

ORIGINAL

OPEN MEETING



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MEMORANDUM

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Arizona Corporation Commission

DOCKETED

TO: THE COMMISSION

2011 FEB -3 P 4:36

FEB 3 2011

FROM: Utilities Division

ARIZONA CORPORATION COMMISSION
DOCKET CONTROL



DATE: February 3, 2011

RE: **REVISED** - ARIZONA PUBLIC SERVICE COMPANY – APPLICATION FOR APPROVAL OF A RESIDENTIAL DEMAND RESPONSE PILOT PROGRAM (DOCKET NO. E-01345A-10-0075)

On December 30, 2010, Staff docketed a memo and proposed order. Based on additional information received from Arizona Public Service Company (“APS” or “Company”) and additional discussion, Staff hereby files this substitute memo and proposed order. The changes involve the appropriate rate of return, recovery of capital related costs, and treatment of noncapital expenses associated with a proposed residential pilot program.

On March 1, 2010, APS filed an application (“Application”) for approval of a demand response (“DR”) pilot program for residential customers as required by Decision No. 71448 issued December 30, 2009. In the Decision, the Commission ordered the Company to file a plan to address the addition of at least 250 Megawatts of Commercial, Industrial or Residential DR, and develop a proposed residential DR tariff and plan for deploying in-home metering devices that provide transparent information regarding real-time pricing of power and real-time renewable energy generation. The Company is seeking approval of its proposed residential Home Energy Information Pilot Program (“HEI Pilot”) and its associated Experimental Service Schedule 16 (“Schedule 16”).

APS expects that the HEI Pilot will be fully deployed within 60 to 90 days of Commission approval of Schedule 16, and the HEI Pilot could be operational sometime during the 2011 summer season. The HEI Pilot is planned to be conducted through two summer seasons, and Schedule 16 is proposed to be available through at least December 31, 2012. Beginning in March of 2011, and with each Demand Side Management (“DSM”) report thereafter, the Company will report on the progress and results of the pilot program.

Proposed Schedule 16 lists the following five options that the HEI Pilot would make available to APS’ residential customers:

Table 1

Option	Description	Target Participation
A	Critical Peak Pricing With Customer Energy Control Device	200 Customers
B	In-Home Energy Information Display	200 Customers

C	Smart Thermostat or Control Switch With APS Direct Load Control of Air Conditioner	200 Customers
D	Qualifying Smart Phone, Personal Digital Assistant, and Computer Energy Information	200 Customers
E	Pre-Pay Energy Service	2,000 Customers

The attached Staff Exhibit 1 summarizes and describes the five program options under APS' proposed Schedule 16.

HEI Pilot

APS is seeking Commission approval of the proposed HEI Pilot, which the Company describes as:

“... a comprehensive residential DR pilot program that includes a technical assessment component for in-home devices that would provide participating residential customers with transparent information regarding their energy use and costs.”¹

It is noteworthy that APS identifies the purpose of the HEI Pilot as a way:

“... to test a variety of technologies that are currently available, as well as customer response to both the technologies and the DR program design, which in turn, will provide essential information for rolling out a full-scale program in the future.”²

Staff believes that the purpose of the proposed HEI Pilot is primarily to gather information on implementing DR. The following references support this finding:

- The Company's current resource plans do not indicate a need for summer peaking capacity resources until 2017; and, in later filings, APS will propose further plans for deployment considering the overall resource plan, the cost effectiveness of the potential DR measures, and the time necessary for customer recruitment and deployment (APS Exhibit B, DR Plan Report at p. 1).
- APS provides no cost-effectiveness test data with the filing, citing Commission-adopted Electric Energy Efficiency Rule R14-2-2412(G), which explicitly exempts research and development pilot programs from the test (Application at Footnote 18 and APS Exhibit B, DR Plan Report at Footnote 5).

¹ Application, pp. 1-2, lines 23-1

² Application, p. 2, lines 2-4

- APS states that even though it is possible to achieve 250 Megawatts of DR by the end of 2016, the Company is not proposing full implementation of new DR measures at this time (Application, p. 4, lines 14-16).
- APS characterizes the activities described in the Application as the “initial assessment phase”, and indicates that the Company will seek Commission approval of specific programs to achieve the full 250 Megawatt DR requirement subsequent to the initial assessment phase of the HEI Pilot (Application, p. 13, lines 6-8).

The proposed HEI Pilot and Schedule 16 are linked by the five options discussed above; consequently, Staff supports APS seeking approval of the proposed HEI Pilot and companion Schedule 16 at the same time. Staff’s Memorandum focuses on the proposed HEI Pilot and Schedule 16, and addresses APS’ request for Commission approval of the proposed DR Plan (Application, p.13, line 15). In addition, APS is requesting a Commission order that:

- Authorizes APS to roll-out the Pre-Pay program throughout APS’ service territory after the program is determined to be technically feasible.
- Waives Arizona Administrative Code (“A.A.C.”) R14-2-211 (Termination of Service) for Pre-Pay program participants.
- Authorizes the modification of the HEI Pilot during the pilot period, if necessary.
- Acknowledges that the Company should treat proposed HEI Pilot-related expenses as research and development, and that program costs are to be recovered through the Demand-Side Management Adjustor Clause (“DSMAC”).
- Approves up to \$6.0 million for the proposed DR Budget.
- Acknowledges that the DSMAC is an appropriate cost-recovery mechanism for costs incurred under Commission-approved programs contained in the DR Plan; and,
- Authorizes recovery of the revenue requirements of the capital portion of pilot deployment, using the authorized cost of capital, through the DSMAC until the capital investment is included in base rates in a subsequent rate case.

Recommendations

HEI Pilot and Schedule 16

With the exception of the proposed Pre-Pay Energy Service option, Staff recommends Commission approval of the proposed HEI Pilot and Schedule 16 as discussed below and filed. The proposed Pre-Pay option is addressed under the Pre-Pay Energy Service section below. Staff believes that the proposed HEI Pilot and Schedule 16 are in compliance with the Decision

requirement that APS "... shall develop a proposed residential demand response tariff and plan for deploying in-home metering devices and providing transparent information regarding real-time pricing of power"³

Staff recommends that the proposed HEI Pilot and Schedule 16 be designated as a DSM research project and non capital-related expenses be recovered through the DSMAC as discussed below. Staff recommends that the recovery of capital-related carrying costs should also be recovered through the DSMAC, but as addressed in more detail below, Staff recommends reducing the estimated carrying costs to reflect the removal of a proposed Pre-Pay program from the proposed HEI Pilot and Schedule 16.

Staff's approval recommendations do not apply to the DR Plan, because the proposed DR Plan includes both residential schedules that have already been approved by the Commission (i.e. Critical Peak Pricing, Rate Schedule CPP-RES and Super Peak Pricing, Rate Schedule ET-SP); and Commercial and Industrial ("C&I") DSM-related programs (e.g. C&I Thermal Energy Storage and Standby Generation) that have not been docketed with the Commission at this time. Consequently, Staff's recommended approval is limited to the proposed HEI Pilot and Schedule 16. The following table summarizes the status of DR Programs contained in the proposed DR Plan Report:

Table 2 (Excludes separately funded R&D Electric Vehicles and Battery Storage programs)

Demand Response Program	MW Reduction by 2016	Status
Residential Direct Load Control	100 – 150	Part of the proposed HEI Pilot
Residential Critical Peak Pricing	2 – 3	Approved by the Commission
Residential Super Peak Pricing	1 – 2	Approved by the Commission
C&I Critical Peak Pricing	30 -40*	Approved by the Commission
C&I Interruptible Rate Rider		With Staff, awaiting an APS Revision
C&I Thermal Energy Storage	2 – 15	Tariff rate to be filed in 2011 general rate case
C&I Standby Generation	50 – 100	In APS research through 2011
Total MW Reduction	185 – 310	

*APS provided the estimated MW reductions combined for these two programs.

Staff recommends that the Commission accept the DR Plan as being in compliance with the Decision, but Staff recommends that the Commission not approve the DR Plan at this point. Staff further recommends that the Commission allow APS to continue its Information Technology software and integration research by approving proposed Schedule 16 and the HEI Pilot, excluding the Pre-Pay Energy Service option as discussed below. Staff also recommends that APS be required to seek Commission approval of proposed C&I programs in future dockets before the Commission.

Staff recommends approval of APS' request to modify the HEI Pilot during the pilot period, if necessary, due to technical feasibility and customer or program needs; however, Staff

³ Decision No. 71448, p. 61, lines 21-23

recommends that all proposed modifications be submitted to the Commission for approval before implementation.

Pre-Pay Energy Service (“Pre-Pay Option”)

Staff does not recommend including the Pre-Pay Option in the proposed HEI Pilot or in Schedule 16 because the proposed program does not meet any of the goals or definitions of DSM programs as adopted by the Commission. The Electric Energy Efficiency Standards rules adopted by the Commission in Decision No. 71819 (August 10, 2010) state, in part, that an affected utility shall design each DSM program to be cost effective and accomplish at least Demand Response, Energy Efficiency or Load Management (R14-2-2403). The three DSM goals are explicitly defined as follows:

- Demand Response “means modification of customers’ electricity consumption patterns, affecting the timing or quantity of customer demand and usage, achieved through intentional actions taken by an affected utility or customer because of changes in prices, market conditions, or threats to system reliability.”
- Energy Efficiency “means the production or delivery of an equivalent level and quality of end-use electric service using less energy, or the conservation of energy by end-use customers.” (It should be noted that APS can only earn a performance incentive for an energy efficiency program.)
- 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.”

Based on the above definitions, Staff believes that the proposed Pre-Pay option is not a DSM program and costs associated with the Pre-Pay option should not be recovered through the DSMAC. Staff is not convinced that a program designed to cut off power due to a lack of funds is in harmony with the intent of, for example, the energy efficiency rule cited above. The Pre-Pay option is a billing option, not a DSM program. Although energy usage of participating customers may be reduced as an ancillary result of the program, any such reduction is speculative at this time.

The Application states that participants may be disconnected under the proposed Pre-Pay Option: a) “Should a participant be disconnected because of lack of funds, that customer does not have to pay a deposit or service establishment fee to reconnect.” (Application, p. 6, lines 16-18); and, b) APS is seeking a waiver of A.A.C. R14-2-211, because pre-pay participants would not receive written notice of disconnection (Id. at lines 18-19).

Staff supports APS’ efforts to reduce its non-payment events and improve access to other payment options for residential customers. However, Staff believes that the funding and review

of such a project should take place under a separate docket that includes a proposed tariff for Commission approval. This approach would provide more opportunity for discovery by the Commission, intervenors and Staff. Staff recommends that if APS wants to pursue a pre-pay program it be included in the next general rate case filed by APS. A separate docket provides more opportunities to find equitable ways to finance a research project that is estimated by APS to cost approximately \$2 million to implement. Since the estimated \$2 million capital investment could become a part of rate base, there are fair value implications associated with the proposed Pre-Pay program. For example, investments in Advanced Metering Infrastructure meters, electronic power disconnect mechanisms, communication mechanisms, new Information Technology software and integration efforts needed to implement the components of the proposed Pre-Pay option have broad implications that require greater analysis and review. Also, the Pre-Pay program may reduce uncollectible bill costs that are currently being paid by all customers through base rates. It would be appropriate to review such costs in a rate case. It should be noted that APS stated in its response to a Staff-initiated data request that "The Pre-Pay program is being created essentially from the ground up in order for APS to leverage its existing systems..." Staff also believes that any plans to roll-out a permanent, full scale Pre-Pay program throughout APS' service territory should be discussed in the aforementioned rate case to be reviewed by the Commission and interested parties.

Proposed REI Pilot Budgets

APS is proposing approximately \$3,681,000 and Staff is recommending approximately \$2,517,000 for the HEI Pilot program, respectively, as follows:

Table 3

	APS' Proposed Unadjusted Budget	Staff's Proposed Adjusted Budget	Difference
Non Capital-Related Expenses ⁽¹⁾	\$2,835,000	\$2,281,000	\$554,000
Capital-Related Carrying Costs ⁽²⁾	\$721,015	\$236,016	\$484,999
Consultant Expenses ⁽³⁾	\$125,000	\$0	\$125,000
Total	\$3,681,015	\$2,517,016	\$1,163,999

(1), (2), and (3) details are addressed below under their respective sections

Recovery of Non Capital Expenses

Non capital-related expenses incurred under Commission-approved programs are recoverable through the DSMAC. Staff recommends approval of the non capital-related expenses in the amount of \$2,281,000, which reflects the removal of: 1) variable Pre-Pay O&M expenses in the amount of approximately \$105,000; and, 2) 25 percent of APS' estimated in-house incremental labor costs in the amount of approximately \$449,000, for a combined amount of \$554,000 (Table 3). Staff and APS are in agreement regarding the removal of approximately

\$105,000 in variable O&M costs if the Commission accepts Staff's recommendation to remove the proposed Pre-Pay program from this filing.

Staff recommends only allowing 75 percent of APS' estimated labor costs at this time for the following reasons: a) APS' estimated "fully loaded" labor costs were submitted without detailed support regarding number of full time employees ("FTE"), number of hours, hourly wage rates, overhead and fringe carrying costs; b) Staff believes that the Pre-Pay option could be a part of APS' next general rate case, which would also be the appropriate forum to discover FTE and other payroll-related data needed to verify APS' estimated labor costs for all options proposed by APS to be included in the residential HEI Pilot; and, c) APS' response to a Staff-initiated data request regarding program implementation indicates that APS is planning much less intensive integration efforts regarding Demand Response software for proposed options A-D (see Table 1 in Staff's Memorandum), thereby pushing full-scale back office integration to an unspecified later date.

The APS estimated non capital budget through CY 2011 is detailed as follows:

Table 4 Residential HEI Pilot Estimated Budget Through CY 2011

Rebates & Incentives ⁽¹⁾	\$557,000
Training & Tech Assistance	\$0
Consumer Education	\$200,000
Program Implementation	\$1,113,000
Program Marketing	\$200,000
Planning & Administration	\$565,000
MER ⁽²⁾	\$200,000
Total	\$2,835,000 Less \$554,000= \$2,281,000 ⁽³⁾

(1) Includes equipment & installation, and home energy audits

(2) Measurement, Evaluation & Research

(3) Adjusted Pre-Pay \$ removed

Recovery of Capital-Related Carrying Costs

APS submitted support for estimated capital-related costs in the amount of \$3,019,900, with carrying costs in the amount of approximately \$721,000. APS describes these costs as new information technology software and integration efforts needed to implement the components of the proposed HEI Pilot. APS further described the roughly \$3 million costs as follows: approximately \$2 million of the estimated budget is for the proposed Pre-Pay program, and the remaining balance is required for Demand Response and Home Area Network functions. Based on Staff's recommendation regarding the removal of the proposed Pre-Pay program from this docket, estimated capital-related costs associated with the proposed HEI Pilot would be reduced to \$1,019,900 (\$3,019,900 - \$2,000,000). Utilizing Staff's recommended cost of capital of 12.45 percent instead of APS' recommended 13.25 percent, Staff estimates that the capital-related carrying costs would be approximately \$236,000 (Table 3), or a reduction of approximately \$485,000 when compared to APS' requested amount of approximately \$721,000 (see Staff

Exhibit 2S attached). Staff therefore recommends that the Commission approve recovery of approximately \$236,000 in capital-related carrying costs through the DSMAC. Staff supports the "carrying cost" approach because it reduces the impact on customers by lowering DSMAC-related costs in the near term. After the capital investment is added to rate base through a general rate case, it is removed from DSMAC costs.

Staff supports using a 12.45 percent cost of capital rather than APS' proposed 13.25 percent, because APS' proposed cost of capital includes an incremental debt rate component, whereas Staff's proposed 12.45 percent cost of capital includes the embedded debt rate component approved by the Commission in Decision No. 71448 (see Staff Exhibit 2S for the derivation of its proposed 12.45 percent cost of capital).

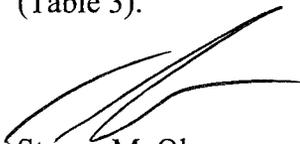
Staff also recommends that APS not be permitted to recover Construction-Work-In-Progress ("CWIP") allowances on capital-related costs incurred under Commission-approved DSM programs.

Recovery of Consulting Expenses

Table 3 includes an APS-proposed \$125,000 consultant expense that Staff recommends be removed from the proposed residential HEI Pilot program. Staff discovered that the proposed consultant expenses were slated by APS to fund additional research into the feasibility of developing C&I Thermal Energy Storage and Standby Generation programs, which are not a part of the proposed residential HEI Pilot program. APS will be pursuing these two C&I programs under separate future dockets with the Commission.

Summary of Staff's Proposed Budget Adjustments

Staff's recommended adjustments total approximately \$1,164,000, thereby reducing APS' proposed HEI Pilot budget from approximately \$3,681,000 to approximately \$2,517,000 (Table 3).



Steven M. Olea
Director
Utilities Division

SMO:WHM:lh\CH

ORIGINATOR: William H. Musgrove

ARIZONA PUBLIC SERVICE COMPANY
PROPOSED RESIDENTIAL DEMAND RESPONSE PILOT PROGRAM
 (Docket No. E-01345A-10-0075)

Exhibit A of Decision No. 71436 (December 18, 2009) proposed the following Rulemaking definitions:

1. Demand Response ("DR") means modification of customers' electricity consumption patterns, affecting the timing or quantity of customer demand and usage, achieved through intentional actions taken by an affected utility or customer because of changes in prices, market conditions, or threats to system reliability (p. 2).
2. Energy Efficiency means the production or delivery of an equivalent level and quality of end-use electric service using less energy, or the conservation of energy by end-use customers (p. 3).
3. 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 (p. 4).

HOME ENERGY INFORMATION PILOT PROGRAM ("HEI PILOT")

Program Options: →	Critical Peak Pricing W/Energy Control Device*	In-Home Energy Information Display*	Smart Thermostat/Load Control Of Air Conditioner*	Smart Communications Devices*	Pre-Pay Energy Service*
Program Description and Features	APS installs a device that automatically responds to a critical event. The device is attached to the thermostat to control energy usage by the air conditioner. Customers are notified of critical events by e-mail, phone or text message one day in advance. Customers may override a pre-programmed response.	APS installs a device that communicates with participants' smart meters and provides real-time or near-time energy cost and usage information. The program may identify communication issues that exist between smart meters and display units.	APS installs a smart thermostat or control that will allow APS to remotely control the thermostat setting during periods of extremely high demand for power. Customers may override APS remote control during critical events.	This program requires participants to own a cellular smart phone, personal digital device or PC w/broadband connectivity to the Internet. APS will provide an energy information application that enables customers to access energy cost and usage data; PC technology may facilitate communications with smart meters.	Pre-pay participants periodically pay for their energy in advance, by phone, mail, on-line, or in person at an APS office, authorized payment location or kiosk. Participants disconnected due to a lack of funds do not have to pay a deposit or service establishment fee to reconnect.
Conforms to Definition(s)	Demand Response and Load Management	Demand Response and Load Management	Demand Response and Load Management	Indirectly related to DR and Load Management with the opportunity to link customer-owned communications equipment with real time energy data.	Not applicable to any of the definitions.

*Advanced Metering Infrastructure ("AMI") meters will be provided to all customers who participate in one of the Demand Response programs (March 2010 APS Demand Response Plan Report, p. 7)

STAFF RECOMMENDED CAPITAL-RELATED 2011 CARRYING COSTS

Staff Exhibit 2S
(Substitute Exhibit)

APS HEI Pilot Program (With Pre-Pay Option)
(APS Proposed Amortization and Cost of Capital)

Monthly Amortization of Plant and RORB:	
Oct-10	\$377,488 13.25% \$4,168
Nov-10	\$754,975 13.25% \$8,336
Dec-10	\$1,132,463 13.25% \$12,504
Jan-11	\$1,509,950 13.25% \$16,672
Feb-11	\$1,887,438 13.25% \$20,840
Mar-11	\$2,264,925 13.25% \$25,009
Apr-11	\$2,642,413 13.25% \$29,177
May-11	\$3,019,900 13.25% \$33,345
RORB Sum----->	
	\$150,051

APS HEI Pilot Program (Without Pre-Pay Option)
(Staff Proposed Amortization and Cost of Capital)*

Monthly Amortization of Plant and RORB:	
	\$127,488 12.45% \$1,323
	\$254,975 12.45% \$2,645
	\$382,463 12.45% \$3,968
	\$509,950 12.45% \$5,291
	\$637,438 12.45% \$6,613
	\$764,925 12.45% \$7,936
	\$892,413 12.45% \$9,259
	\$1,019,900 12.45% \$10,581
RORB Sum----->	
	\$47,617

Monthly Depreciation of Plant and RORB: (Rate Base Beginning June 1)

End of	Depreciation	RORB	Rate Base	Deferred		Cumulative
				Taxes	Deferred Taxes	
Jun-11	\$50,332	\$32,820	\$2,972,409	\$2,840	\$2,840	\$2,840
Jul-11	\$50,332	\$32,296	\$2,924,917	\$2,840	\$5,680	\$5,680
Aug-11	\$50,332	\$31,772	\$2,877,426	\$2,840	\$8,521	\$8,521
Sep-11	\$50,332	\$31,247	\$2,829,934	\$2,840	\$11,361	\$11,361
Oct-11	\$50,332	\$30,723	\$2,782,443	\$2,840	\$14,201	\$14,201
Nov-11	\$50,332	\$30,198	\$2,734,951	\$2,840	\$17,041	\$17,041
Dec-11	\$50,332	\$29,674	\$2,687,460	\$2,840	\$19,882	\$19,882
Sums	\$352,322	\$218,730				

Cumulative RORBs \$368,782

Deprec + RORBs \$721,103

(APS 2011 Annual Carrying Costs)

Reduction in Annual Capital-Related Carrying Costs (APS less Staff)

Monthly Depreciation of Plant and RORB:

End of	Depreciation	RORB	Rate Base	Deferred		Cumulative
				Taxes	Deferred Taxes	
Jun-11	\$16,998	\$10,415	\$1,003,861	\$959	\$959	\$959
Jul-11	\$16,998	\$10,249	\$987,822	\$959	\$1,918	\$1,918
Aug-11	\$16,998	\$10,082	\$971,783	\$959	\$2,878	\$2,878
Sep-11	\$16,998	\$9,916	\$955,744	\$959	\$3,837	\$3,837
Oct-11	\$16,998	\$9,749	\$939,704	\$959	\$4,796	\$4,796
Nov-11	\$16,998	\$9,583	\$923,665	\$959	\$5,755	\$5,755
Dec-11	\$16,998	\$9,417	\$907,626	\$959	\$6,715	\$6,715
Sums	\$118,988	\$69,411				

Cumulative RORBs \$117,027

Deprec + RORBs \$236,016

(Staff 2011 Annual Carrying Costs)

\$485,087

*Capitalization	%	Cost Rate ^{(1) (2)}	Weighted Cost
Equity	53.79	18.18%	9.78
Debt	46.21	5.77%	2.67
Total	100.00		12.45

(1) Equity tax factor adjustment taken up front (11% x 1.653)

(2) Authorized embedded cost of debt

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BEFORE THE ARIZONA CORPORATION COMMISSION

GARY PIERCE
Chairman

BOB STUMP
Commissioner

SANDRA D. KENNEDY
Commissioner

PAUL NEWMAN
Commissioner

BRENDA BURNS
Commissioner

IN THE MATTER OF THE APPLICATION)
OF ARIZONA PUBLIC SERVICE)
COMPANY FOR APPROVAL OF A)
RESIDENTIAL DEMAND RESPONSE)
PILOT PROGRAM)

DOCKET NO. E-01345A-10-0075
DECISION NO. _____
ORDER

Open Meeting
February 17, 2011
Phoenix, Arizona

BY THE COMMISSION:

FINDINGS OF FACT

1. Arizona Public Service Company ("APS" or "the Company") is certificated to provide electric service as a public service corporation within portions of Arizona, pursuant to authority granted by the Arizona Corporation Commission ("Commission").

2. APS provides service in the counties of Apache, Cochise, Coconino, Gila, La Paz, Maricopa, Navajo, Pinal, Yavapai and Yuma. The Company services over 1.1 million customers in Arizona, including approximately 984,000 Residential and 120,000 Commercial customers.

3. On March 1, 2010, APS filed an application ("Application") for approval of a demand response ("DR") pilot program for residential customers as required by Decision No. 71448 issued December 30, 2009.

4. In the Decision, the Commission ordered the Company to file a plan to address the addition of at least 250 Megawatts of Commercial, Industrial or Residential DR, and develop a proposed residential DR tariff and plan for deploying in-home metering devices that provide

1 transparent information regarding real-time pricing of power and real-time renewable energy
2 generation.

3 5. The Company is seeking approval of its proposed residential Home Energy
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5 (“Schedule 16”).

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10 of 2011, and with each Demand Side Management (“DSM”) report thereafter, the Company will
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13 make available to APS’ residential customers:

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23 **HEI Pilot**

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“... a comprehensive residential DR pilot program that includes a technical assessment component for in-home devices that would provide participating residential customers with transparent information regarding their energy use and costs.”¹

9. It is noteworthy that APS identifies the purpose of the HEI Pilot as a way:

“... to test a variety of technologies that are currently available, as well as customer response to both the technologies and the DR program design, which in turn, will provide essential information for rolling out a full-scale program in the future.”²

10. Staff believes that the purpose of the proposed HEI Pilot is primarily to gather information on implementing DR. The following references support this finding:

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17 deployment, using the authorized cost of capital, through the DSMAC until the
18 capital investment is included in base rates in a subsequent rate case.

17 Recommendations

18 HEI Pilot and Schedule 16

19 12. With the exception of the proposed Pre-Pay Energy Service option, Staff
20 recommended Commission approval of the proposed HEI Pilot and Schedule 16 as discussed
21 below and filed. The proposed Pre-Pay option is addressed under the Pre-Pay Energy Service
22 section below. Staff believes that the proposed HEI Pilot and Schedule 16 are in compliance with
23 the Decision requirement that APS "... shall develop a proposed residential demand response tariff
24 and plan for deploying in-home metering devices and providing transparent information regarding
25 real-time pricing of power...."³

26 13. Staff recommended that the proposed HEI Pilot and Schedule 16 be designated as a
27 DSM research project and non capital-related expenses be recovered through the DSMAC as

28 ³ Decision No. 71448, p. 61, lines 21-23

1 discussed below. Staff recommended that the recovery of capital-related carrying costs should also
 2 be recovered through the DSMAC, but as addressed in more detail below, Staff recommended
 3 reducing the estimated carrying costs to reflect the removal of a proposed Pre-Pay program from
 4 the proposed HEI Pilot and Schedule 16.

5 14. Staff's approval recommendations do not apply to the DR Plan, because the
 6 proposed DR Plan includes both residential schedules that have already been approved by the
 7 Commission (i.e. Critical Peak Pricing, Rate Schedule CPP-RES and Super Peak Pricing, Rate
 8 Schedule ET-SP); and Commercial and Industrial ("C&I") DSM-related programs (e.g. C&I
 9 Thermal Energy Storage and Standby Generation) that have not been docketed with the
 10 Commission at this time. Consequently, Staff's recommended approval is limited to the proposed
 11 HEI Pilot and Schedule 16. The following table summarizes the status of DR Programs contained
 12 in the proposed DR Plan Report:

13 **Table 2 (Excludes separately funded R&D Electric Vehicles and Battery Storage programs)**

Demand Response Program	MW Reduction by 2016	Status
Residential Direct Load Control	100 – 150	Part of the proposed HEI Pilot
Residential Critical Peak Pricing	2 – 3	Approved by the Commission
Residential Super Peak Pricing	1 – 2	Approved by the Commission
C&I Critical Peak Pricing	30 -40*	Approved by the Commission
C&I Interruptible Rate Rider		With Staff, awaiting an APS Revision
C&I Thermal Energy Storage	2 – 15	Tariff rate to be filed in 2011 general rate case
C&I Standby Generation	50 – 100	In APS research through 2011
Total MW Reduction	185 – 310	

22 *APS provided the estimated MW reductions combined for these two programs.

23 15. Staff recommends that the Commission accept the DR Plan as being in compliance
 24 with the Decision, but Staff recommends that the Commission not approve the DR Plan at this
 25 point. Staff further recommends that the Commission allow APS to continue its Information
 26 Technology software and integration research by approving proposed Schedule 16 and the HEI
 27 Pilot, excluding the Pre-Pay Energy Service option as discussed below. Staff also recommends that
 28 ...

1 APS be required to seek Commission approval of proposed C&I programs in future dockets before
2 the Commission.

3 16. Staff recommended approval of APS' request to modify the HEI Pilot during the
4 pilot period, if necessary, due to technical feasibility and customer or program needs; however,
5 Staff recommended that all proposed modifications be submitted to the Commission for approval
6 before implementation.

7 **Pre-Pay Energy Service ("Pre-Pay Option")**

8 17. Staff recommended not including the Pre-Pay Option in the proposed HEI Pilot or
9 in Schedule 16 because the proposed program does not meet any of the goals or definitions of
10 DSM programs as adopted by the Commission. The Electric Energy Efficiency Standards rules
11 adopted by the Commission in Decision No. 71819 (August 10, 2010) states, in part, that an
12 affected utility shall design each DSM program to be cost effective and accomplish at least
13 Demand Response, Energy Efficiency or Load Management (R14-2-2403). The three DSM goals
14 are explicitly defined as follows:

- 15 • Demand Response "means modification of customers' electricity consumption
16 patterns, affecting the timing or quantity of customer demand and usage,
17 achieved through intentional actions taken by an affected utility or customer
18 because of changes in prices, market conditions, or threats to system
19 reliability."
- 20 • Energy Efficiency "means the production or delivery of an equivalent level and
21 quality of end-use electric service using less energy, or the conservation of
22 energy by end-use customers." (It should be noted that APS can only earn a
23 performance incentive for an energy efficiency program.)
- 24 • Load Management "means actions taken or sponsored by an affected utility to
25 reduce peak demands or improve system operating efficiency, such as direct
26 control of customer demands through affected utility-initiated interruption or
27 cycling, thermal storage, or educational campaigns to encourage customers to
28 shift loads."

25 18. Based on the above definitions, Staff believes that the proposed Pre-Pay option is
26 not a DSM program and costs associated with the Pre-Pay option should not be recovered through
27 the DSMAC. Staff is not convinced that a program designed to cut off power due to a lack of
28 funds is in harmony with the intent of, for example, the energy efficiency rule cited above. The

1 Pre-Pay option is a billing option, not a DSM program. Although energy usage of participating
2 customers may be reduced as an ancillary result of the program, any such reduction is speculative
3 at this time.

4 19. The Application states that participants may be disconnected under the proposed
5 Pre-Pay Option: a) "Should a participant be disconnected because of lack of funds, that customer
6 does not have to pay a deposit or service establishment fee to reconnect." (Application, p. 6, lines
7 16-18); and, b) APS is seeking a waiver of A.A.C. R14-2-211, because pre-pay participants would
8 not receive written notice of disconnection (Id. at lines 18-19).

9 20. Staff supports APS' efforts to reduce its non-payment events and improve access to
10 other payment options for residential customers. However, Staff believes that the funding and
11 review of such a project should take place under a separate docket that includes a proposed tariff
12 for Commission approval. This approach would provide more opportunity for discovery by the
13 Commission, intervenors and Staff. Staff recommended that if APS desires to pursue a pre-pay
14 program that it be allowed to include such a program in its next general rate case. A separate
15 docket provides more opportunities to find equitable ways to finance a research project that is
16 estimated by APS to cost approximately \$2 million to implement. Since the estimated \$2 million
17 capital investment could become a part of rate base, there are fair value implications associated
18 with the proposed Pre-Pay program. For example, investments in Advanced Metering
19 Infrastructure meters, electronic power disconnect mechanisms, communication mechanisms, new
20 Information Technology software and integration efforts needed to implement the components of
21 the proposed Pre-Pay option have broad implications that require greater analysis and review.
22 Also, the Pre-Pay program may reduce uncollectible bill costs that are currently being paid by all
23 customers through base rates. It would be appropriate to review such costs in a rate case. It
24 should be noted that APS stated in its response to a Staff-initiated data request that "The Pre-Pay
25 program is being created essentially from the ground up in order for APS to leverage its existing
26 systems ..." Staff also believes that any plans to roll-out a permanent, full scale Pre-Pay program
27 throughout APS' service territory could be discussed in the aforementioned rate case to be
28 reviewed by the Commission and interested parties.

1 **Proposed REI Pilot Budgets**

2 21. APS is proposing approximately \$3,681,000 and Staff recommended approximately
3 \$2,517,000 for the HEI Pilot program, respectively, as follows:

4 **Table 3**

	APS' Proposed Unadjusted Budget	Staff's Proposed Adjusted Budget	Difference
Non Capital- Related Expenses ⁽¹⁾	\$2,835,000	\$2,281,000	\$554,000
Capital-Related Carrying Costs ⁽²⁾	\$721,015	\$236,016	\$484,999
Consultant Expenses ⁽³⁾	\$125,000	\$0	\$125,000
Total	\$3,681,015	\$2,517,016	\$1,163,999

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11 (1), (2), and (3) details are addressed below under their respective sections

12 **Recovery of Non Capital-Related Expenses**

13 22. Non capital-related expenses incurred under Commission-approved programs are
14 recoverable through the DSMAC. Staff recommended approval of the non capital-related expenses
15 in the amount of \$2,281,000, which reflects the removal of: 1) variable Pre-Pay O&M expenses in
16 the amount of approximately \$105,000; and, 2) 25 percent of APS' estimated in-house incremental
17 labor costs in the amount of approximately \$449,000, for a combined amount of \$554,000 (Table
18 3). Staff and APS are in agreement regarding the removal of approximately \$105,000 in variable
19 O&M costs if the Commission accepts Staff's recommendation to remove the proposed Pre-Pay
20 program from this filing and requires APS to include the Pre-Pay option in its next general rate
21 case filing.

22 23. Staff recommended only allowing 75 percent of APS' estimated labor costs at this
23 time for the following reasons: a) APS' estimated "fully loaded" labor costs were submitted
24 without detailed support regarding number of full time employees ("FTE"), number of hours,
25 hourly wage rates, overhead and fringe carrying costs; b) Staff believes that the Pre-Pay option
26 could be a part of APS' next general rate case, which would also be the appropriate forum to
27 discover FTE and other payroll-related data needed to verify APS' estimated labor costs for all
28 options proposed by APS to be included in the residential HEI Pilot; and, c) APS' response to a

1 Staff-initiated data request regarding program implementation indicates that APS is planning much
 2 less intensive integration efforts regarding Demand Response software for proposed options A-D
 3 (see Table 1 in Staff's Memorandum), thereby pushing full-scale back office integration to an
 4 unspecified later date.

5 The APS estimated non capital budget through CY 2011 is detailed as follows:

6
 7 **Table 4 Residential HEI Pilot Estimated Budget Through CY 2011**

8 Rebates & Incentives ⁽¹⁾	\$557,000
9 Training & Tech Assistance	\$0
10 Consumer Education	\$200,000
11 Program Implementation	\$1,113,000
12 Program Marketing	\$200,000
13 Planning & Administration	\$565,000
MER ⁽²⁾	\$200,000
14 Total	\$2,835,000 Less \$554,000= \$2,281,000 ⁽³⁾

15 (1) Includes equipment & installation, and home energy audits

(2) Measurement, Evaluation & Research

16 (3) Adjusted Pre-Pay \$ removed

17 **Recovery of Capital-Related Carrying Costs**

18 24. APS submitted support for estimated capital-related costs in the amount of
 19 \$3,019,900, with carrying costs in the amount of approximately \$721,000. APS describes these
 20 costs as new information technology software and integration efforts needed to implement the
 21 components of the proposed HEI Pilot. APS further described the roughly \$3 million costs as
 22 follows: approximately \$2 million of the estimated budget is for the proposed Pre-Pay program,
 23 and the remaining balance is required for Demand Response and Home Area Network functions.
 24 Based on Staff's recommendation regarding the removal of the proposed Pre-Pay program from
 25 this docket, estimated capital-related costs associated with the proposed HEI Pilot would be
 26 reduced to \$1,019,900 (\$3,019,900 - \$2,000,000). Utilizing Staff's recommended cost of capital
 27 of 12.45 percent instead of APS' recommended 13.25 percent, Staff estimates that the capital-
 28 related carrying costs would be approximately \$236,000 (Table 3), or a reduction of approximately

1 \$485,000 when compared to APS' requested amount of approximately \$721,000 (see Staff Exhibit
2 2S attached). Staff recommended that the Commission approve recovery of approximately
3 \$236,000 in capital-related carrying costs through the DSMAC. Staff supports the "carrying cost"
4 approach because it reduces the impact on customers by lowering DSMAC-related costs in the
5 near term. After the capital investment is added to rate base through a general rate case, it is
6 removed from DSMAC costs.

7 25. Staff supports using a 12.45 percent cost of capital rather than APS' proposed 13.25
8 percent, because APS' proposed cost of capital includes an incremental debt rate component,
9 whereas Staff's proposed 12.45 percent cost of capital includes the embedded debt rate component
10 approved by the Commission in Decision No. 71448 (see Staff Exhibit 2S for the derivation of its
11 proposed 12.45 percent cost of capital).

12 26. Staff also recommended that APS not be permitted to recover Construction-Work-
13 In-Progress ("CWIP") allowances on capital-related costs incurred under Commission-approved
14 DSM programs.

15 **Recovery of Consulting Expenses**

16 27. Table 3 includes an APS-proposed \$125,000 consultant expense that Staff
17 recommended be removed from the proposed residential HEI Pilot program. Staff discovered that
18 the proposed consultant expenses were slated by APS to fund additional research into the
19 feasibility of developing C&I Thermal Energy Storage and Standby Generation programs, which
20 are not a part of the proposed residential HEI Pilot program. APS will be pursuing these two C&I
21 programs under separate future dockets with the Commission.

22 **Summary of Staff's Proposed Budget Adjustments**

23 28. Staff's recommended adjustments total approximately \$1,164,000, thereby reducing
24 APS' proposed HEI Pilot budget from approximately \$3,681,000 to approximately \$2,517,000
25 (Table 3).

26 **CONCLUSIONS OF LAW**

27 1. Arizona Public Service Company is a public service corporation within the meaning
28 of Article XV, Section 2 of the Arizona Constitution.

1 IT IS FURTHER ORDERED that Arizona Public Service Company may request
 2 modifications to the HEI Pilot during the pilot period, but all proposed modifications shall be
 3 submitted to the Commission for consideration before implementation.

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

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BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION

CHAIRMAN

COMMISSIONER

COMMISSIONER

COMMISSIONER

COMMISSIONER

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 _____ day of _____, 2011.

ERNEST G. JOHNSON
 EXECUTIVE DIRECTOR

DISSENT: _____

DISSENT: _____

SMO: WHM: lhm\CH

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**ARIZONA PUBLIC SERVICE COMPANY
PROPOSED RESIDENTIAL DEMAND RESPONSE PILOT PROGRAM**
(Docket No. E-01345A-10-0075)

Exhibit A of Decision No. 71436 (December 18, 2009) proposed the following Rulemaking definitions:

1. Demand Response ("DR") means modification of customers' electricity consumption patterns, affecting the timing or quantity of customer demand and usage, achieved through intentional actions taken by an affected utility or customer because of changes in prices, market conditions, or threats to system reliability (p. 2).
2. Energy Efficiency means the production or delivery of an equivalent level and quality of end-use electric service using less energy, or the conservation of energy by end-use customers (p. 3).
3. 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 (p. 4).

HOME ENERGY INFORMATION PILOT PROGRAM ("HEI PILOT")

Program Options: →	Critical Peak Pricing W/Energy Control Device*	In-Home Energy Information Display*	Smart Thermostat/Load Control Of Air Conditioner*	Smart Communications Devices*	Pre-Pay Energy Service*
Program Description and Features	APS installs a device that automatically responds to a critical event. The device is attached to the thermostat to control energy usage by the air conditioner. Customers are notified of critical events by e-mail, phone or text message one day in advance. Customers may override a pre-programmed response.	APS installs a device that communicates with participants' smart meters and provides real-time or near-time energy cost and usage information. The program may identify communication issues that exist between smart meters and display units.	APS installs a smart thermostat or control that will allow APS to remotely control the thermostat setting during periods of extremely high demand for power. Customers may override APS remote control during critical events.	This program requires participants to own a cellular smart phone, personal digital device or PC w/broadband connectivity to the Internet. APS will provide an energy information application that enables customers to access energy cost and usage data; PC technology may facilitate communications with smart meters.	Pre-pay participants periodically pay for their energy in advance, by phone, mail, on-line, or in person at an APS office, authorized payment location or kiosk. Participants disconnected due to a lack of funds do not have to pay a deposit or service establishment fee to reconnect.
Conforms to Definition(s)	Demand Response and Load Management	Demand Response and Load Management	Demand Response and Load Management	Indirectly related to DR and Load Management with the opportunity to link customer-owned communications equipment with real time energy data.	Not applicable to any of the definitions.

*Advanced Metering Infrastructure ("AMI") meters will be provided to all customers who participate in one of the Demand Response programs (March 2010 APS Demand Response Plan Report, p. 7)

STAFF RECOMMENDED CAPITAL-RELATED 2011 CARRYING COSTS

APS HEI Pilot Program (Without Pre-Pay Option)

(Staff Proposed Amortization and Cost of Capital)*

Monthly Amortization of Plant and RORB:

Oct-10	\$127,488	12.45%	\$1,323
Nov-10	\$254,975	12.45%	\$2,645
Dec-10	\$382,463	12.45%	\$3,968
Jan-11	\$509,950	12.45%	\$5,291
Feb-11	\$637,438	12.45%	\$6,613
Mar-11	\$764,925	12.45%	\$7,936
Apr-11	\$892,413	12.45%	\$9,259
May-11	\$1,019,900	12.45%	\$10,581
RORB Sum----->			\$47,617

APS HEI Pilot Program (With Pre-Pay Option)

(APS Proposed Amortization and Cost of Capital)

Monthly Amortization of Plant and RORB:

Oct-10	\$377,488	13.25%	\$4,168
Nov-10	\$754,975	13.25%	\$8,336
Dec-10	\$1,132,463	13.25%	\$12,504
Jan-11	\$1,509,950	13.25%	\$16,672
Feb-11	\$1,887,438	13.25%	\$20,840
Mar-11	\$2,264,925	13.25%	\$25,009
Apr-11	\$2,642,413	13.25%	\$29,177
May-11	\$3,019,900	13.25%	\$33,345
RORB Sum----->			\$150,051

Monthly Depreciation of Plant and RORB:

(Rate Base Beginning June 1)

(Rate Base Beginning June 1)

(Rate Base Beginning June 1)

End of	Depreciation	RORB	Rate Base	RORB	Rate Base	Deferred Taxes	Cumulative Deferred Taxes	
Jun-11	\$50,332	\$32,820	\$2,972,409	\$2,840	\$2,840	\$2,840	\$2,840	
Jul-11	\$50,332	\$32,296	\$2,924,917	\$2,840	\$2,840	\$5,680	\$5,680	
Aug-11	\$50,332	\$31,772	\$2,877,426	\$2,840	\$2,840	\$8,521	\$8,521	
Sep-11	\$50,332	\$31,247	\$2,829,934	\$2,840	\$2,840	\$11,361	\$11,361	
Oct-11	\$50,332	\$30,723	\$2,782,443	\$2,840	\$2,840	\$14,201	\$14,201	
Nov-11	\$50,332	\$30,198	\$2,734,951	\$2,840	\$2,840	\$17,041	\$17,041	
Dec-11	\$50,332	\$29,674	\$2,687,460	\$2,840	\$2,840	\$19,882	\$19,882	
Sums	\$352,322	\$218,730				\$69,411		
Cumulative RORBs				Cumulative RORBs				\$117,027

End of	Depreciation	RORB	Rate Base	RORB	Rate Base	Deferred Taxes	Cumulative Deferred Taxes	
Jun-11	\$16,998	\$10,415	\$1,003,861	\$10,415	\$1,003,861	\$16,998	\$16,998	
Jul-11	\$16,998	\$10,249	\$987,822	\$10,249	\$987,822	\$16,998	\$33,996	
Aug-11	\$16,998	\$10,082	\$971,783	\$10,082	\$971,783	\$16,998	\$50,994	
Sep-11	\$16,998	\$9,916	\$955,744	\$9,916	\$955,744	\$16,998	\$67,992	
Oct-11	\$16,998	\$9,749	\$939,704	\$9,749	\$939,704	\$16,998	\$84,990	
Nov-11	\$16,998	\$9,583	\$923,665	\$9,583	\$923,665	\$16,998	\$101,988	
Dec-11	\$16,998	\$9,417	\$907,626	\$9,417	\$907,626	\$16,998	\$118,986	
Sums	\$118,988	\$69,411				\$69,411		
Cumulative RORBs				Cumulative RORBs				\$117,027

Deprec + RORBs	\$368,782	Deprec + RORBs	\$236,016
Reduction in Annual Capital-Related Carrying Costs (APS less Staff)		(Staff 2011 Annual Carrying Costs)	
	\$721,103		\$485,087

Capitalization	%	Cost Rate ^{(1) (2)}	Weighted Cost
Equity	53.79	18.18%	9.78
Debt	46.21	5.77%	2.67
Total	100.00		12.45

(1) Equity tax factor adjustment taken up front (11% x 1.653)
(2) Authorized embedded cost of debt

Decision No. _____