ORIGINAL NEW APPLICATION

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BEFORE THE ARIZONA CORPORATION COMMISSION

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E-01345A-10-0075

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-____

APPLICATION

Arizona Corporation Commission
DOCKETED
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As required by Decision No. 71448, Arizona Public Service Company ("APS" or "Company") is seeking Arizona Corporation Commission ("Commission") approval of the Company's proposed plan for the development and design of additional demand response ("DR") programs.[1] In that decision, the Commission ordered the Company to file a plan to address the addition of at least 250 megawatts of DR, and to develop a proposed residential DR tariff and a plan for deploying in-home displays to customers. With this filing, APS is seeking approval of its plans for evaluating and implementing new DR program designs ("DR Plan"), which include the installation of various in-home devices. The Company believes that the programs in the DR Plan, if approved by the Commission and accepted by customers, will allow APS to achieve its 250-megawatt demand reduction.

The Company is seeking approval of the Home Energy Information Pilot Program ("HEI Pilot"), which is a comprehensive residential DR pilot program that includes a technical assessment component for in-home devices that would provide participating

[1] The Commission has recently promulgated proposed Energy Efficiency Rules, which address demand side management, energy efficiency and demand response programs. *See* Decision No. 71436 (Dec. 18, 2009). Although not yet finalized, APS recognizes that the proposed Energy Efficiency Rules reflect the Commission's policy perspective on these matters. Therefore, the proposed programs in this filing are consistent with those rules.

residential customers with transparent information regarding their energy use and costs. The purpose of the HEI Pilot is 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. The HEI Pilot will also include a pre-paid energy service component to test customer response to a "pay as you go" option. APS has designed the pilot to evaluate multiple pricing plans and multiple in-home technologies for one of the most comprehensive home energy pilots in the nation. The Company is seeking specific approval of the Home Energy Information Pilot Rider (Experimental Service Schedule 16), which is attached as Exhibit A.

In addition to the programs specifically presented for Commission consideration in this application, APS will be developing and subsequently launching a new section to the Company's website (aps.com) that will provide near real-time information on APS's renewable energy generation. This new online presentation of data will be available to anyone with internet access. APS plans to launch this website during the second quarter of 2010.

In this filing, APS is proposing a phased approach, with necessary near-term testing and studies to support subsequent larger-scale deployment. In addition to providing a detailed description of the HEI Pilot, the DR Plan Report, which is attached as Exhibit B, provides information and timelines for the implementation of a Thermal Energy Storage Program and Standby Generation Program, and discusses two innovative DR initiatives related to electric vehicles and battery storage.

I. BACKGROUND

The "Smart Grid" is a portfolio of technologies that will make our electrical system more efficient and reliable as well as enable our customers to better manage their own energy consumption through information and new products and services. APS's Smart Grid efforts are well underway, and include the deployment of advanced metering infrastructure ("AMI") or "smart meters," deployment of additional automation and "self healing" technologies on the distribution system, as well as distributed renewable energy. DR is widely acknowledged

to be a critical foundation for a smarter electrical system and key in fully developing the Smart Grid.

The Commission has defined DR as "mechanisms designed to provide incentives to customers to reduce their load in response to prices, market conditions, or threats to system reliability",[2] and has identified DR programs as those that are designed to influence the timing of a customer's energy use, including time-of-use ("TOU"), super peak and critical peak pricing rates.[3] From a planning perspective, DR serves as a peaking resource, which is the type of resource most likely to be utilized when capacity need is at its highest. As a result, APS's DR programs are summertime programs, designed to be effective during the peak demand months of June through September.

Since the implementation of APS's initial experimental TOU rate in April 1976, the Company has encouraged its customers to take action to reduce the amount of energy used in their homes and businesses. Over the years, APS has developed various programs to help customers manage their monthly energy bills, and to allow the Company to defer the construction and purchase of increasingly expensive capacity and energy needed to meet customers' growing demand for electricity. Today over 50% of the Company's residential customers subscribe to a TOU rate, making APS the leading TOU utility in the United States. APS is also implementing APS Peak Solutions, a demand response program for Commercial and Industrial ("C&I") customers.[4] APS anticipates that up to 10,000 customers may ultimately participate in this program, which will be in effect during the peak demand months of June through September beginning this summer. The program will be phased in over a three-year period with a total of 100 megawatts of demand reduction by 2012.

A significant factor in the cost effectiveness of DR is the capacity provided by the resource and the utility's need for that capacity. Over the last several years, APS's loads and resources picture has changed significantly due to the execution of renewable contracts to

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[2] Decision No. 69663 (June 28, 2007) at 97.
[3] Decision No. 71448 (December 30, 2009) at 16.
[4] Decision No. 71104 (June 5, 2009).

satisfy Arizona's Renewable Energy Standard,[5] anticipated increases in energy efficiency programs, the effectiveness of the Company's current energy efficiency programs,[6] and the current downturn in the national and state economies. For these reasons, the Company's current resource plans do not indicate a need for additional summer peaking capacity resources until 2017, which, absent other considerations, significantly reduces the near-term cost-effectiveness of new DR programs.

While APS's peaking resource needs do not appear for several years into the future, the Company must continue developing and implementing demand response programs today, as these programs are contingent upon customer involvement and require significant lead time for enrollment and participation. In this application, APS is proposing to conduct the HEI Pilot, implement new DR rates, and continue development of other DR programs. This application sets forth the Company's proposal for DR that APS believes may provide additional peak load reductions of at least 250 megawatts by the end of 2016 if approved by the Commission and accepted by customers. Even though it is possible to achieve 250 megawatts of DR by 2016, APS is not proposing full implementation of new DR measures at this time. 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.

II. RESIDENTIAL DEMAND RESPONSE

In 2010, APS will engage its residential customers in DR by rolling-out the HEI Pilot and implementing two new residential TOU rates.

A. The HEI Pilot

The HEI Pilot is an innovative DR program that will allow APS to assess how technology can improve service, and will enable participating consumers (who will have ready access to their energy usage information) to better manage their energy costs. APS has

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[5] A.A.C. R14-2-1801 through 1816.

[6] Current estimates are that the new requirement of 22% energy efficiency by 2020 will have a peak demand reduction impact of over 12% due to current and anticipated energy efficiency programs. This significant reduction will impact the amount of DR that will be achievable by APS over time.

designed the pilot to evaluate multiple pricing plans and in-home technologies. The goal of the HEI Pilot is to assure that this technology will be robust enough to meet customers' needs into the future.

APS believes the integration of a residential DR program into the broader Smart Grid implementation best serves both customers and the Company. Participating customers will have an AMI meter, and the HEI Pilot will test customer interaction with a variety of DR features and energy management technologies, including Web interfaces, smart phones, in-home displays and programmable thermostats. Customers will receive information about their energy use in a variety of ways, including text message or via a personal digital assistant or smart phone application, in addition to their ability to access home meter usage online through APS's website. To actuate a residential DR program, a communications platform must exist that allows the utility to remotely signal thermostats that a DR event is scheduled to occur, and schedule specific time for customers to shed load. As part of the HEI Pilot's technology assessment, APS is seeking to determine the optimal communications platform to go "to and through" the home, in order to create a Home Area Network ("HAN") that will support the technologies contemplated in the HEI Pilot, as well as potentially other future technologies.[7]

As part of the HEI Pilot, APS will seek to enroll a representative mix of residential customers likely to participate in future programs. Customers will be enrolled in one of the following categories: critical peak pricing participants (with energy control device); in-home display participants; online energy information participants; residential DR/smart thermostat participants; smart phone participants; and pre-pay energy service participants. All customers will also be made aware of the extensive information already provided on aps.com. As part of the HEI Pilot, participating customers will be allowed to retain the in-home devices at the

[7] The HAN also allows for in-home displays to communicate with the meter or the utility to present near real-time consumption and cost data. This connection can be established either through the AMI system, the internet via broadband access into the home, or a third-party solution. The sustainability of the HAN is a significant issue that requires research and field-testing prior to any full-scale program deployment.

end of the pilot, and will also receive a home energy audit at the conclusion of the summer season to evaluate their homes for additional energy-saving opportunities.

The pre-pay option of the HEI Pilot will integrate with the AMI infrastructure and will offer customers more options and flexibility than traditional programs. If this option of the HEI Pilot is approved, APS will be one of the first investor-owned utilities to offer a pre-pay option integrated with utility AMI infrastructure. As part of the pilot, APS intends to roll-out the pre-pay option to 2,000 customers. Two hundred of those customers will be solicited to assess whether a pre-pay option results in a decrease in energy consumption by participating customers. As part of this filing, APS is seeking authorization to extend this program to all eligible customers, once the Company has determined the technical feasibility and customer functionality of the pre-pay option.

Pre-pay customers will pay for their energy in advance, by phone, mail, on-line, or in person at an APS office, authorized payment location or kiosk. Instead of receiving monthly bills, they will be able to track their energy usage on a daily basis through a Web portal. Participants can opt for notification by phone, email or text message when their account balance reaches a certain dollar amount (selected by the customer). 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. Because pre-pay participants would not receive written notice of disconnection, APS is seeking a waiver of A.A.C. R14-2-211 for this program.

The purpose of the HEI Pilot is to determine the effectiveness of different types of technology, and to assess customers' experiences with DR and various technologies. During the pilot, APS will: test multiple DR strategies to determine the amount of energy usage reductions that are realistic for this region; thoroughly test alternative paths for communications to determine the best option; identify the optimal approach for integrating residential DR with other Smart Grid opportunities for customers; and, most importantly, thoroughly engage the participating customers to understand the true impact on their comfort and standard of living that resulted from the DR events, as well as the utilization of the devices being provided.

The data collected will allow APS to better understand how to maximize the benefits of these technologies in the future and will provide operational experience that the Company can draw upon to prepare for increased deployment of DR programs and their interaction with the Smart Grid. The Company's intent is to provide definitive recommendations on the most effective communications medium, DR strategy, and mix of smart home applications and devices that can be rolled out for a full-scale Smart Grid program. APS believes that there is a potential 100-150 megawatts from residential DR programs that may be available in the APS service territory.

The HEI Pilot is currently in the planning stages and involves numerous components. As the specific technologies, vendors, and customer support plans are developed and evaluated, it may be necessary to modify the pilot depending on technical feasibility and customer or program needs. Therefore, APS is seeking authorization to modify the pilot, if necessary.

B. New Residential Time-of-Use Rates

In addition to the HEI Pilot, this year APS is introducing two new residential TOU rates that are designed to encourage and reward customers for shifting electric use from more expensive on-peak, to lower-cost off-peak hours.[8] The Company has recently implemented a new residential TOU rate that contains a "super peak" period (from 3:00 to 6:00 p.m.) during the most critical summer hours (June through August). Also included in the menu of residential DR programs is a Critical Peak Pricing Pilot, which is designed to provide participating residential customers with clear price signals that are narrowly focused on a limited number of time-specific hours each year. The Company will notify participating customers of each critical peak period one day in advance. APS estimates that with the participation of approximately 6,200 customers, up to five megawatts of future demand savings is feasible under these new rate structures.

[8] These rates were approved in Decision No. 71448 (Dec. 30, 2009).

III. COMMERCIAL AND INDUSTRIAL DR PROGRAMS

During 2010, APS will continue with its C&I DR efforts,[9] including continuation of its analysis and research to develop a cost-effective thermal energy storage program and a standby generation program, development of an interruptible rate program, and implementation of critical peak pricing.

A. Thermal Energy Storage

Thermal energy storage programs typically assist customers in acquiring and installing ice or chilled water storage systems that are used to shift air conditioning load to off-peak hours on a daily basis. This is accomplished by using the existing chiller equipment to make either ice or chilled water in the off-peak hours, and then using the thermal energy to cool the customer site during the on-peak hours, instead of more energy-intensive cooling equipment. This effectively shifts the cooling load for a building to the nighttime hours when it is less expensive for the utility to generate electricity.

APS believes that thermal energy storage may provide a viable option for customers wishing to manage their on-peak load. Approximately 44% of peak demand requirements for C&I customers is directly attributable to air-conditioning load.[10] Customer adoption, however, requires two specific actions by APS: (1) a new TOU rate that establishes a shorter on-peak period with a significantly higher energy and demand pricing, and correlated lower energy and demand pricing during the extended off-peak period; and (2) a one-time incentive based on the demand reduction resulting from the installation of a thermal energy storage system.

APS plans to continue researching and analyzing incentives and rate structures offered by similarly-situated utilities around the country for this type of program. The Company intends to file a new thermal energy storage TOU rate as a part of APS's 2011 rate case filing.

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[9] As described, this includes irrigation services customers.

[10] ICF International, *et al.*, Arizona Public Service: Energy Efficiency Baseline Study (March 9, 2007), filed in Docket No. E-01345A-05-0182 (April 12, 2007), Table 5-2, Non-Residential Building Type and End Use Segmentation (Peak MW).

APS anticipates that such a program could achieve up to fifteen megawatts of demand reduction from a targeted thermal energy storage program.[11]

B. Standby Generation

Standby generation programs use customer-owned standby generation units that the utility calls upon to either reduce customer load or provide power directly to the distribution system. Standby generation, specifically when located within a load pocket, provides the added benefit of increasing the electric system's reliability by reducing customer demand, which also supports the transmission system during peak periods.

Because these standby generation units are typically run on natural gas or diesel fuel, the major obstacle for implementing a widespread standby generation program is air emissions. It is imperative that any standby generation program considered by APS be studied in detail for the potential impacts to the environment. Incentives for retrofitting an existing generator with state-of-the-art emissions control equipment must be reviewed, as well as incentives for converting diesel generators so that they are capable of running on natural gas or bio-diesel.

During 2010 and 2011, APS plans to actively work with key environmental stakeholders, such as the Arizona Department of Environmental Quality and the Maricopa County Air Quality Department. APS will also research the number of existing units in the APS service territory and their respective environmental permit status. In conjunction with those efforts, additional research related to standby generation programs that have been adopted in other regions will allow APS to develop an optimal approach for potential participants. Based on the input gained, APS would then assess the feasibility of a Standby Generation program. APS believes that up to 100 megawatts of cost-effective standby generation may be possible in the future.

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[11] This assumption is based on discussions held in 2009 with a consulting firm that specializes in thermal energy storage program development. Higher participation levels for a thermal energy storage program will likely be dependent on the state of the local economy due to the up-front installation costs, and the fact that these systems are much more economical when installed as part of a new construction effort rather than retrofitted.

C. New Commercial DR Rates

APS is currently implementing a Critical Peak Pricing Pilot for general service and irrigation customers, which will provide a substantially higher price signal during a limited number of critical hours on critical days. Participating customers will be notified one day in advance to alert them of a critical peak event, and during those hours customers must respond by reducing consumption to avoid paying the increased price. In addition, this year APS (in consultation with Commission Staff and interested stakeholders) will develop an interruptible rate for customers with energy loads over three megawatts. On peak summer days, when electric loads are high, C&I customers that are able to respond to APS's request to reduce their load would receive credits for load reductions during specific peak periods. Customers will have options regarding duration, frequency and notice requirements. APS anticipates that up to 40 megawatts of demand reduction will result from these new dynamic pricing programs, if adopted by 200 general service customers.

IV. FUTURE INNOVATIVE DR PROGRAMS

APS is committed to implementing additional DR programs and continues to pursue other DR resources. The Company has two research and development ("R&D") efforts currently underway.

A. Vehicle-to-Grid

APS has engaged Navigant Consulting to perform a study on Electric Vehicle ("EV") and Vehicle-to-Grid ("V2G") potential in Arizona, which is currently in progress. The V2G technology refers to EVs that can both receive power from and transfer power back onto the electric grid. Some EV proponents anticipate that during periods where utilities face high power prices, it may be economically beneficial to pay commuters to plug in their vehicles to allow the utility to draw energy from their EV batteries. These V2G services (the two-way plug capability) may allow a utility to take advantage of the extra electrical storage capacity in the vehicle batteries to meet peak demand, provide grid support services, or respond to power outages.

However, because market development of the vehicles themselves is still in the early stages, EV penetration and its corresponding impact to the electric grid has a long-term horizon for development. Much work must be completed before V2G services will provide benefits at any meaningful scale. These include: (1) the preparation of the electric grid for the adoption of EVs with the targeted installation of charging stations; (2) the development of "smart charging" rate schedules that encourage customers, through price differentiation (much like a TOU rate structure) to charge their vehicles during off-peak periods; and (3) the integration of EVs into utility resource planning. In April 2010, APS will be filing the results of Navigant's EV and V2G Study. Later this year APS anticipates proposing a plan for preparing Arizona for the adoption of these vehicles and their integration into the electric system.

B. Battery Storage

In recent years, energy storage has come to the forefront as an important technology with the potential to provide many benefits, including a reduction in the need for new infrastructure and a tool for enabling greater integration of renewable energy. Large-scale battery storage technology has the potential to assist utilities in improving reliability and maximizing the value of renewable generation. In addition, there is a potential for battery storage technology to be deployed on a customer's premise to increase power quality and act as a substitute or enhancement of emergency standby generation.

Through the Community Power Project – Flagstaff Pilot Program, APS plans to deploy and assess energy storage.[12] In 2010, APS will initiate a study on utilizing battery storage technology, a method to store electricity on a large-scale within the power grid.[13] This study will allow APS to gain an in-depth knowledge of battery storage capabilities, information on electric grid integration, and insight into its role in grid management for purposes of utility resource planning. The project will also provide APS with critical knowledge regarding the costs and benefits of battery storage technology, so future programs or installations could be

[12] *See* Docket No. E-01345A-09-0227.

[13] Electrical energy would be stored during times when production from power plants exceeds consumption.

pursued to the benefit of customers. APS is anticipating the integration of this project as a part of its Smart Grid efforts in Flagstaff. This project is being separately funded outside of this application.

V. PROGRAM COSTS AND COST RECOVERY

Pursuant to Decision No. 67744,[14] the Demand Side Management Adjustor Clause ("DSMAC") is the appropriate mechanism to recover program costs for DR programs. APS estimates that the initial phases of the DR Plan for 2010 and 2011 will require an investment of approximately $6 million to implement.[15] For the HEI Pilot, this investment includes information system development for energy management technologies, in-home displays and programmable thermostats, deployment of the pilot, including technology/system interface, contracting, marketing, equipment, installation, and customer support. APS is proposing that the cost of ownership or revenue requirement of the capital portion of pilot deployment, including depreciation, property taxes, income taxes, operating and maintenance expenses, and financing costs using the authorized cost of capital, would be recovered through the DSMAC, until the capital investment is included in base rates in a subsequent rate case. This preferred recovery approach would result in a lower impact to customers through the DSMAC, as APS would recover the annual revenue requirement rather than full initial program costs. The impact to the average residential customer would be approximately 15¢ per month under this proposal.

In the alternative, APS would seek to recover the entire expense of the DR Plan exclusively through the DSMAC. This alternative recovery approach would result in expeditious recovery of full program expenses, but would have the larger rate impact to customers in the near term. Under this approach, the impact to an average residential customer's bill is estimated to be 24¢ per month.

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[14] Issued April 7, 2005, Docket No. E-01345A-03-0437. *See also* DSMAC Plan for Administration at p. 2.

[15] *See* Exhibit B (DR Plan Report), Table 2 at p. 27. At this time, the budget for the DR Plan is based on preliminary cost estimates. The Company has not yet contracted with vendors for development of the communications platform to create the HAN, or for the purchase of in-home displays and smart thermostats. In the coming weeks, APS will be engaging the market and soliciting for specific proposals for the DR Plan, or elements of it.

APS is proposing that the initial 2010/2011 budget and all subsequent budgets for the DR Plan be included as part of the Company's annual Energy Efficiency Implementation Plans. APS would report on program progress in the reports required by the proposed Energy Efficiency Rules.[16] The DR Program's estimated costs for 2010/2011 would be included in the Company's 2011 Energy Efficiency Implementation Plan filing[17] for collection beginning in March 2011. Subsequent to the initial assessment phase described in this filing, APS will seek Commission approval of specific programs to achieve the full 250 megawatt requirement. As part of this filing, APS is requesting that the Commission acknowledge that the Company should treat these program costs in the same manner as all other energy efficiency research and development and program costs, which are authorized to be recovered through the DSMAC.[18]

VI. CONCLUSION

For the reasons set forth above, APS respectfully requests that the Commission issue an order that:

- Approves the Demand Response Plan;
- Approves the Experimental Service Schedule 16;
- Authorizes APS to roll-out the Pre-Pay program throughout its service territory, after the program is determined to be technically feasible;
- Waives A.A.C. R14-2-211 for the Pre-Pay program participants;
- Approves the proposed Demand Response Budget of up to six million dollars;
- Acknowledges that DSMAC is an appropriate cost-recovery mechanism for costs of the Demand Response Plan; and

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[16] Proposed Rule R14-2-2409 addresses the Demand Side Management progress reports that must be submitted to the Commission.

[17] This plan will be filed June 1, 2010.

[18] As is recognized in the Commission's proposed Energy Efficiency Rules, a cost-effectiveness analysis is premature at this juncture. Proposed Rule R14-2-2412(G) specifically exempts R&D and pilot programs from the requirement to demonstrate cost-effectiveness.

- Approves recovery of carrying costs for base rate capital through the DSMAC.

RESPECTFULLY SUBMITTED this 1st day of March, 2010.

By: _____
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EXHIBIT A

EXPERIMENTAL SERVICE SCHEDULE 16
HOME ENERGY INFORMATION PILOT

AVAILABILITY

This experimental service schedule is available through December 31, 2012 in the Phoenix area and other areas served by the Company that are designated to be part of the pilot program.

APPLICATION

The Experimental Service Schedule 16 is applicable to residential retail standard offer customers with an Advanced Metering Infrastructure meter in place at time of service. All provisions of the customer's current applicable rate schedule will continue to apply in addition to the provisions in Service Schedule 16. The participating customer is requested to continue service under the pilot program through December 31, 2012, but may discontinue participation at any time.

The pilot program shall consist of five options with associated technology devices and eligible rate schedules. Participation shall be limited to a total of 2,800 customers capped at the designated maximum participation for each option. However, the Company, at its discretion, may oversubscribe participation to allow for potential dropouts during the pilot period.

Option	Description	Eligible Residential Rate Schedules	Maximum Participation
A	Critical Peak Pricing with Customer Energy Control Device	E-12, ET-1, ET-2, with rider CPP-RES	0-300
B	In-home Energy Information Display	E-12, ET-1, ET-2, ET-SP	0-300
C	Smart Thermostat or Control Switch with APS Direct Load Control of Air Conditioner	E-12, ET-1, ET-2	0-300
D	Qualifying Smart Phone, Personal Digital Assistant, and Computer Energy Information	E-12, ET-1, ET-2, ET-SP	0-300
E	Pre-pay Energy Service	E-12, E-12 Low Income, ET-1, ET-1 Low Income, ET-2, ET-2 Low Income, ET-SP	0-2,000

In addition, to be eligible for Options A, B and C the customer must own and reside in the home associated with the pilot program, and their average computed monthly bill during June through September must be $150 or greater. Customers participating in Option D must own a qualifying smart phone, personal digital assistant or computer with required broadband service. Customers participating in Option E must have an AMI remote disconnect function and may not participate in rider rate schedules CPP-RES, GPS-1, GPS-2, Solar-3, EPR-2, EPR-6 and E-4, or direct debit and budget billing programs.

DESCRIPTION OF SERVICES

Option A – Critical Peak Pricing with Customer Energy Control Device

Company shall provide a device in the customer's home that enables the customer to control their home energy usage to provide an automated response to critical peak pricing under Schedule CPP-RES. APS shall communicate with the device to activate the customer's pre-programmed response during critical events. Customer may override the response.

EXPERIMENTAL SERVICE SCHEDULE 16
HOME ENERGY INFORMATION PILOT

(Description of Services Con't)

Option B – In-home Energy Information Display

Company shall provide a device in the customer's home that displays various energy usage and cost information.

Option C - Smart Thermostat or Control Switch with APS Direct Load Control of Air-conditioner

The Company will install a smart thermostat or control switch in the customer's home that will allow the Company to modify the thermostat settings through a remote signal in order to reduce the customer's energy usage during hours of extremely high electrical demand, high temperature, major generation or transmission outage, energy market disruptions, or other critical events.

Customer agrees to have a smart thermostat control device or switch installed in their home at Company expense and to allow the Company to remotely control their thermostat setting during high summer peak hours in accordance with the Direct Load Control Program Guidelines, which may be revised by the Company from time-to-time during the pilot program with notification to the customer.

Option D – Qualifying Smart Phone, Personal Digital Assistant and Computer Energy Information

Company shall provide an application for the customer's qualifying smart phone, personal digital assistant, or computer that will provide energy cost and usage information.

Option E – Pre-pay Energy Service

The customer periodically pre-pays an amount towards their electric service in lieu of paying a monthly bill. The Company provides the customer with updated energy usage, cost, and account balance information to assist them in managing their energy dollars. The Company alerts the customer when their account balance falls below a threshold level. Customer agrees to the provisions of pre-pay service provided in the Pre-pay Energy Service Program Guidelines, which may be revised by the Company from time-to-time with notification to the customer. The Company shall solicit a maximum of 300 participants to study the impact of pre-pay service on their monthly energy consumption.

TERMS AND CONDITIONS

1. The customer agrees to have the specified device or application installed in their home, smart phone, personal digital assistant or computer, as applicable, at Company expense.
2. The Company may substitute other smart devices in lieu of or in addition to a smart thermostat or in-home devise as agreed to by the customer.
3. The customer may be required to sign a participant agreement as applicable.
4. The customer agrees to participate in marketing research conducted as part of the pilot program.
5. Customer may keep the device or application, as applicable, at the end of the program if they participate through December 31, 2012.
6. For customers who continue participation in the pilot program through December 31, 2012, the Company shall provide a home energy audit at no expense to the customer. For Option E, the energy audit will be limited to a maximum of 300 customers who are solicited by APS to study their monthly energy impacts.
7. If customer discontinues participation prior to December 31, 2012, the Company shall remove the device or application at Company expense.

EXHIBIT B

ARIZONA PUBLIC SERVICE COMPANY

DEMAND RESPONSE PLAN REPORT

In Compliance With
Commission Decision No. 71448 in
Docket No. E-01345A-08-0172

March 1, 2010

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY

Arizona Public Service Company ("APS" or "Company") is requesting Arizona Corporation Commission ("Commission") approval to implement additional demand response ("DR") programs as required by Commission Decision No. 71448.[1] This report outlines the Company's strategy for the development of new DR programs and pilot program designs which APS proposes to implement and/or evaluate over the next several years. The Company believes that the programs in this strategy, if approved by the Commission and accepted by customers, will allow APS to develop the programs necessary to add at least 250 MW to the Company's DR portfolio.

While it is feasible to obtain an additional 250 MW, the economic value of the proposed DR programs is based on the Company's capacity needs. Over the last several years, APS's loads and resources picture has changed significantly due to the execution of renewable contracts to satisfy Arizona's Renewable Energy Standard ("RES"),[2] anticipated increases in energy efficiency programs, the effectiveness of the Company's current energy efficiency programs, and the current downturn in the national and state economies. For these reasons, the Company's current resource plans do not indicate a need for summer peaking capacity resources until 2017. Implementing DR programs ahead of the need for new peaking capacity results in accelerated expenses and less financially attractive programs.

However, while DR needs do not appear for several years into the future, the Company must begin developing and implementing a DR strategy today. In this report, APS is proposing to conduct the Home Energy Information Pilot ("HEI Pilot"), implement new DR rates, and continue development of additional DR programs. 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.

The residential HEI Pilot program will test various in-home devices to determine customer acceptance and to advance integration of the technologies with the developing smart grid. This program fulfills the Commission's directive requiring APS to propose a residential demand response program that incorporates a plan to deploy in-home devices for residential customers in order to provide transparent energy information to assist the participant in controlling home energy usage.[3]

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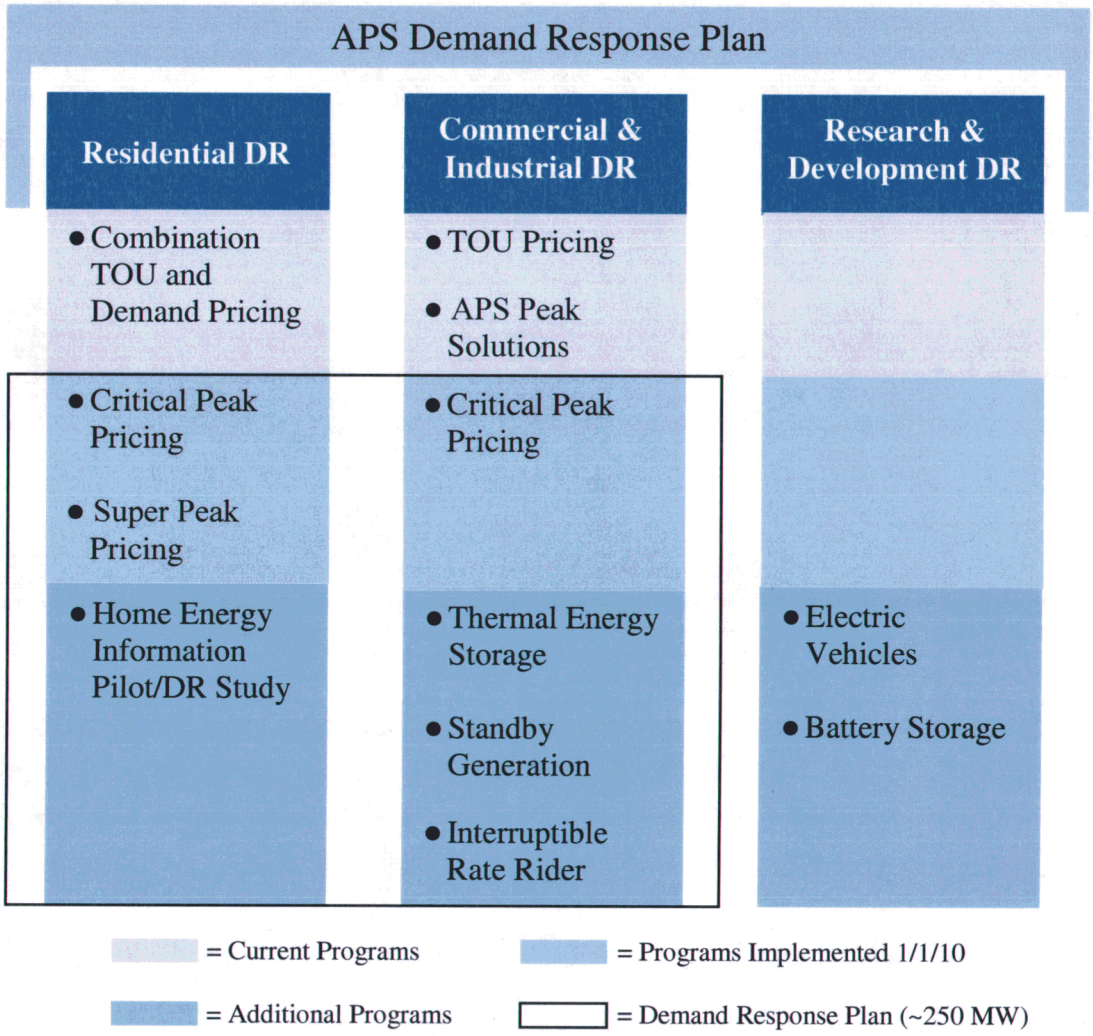
[1] In this Decision, the Commission ordered APS to file at least 250 MW of demand response programs for Commission consideration.

[2] A.A.C. R14-2-1801 through 1816.

[3] ACC Decision No. 71448 (December 30, 2009) at 58.

APS's proposed suite of DR programs is provided below:



The Company's DR strategy engages multiple customer classes, from low-income residential to extra large commercial and industrial ("C&I") customers.[4] APS has designed a combination of programs that will provide customers an opportunity to participate in DR, while at the same time allowing the Company to test varying technologies and gain expertise in marketing, measuring, and integrating programs with the expanding "smart" grid.

[4] Additionally, certain irrigation customers may be able to participate through one or more of the Company's DR TOU rate schedule offerings.

The overall budget for programs in this DR plan is estimated to be approximately $6 million; however, because the plan is in the early stages of development this estimate is preliminary only. Several facets of the plan are still being finalized; however, the Company expects to begin soliciting proposals in the second quarter of 2010 from technology providers that would be used to support the HEI Pilot program . A cost-effectiveness test to determine the viability of the programs contained in this plan is premature at this time.[5]

The appropriate vehicle to recover program costs for the HEI Pilot, thermal storage program, and standby generation program is the Demand-Side Management Adjustment Charge ("DSMAC").[6,7] Estimated costs for DR programs in 2010 and 2011 will be included in the Company's June 1, 2010 Energy Efficiency Implementation Plan filing, for collection beginning in March of 2011. APS does not anticipate requesting recovery of the entire budget amount for these programs in a single year, but instead will request revenue requirement recovery including operations, maintenance, and carrying costs of any capital investment on an annual basis.

All programs proposed herein are in addition to the energy efficiency programs approved by the Commission in the Company's 2010 Energy Efficiency Implementation Plan.[8] APS will provide progress reports on these programs, including updated budgets and cost recovery proposals, with the Company's annual implementation plans.

[5] Proposed Energy Efficiency Rule R14-2-2412(G) specifically exempts research and development and pilot programs from the cost-effectiveness test.

[6] Any costs attributable to the programs included in this plan that utilize specific rate schedules (critical peak pricing, super-peak pricing, and the interruptible rate rider) will be recovered through traditional cost recovery methods in the Company's next rate case request. The electric vehicle and battery storage projects discussed in this filing will be separately funded.

[7] *See* ACC Decision No. 67744 in Docket No. E-01345A-03-0437 (April 7, 2005). *See also* DSMAC Plan for Administration at 2.

[8] Filed in Docket No. E-01345-08-0172 on July 15, 2009 and approved by the Commission in Decisions No. 71444 (December 23, 2009) and 71460 (January 26, 2010).

II. DEMAND-SIDE MANAGEMENT PROGRAMS

Since the implementation of APS's initial experimental time-of-use ("TOU") rate in April of 1976, the Company has encouraged its customers to take action to reduce the amount of energy used in their homes and businesses. Over the years, APS has developed various demand-side management ("DSM") programs to help customers manage their monthly energy bills, and to allow the Company to defer the construction and purchase of increasingly expensive capacity and energy needed to meet the growing demand for electricity.

A. BACKGROUND

DSM programs fall into two broad categories: energy efficiency programs, whose goal is to encourage customers to use less electricity in all hours of the year by being more efficient in how that electricity is used; and demand response programs, whose goal is to promote less energy usage specifically in those hours in the summer when the demand for electricity is at its highest. APS has been committed to promoting programs in both of these categories since the early 1980s, beginning with the Company's first widely available residential TOU Rate Schedule ET-1 and the first-of-its-kind residential demand Rate Schedule EC-1.

Most energy efficiency efforts in the 1980s and 1990s were aimed at transforming the market to adopt energy efficiency practices through education and information. Direct customer incentives were not employed to promote programs until 2005, when APS significantly increased energy efficiency program scope and magnitude. At this time, the Company began paying financial incentives to customers for investing in energy efficiency. Since 2005, APS has increased the amount of money spent and the amount of energy saved from our programs in each successive year through 2009. Overall, these programs have produced significant customer savings and positive environmental impacts:

- ⇨ Annual energy savings of almost 800,000 MWh;
- ⇨ Lifetime savings in excess of 7 million MWh;[9]
- ⇨ Lifetime savings on customer bills of well over $500 million;
- ⇨ Net benefits of approximately $200 million;
- ⇨ Over 3 million tons of CO_2 greenhouse gas emissions eliminated; and
- ⇨ Total program spending of approximately $83 million from 2005 through 2009.

[9] Over the life of the measures installed between 2005 and 2009.

For 2010, the goal established in the Company's recent rate case settlement is to save the equivalent of 1% of the Company's total energy resources from APS energy efficiency programs.[10]

Demand response ("DR") is also an integral part of the family of DSM programs. Because the primary goal for DR programs is to reduce peak load, DR serves as a peaking resource - the type of resource utilized when capacity need is at its highest. As such, DR programs will be most effective for APS in the summer season, when there is the greatest need for mitigation of peaking loads. DR programs encourage customers to reduce usage when electricity is in short supply or expensive to produce; for example, in times of extreme temperatures, high loads, generation outages or transmission outages.

In the early 1990s, APS tested early thermal energy storage solutions for a limited number of large commercial customers. APS provided an incentive in the form of a rebate on thermal storage investment based on the amount of peak load shifted to off peak hours. Contracts for customers with these systems were phased out over time as the cost to maintain the thermal storage systems exceeded their value. Additionally, the Company conducted a limited day-ahead pricing pilot program in the mid-1990s in order to study the effect of competitive pricing signals on residential consumer purchasing behavior (Rate Schedule SEP-1, "Smart Energy Pilot"). APS provided a telecommunications device which was capable of both transmitting and displaying electric consumption data and hourly pricing points for the following day, and provided a cash incentive for participation in the program. This program was cancelled after approximately two years due to lack of participation.

APS also has significant experience with interruptible rate designs. Throughout the 1980s and 1990s, many of the Company's large industrial customers were served under special contracts that included interruptible load terms and pricing. These contracts were phased out primarily as a result of the expected shift to a competitive electricity market in the late 1990s.

Attachment A presents a historical timeline of DR programs that the Company has undertaken.

B. CURRENT DEMAND RESPONSE PROGRAMS

1. Residential Demand Response Programs

APS has employed and continues to employ two fundamental residential DR programs: the demand rate structure and the TOU rate structure. The demand rate structure assigns

[10] ACC Decision No. 71448, Section 14.1 (dated December 30, 2009).

cost to the amount of energy used at a specific point in time, in order to encourage customers to be aware of the rate at which energy is utilized in the residence. Residential demand rates today are incorporated into a rate structure that combines both demand rates and TOU rates.

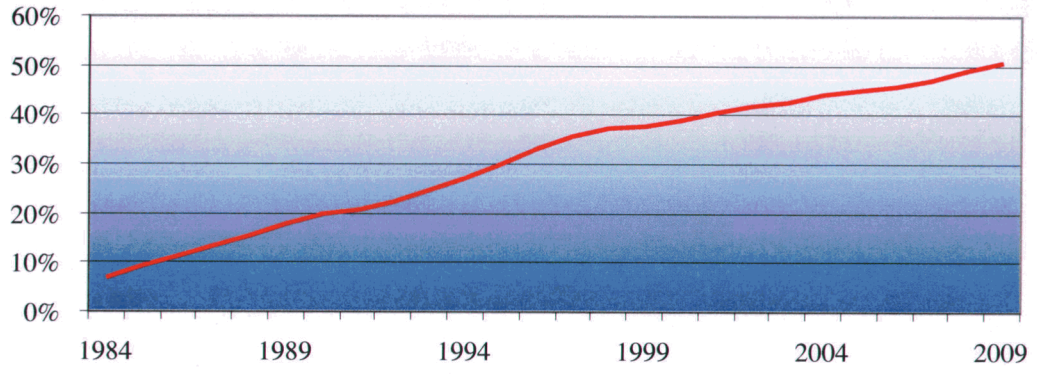
Residential DR

- Combination TOU and Demand Pricing

The goal of TOU rates or real-time prices is: 1) to reflect the time variation in the cost of producing electricity, to more accurately match those costs with the service being provided to the customer thereby encouraging efficient use of energy, and 2) to encourage customers to eliminate consumption during peak hours or to shift energy usage to off-peak periods. A well designed TOU program will benefit both the customer (reduction in monthly billings) and the utility (deferral of significant capital expenditures).

As the smart grid platform becomes more prevalent, utilities are using the underlying metering implementation to rapidly develop and launch DR programs featuring TOU rate plans. However, as noted earlier, APS has successfully offered a family of DR TOU rate structures for many years. In fact, today over 50% of the Company's residential customers subscribe to a TOU rate, making APS the leading time-differentiated pricing provider in the United States.[11]

Chart 1. Historical Residential TOU Penetration



In the summer of 2008, APS realized a estimated total of 100 MW of DR reductions due solely to the Company's residential TOU rate program.

[11] The next closest utility in terms of percentage of residential customers on a TOU rate is Salt River Project at 23% TOU penetration.

2. Advanced Metering Infrastructure

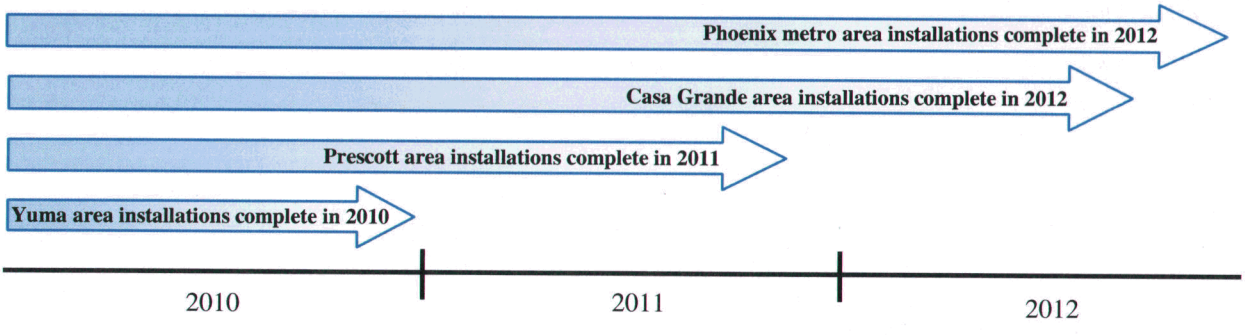
Advanced metering infrastructure ("AMI") is one of the backbone technologies that is supporting the future smart grid, and is critical to the eventual deployment of an effective overall demand response program at APS. The Company began testing new advanced metering technologies in selected areas of the APS service territory through an AMI pilot program beginning in 2004. As a result of the many advantages of AMI, including the support of a wide variety of rate and associated customer options, enhanced customer service, and more efficient utility operations, this initiative expanded significantly in October of 2006. By January of 2010, over 330,000 smart meters had been installed throughout the APS service territory.

The Commission has consistently supported the acquisition of smart meters in APS's service territory. Most recently, in Decision No. 71448, the Commission stated "we believe that smart meters have the potential to greatly advance the way utilities deliver electricity to their customers, and could assist consumers in making sound economical choices about the use of electricity, assisting them in reducing their bills and allowing utilities to reduce the need for incremental new generation."[12]

AMI meters will be provided to all customers who participate in one of the DR programs outlined in this plan. This metering infrastructure will allow for more precise measurement and verification procedures when determining the effectiveness of the programs in all aspects, from participant interest to technology reliability.

In order to support system-wide rollout of those DR programs that prove to be effective, the Company continues to install smart meters. It is anticipated that by the beginning of the calendar year 2013, all meters in the APS metro service territories will have AMI capability.[13]

Figure 1. Advanced Metering Deployment Timeline



Flagstaff area installations were completed in 2009.

[12] ACC Decision No. 71448 at 58 (December 30, 2009).

[13] APS is currently researching the most effective AMI technology solution for use in the Company's rural service territory. Deployment of rural technologies will begin after 2012.

3. APS Website (aps.com)

The APS website is an excellent source of general energy information as well as information specific to individual customers. Currently, nearly 425,000 customers are active users of aps.com, over 40% of the Company's overall customer base. Of those, 16% have chosen to be billed only electronically. Customers who register with aps.com receive data and feedback which can positively influence energy usage behavior. Customers managing their account at aps.com have access to recommendations on reducing energy usage, tools for individuals to better understand how their actions impact their energy usage, and can see how their energy consumption compares to similar homes.

APS continually updates and improves its customer online interface to provide more meaningful information to help educate the customer on the different ways energy usage can be managed. In May of 2009, APS unveiled a new "My Account" webpage, which provides energy information designed to provide detailed information, including graphs and tables, to the customer on their monthly energy usage. In September of 2009, APS launched the APS Energy Challenge, which engages customers in monitoring and reducing their energy usage by committing to a savings target. This online tool allows customers to track and compare their energy usage over time and measure their energy efficiency performance.

Most importantly for the evolution of demand response programs, customers with smart meters can now view their hourly and daily energy usage at aps.com. Customers can see exactly how much energy is used every hour of the day and every day of the week. This data helps customers make informed energy choices.

In addition to the programs specifically presented for Commission consideration in this application, APS will be developing and subsequently launching a new section on aps.com that will provide the real-time renewable energy generation information required in Decision No. 71448.[14] APS plans to launch this website by the end of the second quarter of 2010.

Appendix B contains explanations and screenshots of the various information available today to users of aps.com.

[14] *See* Finding of Fact 92, page 58 in ACC Decision No. 71448 (December 30, 2009).

4. APS Peak Solutions

Commercial & Industrial DR

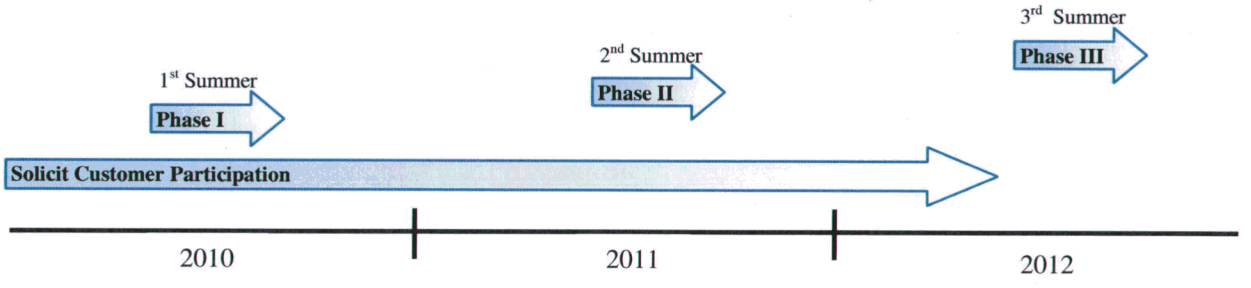
- APS Peak Solutions

In June of 2009, the Commission approved a DR program for C&I customers in which 100 MW of load reduction would be provided via a contract between APS and Alternative Energy Resources, Inc ("AER").[15] The program offers eligible C&I customers financial incentives to reduce their electricity usage during APS's summer peak periods. This reduction in usage will be accomplished through a combination of Direct Load Control and manual load reductions at each customer's site. APS anticipates that up to 10,000 customers may ultimately participate in this program, which will be in effect during the peak demand months of June through September beginning in the summer of 2010. Demand response load reductions will take place during the peak hours of 12 noon to 8 pm during those summer months and will be accomplished through a combination of direct load control and manual load reductions at each customer's site.

This demand response program will provide firm load reduction capability similar in availability and run time to a combustion turbine. Incentive payments to customers will be managed by AER, and will vary based on the participation level of the individual customer. Participants who do not reduce load as agreed upon will be removed from the program.

The program will be phased in over a three-year period (2010-2012) with a ramp-up of approximately 30-35 MW per year, for an overall total of up to 100 MW of demand reduction.

Figure 2. APS Peak Solutions Timeline



[15] See ACC Decision No. 71104 (June 5, 2009).

C. DEMAND RESPONSE NEEDS ASSESSMENT

The value of DR programs is based on the capacity needs of the utility employing those programs. Over the last several years, APS's resource needs have changed due to the execution of renewable contracts to satisfy Arizona's Renewable Energy Standard,[16] anticipated increases in energy efficiency programs, the effectiveness of the Company's current energy efficiency programs, and the current downturn in the national and state economies.

For these reasons, the Company's current resource plans do not indicate a need for summer peaking capacity resources until 2017, which, absent other considerations, impacts the near-term cost-effectiveness of new DR programs.[17]

However, while demand response needs do not appear for several years into the future, the Company must begin developing and implementing demand response programs today, as these programs are contingent upon customer involvement and require some lead time for enrollment and participation. Recognizing this, in the recent rate case settlement, the Commission required APS to develop additional DR programs:

> "IT IS FURTHER ORDERED that Arizona Public Service Company shall file with the Commission [a plan] for adding at least 250 Megawatts of Commercial and Industrial or Residential Demand Response with Docket Control for Commission consideration..." *ACC Decision No. 71448 at 61.*

This report sets forth the Company's proposal to implement DR programs that APS believes may provide peak load reductions of at least 250 MW. If approved by the Commission, these programs will become part of the Company's overall DSM portfolio. Any necessary subsequent approvals will be requested either as part of the annual APS DSM/Energy Efficiency Implementation Plan or as stand-alone filings, and program explanations, progress, and budgetary considerations will be included as part of those filings.

[16] A.A.C. R14-2-1801 through 1816.

[17] Current estimates predict that the proposed Energy Efficiency Standard requirement of 22% cumulative energy savings by the year 2020 will also create a peak demand reduction impact of over 12% due to implemented energy efficiency programs. This significant reduction will impact the amount of DR that will be achievable by APS over time.

III. DEMAND RESPONSE PLAN

The Company has conducted research into DR programs over the past several years to gather information and determine which of the available programs and technologies may be the most reasonable to test in APS's unique service territory. This research includes investigation into other utility pricing programs, market research on various pricing concepts, and assessment of potential benefits.[18] APS's proposed strategy is based on this ongoing research.

As DR programs rely upon individual customers instead of a specific resource, it is difficult to determine the amount of load reduction that will be realized from a specific program or set of programs until the program is developed, marketed, and deployed. For example, there must be adequate interest by the customer base for the specific program being offered. Additionally, customers that do choose to enroll must then remain in the program, a key factor in determining the long-term viability of any demand response program. For these reasons, estimates of future DR MW reductions are given in ranges.

Table 1 summarizes the DR programs that comprise the Company's strategy to achieve at least 250 MW (over and above existing programs) of DR by the summer of the year 2016.

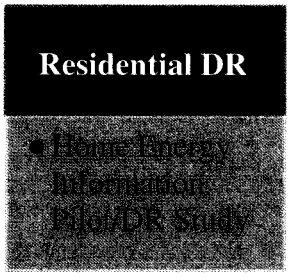
Table 1. Summary of Anticipated Demand Response Reduction

DEMAND RESPONSE PROGRAM	MW Reduction by summer 2016
Residential Direct Load Control[19]	100 - 150 MW
Residential Critical Peak Pricing	2 – 3 MW
Residential Super Peak Pricing	1 – 2 MW
C&I Critical Peak Pricing	30 – 40 MW
Interruptible Rate Rider	
Thermal Energy Storage	2 – 15 MW
Standby Generation	50 – 100 MW
TOTAL MW REDUCTION	**185 – 310 MW**

[18] This research was first presented to the Commission in the Company's Demand Response & Load Management Program Study filed in June 2008 in compliance with ACC Decision No. 69663 (June 28, 2007) and has continued since that time.

[19] Part of the HEI Pilot program.

A. RESIDENTIAL



1. Home Energy Information Pilot Program

In Decision No. 71448, the Commission stated that utility customers, who are paying for the deployment of AMI metering, should benefit from that technology through in-home metering devices and access to information regarding real time cost of generation as well as a utility's peak times for generating renewable energy. The Commission directed APS to develop a plan to provide residential customers with this information:

> "IT IS FURTHER ORDERED that Arizona Public Service Company 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 and real-time renewable energy generation, and submit the plan as a compliance item in this docket, for Commission consideration...." ACC Decision No. 71448 at 61.

In response, APS is proposing the HEI Pilot program, designed to test available home area network technologies and determine communication devices, demand response strategies, and mix of "smart" home applications that can be most effectively employed in a residential setting.[20] In addition, the HEI Pilot will assess customer acceptance, value, and frequency of usage of in-home energy displays or other communication devices designed to assist the customer in managing daily energy usage. The pilot will be conducted over two summer seasons (2011 and 2012), allowing the Company time to choose technology vendors, solicit residential participants, install devices and communications systems, and determine measurement and evaluation techniques.

Valuable information APS expects to obtain from this pilot includes communication system and device reliability, customer response, operational and support needs, and the adequacy and effectiveness of program implementation. The data collected will allow APS to better understand how to maximize the benefits of these technologies in the future and will provide operational experience which the Company can draw upon to prepare for increased deployment of DR programs and their interaction with the smart grid.

[20] A pilot program is an experimental program designed to test administrative and operational procedures and to collect information on customer demands and costs that will serve as a basis for operating programs efficiently.

a. Technical Feasibility Assessment

Based on currently available devices, the Company proposes to offer the following five technology assessment programs as part of the HEI Pilot:

- ⇨ Critical Peak Pricing with Customer Control Device
- ⇨ In-Home Energy Information Display
- ⇨ Direct Load Control
- ⇨ "Smart" Phone/Personal Computer In-Home Display
- ⇨ Pre-Pay Service

These programs will be offered to a maximum of 2,800 customers - up to 300 customers for each of the first four programs, and up to 2,000 customers for the pre-pay service program. As with all proposed demand response programs, AMI metering will be installed at each participants' residence if it is not already available.[21] Additionally, customers who enroll in this pilot program must agree to participate in marketing research in order for the Company to track customer understanding, acceptance, and response to energy information to determine the extent to which participant consumption behavior is influenced by these technologies.[22]

Critical Peak Pricing with Customer Control Device

This program is a subset of the residential Critical Peak Pricing program that is described separately in this report. Participants who have chosen to receive service under residential rate RES-CPP will be offered the ability to automatically reduce their energy usage during designated critical peak periods. The customer will be provided with a home energy control device attached to the home's thermostat, at Company expense, that will enable the customer to define individual control preferences associated with pricing signals (for example, adjusting the thermostat up by a certain amount during critical peak hours). This technology will enable automatic control of the air-conditioning energy usage without further interaction. APS will send a notification to the customer of an upcoming critical event through e-mail, phone message or text message (at the customer's preference).

Specifically, under this option APS will track customer response to critical events when a home energy control device is available and contrast that against customer response to

[21] In specific geographical areas of the Company's service territory, APS may limit customer participation based on the availability of the supporting AMI network.

[22] The HEI pilot is currently in the planning stages. As specific technology, vendors, and customer support plans are developed, it may be necessary to modify the pilot for technical, customer or program needs. Additionally, although these five options represent the expected technologies to be tested under the experimental program, APS may modify or enhance the pilot offerings on a limited basis contingent upon device or communication system reliability, economics, or availability of additional technologies.

critical events under Rate Schedule RES-CPP where no device is available. Other key objectives of this pilot option include testing of:

- ⇨ Reliability of communication system and device to provide alerts and to activate pre-programmed directives prior to and during critical events;
- ⇨ Effectiveness of critical event notification process; and
- ⇨ Frequency of and reasons for customer overrides of pre-programmed directives during a critical event.

In-Home Energy Information Display

Customers who participate in this pilot program option will be issued a home energy information display device that communicates with the participants' smart meter and will provide real-time or near-time energy information, including current usage data such as kW and kWh and individual rate schedule $/kWh or $/hour.

Objectives of this pilot option include testing of:

- ⇨ Accuracy of real-time or near-time energy information;
- ⇨ Participant understanding of energy information displayed; and
- ⇨ Communication issues that might exist between meter and display.

Additionally, the Company will assess possible alternative communications platforms such as the internet through broadband or a third-party provider solution.

Direct Load Control

In this technology assessment, APS will install a remotely programmable thermostat in the participant's residence (at the Company's expense). The Company will then remotely modify the thermostat's settings in order to reduce the participant's energy usage during hours of extremely high electrical demand and prices, high temperature, major generation or transmission outages, energy market disruptions, or other critical events.

Remote Company control will be limited to a specific number of control days per year, all during the high cost summer peak hours (weekdays from June through September), and a specific number of hours per control event. The thermostat will at all times be under the control of the customer, who may override remote Company control during critical events if the customer so chooses.

Objectives of this pilot technology assessment include testing of:

- ⇨ Remote communication system reliability;
- ⇨ Frequency of and reasons for customer overrides of Company control;
- ⇨ Effectiveness and impact of control strategies; and
- ⇨ Impact on participant comfort.

APS believes that the potential reduction in overall demand achievable through this residential direct load control program is 100 to 150 MW.

"Smart" Phone/Personal Computer In-Home Display

To participate in this pilot option, the customer must own a cellular smart phone, personal digital assistant ("PDA") device, or personal computer ("PC") that has broadband connectivity to the Internet. Participants will be provided with an energy information application at no charge to install on their smart phone or PDA which will allow access to the customer's energy and billing information on aps.com. The application will allow the customer to remotely access energy consumption data. Based on personal alert preference settings, information messages will be delivered to the device in the same manner as a bank will send a message to a customer when a pre-determined deposit threshold is reached. For example, a participant may request that a text or voice message is sent to the device when energy usage at the customer's residence exceeds a specified kW demand threshold. Based on the availability of technology for the PC to communicate with the participant's smart meter, real-time or near-time energy information will be provided.

Objectives of this pilot option include testing of:

- ⇨ Viability of multi-use devices as in-home display alternatives;
- ⇨ Impact on customer consumption or shifting of load to off-peak hours;
- ⇨ Customer monthly bill savings, if any; and
- ⇨ Usefulness of information and alerts to the participant.

Pre-Pay Service

APS is proposing to include a pre-pay service program as an option under the experimental HEI Pilot. Historically, pre-pay programs have utilized specialized meters, reloadable "smart" cards, and in-home displays. Customers would insert their card into an in-home device to load it with their energy purchase, and customers could monitor their usage as the depletion of their energy balance was displayed . However, the value of these programs has been limited due to the cost of specialized pre-pay metering equipment, the additional complexity of the meter interface, and additional maintenance costs of the in-home devices. Customer convenience was also hampered by the need to

travel to a limited number of kiosk machines to load additional consumption value to their card.

The emergence of AMI and meter data management systems creates an opportunity for APS to develop a pre-pay service program that eliminates these costs. In this pilot program, participants will be able to access and manage usage through a personal computer interface or over the telephone, and can request energy balance estimates and notifications by e-mail, text, or voice messaging. No card is needed to load funds to the customer's account, and the program can be used with several existing residential rate schedules.[23] This innovative approach offers participants more flexibility than is available in a traditional pre-pay program.

APS will send a notice through the participant's preferred communications (e-mail, voice mail, or text) prior to the time account funding is expected to expire. Should a participant disconnect due to lack of funds, the Company will waive any deposit or service reconnection fees.[24]

The Company expects that the ability to observe the relationship between the pace at which energy is consumed and the depletion of an energy balance will provide cues to the customer that will impact and influence energy behaviors.[25] Additional objectives of this portion of the HEI Pilot include:

- ⇨ Impact of payment in advance on energy consumption behavior, if any;
- ⇨ Implementation and accuracy of billing options;
- ⇨ Participant acceptance; and
- ⇨ Reliability of customer alerts.

If this option of the HEI Pilot is approved, APS will become one of the first investor-owned utilities to offer a pre-pay service program integrated with utility AMI infrastructure.

b. Customer Acceptance Assessment

To assess the viability of these DR programs, APS will use a combination of accepted market research methodologies, including qualitative, quantitative, and secondary

[23] While historical pre-pay programs have been associated solely with flat rate plans due to limitations of the metering technology capability, this pilot program will support any energy-only residential rate schedule (E-12, ET-1, ET-2, and ET-SP, as well as the E-3 rate rider for these rate schedules).

[24] As a part of this program, APS is seeking a waiver of A.A.C. R14-2-211 (Termination of Service) as pre-pay customers will not receive written notice of disconnection.

[25] As mentioned earlier, the pre-pay option will be available to 2,000 customers; however, up to 300 of those customers will be solicited to participate in an assessment of pre-pay consumer behavior as it relates to energy efficiency impacts.

research tools, in order to gather customers' acceptance, interest, preferences, motivation to change, behavior changes, and reactions to – including likelihood to adopt – various combinations of technologies and communication channels, pricing signals, and incentives.[26]

Market research for the HEI Pilot program has already started with the gathering of relevant secondary research, including gleaning data from the pilot program experiences of other jurisdictional utilities offering similar technology or behavior options, to be evaluated and translated for use in APS's diverse population and service locations.

Qualitative and quantitative research will be conducted during the summer months of the pilot program to best assess customer acceptance of technology, information delivery methods, and behavior changes. Additional quantitative research will follow in order to estimate the likelihood of the general population to adopt these technologies given the choice of offerings, and to estimate the potential of usage and load reductions over the Company's service territory in future years.

Specifically, market research for the HEI Pilot program will address:

- ⇨ Customer acceptance of enabling devices and technology, information delivery methods, and amount of involvement necessary;
- ⇨ The impact of incentive levels and messaging on likelihood to adopt; and
- ⇨ The impact of providing information or feedback on behavior changes once adopted and over time.

c. Participant Selection

APS is currently developing selection and communication plans in order to reach and inform customers of the opportunity to participate in the HEI Pilot program. In order to provide statistically valid data on program acceptance and viability for the greater customer base, it is important that participants in each pilot group be representative of all residential customers. The Company recognizes that any program option may be successful and, if so, could be extended to the entire residential customer population.

To ensure pilot participants are representative, the Company plans to create a randomly selected list of sufficient size from all Residential customers who might currently be eligible or qualify to participate in the pilot. Customers will then be randomly selected from the list and invited to participate in the program. Invitations

[26] Qualitative research methodologies generally utilize tools that help the researcher understand what motivates and drives behavior (the in-depth interview and focus groups are examples of qualitative research). Quantitative research provides the researcher with information about the needs of individuals in the marketplace through such techniques as surveys and questionnaires. Secondary research involves the collation and summary of data based on existing research.

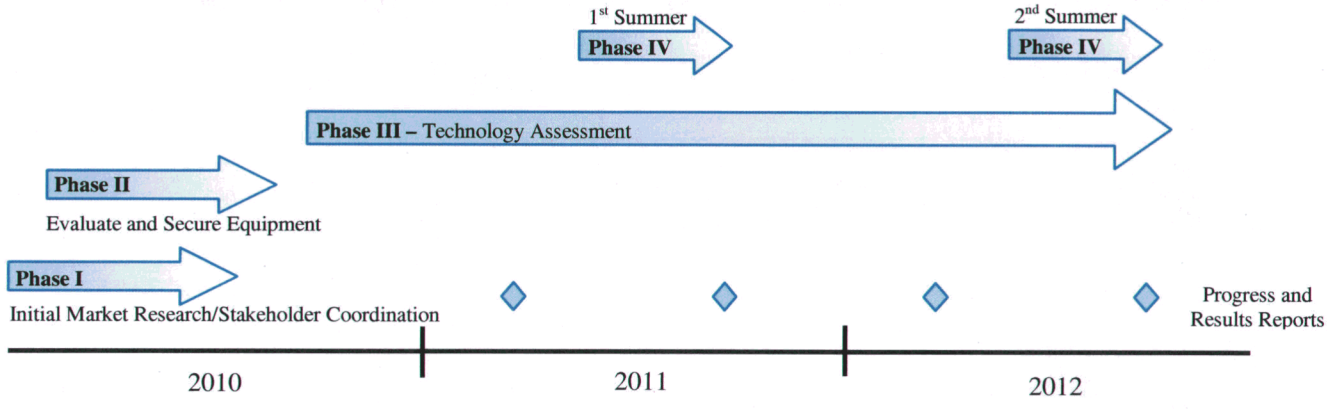
will be issued through e-mail, conventional mail, or telephone until the Company has recruited enough participants to ensure a sufficient sample size for evaluation at the end of the pilot period. Customers interested in participating will be asked to complete an application and to agree to participate in research activities throughout the life of the pilot program. APS plans to begin the selection process upon approval of the program by the Commission.

d. Program Timeline

As mentioned earlier, secondary market research for the HEI Pilot is already underway. Evaluation of equipment vendors for the various technology devices to be offered in the pilot program is also in progress. APS plans to hold stakeholder meetings during the second quarter of 2010 to discuss the pilot technology offerings and to engage industry expertise to support and enhance the program parameters, including measurement, evaluation, and validation of program results.

Upon approval of the pilot by the Commission, APS will begin participant selection and technology installation. Communication systems will be installed and tested, with the expectation that all systems will be ready for full deployment for the 2011 summer season. The pilot will be conducted through two summer seasons (2011 and 2012) in order to effectively evaluate technologies and customer program acceptance. Beginning in March of 2011, and with each DSM report thereafter (March and September annually), the Company will report on the progress and results of the pilot program.

Figure 3. Home Energy Information Pilot Program Timeline



Phase III begins 60 to 90 days after Commission approval of the pilot, but no sooner than September 2010.

2. Critical Peak Pricing

Residential DR

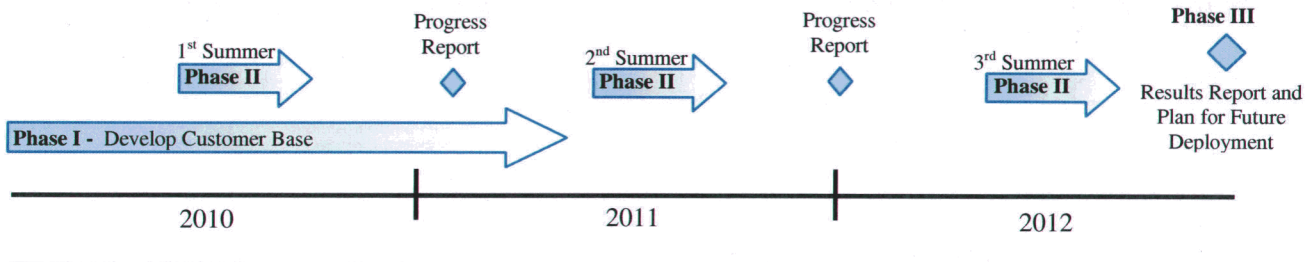
- Critical Peak Pricing

Critical peak pricing ("CPP") is a time-of-use demand response program which utilizes very high kWh prices at specific times of the year at expected peak hours of the day to incent the customer to reduce energy usage at times when the Company expects its energy expenses to be at their highest. A residential CPP rate schedule was approved by the Commission as part of the Company's most recent rate case settlement.[27]

Under the CPP plan, APS notifies customers of a CPP event when the Company expects resources to be constrained. CPP events can be triggered by severe weather, high loads, high wholesale energy prices or major generation or transmission outages. Events will take place only in the summer months (June through September), and only during a weekday between 2 pm and 7 pm (Monday – Friday), excluding holidays. Customers will be sent a notification of an event by telephone, e-mail or text message by 4:00 P.M. of the day prior to the CPP event. Customers will pay a higher price for energy during the CPP event compared to other rate schedule energy prices, in exchange for lower prices during non-critical time periods. The Company has committed to limit the number and duration of these events to no more than 18 events per calendar year, with no more than 5 hours per event.

The residential CPP program will initially be available for three years, from January of 2010 through December of 2012, to allow for data to be gathered on the effectiveness and acceptance of the program for three summer periods.[28] APS is targeting a participation level of 3,000 customers in this DR program. The potential reduction in overall demand achievable through the residential CPP program is 2 to 3 MW.

Figure 4. Residential Critical Peak Pricing Program Timeline



[27] Rate Schedule CPP-RES, approved in ACC Decision No. 71448 (December 30, 2009).

[28] For DR pricing programs implemented on January 1, 2010 (CPP-RES, ET-SP, and CPP-C&I), the Company is required to file as a compliance item in the rate case settlement docket (ACC Docket No. E-01345A-08-0172) interim reports on study results on January 31, 2011 and December 31, 2011. *See* ACC Decision No. 71448 at 54-55.

3. Super-Peak Pricing

Residential DR

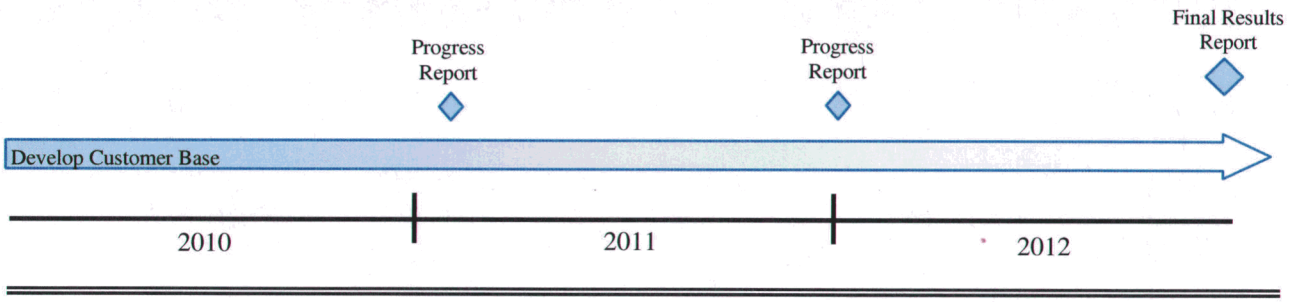
- Super Peak Pricing

Like the CPP pricing program, super-peak pricing ("SPP") is a time-of-use demand response program that sends high price signals to customers in an effort to incent customers to reduce energy usage during times of high energy cost. The SPP differs, however, in that the pricing periods are pre-determined and set forth in the rate schedule rather than communicated to the customer on a day-ahead basis as in the CPP. A residential SPP rate was approved by the Commission as a part of the Company's most recent rate settlement.[29]

During the "super-peak" periods, customers who participate in the rate schedule will pay higher charges, but will pay lower charges during other peak and off-peak periods. The "super-peak" period is defined as 3:00 P.M. to 6:00 P.M., Monday thru Friday during June, July, and August (excluding holidays). These periods generally are the times when APS's marginal generation resources are the most expensive.

The SPP rate schedule has been permanently integrated into APS's suite of residential pricing programs and is available to all residential customers. The Company expects an initial participation level of approximately 3,000 customers and the potential reduction in overall demand achievable through this residential SPP program is 1 to 2 MW.

Figure 5. Residential Super Peak Pricing Program Timeline



[29] Rate Schedule ET-SP, approved in Decision No. 71448 (December 30, 2009).

B. COMMERCIAL AND INDUSTRIAL

1. Critical Peak Pricing

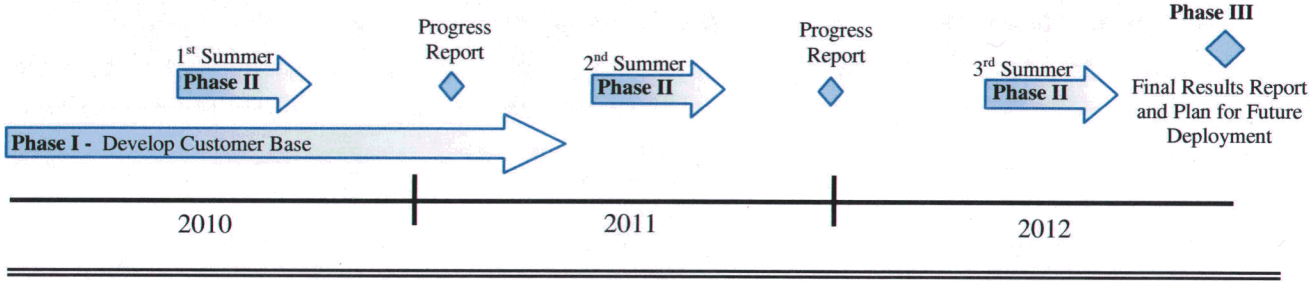
Commercial & Industrial DR

- Critical Peak Pricing

A C&I CPP rate schedule was approved by the Commission as part of the Company's most recent rate case settlement.[30] This rate schedule mirrors the residential CPP rate schedule discussed above, with the exception that the C&I customer must demonstrate the ability to reduce usage during a critical event by a minimum of 200 kW. Customers must also have interval metering, and must submit a load reduction plan for approval by the Company prior to participation.

As with the residential CPP program, the C&I CPP program will initially be available for three years, from January of 2010 through December of 2012, to allow for data to be gathered on the effectiveness and acceptance of the program for three summer periods. APS is targeting a participation level of 200 customers in this DR program. The potential reduction in overall demand achievable through the C&I CPP program is 30 - 40 MW.

Figure 6. C&I Critical Peak Pricing Program Timeline



2. Thermal Energy Storage

Commercial & Industrial DR

- Thermal Energy Storage

Thermal Energy Storage ("TES") is a relatively mature technology which can be used to reduce energy costs by allowing energy-intensive, electrically driven cooling equipment to be predominantly operated during off-peak hours when energy demand is at its lowest. TES systems use existing equipment to either make ice or chilled water in the off-peak hours, then use the ice or chilled water to cool the customer site during the on-peak hours in lieu of

[30] Rate Schedule CPP-GS, approved in ACC Decision No. 71448 (December 30, 2009).

running more energy-intensive cooling equipment. These systems have the potential to be utilized cost-effectively in most buildings with a space cooling system and, as much of the APS service territory is low desert country with heavy air-conditioning load, are therefore a viable technology for testing in the APS service territory. There are two main forms of TES available today:

- ⇨ Refrigerant-Based TES – This technology is utilized most effectively for packaged (rooftop/modular) and split A/C units. The system uses stored ice to cool the refrigerant, which in turn is used for cooling the building. These systems can produce up to 5 tons of cooling for a 6 hour period.

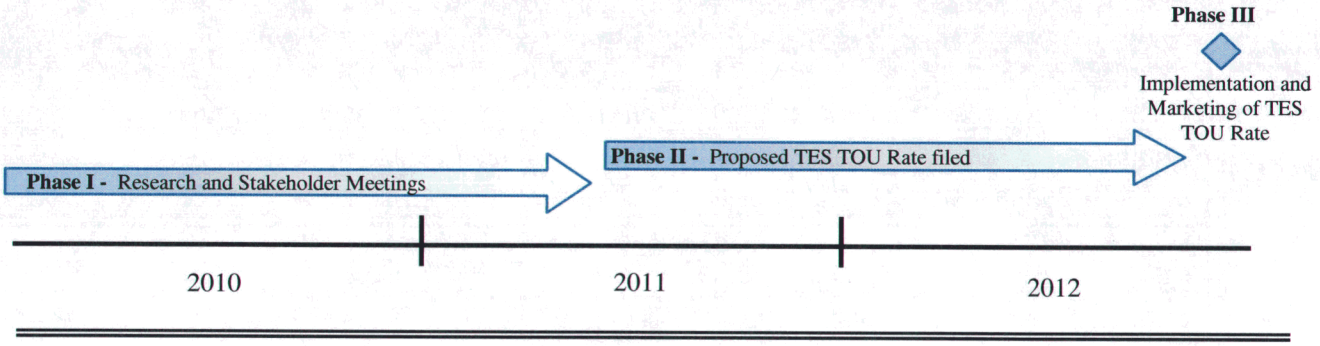
- ⇨ Chilled Water-Based TES – This technology is used in conjunction with chiller-based HVAC cooling systems that exceed 100 tons of capacity. The systems use stored ice to cool the chilled water which in turn cool the building during peak hours.

TES provides a viable option for C&I customers wishing to manage their on-peak load. In the APS service territory, over 44% of the peak demand requirements for C&I customers is directly attributable to air-conditioning load.[31] However, for the Company's customers to consider TES adoption, APS must develop a new C&I TOU rate that establishes a shorter on-peak period with higher energy and demand pricing and correlated lower energy and demand pricing during an extended off-peak period. In addition, the Company must provide a one-time incentive to customers, based on the reduced peak kW resulting from installation of the TES system, to remove the up-front economic obstacle to acquiring and deploying the technology.

Research on the viability of current TES technology in the APS service territory began in 2008, when the Company contracted with an experienced consultant to determine how well these systems perform in a desert climate. As this research continues, in 2010 and early 2011, APS will also research the specific incentives offered for TES systems by similarly-situated utilities around the country as well as the various rate structures that the participating customers operate under. Using this information, APS will develop a new TES TOU rate that will be filed as a part of the 2011 General Rate Case filing outlined in the Company's recent rate case settlement.[32] The potential demand reduction achievable from a targeted TES program is 2 – 15 MW.

[31] ICF International, et al., Arizona Public Service: Energy Efficiency Baseline Study (March 9, 2007), filed in Docket No. E-01345A-05-0182 (April 12, 2007) at Table 5-2 Non-Residential Building Type and End Use Segmentation (Peak MW).
[32] ACC Decision No. 71448 at Paragraph 2.2 (December 30, 2009).

Figure 7. Thermal Energy Storage Program Timeline



3. Standby Generation

Commercial & Industrial DR

- Standby Generation

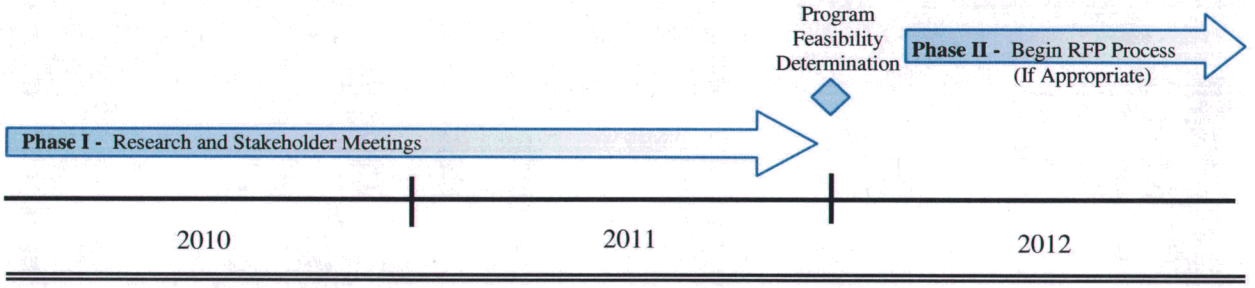
Standby generation programs use customer-owned standby units, typically run on diesel fuel or natural gas, which are called upon by the utility to either reduce customer load or inject power directly into the distribution system. Standby generation, specifically when located within a load pocket, provides the added benefit of increasing the electric system's reliability by reducing the stress on grid components, supporting local voltage levels, and increasing the diversity of power supply.

Any standby generation program considered by APS must be studied in detail to assess the potential impacts to the environment. Incentives for either retrofitting an existing generator with state-of-the-art emissions control equipment or converting a generator to utilize environmentally sensitive fuel may be necessary to mitigate environmental impacts should the Company choose to pursue a standby generation DR program. Additionally, existing customer-owned generators have specific permits that dictate the allowable run-hours each year, therefore any program must be designed to operate within these restrictions.

APS plans to actively work with key environmental stakeholders such as the Arizona Department of Environmental Quality and the Maricopa County Air Quality Department in researching the viability of any standby generation DR program, and determine the number and type of existing units in the APS service territory capable of standby status. In conjunction with these efforts, additional research related to standby program structures adopted in other regions will provide data useful to APS when developing a viable DR program.

These research efforts are expected to continue through the calendar years 2010 and 2011. APS believes that 50 to 100 MW of standby generation DR reduction could be obtained in a cost-effective manner.

Figure 8. Standby Generation Program Timeline



4. Interruptible Rate Rider

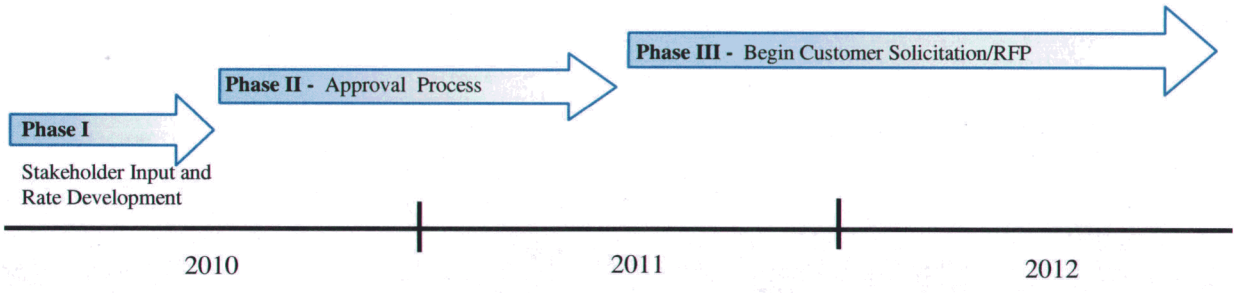
Commercial & Industrial DR

- Interruptible Rate Rider

An interruptible rate is a form of DR program where, in accordance with contractual arrangements, a utility can interrupt customer load at times of seasonal peak load by either direct control of the utility system operator or by action of the customer at the direct request of the system operator. In the Company's recent rate settlement, APS committed to develop an interruptible rate option in consultation with Staff and interested stakeholders for customers with loads over three MW (customers who currently receive electric service under Rate Schedules E-34 and E-35).

As noted in the settlement, this rate rider will provide a range of options with respect to notice requirements, duration, and frequency, and will provide credits to participating customers based on avoided capacity costs. APS is currently in the process of designing the Interruptible Rate Rider and will file for approval of the rate by July 1, 2010 as required by the settlement.

Figure 9. Interruptible Rate Rider Program Timeline



Implementation of the Interruptible Rate Rider will begin upon approval by the Commission.

C. RESEARCH AND DEVELOPMENT PROGRAMS

1. Electric Vehicle

In accordance with Decision No. 71104, APS has been pursuing the development of a study on Electric Vehicle ("EV") and Vehicle-to-Grid ("V2G") potential in Arizona. The V2G technology refers to EVs that can both receive power from and transfer power back to the distribution grid. The two-way plug capability could potentially allow a utility to take advantage of the available energy that is stored in the vehicle batteries to help meet peak demand, provide grid support services, or to provide for energy resource shifting. The study includes these areas of analysis to fully understand future equipment availability:

- ⇨ Current and future state of EV charging equipment and standards for both plug-in hybrid and full EVs;
- ⇨ Market uptake of EV and factors that may limit availability and acceptance in the APS service territory;
- ⇨ Impacts of EV charging on the APS distribution system;
- ⇨ Current and future state of V2G technologies and their acceptance by communities, manufacturers and customers; and
- ⇨ Forecast of the number of vehicles available for a V2G program and the value and estimated quantities of the energy available to support the distribution grid.

EV penetration and its corresponding impact to the grid currently has a long-term horizon for incorporation into utility programs. Several stages of development will need to be addressed, including 1) preparation of the electric grid for the adoption of these vehicles with the targeted installation of charging stations; 2) the design of "smart charging" rate schedules that encourage customers, via price differentiation, to only charge their vehicles during off-peak periods; and 3) the integration of these vehicles into utility planning. In April of 2010, APS will be filing the results of its EV and V2G study and proposed plan for preparing Arizona for the adoption of these vehicles as well as the time horizons for the steps outlined above.

2. Battery Storage

Large-scale battery storage technology has the potential to assist utilities in improving reliability and maximizing the value of renewable generation. For example, battery storage could be implemented at substations in key areas of the grid to allow for "ride-throughs" of grid disturbances, to potentially shift the

utility's demand profile, or sited with renewable generators to smooth a variable production profile. In addition, the potential exists for battery storage technology to be deployed at customer premises to increase power quality and act as a substitute or enhancement of emergency standby generation. Through the Flagstaff Smart Grid pilot program, APS plans to deploy and assess energy storage. This project will allow APS to gain an in-depth knowledge of the capabilities of battery storage, how it may integrate into the electric grid, and how battery storage could have a proactive grid management role for utility planning. This project would also serve to provide APS with critical knowledge on the costs and benefits of this technology so future programs or installations could be pursued to the benefit of the ratepayer.

IV. BUDGET

APS's preliminary budget for the Company's overall DR program strategy as presented in this report is estimated to be approximately $6.0 million. This estimate represents program and development costs described herein for the HEI Pilot, thermal energy storage, and standby generation programs for the initial two years of the plan (from 2010 to 2011). Costs attributable to the programs included in this plan that utilize specific rate schedules (critical peak pricing, super-peak pricing, and the interruptible rate rider) will be recovered through traditional cost recovery methods in the Company's next rate case request and are not included in this budget. The electric vehicle and battery storage projects discussed herein will be separately funded.

At this time, the budget is based on preliminary cost estimates. The Company has not yet contracted with vendors for development of communications platforms, the purchase of in-home displays and smart thermostats, or measurement and verification analysis.

Table 2 provides a summary of anticipated spending for the assessment period. This budget represents the estimated spending requirement for the initial assessment phases of the program only. The full cost to add at least 250 MW of demand response will be identified and presented to the Commission once the assessment is complete.

Table 2. Estimated Budget through CY 2011

	$000s	
	Consumer Products	**% of Cost by Category**
*Rebates & Incentives**	$554	9.8%
Training & Tech Assistance	$0	0.0%
Consumer Education	$200	3.5%
Program Implementation	$4,134	73.2%
Program Marketing	$200	3.5%
Plan & Admin	$563	10.0%
Program Total Cost	**$5,651**	100.0%
Measurement, Evaluation & Research	$325	
Performance Incentive	$0	
TOTAL	**$5,976**	

*Includes all equipment & installation and home energy audit costs

The budget includes approximately $3M in capital costs which will be incurred as APS's Customer Information System and other related systems are upgraded. Additionally, approximately $2.8M is budgeted for initial deployment of the HEI Pilot program, which includes such costs as systems interface technology, equipment, contracting, marketing, program management, and customer support.

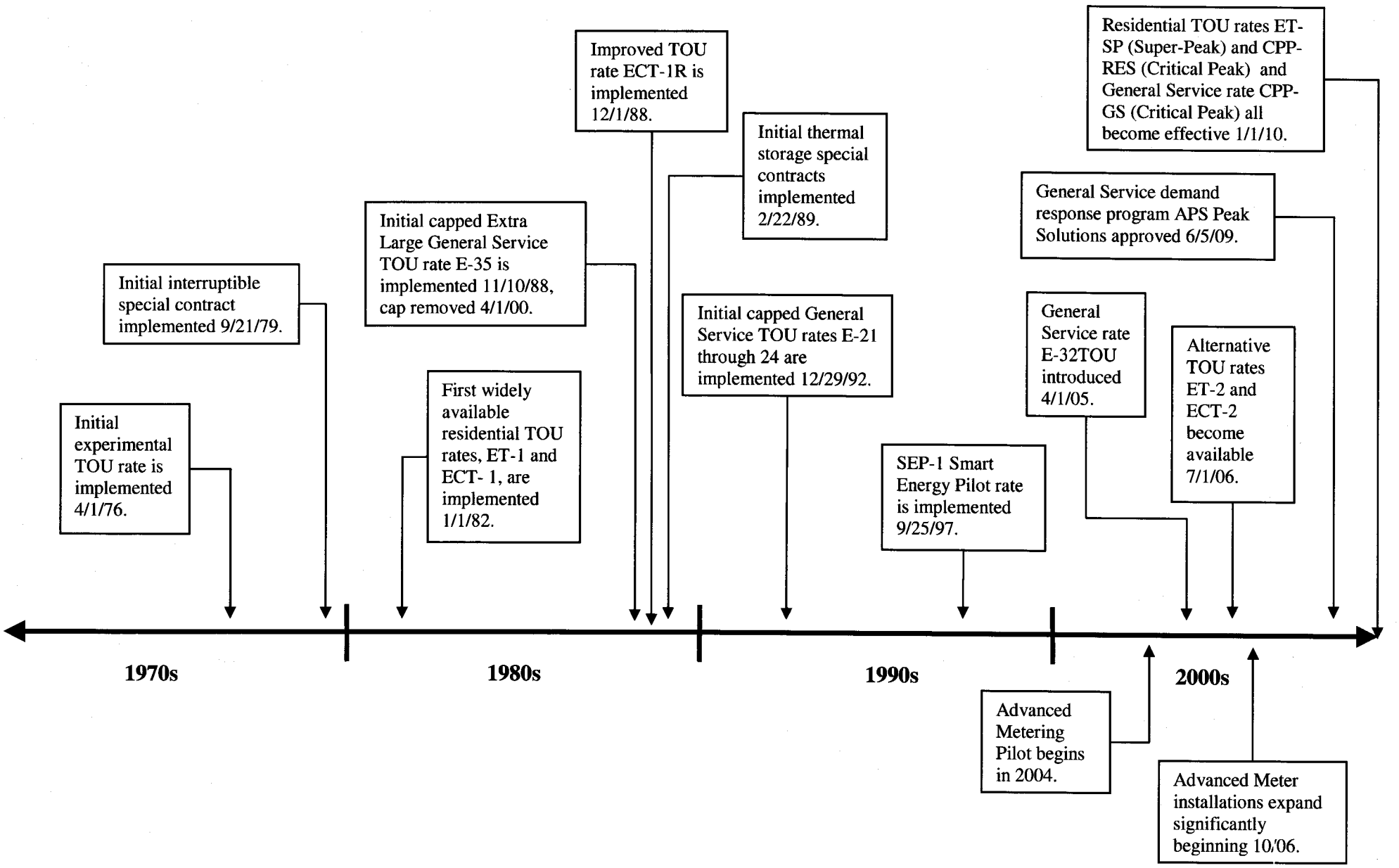
Pursuant to Decision No. 67744, the DSMAC is the appropriate vehicle for cost recovery for these programs.[33] However, the Company is not proposing to recover capital expenditures through the DSMAC. Instead, APS proposes to recover operations, maintenance, and carrying costs for capital investment through the DSMAC on an annual basis until such capital costs can be recovered through base rates in a subsequent rate case. Budgeted carrying costs related to expected capital expenditures are estimated at $721,000 for 2010 and 2011, and are based on the Company's currently assumed future pre-tax cost of debt of 7.5% and the 11.0% cost of equity allowed in the Company's most recent rate case settlement. This cost treatment is consistent with the Commission Staff proposal for recovery of Flagstaff Community Power Project funds through the RES adjustment mechanism.

Estimated costs for DR programs in 2010 and 2011 would be included in the Company's June 1, 2010 Energy Efficiency Implementation Plan filing, for collection beginning in March of 2011. APS will provide updated budgets in subsequent plan filings, and will report on the progress of the HEI Pilot and other DR programs in the progress reports required in the proposed Energy Efficiency Rules.[34]

[33] Issued April 7, 2005 in ACC Docket No. E-01345A-03-0437.

[34] Proposed Energy Efficiency Rule R14--2-2409 requires that Demand Side Management progress reports be submitted to the Commission in March and September of each year.

ARIZONA PUBLIC SERVICE COMPANY
TIMELINE OF DEMAND RESPONSE ACTIVITIES

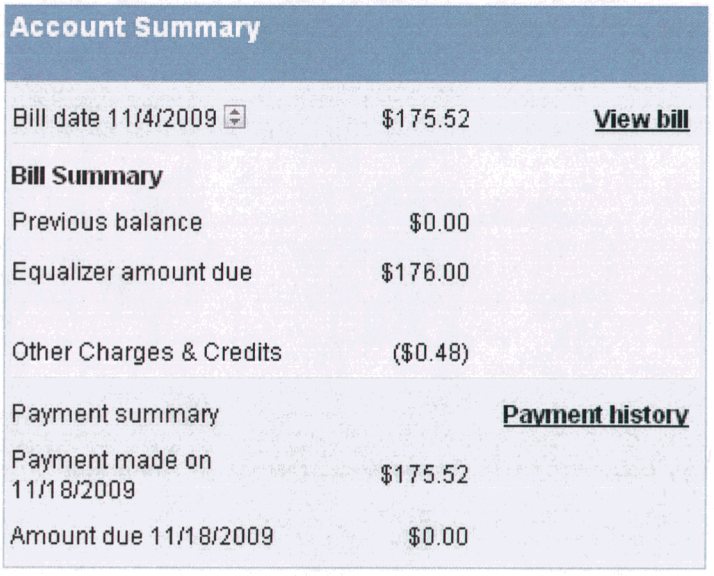


ATTACHMENT B

aps.com

"My Account" webpage on aps.com:

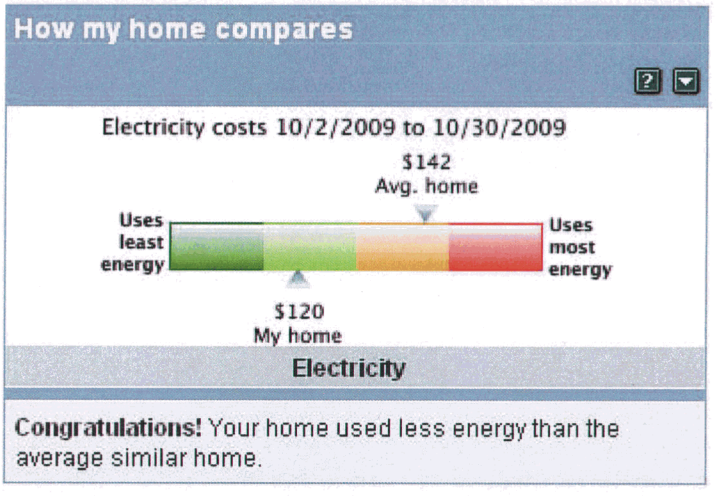
- Account Summary. An at-a-glance overview of the bill, including amount due, links to view and pay bills, as well as a link to payment history.



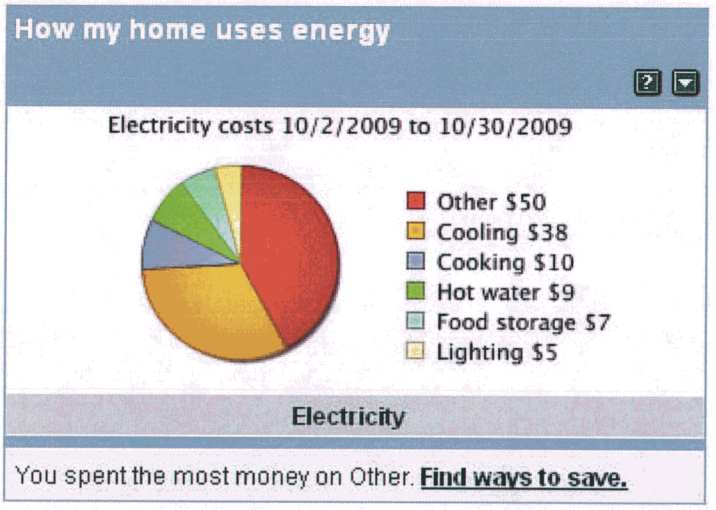
Account Summary

Bill date 11/4/2009	$175.52	View bill
Bill Summary		
Previous balance	$0.00	
Equalizer amount due	$176.00	
Other Charges & Credits	($0.48)	
Payment summary		Payment history
Payment made on 11/18/2009	$175.52	
Amount due 11/18/2009	$0.00	

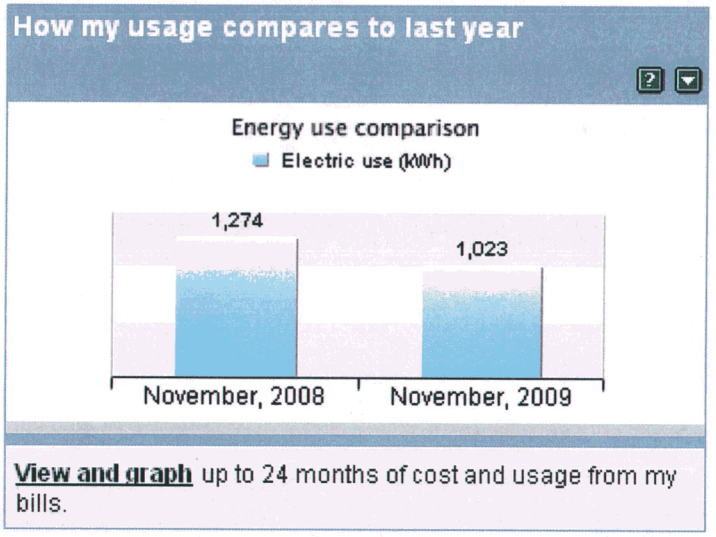
- How my home compares. A graph that shows how a customer's energy costs compare to similar homes.



- How my home uses energy. A chart showing a breakdown of the current bill, how major appliances impact energy use,[1] and a link to find ways to save energy.

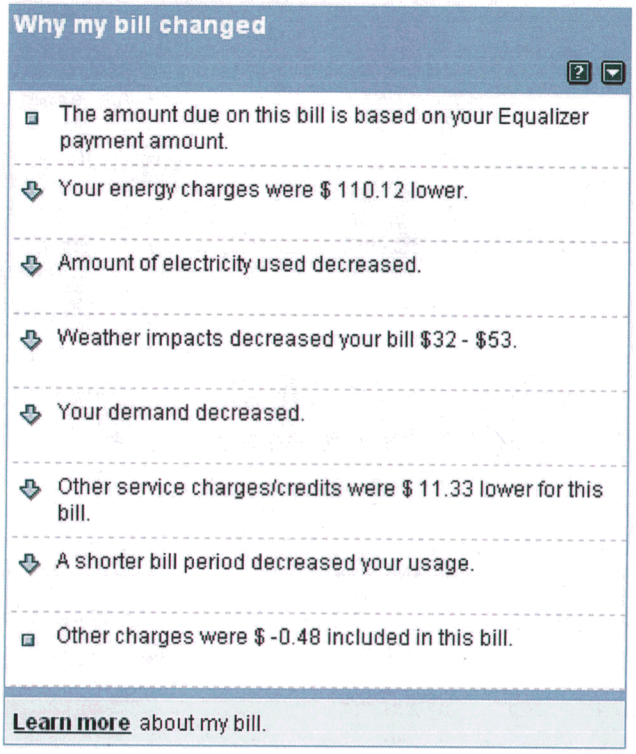


- How my usage compares to last year. Provides a quick visual breakdown of usage this year compared to the same time last year. From this section, customers can view up to 24 months of usage history and create customized usage and payment graphs.

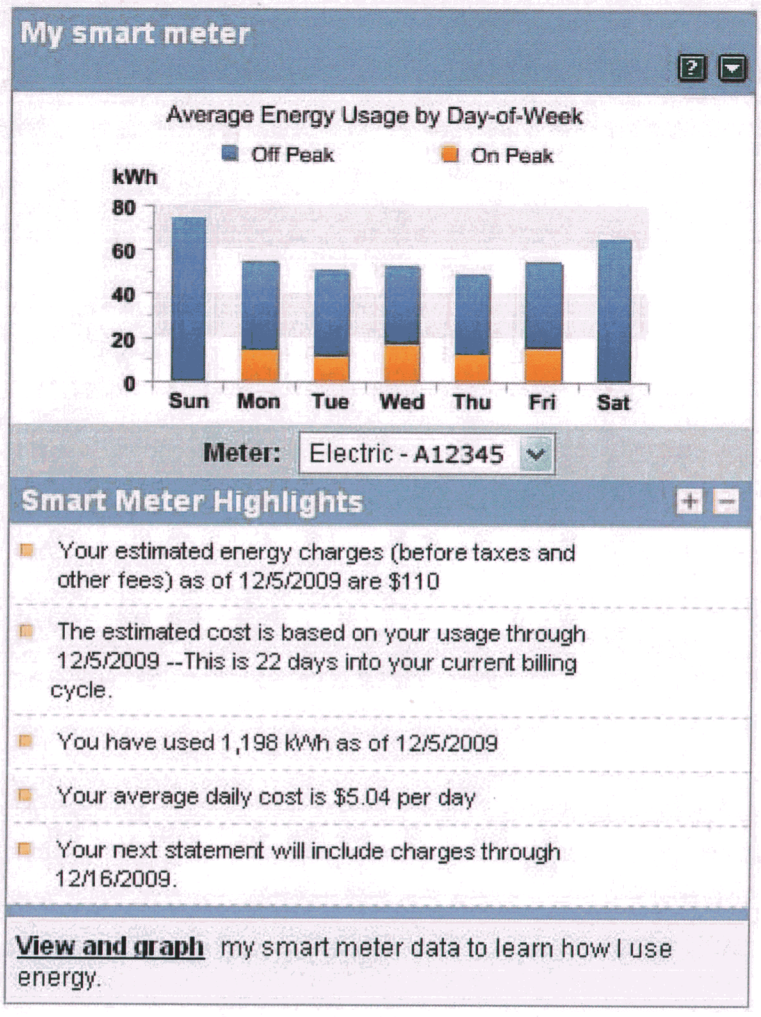


[1] Appliance usage is estimated from energy consumption studies.

- Why my bill changed. Shows all the factors that affect the bill and approximately how much of an impact each factor has on the amount due. From this page, customers can complete a detailed comparison that shows the impact of vacations, house guests, construction additions and more on their monthly energy bill.



- My smart meter and smart meter highlights.

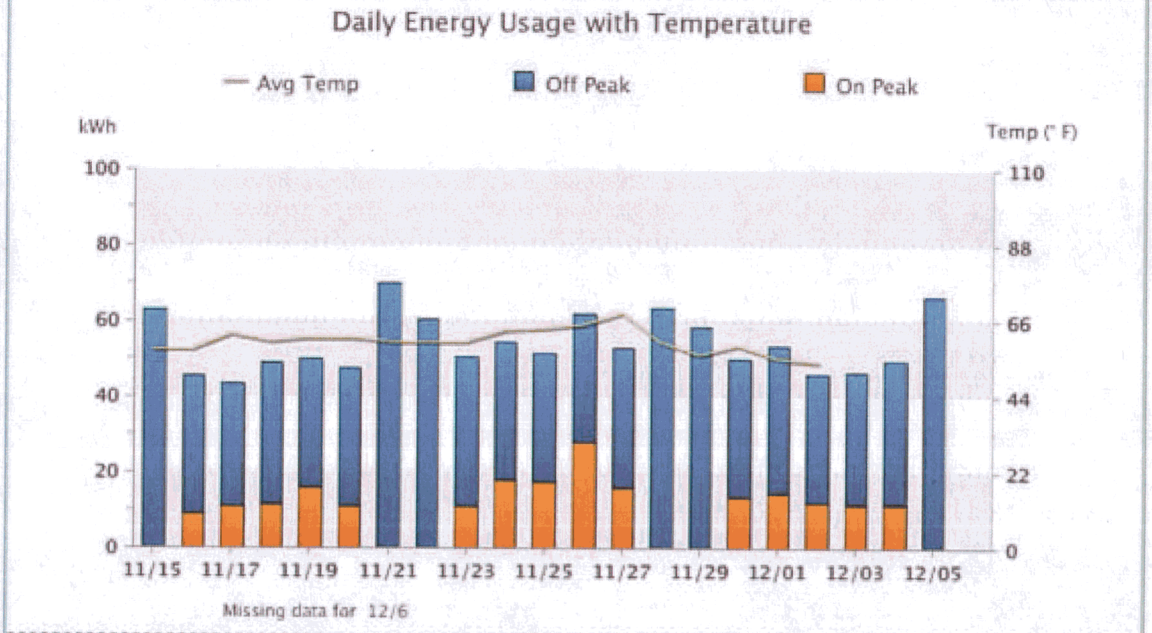


Sample Smart Meter graph – Daily Energy Usage with Temperature

Service address: Electric - A12345 12345 W Sample St

Graph: Daily Energy Usage with Temperature **Date:** Dec 2009 6

Refresh graph



Choose a period: (•) Billing cycle ( ) Month ( ) Week **Download Smart Meter Data**

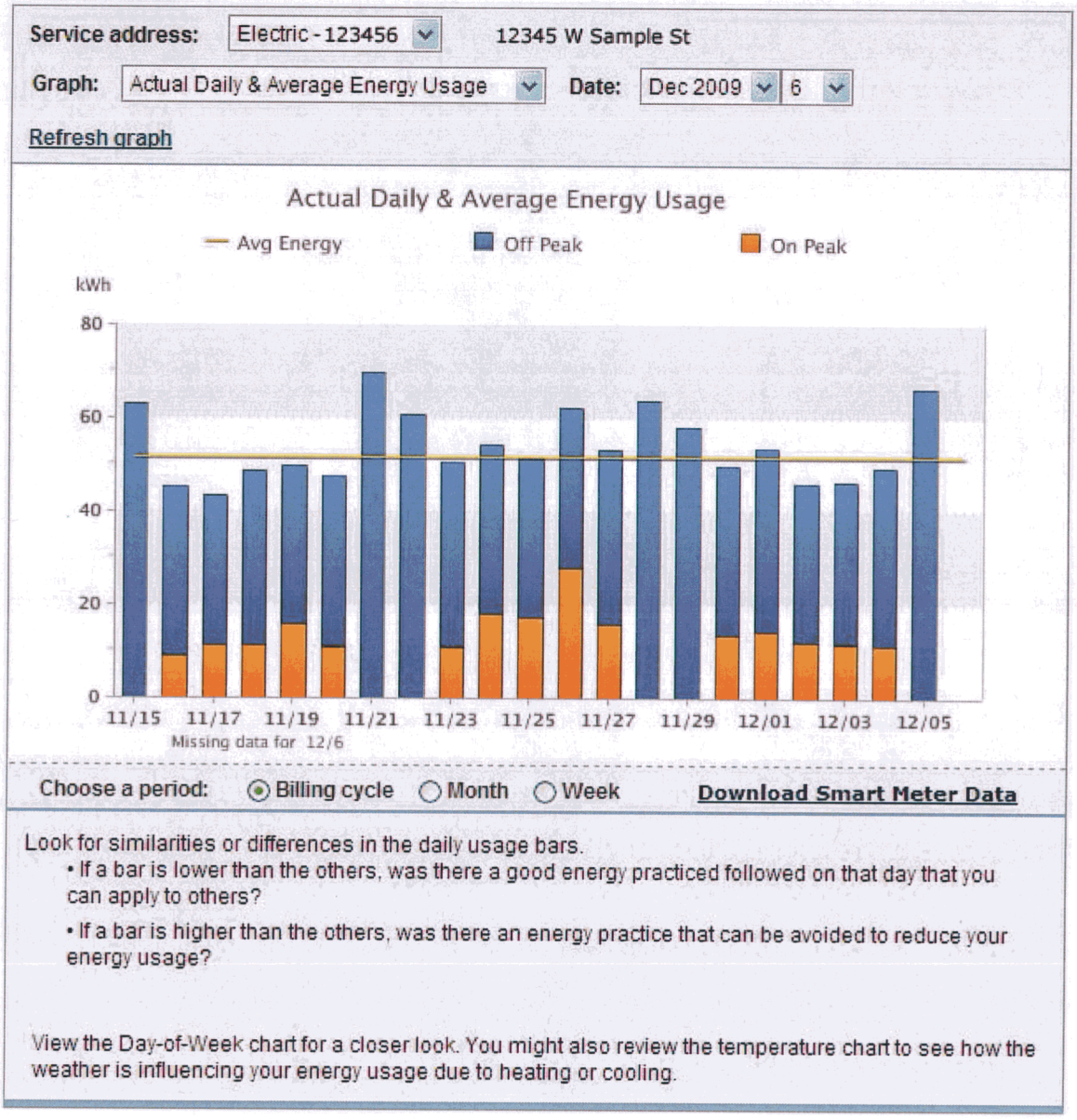
* Note: Temperature data was not available for certain dates within the selected period.

Look for similarities or differences in the bars.

- During summer, expect to see higher bars with higher temperatures.
- During winter, you may expect to see higher bars with lower temperatures
- You may see a usage "spike" on a particularly hot or cold day.

If your biggest variations are associated with weather then your heating and cooling systems could be the cause. Here are some **energy saving tips** to help you save the most money.

Sample Smart Meter graph – Daily Energy Usage with Average Energy Usage

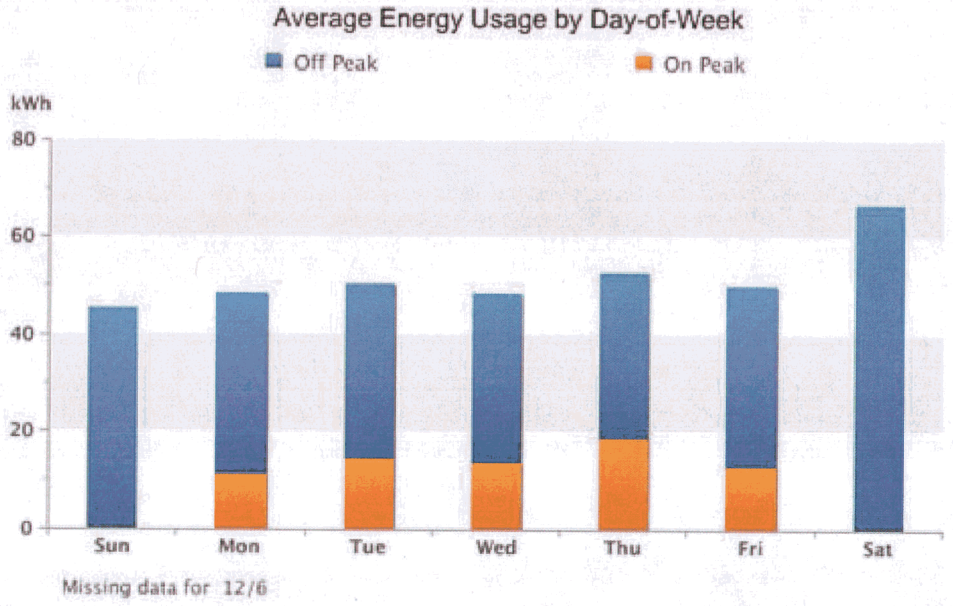


Sample Smart Meter graph – Average Energy Usage by Day of Week

Service address: Electric - A12345 12345 W Sample St

Graph: Average Energy Usage by Day-of-Week **Date:** Dec 2009 6

Refresh graph



Choose a period: (•) Billing cycle ( ) Month ( ) Week **Download Smart Meter Data**

Look for similarities or differences in the days of the week.

- Is your usage even on weekdays or does a day of the week stand out as higher or lower than the others?
- How is your weekend usage compared to weekdays?
- If you are home more often, you can expect a proportional increase in your energy usage.

Change the chart interval from monthly to weekly or select another week.

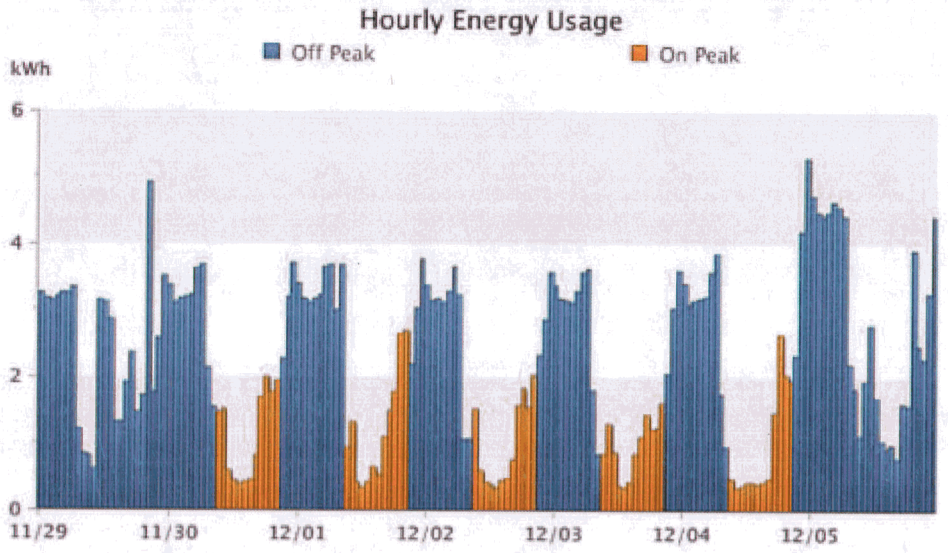
- Are your results consistent from week to week?
- Can you spot a bar that is particularly low? Was there some particularly good energy practice on that day that can be applied to others?

Sample Smart Meter graph – Hourly Energy Usage - Weekly view

Service address: Electric - A12345 12345 W Sample St

Graph: Hourly Energy Usage **Date:** Dec 2009 3

Refresh graph



Choose a period: (•) Week ( ) Day **Download Smart Meter Data**

Look for similarities or differences in the hourly demand (kW).

- What are the top three hours of energy demand?
- Do these hours vary from day to day?
- What are the main activities that are happening during the top three hours?

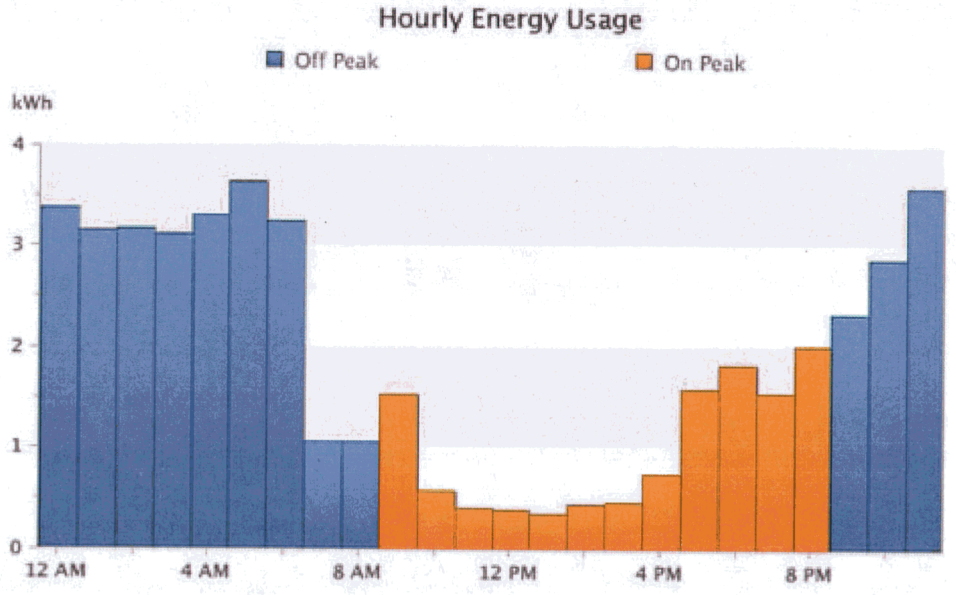
Consider if there are any ways to reduce energy-consuming processes during these hours to reduce your overall energy usage. Here are some **energy saving tips** to help you save the most money.

Sample Smart Meter graph – Hourly Energy Usage – Daily view

Service address: Electric - A12345 123456 W Sample St

Graph: Hourly Energy Usage **Date:** Dec 2009 2

Refresh graph



Choose a period: ○ Week ◉ Day **Download Smart Meter Data**

Look for similarities or differences in the hourly demand (kW).

- What are the top three hours of energy demand?
- Do these hours vary from day to day?
- What are the main activities that are happening during the top three hours?

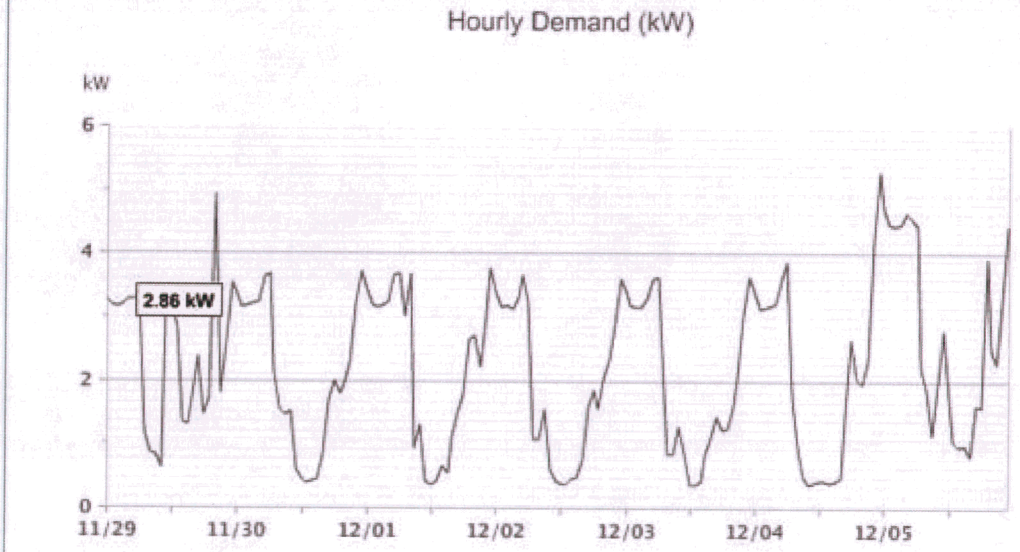
Consider if there are any ways to reduce energy-consuming processes during these hours to reduce your overall energy usage. Here are some **energy saving tips** to help you save the most money.

Sample Smart Meter graph – Hourly Demand – Weekly view

Service address: Electric - A12345 12345 W Sample St

Graph: Hourly Demand (kW) **Date:** Dec 2009 2

Refresh graph



Choose a period: (•) Week ( ) Day **Download Smart Meter Data**

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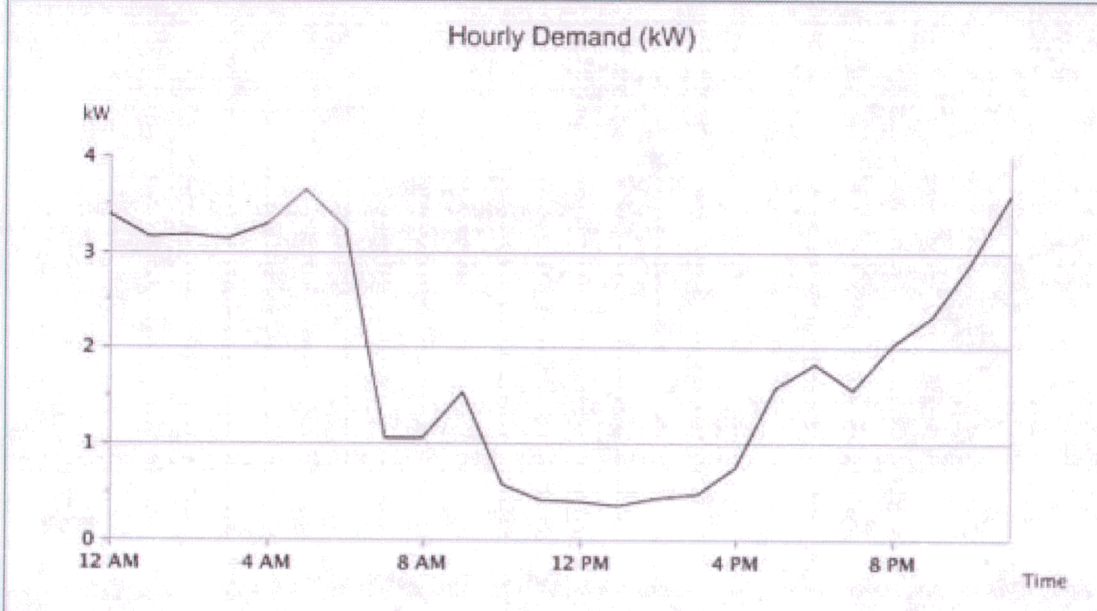
Sample Smart Meter graph – Hourly Demand – Daily view

Service address: Electric - A12345 12345 W Sample St

Graph: Hourly Demand (kW) **Date:** Dec 2009 2

Refresh graph



Choose a period: ◯ Week ◉ Day **Download Smart Meter Data**

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"Energy Challenge" webpages on aps.com:

WELCOME

Take the APS Energy Challenge

The APS Energy Challenge is a fun way to reduce your energy use and help lower your energy costs. Set a goal, get some tips, challenge a friend, and save!

Complete your profile

- Answer a few questions about your home.
- Set a goal to use 5, 10 or 20% less energy each month than you used last year.

Find ways to meet your goal

- Read custom tips designed to help you meet your personal goal and see what others are doing to meet theirs.
- Have a saving tip that works for you? Submit a tip and help others meet their goal.
- Challenge a friend to set an energy savings goal.

Track your progress

- After your next bill, come back and see your progress.
- As you complete energy saving actions, update your profile to add the action to the community comparison.

Challenge a friend >

Service address: 4609 W Moss Springs Rd

GOAL | ACTUAL | COMPARISON

5% | 63 %

Change my goal | Edit/view profile

All City Neighborhood

Where I stand: **284 of 511**

People who have installed a new AC unit:	**375**	(join them)
People who have installed ceiling insulation:	**200**	(join them)
People using CFLs:	**674**	

GRAPHS

Jan 2010	1058 kWh	2010 to date	1058 kWh
Jan 2009	1724 kWh	2009 to date	1724 kWh
		2009 total	17679 kWh

Analyze your bill

TIPS

Tips you can use

- ENERGY STAR CFL light bulbs use 75% less energy.
- A fridge in a hot area uses extra power. Move it in the house or get rid of it.
- Keep your newer unit in peak shape with AC tune ups every other year.

Submit a tip >