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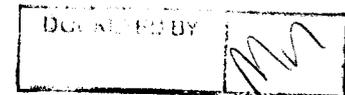
**SOUTHWEST GAS CORPORATION**

September 29, 2009

Docket Control Office  
Arizona Corporation Commission  
Utilities Division  
1200 West Washington Street  
Phoenix, AZ 85007

Arizona Corporation Commission  
**DOCKETED**

SEP 30 2009



**Re: Docket No. G-01551A-93-0272; D.58693**

Southwest Gas Corporation (Southwest) herewith submits for filing an original and thirteen (13) copies of Southwest's Semi-Annual Demand Side Management Progress Report. This report is being submitted in compliance with Decision No. 58693 issued in Docket No. G-01551A-93-0272.

If you have any questions or comments on the attached report, please do not hesitate to contact me at 702-876-7163.

Respectfully submitted,

Debra S. Gallo, Director  
Government & State Regulatory Affairs

Enclosures

- c Mr. Ernest Johnson, ACC
- Compliance Section, ACC
- Ms. Barbara Keene, ACC
- Ms. Julie McNeely-Kirwan, ACC

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**SOUTHWEST GAS CORPORATION**

**ARIZONA**

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**DEMAND SIDE MANAGEMENT**

**REPORT**

**September 30, 2009**

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# INTRODUCTION

## **INTRODUCTION**

Southwest Gas Corporation (Southwest or Company) submits its Semi-Annual Demand Side Management (DSM) Report (Report) in accordance with various approvals received from the Arizona Corporation Commission (Commission) in Docket Nos. U-1551-93-272 (Decision No. 58693), U-1551-96-189 (Decision No. 59685), U-1551-96-596, (Decision No. 60352), G-01551A-99-0288 (Decision No. 61853), G-01551A-05-0249 (Decision No. 67878), G-01551A-04-0876 (Decision No. 68487 and Decision No. 70526) and G-01551A-08-0556 (Decision No. 70660).

DSM activities discussed in this Report include programs for ENERGY STAR® Home, Low-Income Energy Conservation, Consumer Products, Commercial Equipment, Pre-Rinse Spray Valves, Technology Information Center, Distributed Generation, and the Demand Side Management Adjuster Mechanism.

**DEMAND SIDE  
MANAGEMENT  
PROGRAMS**

**ENERGY STAR® HOME  
PROGRAM**

## ENERGY STAR® HOME PROGRAM

The ENERGY STAR® Home (ESTAR) program is a residential new construction program designed to upgrade the energy-efficiency of new housing. ESTAR encourages the construction of new, energy-efficient homes that comply with guidelines established by the U.S. Environmental Protection Agency (EPA). Improvements are made in thermal shell construction and the installation of high-efficiency mechanical equipment. Homebuilders are required to participate in performance-based practices that address whole-house infiltration, duct leakage, and pressure balancing.

This program involves the recruitment of builders to not only meet or exceed the guidelines set by the EPA ENERGY STAR® standards but to also obtain certification. Inspection and testing of the ESTAR Home program is done through certified Home Energy Rating System (HERS) providers, which inspect and test homes for compliance with the EPA ENERGY STAR® guidelines.

### Program Activity and Participation

A total of eleven (11) Arizona builders are currently participating in the ESTAR Home program, representing 4,884 homes in fifty-one (51) subdivisions. Table 1 below is a summary of ESTAR participants and further details on the participating homes are presented in Appendix A.

	<b>Total</b>
<b>Builders</b>	<b>11</b>
<b>Subdivisions</b>	<b>51</b>
<b>Homes Committed</b>	<b>4,884</b>
<b>Homes Approved</b>	<b>754</b>

During the life of Southwest's residential new construction program, the homebuilding industry has gradually accepted ever-increasing levels of energy performance, which is transforming the new housing market in Arizona. Responding to the marketplace, local building code guidelines have kept pace with the transformation to higher energy performance. Southwest holds training sessions with builders, subcontractors and sales staff on-site at participating subdivisions to educate the builder representatives about ESTAR program participation and how to be an ENERGY STAR® partner.

Southwest has focused on expanding the program throughout Arizona. Currently, Southwest provides a reimbursement of \$125 per qualifying tested and built natural gas home in compliance with the ESTAR requirements.

On June 9, 2009, Southwest submitted its Proposal to Supplement and Modify the Arizona Demand Side Management Plan for Program Years 2009 and 2010. In the Proposal, Southwest has requested to modify this program to provide additional focus on the installation and use of

energy efficient natural gas appliances in new homes. Many builders meeting the overall ENERGY STAR® standards for certification are choosing lower efficiency water heaters and furnaces. Southwest would like to target and improve the efficiency of the installed natural gas appliances and work in conjunction with neighboring electric utilities' programs in order to help builders improve total energy use.

All builders Southwest has met with agree that energy-efficiency remains in the forefront of their future plans. At this time, however, many of them decline to participate in Southwest's ESTAR program, being reluctant to do anything that could increase the cost of their homes. Nevertheless, there are at least three major builders in the Phoenix area who are reviewing and revising their current home plans with the ultimate purpose of participating in the program. One of these builders offer Green Building options, but intends to make them standard when market conditions improve.

It is anticipated that energy-efficient new construction in the near future, will focus on efficiency enhancements with ESTAR as their foundation. The EPA sponsors Indoor Air Quality and Lighting packages, and continues to investigate merging ENERGY STAR® with Green Building standards. Another related consideration, which could affect the guidelines, will be greenhouse gas emissions, as EPA may revise future ENERGY STAR® guidelines to reduce the carbon footprint of new homes.

Testing and inspection of homes continues to be valued by builder participants, providing opportunities for highly productive field training. Due to the smaller numbers of homes being built this year as a result of the slow economy, the sampling protocol required by ENERGY STAR® has actually increased the percentage of homes needing to be inspected and tested since sample sets are closed within thirty (30) days, and most are smaller than the maximum allowed size of seven homes.

Southwest remains committed to energy-efficient new construction. In light of local and national policies, Southwest will continue to utilize the program to assure the most benefit for its Arizona customers.

### **Program Promotion and Outreach**

Keeping updated with ENERGY STAR® and the building science industry is an ongoing effort. In February 2009, Southwest attended the Residential Energy Services Network (RESNET) conference. Key developments for the 2011 ENERGY STAR® program were unveiled during this conference. This early information was used in developing Southwest's proposed changes to its current program, as explained in the pending June 2009 Proposal.

Additionally, presentations were given to county building inspectors regarding energy programs that exceed code, and computer energy modeling. This information was well received and participants expressed surprise at the level of detail involved, beyond that which goes in to basic REScheck™ verification for code purposes.

In February, Southwest participated in the sustainability workshop event promoted by the Pima Association of Governments. In March, Southwest participated in the Energy Expo 2009 held in Tucson. Please see Appendix A for a copy of the workshop agenda and the newspaper

advertisement for the Energy Expo. Commitments have also been made to participate in the upcoming Southwest Builders Show in Phoenix.

The ESTAR program is also promoted via Southwest's website, [www.swgas.com](http://www.swgas.com), under the energy-efficiency programs section. Informational handouts are also distributed for both builders and consumers. These materials help recruit potential builder participants and educate prospective homebuyers. Copies are included in Appendix A.

Southwest participated in the Arizona Energy Efficiency and Renewable Energy Community Outreach Conference held in Tempe, Arizona in April 2009. All current DSM programs were promoted. See Appendix A for a copy of the agenda.

In addition to promoting consumer awareness of the Company's ESTAR Program, visibility to Southwest's builder partners is also important. To accomplish this, the program is featured in the builder magazine produced by the Southern Arizona Home Builders Association. Copies are included in Appendix A.

### Program Cost

The approved annual budget and actual program costs from January 1, 2009 through June 30, 2009 are presented in Table 2.

<b>TABLE 2</b> <b>ESTAR Home Program</b> <b>Program Costs</b> <b>January 1, 2009 through June 30, 2009</b>			
<b>Description</b>	<b>Annual Budget</b>	<b>Actual Program Costs</b>	<b>(Over)/ Under</b>
Implementation	\$ 297,000	\$ 112,217	\$ 184,783
Communication	\$ 22,000	\$ 5,020	\$ 16,980
Outreach	\$ 3,500	\$ 2,216	\$ 1,284
Training & Education	\$ 13,000	\$ 1,059	\$ 11,941
Measurement & Evaluation	\$ 9,500	\$ 9,000	\$ 500
Administration	\$ 5,000	\$ 932	\$ 4,068
<b>Total</b>	<b>\$ 350,000</b>	<b>\$ 130,445</b>	<b>\$ 219,555</b>

### Key Partnerships

The Arizona Department of Commerce Energy Office (AEO) continues to provide on-going consultative support for ESTAR educational activities and plays an important advisory role with regard to energy-efficient building practices. Southwest also continues to maintain a close relationship with the Architectural Energy Corporation (AEC), creator of the REM/Rate software that Southwest and other HERS raters use to model energy performance from builders' plans. AEC is committed to on-going improvement and updating of the software to track developments in energy codes and policies.

RESNET oversees the HERS certification system, which is the foundation for ESTAR. As such, Southwest participates in various RESNET activities and maintains compliance with its accreditation requirements.

The Environments For Living (EFL) group, a rater who is partnering with Southwest, has created its own new home rating program and co-promoted the ESTAR program with their Program. Please see EFL's flyer shown in Appendix A.

A significant benefit of using the nationally branded standard of ENERGY STAR® as the basis for Southwest's residential program is its use underpinning other advanced energy-efficiency and green programs. Some ESTAR participating homes also qualify for the Department of Energy's Builders Challenge, the Federal Energy Policy Act tax credit, local green programs, and Leadership in Energy-Efficient Design (LEED) for Homes.

The Company also remains allied with Pima County for its Green Building program and is participating in Maricopa County's development of a similar program.

**LOW-INCOME ENERGY  
CONSERVATION  
PROGRAM**

## LOW-INCOME ENERGY CONSERVATION PROGRAM

The Low-Income Energy Conservation (LIEC) weatherization program originated in 1998 and is administered by the Arizona Department of Commerce Energy Office (AEO) in conjunction with the federal government's Department of Energy's (DOE) statewide Weatherization Assistance Program (WAP) in Arizona. The AEO sub-contracts with local community agencies to install the home weatherization measures.

In addition to weatherization, bill assistance funding is available for low-income customers to use in emergency situations to pay all or a portion of their natural gas bill. The emergency bill assistance program is available to those whose annual income is less than 150 percent of the federal poverty income guidelines as established annually by the U.S. Department of Health and Human Services. The Arizona Community Action Association (ACAA), the umbrella organization for the community action agencies throughout Arizona, administers Southwest's bill assistance funds.

In April 2007, the Commission issued Decision No. 69405 granting Southwest final approval to: (1) continue the LIEC program beyond June 30, 2007; (2) increase annual weatherization funding from \$350,000 to \$450,000; and (3) offer emergency bill assistance totaling \$50,000 annually. Decision No. 68487, which was issued in Southwest's general rate case in February 2006, initially approved the increased funding for the LIEC program and permitted a new bill assistance component. Recovery of the additional funding was approved in Southwest's 2006 DSM Adjuster Mechanism (Decision No. 68649) and 2007 DSM Adjuster mechanism (Decision No. 69375) filings and began being collected in May 2006. The bill assistance component was implemented during the 2006-2007 LIEC program year.

On October 30, 2008, Southwest sought approval to increase the bill assistance component of its LIEC program from \$50,000 to \$100,000. On December 22, 2008, the Commission issued Decision No. 70660 granting Southwest final approval to increase funding for the bill assistance component from \$50,000 to \$200,000. In addition, the Decision ordered the following: (1) a cap of \$15,000 for ACAA administrative expenses; (2) enhanced marketing of bill assistance to focus directly on delinquent customers before they are disconnected or reach a level of delinquency requiring a deposit; (3) the development and docketing of a marketing plan (within 60 days of the Decision) for providing earlier and more targeted information on bill assistance to customers who are having problems paying their natural gas bills; and (4) reporting of percentages of bill assistance going to deposits. The marketing plan was filed with the Commission on February 20, 2009.

As noted earlier, in June 2009, Southwest submitted its Proposal to Supplement and Modify the Arizona Demand Side Management Plan for Program Years 2009 and 2010. In the submittal, Southwest requested two modifications to the bill assistance portion of the LIEC program. First, Southwest proposed that ACAA be allowed to determine which agencies are best suited to disburse the funds and that prior approval to incorporate or eliminate an agency not be required from the Commission. Southwest proposed to provide written notification to the Director of the Utilities Division within 30 days of any community agency changes. Second, Southwest proposed that ACAA be allowed to distribute the funding based on a formula taking into account population density, poverty levels and Southwest's customer density in each area. The Commission has yet to make a decision on Southwest's proposal.

## **Program Activity**

During the 2008/2009 program year (July 1, 2008 through June 30, 2009), 197 households were served under the weatherization program, with expenditures totaling \$465,246. These funds were spent in four major categories: (1) duct repair; (2) infiltration control; (3) attic insulation; and (4) replacement of natural gas furnaces, which were not operational or posed a health hazard. Estimated annual energy savings for households weatherized during the program year are presented in Appendix B.

The AEO subcontracted with nine agencies to complete the weatherization services. These included: Community Action Human Resource Agency (CAHRA), which covers Pinal County; Gila County; Maricopa County, excluding the City of Phoenix and the City of Mesa; A New Leaf, which covers the City of Mesa; Pima County; City of Phoenix; Southeastern Arizona Human Resource Council (SEACAP), which covers Graham, Greenlee, Cochise, and Santa Cruz Counties; Tucson Urban League (TUL), which covers the cities of Tucson and South Tucson; and Western Arizona Council of Governments (WACOG), which covers Yuma, La Paz, and Mohave counties.

Adhering to Decision Nos. 68487 and 69405, in which any unspent bill assistance funds are required to be allocated to the general LIEC program for weatherization, Southwest increased the LIEC weatherization budget by \$30,000 and decreased the bill assistance component by \$30,000 for the program year.

ACAA continued to partner with community-based agencies to distribute bill assistance funds during the program year. The nine agencies are the same as those utilized by AEO and are situated throughout Southwest's service territory. The agencies provide easy access to families in need. Many of these agencies subcontract with multiple community agencies in their service area to assist the greatest number of clients. The agencies are adept at managing a variety of assistance programs and most offer an array of services, including food, shelter, rent and mortgage assistance, clothing, job training, healthcare and other vital programs for those in need.

The bill assistance program assists households that have experienced a sudden loss of income, utility disconnection, unexpected expenses resulting in an inability to pay, or health risks associated with the non-use of gas appliances. To qualify for the program, the household must be income-qualified, have not received Southwest bill assistance during the previous 12 months, and be facing a hardship, as described above. Bill assistance funds are available year-round and a maximum funding amount of \$400 may be provided to a household annually.

Each agency was allocated \$5,000 for bill assistance fund distribution during the first half of the 2008/2009 program year. After Decision No. 70660 was issued, Southwest worked with ACAA to increase existing contracts to accommodate the increase from \$5,000 per agency to \$20,555, and in March 2009, Southwest disbursed the additional \$150,000. Southwest and the ACAA closely monitored the funds to ensure they were accounted for and spent appropriately. In May 2009, ACAA recognized two agencies would not be able to spend portions of the additional funding and was able to make additional contract changes to return \$30,000 to Southwest. A total of 739 households were assisted during the 2008/2009 program year with an average assistance per household of \$186. Table 3 shows the number of households served by each agency.

Also in accordance with Decision No. 70660, Southwest enhanced its marketing of bill assistance to focus directly on delinquent customers, and information on bill assistance was made available to delinquent customers before they were disconnected or reached a level of delinquency requiring a deposit. The percentage of bill assistance funding going to deposits for program year 2008/2009 was 18 percent.

**TABLE 3**  
**Low-Income Energy Conservation Bill Assistance Program**  
**Households Served by Agency**  
**July 1, 2008 through June 30, 2009**

Agencies	Households Served
A New Leaf	30
CAHRA	74
City of Phoenix	131
Gila County	44
Maricopa County	176
Pima County	63
SEACAP	37
TUL	90
WACOG	94
<b>Total</b>	<b>739</b>

### **Program Promotion and Outreach**

Southwest combines the promotion and outreach activities for both the LIEC and its Low-Income Residential Assistance (LIRA) programs. The LIRA program provides discounted rates for natural gas service to income-qualified customers from November through April and year-round on the service establishment charge. Southwest provides bill inserts in English and Spanish, provides program information on its website, meets periodically with community action agencies, and attends a variety of community events. In addition, an annual supply of LIRA applications, which include LIEC program information, is sent to approximately 150 community agencies statewide. The bill insert was sent to Southwest's residential customers in January and May 2009. The LIRA application, which includes the updated income guidelines effective as of July 1<sup>st</sup>, is scheduled for insertion in August 2009 customer bills. Appendix B includes copies of the LIRA application and informational bill insert.

Southwest partnered with Tucson Electric Power and Tucson Urban League to create a weatherization brochure for distribution throughout Tucson and Pima County. The brochure is included in Appendix B.

### **Program Costs**

The annual program runs on a fiscal year from July through June, as do the other federally-funded programs. Table 4 shows the financial details for the 2008/2009 program year, as recorded from the AEO and ACAA's invoices. These program year costs typically do not match the costs reported in Southwest's general ledger system in the same quarter, due primarily to timing differences. Lag times exist from the time when weatherization work is completed, bill assistance is granted, invoices are received, and invoices are paid and recorded.

**TABLE 4**  
**Low-Income Energy Conservation Program**  
**July 1, 2008 through June 30, 2009**

Description	Annual Budget	Actual Program Costs	(Over)/Under
<b>Weatherization/Health/Safety Components of LIEC Program</b>			
<b>Implementation</b>			
Weatherization <sup>1</sup>	\$ 230,500	\$ 279,156	\$ (48,656)
Health & Safety <sup>2</sup>	\$ 93,000	\$ 40,414	\$ 52,586
Special Project	\$ 60,000	\$ 60,000	\$ -
Training and Monitoring Costs	\$ 20,000	\$ 20,000	\$ -
<b>Subtotal</b>	<b>\$ 403,500</b>	<b>\$ 399,569</b>	<b>\$ 3,931</b>
<b>Program Support</b>			
Administration-Arizona Energy Office	\$ 22,500	\$ 22,500	\$ -
Administration-Agencies	\$ 45,000	\$ 33,997	\$ 11,003
Information/Outreach - Southwest	\$ 9,000	\$ 9,180	\$ (180)
<b>Subtotal</b>	<b>\$ 76,500</b>	<b>\$ 65,677</b>	<b>\$ 10,823</b>
<b>Total</b>	<b>\$ 480,000</b>	<b>\$ 465,246</b>	<b>\$ 14,754</b>
<b>Emergency Bill Assistance Component of LIEC Program <sup>2</sup></b>			
<b>Implementation</b>			
Emergency Bill Assistance <sup>3</sup>	\$ 155,000	\$ 137,774	\$ 17,226
<b>Program Support</b>			
Administration-ACAA	\$ 15,000	\$ 15,000	\$ -
<b>Subtotal</b>	<b>\$ 170,000</b>	<b>\$ 152,774</b>	<b>\$ 17,226</b>
<b>Total</b>	<b>\$ 650,000</b>	<b>\$ 618,020</b>	<b>\$ 31,980</b>

<sup>1</sup> The annual weatherization budget reflects an additional \$30,000, which was reallocated in May 2009 from the bill assistance portion of the program per Decision Nos. 68487 and 69405.

<sup>2</sup> Agencies are permitted to spend up to 25 percent of their annual program budgets on health and safety, when applicable. When these funds are not need, agencies apply the remaining health and safety budget toward weatherization activities.

<sup>3</sup> In March 2009, Southwest advanced ACAA the increased funding of \$150,000 per Decision No. 70660 and in May 2009, reallocated \$30,000 back to SWG for the weatherization program. See footnote 1.

### **Special Projects for Weatherization**

In order to increase the use and effectiveness of program funds, Southwest has allocated a portion (up to \$60,000 annually) of the LIEC weatherization funds for cost-effective special projects. The LIEC Special Projects category is designed to make funds available for large, multi-family projects. All projects must follow established program guidelines. The higher-than-normal savings from these projects help offset the less energy-efficient health and safety measures included in the program and assist in keeping the LIEC program cost-effective overall.

Distribution of these funds is on a competitive basis, using the following criteria:

1. Cost-effectiveness of the projects;
2. Partnerships with additional entities; and
3. Agency production to-date.

A committee composed of housing professionals from the AEO and Southwest carefully review the submitted applications and determine which project or projects are funded each program year.

The special project for the 2008/2009 program year was awarded to CAHRA and is a partnership between Southwest, the AEO, CAHRA, and Pinal County Division of Housing. The project weatherized 25 rental units at the Eleven Mile Corner Complex Project, located in Casa Grande. The housing complex consists of 25 duplex style buildings, ranging from 625 square feet (1 bedroom) to 1100 square feet (4 bedroom), and was retrofitted by Pinal County Division of Housing from forced air natural gas/evaporative units to gas packs three years ago. CAHRA completed work in four areas: additional ceiling insulation to R-30, window shade screens, pressure relief to all bedrooms, and duct sealing.

In April 2009, Southwest sent a request for proposal to the weatherization agencies for the 2009/2010 program year. In July, Southwest and AEO selected the Villa del Rey Sustainability Project as the 2009/2010 special project. Villa del Rey is a 32-unit low-income rental project in the north Phoenix valley.

Southwest's 2008 special project received national recognition in early 2009. The Norton Circle weatherization project completed in conjunction with AEO, Maricopa County Human Services Department, Maricopa County Housing Authority, Foundation for Senior Living, APS and Southwest, received national recognition as the recipient of the State and Local Energy Report National Weatherization Awards in the category of multi-family housing weatherization projects. A copy of the award details is included in Appendix B.

### **Training and Education for Weatherization**

The AEO continued to enhance the training provided to both field and administrative personnel of the agencies conducting the statewide program. Southwest believes well-trained and experienced personnel are essential to a successful program.

#### ***Southwest Building Science Training Center***

The Southwest Building Science Training Center (Center), operated by the Foundation for Senior Living Home Improvement (FSL) and funded through the AEO and local utilities, provides Arizona low-income weatherization technicians and residential building trades with the knowledge and skills needed to successfully perform diagnostics and repairs on Arizona's housing stock. Southwest supports this training center and allocates its entire training budget (\$20,000) towards it. FSL has hired two full-time positions; a training coordinator to develop, coordinate and implement a comprehensive training program at the training center, and an administrative assistant to provide support to the coordinator.

The Center, in partnership with the Building Performance Institute, Inc. (BPI), provides nationally recognized building science certifications to Arizona's weatherization agencies. Representatives from each agency are participating in the certification process. All of the agencies have BPI certified technicians on staff.

### ***Peer-to-Peer Training***

The LIEC program continued to coordinate with Arizona's WAP Peer-to-Peer training courses. These courses utilize the agencies that have the experience and skills needed to successfully implement the weatherization program. This knowledge is shared with other agencies throughout the state. The training consists of one day of classroom training and two or three days of field training. The crews work and learn with other crew members. The Peer-to-Peer technical training includes the following topics:

*Pressure Diagnostic:* This section of the course provides classroom and field training on testing and repair of homes with air leakage and/or room pressure problems. The training includes the use of blower doors, manometers, smoke generators, and duct air-tightness testing.

*Health and Safety:* This portion of the course provides classroom and field training on the testing and repair of possible safety problems.

*Applied Building Science:* This section of the course covers current building science theory and practical experience focused on building design, construction techniques, materials, and HVAC equipment. There is also a follow-up investigation to determine what effects these measures have on building occupants.

### ***REM/Design Training***

Training was also provided to the agencies on the use of the REM/Design software. This training instructs the attendees on the use of software for estimating annual heating, cooling, and water heating use, the potential savings from retrofit measures, and the cost-effectiveness of retrofit measures.

### ***Peer-to-Peer Fiscal and Technical Procedures***

The Arizona WAP has formed peer-to-peer working groups that allow the fiscal and technical staff from the agencies and the AEO to meet and discuss issues that arise in the program. Agencies are able to share solutions to common problems and other information.

### ***Improvements to the Statewide Weatherization Assistance Program***

The AEO implemented the procedures listed below to ensure that the statewide weatherization program is providing Southwest and other funding sources with a cost-effective program, while also maintaining or improving health and safety.

### ***Agency Personnel Performance Reviews***

A review and monitoring process to evaluate the competency of agency personnel performing the various requirements of the weatherization program was developed for the statewide weatherization assistance program. Based on this process, additional one-on-one training and technical assistance is provided on an as-needed basis.

## ***Inspections***

The Arizona WAP has implemented a monitoring program that focuses on determining areas that need improvement and utilizes the monitoring process to implement needed changes. The areas covered include auditing, diagnostics, testing and measures completed. This process begins with the review of the technical reports for 100 percent of the auditing, diagnostics, testing and work completed each month. These reports can highlight instances where opportunities were missed or program requirements were not followed. When there are concerns with some element of the report, a site visit is conducted to address the concerns. At the job site, the diagnostic, testing and work are reviewed to determine if any improvements can be made. Based on the site visit results, follow-up training and technical assistance is provided to the local agency. For agencies where the technical reports do not show concerns, the site visit consists of monitoring a number of randomly selected homes and reviewing the diagnostics, testing and work completed. These efforts, combined with the training and competence programs, have a goal of ensuring that the program is providing the clients with a high return on Southwest's investment, while maintaining or improving the customers' health and safety.

## **Utility Bill Analysis**

The AEO conducted an analysis of 161 homes weatherized from July 2005 through May 2009, utilizing APS, TEP, Unisource Gas and Electric and Southwest utility data.

Savings-to-Investment Ratios (SIR) for total investment from all funding spent (diagnostics, energy measures and health and safety measures) and for energy-related measures only (diagnostics and energy measures) are provided below.

## ***Assumptions***

The present value of the energy-efficiency investment was based on a 17.5 year measure life (average 15 year life of equipment and 20 year life of envelope measures), a discount rate of three (3.0) percent and a utility cost escalation rate of three (3.0) percent. On evaporative cooling conversions to air conditioning only, the present value included water savings of \$100 per year.

## ***Results Summary***

The combined SIR of all jobs reviewed for funds spent on diagnostics, energy measures, and health and safety measures was 1.06. Health and Safety represented 15 percent of expenditures.

The combined SIR of all jobs reviewed for funds spent on energy measures and diagnostics was 1.24.

The average savings per home reviewed was:

- 2,482 kWh
- 35 therms (in homes with natural gas).

**CONSUMER PRODUCTS  
PROGRAM**

## CONSUMER PRODUCTS PROGRAM

On September 27, 2007, in Decision No. 69916, the Commission approved the Consumer Products program as a one-year pilot program. The goal of this program is to increase the awareness and purchase of more efficient natural gas equipment, with the first approved measure being residential water heaters. Southwest offers a rebate of \$75 to consumers for the purchase of high-efficiency water heaters with an Energy Factor (EF) of 0.62 or higher.

Decision No. 69916 ordered Southwest to review other potential natural gas consumer product measures for inclusion in the DSM Consumer Products Program and file for approval to continue the program by January 1, 2009. On December 30, 2008, Southwest filed an Application to Continue and Modify the Demand Side Management Consumer Products Program (Docket No. G-01551A-08-0619). In the application, Southwest requested the continuation of the existing high efficiency water heater rebate and proposed two additional efficiency measures, programmable thermostats and "smart" showerheads, with a reduced annual program budget of \$529,300. All three measures were approved by the Commission on September 22, 2009.

As noted earlier, in June 2009, Southwest submitted its Proposal to Supplement and Modify the Arizona Demand Side Management Plan for Program Years 2009 and 2010. In the submittal, Southwest proposed to include two additional new measures for energy efficient natural gas appliances: tankless water heaters and a high-efficiency clothes washer and dryer combination. The measures now proposed for inclusion in the revised Consumer Products program include the following: high-efficiency water heating appliances (tankless and storage), ENERGY STAR® qualified clothes washers and high-efficiency natural gas clothes dryers (purchased together), ENERGY STAR® programmable thermostats, and Roadrunner Evolve thermo-actuated low-flow showerheads (smart showerheads).

### Program Activity and Participation

There has been a large increase in program participation during the first six months of 2009. Southwest believes the increase is due to increased outreach performed in both southern and central Arizona, and better communication with plumbers and big box retailers. Southwest will continue these local efforts to work with water heater retailers to ensure they stock the high efficiency models.

Program participation is detailed below in Table 5.

<b>Rebate Status</b>	<b>Customer Count</b>	<b>Rebates</b>
Pending	137	\$ 10,275
Installed	884	\$ 66,300
<b>Totals</b>	<b>1021</b>	<b>\$ 76,575</b>

Installed measures are detailed below in Table 6.

<b>Year</b>	<b>Month</b>	<b>Quantity</b>	<b>Equipment Description</b>	<b>Rebates</b>	<b>Annual Therm Savings</b>
2009	Jan	68	Water Heater	\$ 5,100	1,904.0
2009	Feb	65	Water Heater	\$ 4,875	1,820.0
2009	Mar	146	Water Heater	\$ 10,950	4,088.0
2009	Apr	169	Water Heater	\$ 12,675	4,732.0
2009	May	163	Water Heater	\$ 12,225	4,564.0
2009	Jun	273	Water Heater	\$ 20,475	7,644.0
<b>Totals</b>		<b>884</b>		<b>\$ 66,300</b>	<b>24,752.0</b>

### **Program Promotion and Outreach**

During the first half of 2009, Southwest personnel visited more than 59 retail stores throughout Southwest's service area, distributed applications and signs and spoke with 69 managers. Southwest discussed the program guidelines and provided training to various levels of staff, including plumbers, retail management and sales personnel. The intent of the visits was to increase awareness of the program guidelines with those that have direct contact with Southwest's customers. A copy of the signs is included in Appendix C.

Southwest inquired with big box retailers about point-of-sale coupons and stocking the qualifying water heater models associated with the coupon to increase participation. Though Southwest has seen improvements in participation at the big box retailers, the mechanics of implementing a point of sale coupon for the water heater rebate do not allow Southwest to collect the necessary information to validate and verify customer data. Southwest will continue to work with the big box retailers to ensure qualifying water heaters are stocked locally.

The program is promoted via Southwest's website, [www.swgas.com](http://www.swgas.com), under the energy-efficiency programs section. A copy of the web page is included in Appendix C.

The rebate application can also be seen in Appendix C. In alignment with the Commission's Decision, Southwest continues to assess the level of free ridership. Table 7 below shows the responses to this question indicating 56 percent answered they would purchase a high-efficiency water heater.

**TABLE 7**  
**Consumer Products Program**  
**Follow-Up Survey Results**  
**January 1, 2009 through June 30, 2009**

Question	Yes	No	No answer
Would you have purchased and installed this high-efficiency water heater if Southwest Gas didn't offer a rebate?	498	228	158

**Program Costs**

The approved annual budget and actual program costs from January 1, 2009 through June 30, 2009 are shown below in Table 8.

**TABLE 8**  
**Consumer Products Program**  
**Program Costs**

Description	Annual Budget	Actual Program Costs	(Over)/ Under
Implementation	\$ 25,000	\$ 9,349	\$ 15,651
Communication	\$ 263,000	\$ 1,000	\$ 262,000
Incentives/Rebates	\$ 482,000	\$ 50,000	\$ 432,000
Administration	\$ 5,000	\$ 3,438	\$ 1,563
<b>Total</b>	<b>\$ 775,000</b>	<b>\$ 63,787</b>	<b>\$ 711,213</b>

**COMMERCIAL  
EQUIPMENT PROGRAM**

## COMMERCIAL EQUIPMENT PROGRAM

The Commercial Equipment Program was approved by the Commission on August 28, 2007, in Decision No. 69880. This program encourages the replacement of inefficient natural gas water heaters, griddles, and steamers with high-efficiency models for Southwest's commercial food service customers, which include restaurants, schools, and hospitals. Because commercial appliances consume a large amount of energy, the opportunities for energy savings are high. Southwest offers rebates on commercial water heaters, griddles, and steamers.

### Program Activity and Participation

Southwest has continued to encounter some difficulty in getting customers to show an interest in purchasing new energy-efficient equipment due to the current slow economic conditions. There were four program participants during the first half of 2009. Two additional rebates are currently pending approval and payment.

Program participation is detailed below in Table 9.

<b>Measures</b>	<b>Quantity</b>	<b>Rebates</b>	<b>Annual Therm Savings</b>
Water Heaters	4	\$ 6,800	112.0
Griddles	0	\$ -	-
Steamers	0	\$ -	-
<b>Totals</b>	<b>4</b>	<b>\$ 6,800</b>	<b>112.0</b>

The largest impediment to progression in the Commercial Equipment Program is the current difficulties in the economy. Money is extremely tight for those in the restaurant industry, not only in revenues but in credit lines as well. Comments from some of the dealer contacts indicate that they expect this to continue at least throughout the balance of 2009 and extending into 2010. While there are some signs of economic recovery, they have not been consistent or strong enough to as yet, turn the tide.

Based on customer feedback, Southwest has evaluated the need for combination oven and fryer rebates. On June 9, 2009, Southwest submitted its Proposal to Supplement and Modify the Arizona Demand Side Management Plan for Program Years 2009 and 2010. In the submittal, Southwest requested the inclusion of these two new program measures to the Commercial Equipment program. Additionally the proposed budget for 2010 was increased to \$1,111,000 to reflect the inclusion of the two new measures.

## Program Promotion and Outreach

Southwest representatives visited numerous retail stores and distributed brochures and signs promoting the program. During the first half of the year, Southwest also had the opportunity to meet with approximately 155 managers/employees of vendors. Southwest has also spoken with various manufacturers of high-efficiency commercial equipment.

Southwest has made several presentations to potential end-users, including assisted living facilities managers, restaurant owners/managers, and chain restaurant management. Additional presentations were given at the City of Litchfield Park energy conservation seminar and to the Arizona Culinary Federation's general membership meeting, which was hosted by Southwest. Please see Appendix D for a copy of the Commercial Equipment program brochure, program application and Southwest's web page.

The Company has also partnered with a local restaurant expo magazine called the Restaurateur of Arizona. Please see Appendix D for a copy of the internet expo web page.

## Program Cost

The annual approved budget and actual program costs from January 1, 2009 through June 30, 2009 are shown below in Table 10.

<b>Description</b>	<b>Annual Budget</b>	<b>Actual Program</b>	<b>(Over)/Under</b>
Implementation	\$ 50,000	\$ 5,088	\$ 44,913
Communication	\$ 30,500	\$ 2,580	\$ 27,920
Outreach	\$ 30,000	\$ -	\$ 30,000
Training/Education	\$ 110,000	\$ -	\$ 110,000
Incentives/Rebates <sup>1</sup>	\$ 597,000	\$ -	\$ 597,000
Administration	\$ 12,000	\$ 1,488	\$ 10,512
<b>Total</b>	<b>\$ 829,500</b>	<b>\$ 9,156</b>	<b>\$ 820,344</b>

<sup>1</sup> Southwest advanced Electric and Gas Industries Association (EGIA) \$25,000 in January 2008, for disbursement of rebate payments to customers. Future payments will be issued once the initial funds are utilized.

**PRE-RINSE SPRAY  
VALVE PROGRAM**

## PRE-RINSE SPRAY VALVE PROGRAM

On June 28, 2007, in Decision No. 69666, the Commission approved the Pre-rinse Spray Valve component of the Commercial Equipment Program. Pre-rinse spray valves (valves) are used in commercial food service establishments to rinse dishes prior to placing them in a dishwasher. The Arizona Department of Water Resources (ADWR) offers a RinseSmart program in conjunction with the U.S. Bureau of Reclamation to provide high-efficiency spray valves free of charge to participants. Southwest has partnered with ADWR to fund the installation of approximately 5,000 additional spray valves per year for food-service customers, such as restaurants, schools, and hospitals.

### Program Activity and Participation

ADWR installed 35 valves under Southwest's program from January through June 30, 2009. The energy savings for these installations are shown in Table 11 below.

Facility Type	Installed	Annual Savings		
		Water (gallons)	Gas (therms)	Electric (kWh)
School	2	60,984	670	10,968
Other	8	243,936	2,680	43,872
Restaurant	25	762,300	8,375	137,100
<b>Spray Valve</b>	<b>35</b>	<b>1,067,220.0</b>	<b>11,725.0</b>	<b>191,940.0</b>

Savings are based on replacing a 3.0 gallons per minute (gpm) pre-rinse spray valve with a 1.6 gpm spray valve used a total of one hour per day, 363 days of the year.

Due to the severe budget cuts recently experienced in the state of Arizona, ADWR was unable to continue to pay for the services of their sub-contractor who was installing the valves. As such, ADWR has only continued to install valves on a very limited basis.

After review, Southwest believed it was appropriate to discontinue the pre-rinse spray valve program at this time and reallocate the budget for the valves to the remaining and proposed measures in the Commercial Equipment program. In its June 2009 Proposal to Supplement and Modify the Arizona Demand Side Management Plan for Program Years 2009 and 2010, Southwest requested the inclusion of two new program measures to the Commercial Equipment program as specified in the section above.

## Program Promotion and Outreach

The Commercial Equipment program brochure, which was previously direct-mailed to approximately 8,500 commercial customers in Arizona, contains information about the free pre-rinse spray valves. The program is also promoted via Southwest's website, [www.swgas.com](http://www.swgas.com), under the energy-efficiency programs section. Samples can be found under the Commercial Equipment Program section in Appendix D, along with the program application.

## Program Cost

The approved annual budget and actual program costs from January 1, 2009 through June 30, 2009 are shown below in Table 12.

<b>Description</b>	<b>Annual Budget</b>	<b>Actual Program</b>	<b>(Over)/Under</b>
Implementation <sup>1</sup>	\$ 142,000	\$ -	\$ 142,000
Communication	\$ 25,000	\$ -	\$ 25,000
Administration	\$ 3,500	\$ -	\$ 3,500
<b>Total</b>	<b>\$ 170,500</b>	<b>\$ -</b>	<b>\$ 170,500</b>

<sup>1</sup> Funds were advanced to ADWR in December 2007 to provide installations for 2008. Future payments will be issued once the initial funds are utilized.

ADWR has currently spent \$37,713 of the \$125,000 advance from December 2007. During 2008, ADWR purchased 1,552 valves. There has not been a need to purchase additional valves at this time.

**TECHNOLOGY  
INFORMATION CENTER  
PROGRAM**

## TECHNOLOGY INFORMATION CENTER PROGRAM

The Commission approved Southwest's Technology Information Center (TIC) Program as a pilot program on June 28, 2007, in Decision No. 69667. This program is designed primarily for Southwest's large commercial, industrial and transportation-eligible customers, a widely-varying group of large-use customers. Participants receive a monthly electronic newsletter, *Energy Line*, containing technical information on energy-saving equipment and processes that will enable them to make informed energy and environmental decisions. Features include the "Ask an Expert" hotline, an electronic research library, and a carbon footprint calculator, among others. Using this tool, Southwest's Key Account Management (KAM) engineers track customer interest in various topics and potentially use it as way to tailor future DSM programs.

On August 1, 2008, Southwest filed with the Commission for continuation of the program. The Commission issued Decision No. 70526, on September 30, 2008, ordering Southwest to: continue the TIC program for an additional year, with modifications, and file for program renewal by October 1, 2009; continue to focus the content of the newsletter on energy-saving equipment and processes for large end-users; continue to promote Southwest's DSM programs designed for commercial and industrial customers, also providing contact information for potential DSM program participation; work to improve the level of response to future surveys, including follow-up with non-responding recipients; and promote free energy consultations, including contact information on an ongoing basis in the *Energy Line*. The Decision also ordered Southwest to keep the annual surveys in place, with a focus on questions concerning the actual energy savings experienced by newsletter recipients (see the section entitled "Survey"), along with performing bill comparisons to establish whether the customers receiving the newsletter have been able to decrease usage. Additionally, the status of the TIC program was required to be reported in Southwest's semi-annual DSM reports, including: (1) an attestation from a Company officer that costs charged to the TIC program are not being recovered in base rates; (2) the number of e-mail recipients; (3) the number of website hits; and (4) a copy of the most recent survey.

### Program Activity and Participation

Southwest currently has 190 large commercial, industrial and transportation-eligible customers in Arizona who receive the newsletter via e-mail. During the first half of 2009, the website recorded approximately 819 hits. Recently, the Company has discovered that additional commercial customers are receiving the newsletter via forwarding and their use of the web-site would therefore not be recorded. Southwest is focusing its efforts to enroll all of its customers on the tracking list so that it will more accurately reflect the number of customers receiving the newsletter. Southwest hopes that with the addition of these previously unrecorded customers will achieve the 2009 participation goal of 300 customers. Please see Appendix E for a sample of the *Energy Line* newsletter.

In accordance with Decision No. 70526, Southwest has a link attached to every newsletter to promote free energy consultations with Southwest's KAM engineers. Although the Company has not received any requests for information directly through the newsletter link, it has had more than 12 inquiries about energy efficiency from customers, many of whom receive the newsletter.

In its June 2009 Proposal to Supplement and Modify the Arizona Demand Side Management Plan for Program Years 2009 and 2010, Southwest requested the proposed budget for 2010 to be decreased to \$15,000 to more accurately reflect the expected annual ongoing cost of the program.

### Program Cost

The approved annual budget and actual program costs from January 1, 2009 through June 30, 2009 are shown below in Table 13.

<b>Description</b>	<b>Annual Budget</b>	<b>Program Costs</b>	<b>(Over)/Under</b>
Implementation	\$ 33,000	\$ 28,438	\$ 4,563
Administration	\$ 2,000	\$ 180	\$ 1,820
<b>Total</b>	<b>\$ 35,000</b>	<b>\$ 28,617</b>	<b>\$ 6,383</b>

### Survey Summary

In February and March of 2009, surveys were e-mailed to a total of 140 Arizona recipients, with a total of 23 completed surveys returned within two weeks. One hundred percent (100%) of respondents find the *Energy Line* "somewhat valuable" or "very valuable," and one hundred percent (100%) find the information "somewhat helpful" or "very helpful" in making energy decisions, with eighty percent (80%) passing the information on to others involved in making energy decisions. Energy pricing forecasts and green energy/alternative energy received the highest interest ranking, with energy management and energy-saving technologies a close second. Approximately fifty-two percent (52.2%) have taken steps to improve energy-efficiency as a result of information provided in *Energy Line*. The greatest interest in energy-efficiency programs was for equipment replacement (21.5%) followed by peak shaving (16.9%) and combined heat and power (16.9%). Seventy-eight percent (78.3%) indicated interest in an energy consultation from Southwest, with eighty-three percent (83.3%) wanting it within six months or less.

This survey was actually sent to recipients twice in hopes of increasing the number of respondents. Southwest will continue to work with Questline, the administrators of the *Energy Line* newsletter, to try other means to improve customer responsiveness.

**DISTRIBUTED  
GENERATION PROGRAM**

## **DISTRIBUTED GENERATION PROGRAM**

On September 27, 2007, Southwest's Distributed Generation (DG) Program was approved in Decision No. 69917. DG is defined as localized, on-site power generation, typically deployed through the use of modular technologies. The approved DG program encourages the installation of high-efficiency Combined Heat and Power (CHP) technologies. CHP describes any system that simultaneously or sequentially generates electric or mechanical energy and utilizes the thermal energy that is normally wasted. Most CHP systems are configured to generate electricity or mechanical power, recapture the waste heat, and use that heat for space heating, water heating, industrial steam loads, air conditioning, humidity control, water cooling, product drying, or any other thermal need. Alternately, CHP may use excess heat from industrial processes and convert it into electricity. This program is intended for commercial and industrial customers utilizing Southwest's general service or transportation tariffs, depending upon the potential application.

### **Program Promotion and Outreach**

On June 15, 2009, Southwest met with the Intermountain Combined Heat and Power Center (ICHPC). Discussions were held regarding how ICHPC may help with program promotion, such as e-mail blasts and a link on their website to Southwest's website. The possibility of working together later this year to host another CHP seminar similar to the one held in April 2008 was also discussed.

Southwest attended the Energy Solutions Center (ESC) conference held in June 2009, which was attended by other gas utilities with similar DSM programs to the Southwest DG program. One of the presenters at the conference representing the Department of Energy (DOE) discussed some of the industrial energy efficiency success stories and the DOE involvement in helping these customers pay for and finance those improvements.

Southwest's KAM engineers have had discussions with several customers about the feasibility of adding a CHP process to their facility. Many of these customers have a strong interest in the program until they research the cost. To-date, one customer has requested an application to participate in the DG program, but has not yet submitted it to Southwest.

Southwest's KAM engineers continue to actively work with potential CHP candidates to encourage applications, and ultimately, installations. Southwest submitted its June 2009 Proposal to Supplement and Modify the Arizona Demand Side Management Plan for Program Years 2009 and 2010, Southwest requested the proposed DG budget for 2010 be increased to \$700,000 to increase the incentive available for customers and to, hopefully, overcome the initial high cost of installation.

Additionally, Southwest is in negotiation with the Arizona Department of Commerce Energy Office to have the State of Arizona administer an \$825,000 combined heat and power (CHP) grant program through the American Recovery and Reinvestment Act (ARRA) and the Department of Energy (DOE). Applicants that qualify under the Commission approved DG program would therefore be able to qualify for both incentive programs. Please see Appendix F for copies of the program application, program brochure *Energy Line* newsletter article, program agreement form and Southwest's web page.

## Program Cost

The annual approved budget and actual program costs from January 1, 2009 through June 30, 2009 are shown below in Table 14.

<b>Table 14</b>			
<b>Distributed Generation Program</b>			
<b>Program Costs</b>			
<b>Description</b>	<b>Annual Budget</b>	<b>Actual Program Costs</b>	<b>(Over)/Under</b>
Implementation	\$ 22,000	\$ -	\$ 22,000
Communication	\$ 8,000	\$ -	\$ 8,000
Training & Education	\$ 10,000	\$ -	\$ 10,000
Measurement &	\$ 8,000	\$ -	\$ 8,000
Administration	\$ 2,000	\$ 150	\$ 1,850
Incentives/Rebates	\$ 350,000	\$ -	\$ 350,000
<b>Total</b>	<b>\$ 400,000</b>	<b>\$ 150</b>	<b>\$ 399,850</b>

**DEMAND SIDE  
MANAGEMENT  
ADJUSTER MECHANISM**

## DEMAND SIDE MANAGEMENT ADJUSTER MECHANISM

Southwest, in accordance with the Settlement Agreement approved by the Commission in Docket No. U-1551-96-596 (Decision No. 60352), submits its Report on the DSM Adjuster Mechanism (DSMAM) below.

The DSMAM is designed to allow Southwest's on-going recovery of its DSM program costs. A total of \$1,483,240, including interest was collected through the DSMAM adjuster during the first half of 2009. Table 15 presents the recorded costs, recoveries, and interest collected by quarter and the year-end balance. Actual costs incurred (shown in previous cost tables by program) may vary from the costs recorded below for two reasons: (1) advances to program administrators; and (2) timing differences. Timing differences exist from the time work is completed, invoices are received, and invoices are paid or recorded.

Description	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Total
Commercial Spray Valves					\$ -
Commercial Equipment	\$ 3,988	\$ 5,168			\$ 9,156
Consumer Products Water Heaters	\$ 24,808	\$ 38,978			\$ 63,786
Distributed Generation		\$ 150			\$ 150
Energy Advantage Plus	\$ 69,827	\$ 60,617			\$ 130,444
Low-Income Energy Conservation	\$ 42,312	\$ (21,334)			\$ 20,978
Low-Income Energy Conservation Bill Assistance	\$ 150,000	\$ 26			\$ 150,026
Technology Information Center	\$ 28,438	\$ 180			\$ 28,618
<b>Total - Costs Booked 2009</b>	<b>\$ 319,373</b>	<b>\$ 83,785</b>			<b>\$ 403,158</b>
<b>Total - Recoveries &amp; Interest 2009</b>	<b>\$ (987,146)</b>	<b>\$ (496,094)</b>			<b>\$ (1,483,240)</b>
<b>Balance Carried Over from 2008</b>					<b>\$ (910,878)</b>
<b>Balance DSM Deferral Account as of June 30, 2009</b>					<b>\$ (1,990,960)</b>

On March 20, 2008, the Commission approved Staff's adjusted DSMAM rate of \$0.00423 in Decision No. 70198. The new rate became effective on April 1, 2008. On January 30, 2009, Southwest submitted a tariff filing (Docket No. G-01551A-09-0039), requesting a revised DSM adjuster rate of \$0.00390 per therm effective April 1, 2009. On March 12, 2009, Commission Staff issued a Memorandum and Recommended Opinion and Order recommending a credit DSM adjuster rate of <\$0.00099> per therm. In Decision No. 70959, issued on April 7, 2009, the Commission expressed reservations about reducing the DSM adjuster and concluded that it would be in the public interest to continue to charge Southwest's current DSM adjuster rate of \$0.00423 per therm until further order. In response to the Commissioners' requests in their deliberations for this Decision, Southwest submitted its proposal for supplementing and modifying its existing DSM Plan for program years 2009-2010 on June 9, 2009.

# **APPENDIX A**

## **ENERGY STAR® HOME**

## **APPENDIX A - ENERGY STAR® HOME**

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## Estimated Annual Energy Savings

<b>Annual Energy Savings</b>	
<b>January 1, 2008 - June 30, 2009</b>	
<b>Builder No.</b>	<b>MMBtu saved per home</b>
<b>1</b>	<b>10.5</b>
<b>2</b>	<b>17.8</b>
<b>3</b>	<b>19.9</b>
<b>4</b>	<b>35.0</b>
<b>5</b>	<b>28.8</b>
<b>6</b>	<b>16.2</b>
<b>7</b>	<b>34.3</b>
<b>8</b>	<b>17.5</b>
<b>9</b>	<b>18.5</b>
<b>10</b>	<b>20.3</b>
<b>11</b>	<b>20.3</b>
<b>Average MMBtu Saved</b>	<b>21.7</b>
<b>Total Homes Approved</b>	<b>754</b>
<b>Total energy savings</b>	<b>16,389 MMBtu</b>
<b>Electricity savings at 76% usage*</b>	<b>3,649,551 kWh</b>
<b>Natural gas savings at 24% usage*</b>	<b>39,334 therms</b>

\*Energy Information Administration, 2001

## **DSD Sustainability Workshops**



### **MAINSTREAM GREEN**

**Thursday February 26**

**7:30 am to 8:30 am**

**201 N Stone DSD Conference Room, 1st floor**

#### **Eric Shoberg – Residential Energy Modeling, HERS rating and LEED for Homes**

Senior Service Planner, Southwest Gas

Eric will present on REMRATE software developed by RESNET to model the energy efficiency of homes. RESNET is the Residential Energy Services Network. RESNET developed the Home Energy Rating System or HERS™ rating, the energy modeling software and training and certification of HERS Providers and Raters. Eric is a HERS Provider and oversees HERS raters. REMRATE is used to certify homes for the EPA Energy Star program and LEED for Homes. Eric will provide an overview of how REMRATE works and how REMRATE helps design more energy efficient homes.

DSD Sustainability Workshops are an occasional series of information sessions about sustainability in the built environment. The Workshops will generally occur on Thursdays at 7:30 am. They will be held at 201 N Stone in the Development Services first floor conference room.

Future Workshops are:

**Thursday March 5, 7:30 am to 8:30 am**

**Nader V. Chalfoun, Ph.D. LEED AP – Passive Solar Design**

Professor of Architecture

Director: The House Energy Doctor Program <http://capla.arizona.edu/research/hed/index.html>

Solar Heating Coordinator: Graduate Program on "Design and Energy Conservation"

Coordinator: Environmental Education Ph.D. Minor Faculty on Global Change Ph.D. Minor

Planned Workshops include:

Tucson's own EPS panel systems, a metal stud and Styrofoam factory fabricated wall panel system  
Passive rainwater harvesting using bioswales, rain gardens and native plants.



# OLD ENERGY STAR Homes

## The Natural Choice for You and the Environment

When you're in the market to buy a home, look for one that is ENERGY STAR certified. ENERGY STAR homes provide:

### Increased Value

The superior construction and energy-efficient windows and appliances found in ENERGY STAR homes help increase the value of your energy dollar by decreasing your home's energy usage.

### Environmental Benefits

Because ENERGY STAR homes are energy efficient, they help conserve natural resources and reduce greenhouse gas emissions – a wise investment for you and the environment.

Learn more at [www.energystar.gov](http://www.energystar.gov).



Certified **ENERGY STAR**® homes are your assurance of satisfaction. For locations and information, call Southwest Gas at **1-800-OK-GAS-OK** (1-800-654-2765).





## Energy Efficiency Programs

### Arizona Energy Efficiency Programs

HOME



## Arizona ENERGY STAR® Home Program *The Natural Choice...*

An ENERGY STAR home certified through the Southwest Gas program provides all the features and amenities you want in a new home, while at the same time conserving energy. These homes have tighter construction, improved insulation, tightly-sealed ducts and advanced design windows. In addition, they have high-efficiency heating, water heating and cooling.



### What is ENERGY STAR?

ENERGY STAR is a program of the U.S. Environmental Protection Agency and the U.S. Department of Energy. ENERGY STAR means that a new home is significantly more energy efficient than a standard home. To qualify for ENERGY STAR certification, a builder must meet stringent standards of construction and qualifying homes must be inspected and certified by an independent company.

[www.energystar.gov](http://www.energystar.gov)

### Tight Construction

Advanced techniques for sealing homes, cracks in the home's exterior shell and in the heating and cooling ducts help reduce drafts, moisture, dust, pollen, pests, and noise. Superior framing techniques eliminate the air infiltration that typically occurs in standard homes. Penetrations of wiring plumbing and ductwork are tightly sealed, too, so insulation can perform at its best.

### Tight Ductwork

Tightly sealed ducts are crucial for maintaining a home's comfort and energy efficiency. In typical American homes, ducts leak 20-30 percent of the air moving through them. This means conditioned air is being lost, and extra money is being spent to heat or cool your home. In ENERGY STAR homes, there is very little duct leakage.

### Energy Efficient Heating and Cooling Equipment

With the increased attention given to air and duct sealing, insulation and windows, the size of a home's heating and cooling system can be better matched to the home's needs. This means more efficient operation, and lower energy costs. With ENERGY STAR, you'll know your home has top-quality natural gas heating equipment paired with high-efficiency air conditioning. This combination is best for year-round high performance and maximum energy savings.

### Improved Insulation

For insulation to provide an effective air barrier, it must be installed carefully with no gaps, crimping, or compression, as these can allow unwanted heat exchange between the outside and inside. With properly installed insulation, air leakage is minimized and your conditioned air stays where it's supposed to be, inside your home.

### Advanced Design Windows

Windows typically represent 10-25 percent of a home's exterior wall area, and account for 25-50 percent of the heating and cooling needs. Advanced design windows help keep heat out during the summer, and in during the winter. They also block damaging ultraviolet sunlight that can discolor your carpets, paintings and furnishings.

### Independent Testing

While it's easy to claim that homes are energy efficient, ENERGY STAR home builders back up that claim with third-party inspections that verify they are in compliance with ENERGY STAR specification.

**For locations and information call Southwest Gas at 1-800-654-2765.**

## Why choose a home built under the ENERGY STAR home program?

Homes that earn the ENERGY STAR label through the Southwest Gas program are truly high performance homes. They give you a better product for your investment, while helping you lower your energy use, thus saving you money each month. Plus, you'll enjoy the comfort, efficiency and choices that natural gas appliances provide...an unbeatable combination!

## What is ENERGY STAR?

ENERGY STAR is a program of the U.S. Environmental Protection Agency and the U.S. Department of Energy. ENERGY STAR means that a new home is significantly more energy-efficient than a standard home. To qualify for ENERGY STAR certification, a builder must meet stringent standards of construction, and qualifying homes must be inspected and certified by an independent company.

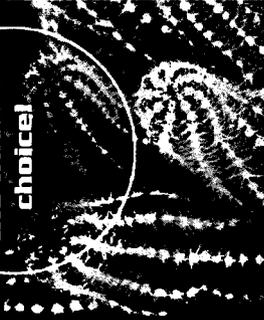
## What makes an ENERGY STAR home better?

Simply put—performance. ENERGY STAR homes provide all the features and amenities you want in a new home, while at the same time conserving energy. These homes have tighter construction, improved insulation, tightly-sealed ducts, and advanced design windows. In addition, they have high-efficiency heating, water heating and cooling, along with choices for other natural gas appliances. Combined with innovative design, these features add up to a high-performance home that will enhance your indoor comfort while saving you money.

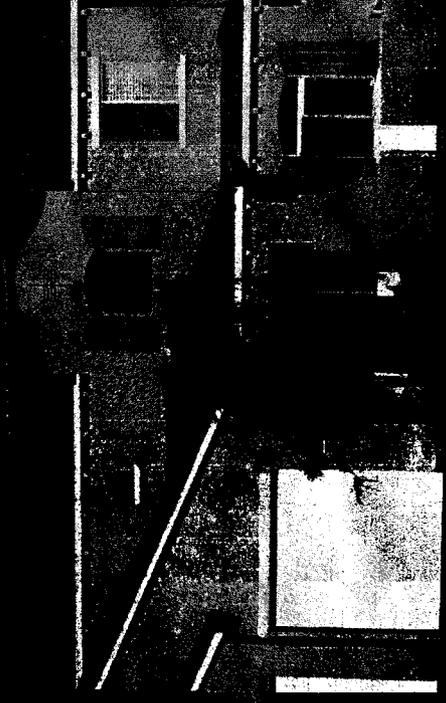
high  
performance

energy  
efficient

the natural  
choice!



The Natural Choice...  
**ENERGY STAR HOMES**



Look for a certified high-performance ENERGY STAR® home—your assurance of satisfaction.

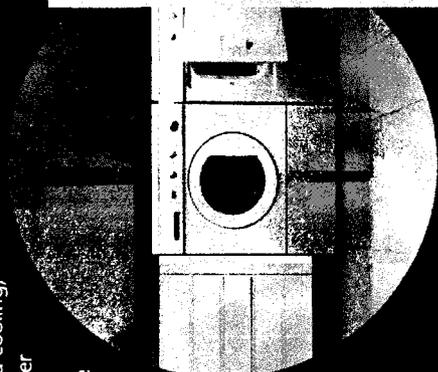
For locations and information call Southwest Gas at **1-800-654-2765**.



**SOUTHWEST GAS**



**SOUTHWEST GAS**



# ENERGY STAR home builders offer superior construction!

## Tight construction

Advanced techniques for sealing homes, cracks in the home's exterior shell and in the heating and cooling ducts help reduce drafts, moisture, dust, pollen, pests, and noise. Superior framing techniques eliminate the air infiltration that typically occurs in standard homes. Penetrations for wiring, plumbing, and ductwork are tightly sealed, too, so insulation can perform at its best.

## Energy-efficient heating and cooling equipment

With the increased attention given to air and duct sealing, insulation, and windows, the size of a home's heating and cooling system can be better matched to the home's needs. This means more efficient operation, and lower energy costs. With an ENERGY STAR home, you'll know your home has top-quality natural gas heating equipment paired with high-efficiency air conditioning. This combination is best for year-round high performance and maximum energy savings.



## Tight ductwork

Tightly sealed ducts are crucial for maintaining a home's comfort and energy efficiency. In typical American homes, ducts leak 20-30 percent of the air moving through them. This means conditioned air is being lost, and extra money is being spent to heat or cool your home. In ENERGY STAR homes, there is very little duct leakage.

## Independent testing

While it's easy to claim that homes are energy efficient, ENERGY STAR home builders back up that claim with third-party inspections that verify they are in compliance with ENERGY STAR specifications.

## Improved insulation

For insulation to provide an effective air barrier, it must be installed carefully with no gaps, crimping, or compression, as these can allow unwanted heat exchange between the outside and inside. With properly installed insulation, air leakage is minimized and your conditioned air stays where it's supposed to be, inside your home.

## Advanced design windows

Windows typically represent 10-25 percent of a home's exterior wall area, and account for 25-50 percent of the heating and cooling needs. Advanced design windows help keep heat out during the summer, and in during the winter. They also block damaging ultraviolet sunlight that can discolor your carpets, paintings, and furnishings.

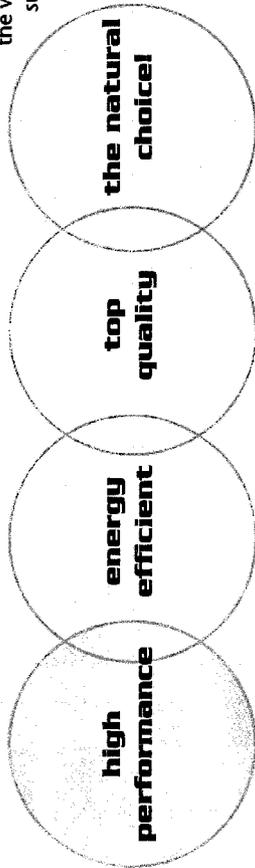


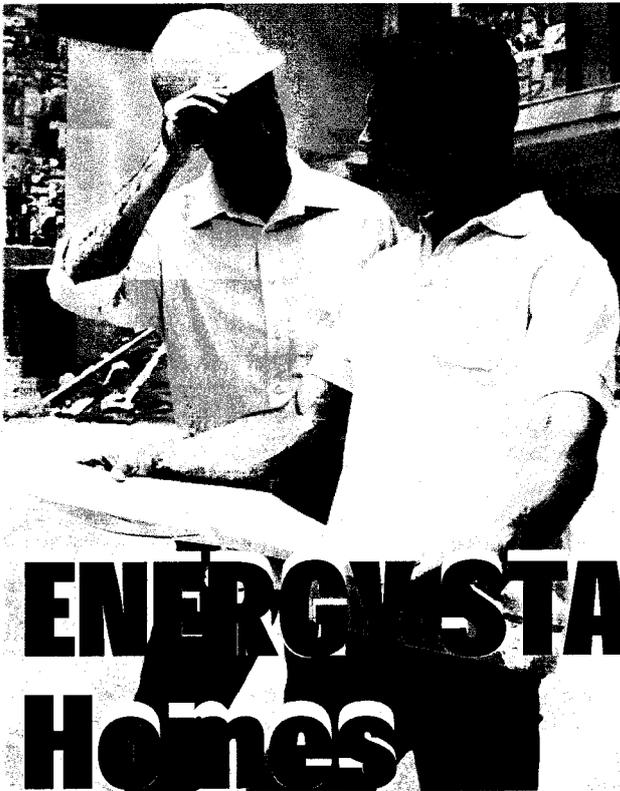
# The Natural Choice... ENERGY STAR HOMES

An ENERGY STAR home certified through the Southwest Gas program provides you with the most comfortable and efficient heating and water heating. And, with natural gas, you'll also have plenty of other choices that add up to a picture-perfect home. Natural gas is the natural choice for your other home energy needs...cooking, clothes drying, and more. These appliances use less energy and provide other advantages you're looking for.

An ENERGY STAR home offers you:

- lower utility bills
- increased comfort
- an assurance of quality
- greater buying power
- the best choice in energy-efficient appliances, indoors and out





# ENERGY STAR<sup>®</sup> Homes

## The Natural Choice for Builders, Homebuyers and the Environment

In today's market, homebuyers are looking for more than a great place to live. **ENERGY STAR<sup>®</sup>** homes provide:

### Increased Value

The superior construction and energy-efficient windows and appliances found in ENERGY STAR homes help increase the value of a homebuyer's energy dollar by decreasing their home's energy usage.

### Benefits That Matter

In an ENERGY STAR home, a homebuyer is not only getting a better product for their financial investment, but their home's energy efficiency also conserves natural resources and reduces greenhouse gas emissions – an even wiser investment for today and tomorrow.

### Builders of Choice

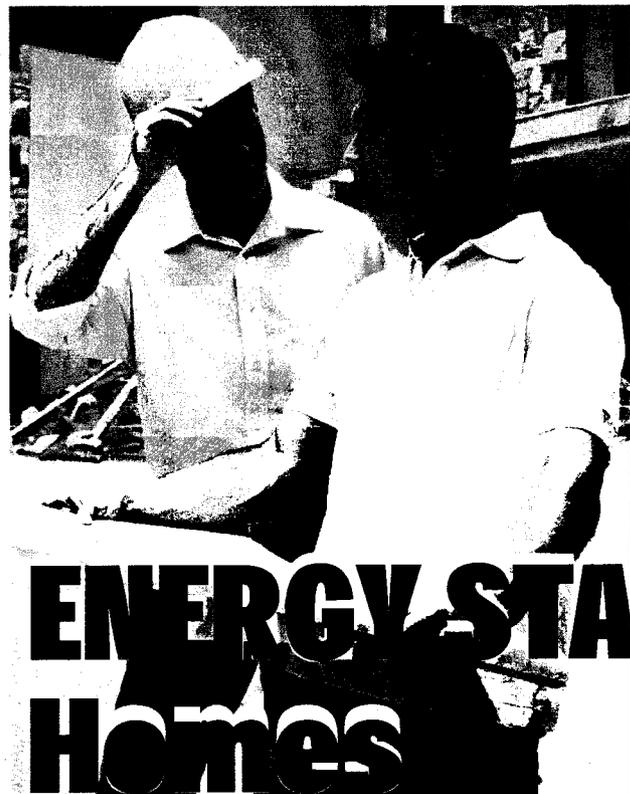
Added value, superior construction, and environmental benefits add up to increased visibility for ENERGY STAR builders.



ENERGY STAR is a program of the U.S. EPA and the Department of Energy. ENERGY STAR builders must meet stringent standards of construction, and qualifying homes must be inspected and certified by an independent company.

An ENERGY STAR home certified through the Southwest Gas program offers features that matter to today's savvy homebuyers: environmental benefits associated with lower energy usage, increased comfort, the best choice in energy-efficiency, lower utility bills, and an assurance of quality.

Learn more at  
[www.energystar.gov](http://www.energystar.gov).  
Or call Southwest Gas at  
**1-800-OK-GAS-OK**  
(1-800-654-2765).



# ENERGY STAR<sup>®</sup> Homes

## The Natural Choice for Builders, Homebuyers and the Environment

In today's market, homebuyers are looking for more than a great place to live. **ENERGY STAR<sup>®</sup>** homes provide:

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### Builders of Choice

Added value, superior construction, and environmental benefits add up to increased visibility for ENERGY STAR builders.



ENERGY STAR is a program of the U.S. EPA and the Department of Energy. ENERGY STAR builders must meet stringent standards of construction, and qualifying homes must be inspected and certified by an independent company.

An ENERGY STAR home certified through the Southwest Gas program offers features that matter to today's savvy homebuyers: environmental benefits associated with lower energy usage, reduced utility bills, increased comfort, the best choice in energy-efficiency, and an assurance of quality.

As an additional benefit, Southwest Gas offers builders assistance with the costs for ENERGY STAR qualification.



Learn more at  
[www.energystar.gov](http://www.energystar.gov).  
Or call Southwest Gas at  
**1-800-OK-GAS-OK**  
(1-800-654-2765).

# Arizona Energy Efficiency and Renewable Energy Community Outreach Conference

The purpose of this conference is to educate the general public on the societal benefits of reducing energy consumption and helping utility companies avoid the costs of building capital intensive, carbon-based power plants, and reducing harmful carbon emissions that contribute to global warming.

Residential customers will learn how to use utility incentive programs to pay for home energy audits; the benefits of buying energy efficient products such as CFL light bulbs and Energy Star electric/gas appliances and how to seal up leaking building energy envelopes by weatherizing doors and windows and adding insulation and radiant barriers to keep energy inside where it belongs and produce as many "negawatts" as possible. ([www.energystar.gov](http://www.energystar.gov))

Commercial customers will learn how to use utility incentive programs to pay for commercial building energy audits and the benefits of installing more efficient lighting systems, motors, heating and air conditioning systems and how to produce their own power with co-generation power plants.

## Today's List of Guest Speakers:

- **Daran Wastchak, D.R. Wastchak** – Mr. Wastchak will cover building energy evaluations to show consumers where energy leaks occur, what appliances waste the most electricity, and then detail the most cost-effective ways to seal building envelopes and install Energy Star appliances to reduce energy consumption. ([www.drwastchak.com](http://www.drwastchak.com))
- **Lucy Mason, Arizona House of Representatives** – Rep. Mason will cover important pending renewable energy legislation, which will enable the rapid deployment of energy efficiency and renewable energy programs that will foster economic development and badly need jobs. ([www.azleg.gov](http://www.azleg.gov))
- **Kris Mayes, Arizona Corporation Commission** – Chairman Mayes will cover \$200 million worth of utility incentive programs and federal funding that will be available in Arizona to build a thriving energy efficiency industry in Arizona. ([www.azcc.gov](http://www.azcc.gov))
- **Jeff Schlegel, Southwest Energy Efficiency Project** – Mr. Schlegel will cover the societal benefits of reducing energy consumption and helping utility companies avoid the costs of building capital intensive, carbon-based power plants, and reducing harmful carbon emissions that contribute to global warming. ([www.swenergy.org](http://www.swenergy.org))
- **Linda Douglas, TEP/UniSource Electric/Gas**– Ms. Douglas will cover TEP's and UniSource Electric/Gas' leading edge energy efficiency & DSM incentive programs that encourage consumers and commercial customers to install CFL light bulbs, migrate toward Energy Star appliances, HVAC and other equipment upgrades and planting cost-effective shade trees. ([www.tep.com](http://www.tep.com))
- **Bobbi Sterrett, Southwest Gas**– Ms. Sterrett will cover Southwest Gas' leading edge energy efficiency & DSM incentive programs that encourage consumers and commercial customers to install Energy Star appliances, complete weatherization projects, install pre-rinse spray valves and build Energy Star rated homes. ([www.swgas.com](http://www.swgas.com))

All presentations will be uploaded to the Arizona Solar Power Society's website and can be viewed 24 hours a day for the next 2 weeks at:

<http://ccsm mediasite.com/mediasite/Viewer/?peid=f24f931f-17e8-4834-9ae9-2b11e9e8b10a>



# ENERGY \$ Homes

## The Natural Choice for You and the Environment

When you buy an **ENERGY STAR**® home, you get more than a great place to live. ENERGY STAR homes provide:

### Increased Value

The superior construction and energy-efficient windows and appliances found in ENERGY STAR homes help increase the value of your energy dollar by decreasing your home's energy usage.

### Benefits That Matter

In an ENERGY STAR home, you're not only getting a better product for your financial investment, but your home's energy efficiency conserves natural resources and reduces greenhouse gas emissions – a wise investment for you and the environment.



ENERGY STAR is a program of the U.S. EPA and the Department of Energy. ENERGY STAR builders must meet stringent standards of construction, and qualifying homes must be inspected and certified by an independent company.

An ENERGY STAR home certified through the Southwest Gas program offers you the best choice in energy-efficiency, lower utility bills, and an assurance of quality.



Learn more at  
[www.energystar.gov](http://www.energystar.gov).  
 Or call Southwest Gas at  
**1-800-OK-GAS-OK**  
 (1-800-654-2765).

The ENVIRONMENTS FOR *Enviro*<sup>®</sup> Program

# GUARANTEES

HEATING & COOLING USAGE

24 (Therms) 380 (kWh)

Estimated  
Heating &  
Cooling  
Energy Costs **\$72** per month\*

For The Artesa - The Base Home

\*This cost is strictly an estimate and will vary with your actual cost of energy. This heating and cooling cost is based only on the utility rates as of May 2009, and does not include taxes, surcharges, or other fees charged by your utility providers. See the ENVIRONMENTS FOR *Enviro*<sup>®</sup> guarantee for further details and limitations. Display information and guarantee provided by the ENVIRONMENTS FOR *Enviro*<sup>®</sup> program, Masco Home Services, Inc.



Estimates do not reflect optional casita, cart storage, flex space, tandem garage or other options that affect square footage, all of which may affect estimated utility costs.

# **APPENDIX B**

## **LOW-INCOME ENERGY CONSERVATION PROGRAM**

## **APPENDIX B - LOW-INCOME ENERGY CONSERVATION PROGRAM (LIEC)**

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# LOW-INCOME ENERGY CONSERVATION PROGRAM (LIEC)

## Estimated Annual Energy Savings

LOW-INCOME ENERGY CONSERVATION ESTIMATED ANNUAL ENERGY SAVINGS JULY 2008 - JUNE 2009	
Total homes assisted	197
Electricity savings (kWh)	168,260
Natural gas savings (therms)	8,423





### Low-Income Energy Conservation (LIEC) Program

The LIEC weatherization program provides free audits, conservation education, and comprehensive weatherization materials that increase energy efficiency and safety in the homes of low-income customers. Emergency bill assistance is also available to income-qualified customers facing a financial hardship. For more information, please call 1-877-860-6020.

### Low-Income Home Energy Assistance Program (LIHEAP)

You may also be eligible for energy bill assistance under LIHEAP, which is administered by the State of Arizona Department of Economic Security (DES). Eligibility requirements and additional information on the LIHEAP program can be obtained by calling DES at 1-800-582-5706. TDD customers use Arizona Relay Service.



### ¿Desea información en español?

El programa de asistencia a consumidores de bajos ingresos (LIRA son las siglas en inglés) de Southwest Gas proporciona una reducción del 20% de la tarifa en las primeras 150 unidades térmicas (therms) de su factura mensual. El programa comienza el 1° de noviembre y continúa hasta el 30 de abril de cada año.

Para recibir un formulario en español o para más información, por favor llame al número de teléfono indicado abajo.

**1-877-860-6020**

(Detach, fold, and seal with tape to form postage-paid reply. Do not use staples.)

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IN THE  
UNITED STATES



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PO BOX 1498  
VICTORVILLE CA 92393-9969





Southwest Gas Corporation and  
**Tucson Electric Power Company**  
 provide funds to augment existing  
 resources to weatherize eligible  
 homes in the Tucson metropolitan  
 area. We've joined this effort to help  
 increase the number of homes that  
 are weatherized for energy efficiency.

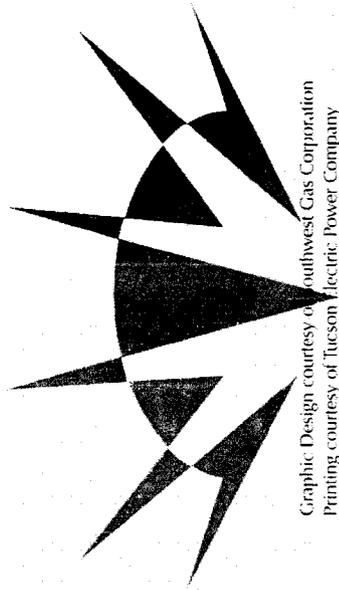


A UniSource Energy Company

**We're there when you need us.™**



**SOUTHWEST GAS**

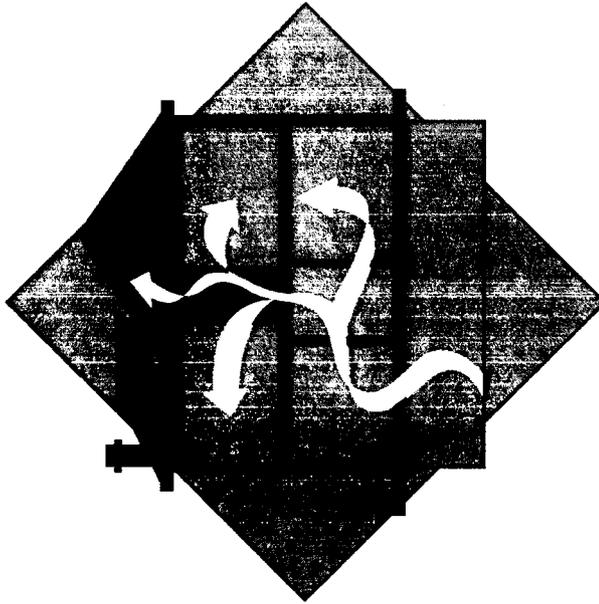


Graphic Design courtesy of Southwest Gas Corporation  
 Printing courtesy of Tucson Electric Power Company



# WEATHERIZATION PROGRAM

**Free for Low-Income Customers**



**City residents**  
 Call Tucson Urban League  
 520-882-4872

**County residents**  
 Call Pima County/Community Development  
 and Neighborhood Conservation  
 520-243-6696

## Tucson Urban League and Pima County/ Community Development and Neighborhood

**Conservation** assist low-income residents to reduce energy use and lower their utility bills by implementing year-round weatherization measures.

This service is provided for single-family homes and mobile homes at no cost to eligible customers.

## Program Goals

- 1) reduce low-income customers' energy use;
- 2) reduce low-income customers' electric and gas bills;
- 3) improve low-income customers' comfort.

Representatives from *Tucson Urban League* and *Pima County/Community Development and*

*Neighborhood Conservation* determine what weatherization measures are needed and install the weatherization measures including:

- Caulking and weather-stripping
- Insulation (attic, walls, and ducts)
- Sunscreens
- Reflective paint for roof and exposed ducts
- Evaporative cooler maintenance
- Evaporative cooler motor replacements
- Evaporative cooler thermostats
- Low-flow shower heads
- Shade trees\*

\*For TEP-sponsored shade trees to help lower energy bills, call *Trees for Tucson* at 520-791-3109

Other weatherization measures **may** be included:

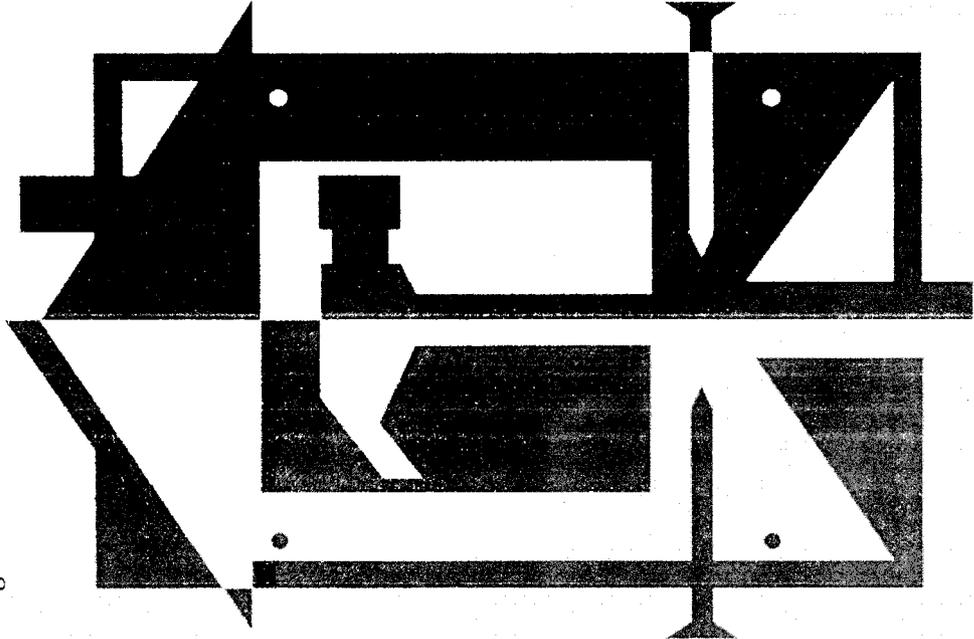
- Compact fluorescent light bulbs (CFLs)
- Refrigerator replacement (when applicable)
- AC replacement

## Program Qualification

Applicants must meet income guidelines.

To find out if you qualify for the program, contact either *Tucson Urban League* or *Pima County/Community Development and Neighborhood Conservation*.

Call now for information. Workshops about weatherization and energy conservation will help you utilize energy more efficiently and gain greater control over your energy bills.



**City residents**  
Call *Tucson Urban League*  
520-882-4872

**County residents**  
Call *Pima County/Community Development*  
and *Neighborhood Conservation*  
520-243-6696

# *State & Local Energy Report National Weatherization Awards*

## **Entry Form:**

To nominate a project, please fill out the following form and submit it to the State & Local Energy Report by **November 1st**.

Organization:      Maricopa County Human Services Department, Community Services Division

### Type of Project:

- Single-Family Home (1 to 4 units)
- Multi-Family Building (5 units or more)**
- New Construction

Contact Person:    Margarita Leyvas, Assistant Director, Community Services

Address:            234 N Central Avenue, Suite 3000  
Phoenix, AZ 85004

Phone:              602-506-5911

Email:                leyvasm@mail.maricopa.gov

Fax:                  602-506-4749

Submission Date:   October 31, 2008

### Description of Project:

Maricopa County Human Services Department, Community Services Division (MCHSD/CSD) initiated a multi-family, low-income weatherization project in August 2007 to reduce energy costs and provide comfort and safety for 46 low-income housing units in Norton Circle, a housing authority complex in the City of Avondale. This innovative and collaborative project was successful due to its partnership with Foundation for Senior Living, Home Improvements, (FSL), Arizona Department of Commerce, Energy

Office (DOC), the Housing Authority of Maricopa County (HAMC), Arizona Public Service (APS), Southwest Gas (SWG), the Arizona Community Action Agency (ACAA), and the City of Avondale.

Avondale, Arizona is located in Maricopa County, west of the City of Phoenix, and one of the major growth areas of the Valley of the Sun. Maricopa County Human Services Department applied for and received special project funds from Southwest Gas Company to supplement the weatherization of this project. This generous financial support from Southwest Gas was combined with the donation of brand new gas dryers from Southwest Gas, as well as donations of new energy efficient refrigerators from APS. Federal funding from the Department of Energy, and the Low Income Home Weatherization Program provided through the Arizona Department of Commerce, Energy Office to Maricopa County Human Services Department, ensured sufficient funding and a successful program. The City of Avondale also partnered in this project by waiving permit fees that allowed the weatherization of additional low-income housing units.

This innovative project was a unique, collaborative effort spearheaded by county government to assist low-income households, with an added benefit of community improvement. Furthermore, the project promoted intergovernmental cooperation and coordination in addressing shared problems through the collaborative efforts of federal, state, and city governments, and private sector agencies. The project displayed a creative approach to enhance services to low-income families, going above and beyond base line regulations and contract expectations. The project produced measurable results in terms of cost savings, improved intergovernmental cooperation, and community benefits.

In addition to the partnerships Maricopa County Human Services Department, Community Services Division developed for this project, the uniqueness lies most especially in the project's efficiency. Usually, homes in Maricopa County are weatherized as single family dwellings, one at a time. This project weatherized 46 units at one time, thereby creating unique program efficiency. Labor costs, material costs and administrative costs were reduced by over 50% as a result.

The project was consistent with all government and financial management practices, and promoted general governmental accountability through the stellar performance of Maricopa County Human Services Department, Community Services Division administrative staff.)

In October 2007, a Weatherization Kick –Off event was held at the Norton Circle Property to showcase the project. Property residents, funders, media, general public and local elected officials were invited to tour an empty unit, observe blower-door tests, and receive information on weatherization activities and results, and impacts on the community and its economy. Pictures from the event and the property follow.

Weatherization Features:

**Norton Circle HUD Apartment Multi-Family Weatherization Project**

<u>Type of Units</u>	<u>Sq. Ft.</u>	<u># of Units</u>
1 Bedroom	625	18
2 Bedrooms	900	11
3 Bedrooms	1050	13
4 Bedrooms	1350	4

The Norton Circle HUD apartment complex was constructed in 1973 and consists of 25 single story buildings made of block construction, with single pane aluminum frame windows and uneven R-11 cellulose in the attics. Prior to Weatherization, each unit had an evaporative cooler located on the roof and a forced air furnace located in an interior closet. The evaporative coolers and the furnaces shared a duct system. There was significant duct leakage as observed during the site inspection and based on blower door analysis. Old inefficient refrigerators contributed to the energy demands on each apartment.

Duct Diagnostic Testing prior to weatherization provides an example of the severity of the duct leakage.

	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
Initial CFM 50	2392	2120	1923	1747
Living Room	1.1	23.7	3	2.4
Kitchen	1.7	27.7	3	2.3
Dining	na	na	2	2.4
Laundry	na	na	2.3	2.4
Bed 1	0.1	23.1	1.3	2.4
Bed 2	na	23.6	2.3	2.4
Bed 3	na	na	2	2.8
Master (4 bed)	na	na	na	3.7
Master Bath	na	na	na	2.6
Hall Bath	0.1	23.2	1.8	1.6
Return	2.3	24.6	3.9	3.3

Due to the ineffectiveness of evaporative cooling in the Phoenix climate and the need to replace broken or inefficient HVAC equipment, the complex was going to upgrade to gas package roof mounted heating and cooling units. However, there were no plans to replace the leaky duct system. In addition, there were no provisions to upgrade insulation in the attic from its original R-11. This would have resulted in higher energy bills for the low income residents. Lastly, there were Combustion Air Zone health and safety concerns with some of the water heaters which were located in interior closets. Due to the toxicity of the combustion appliance emissions some of these units needed to be replaced with sealed combustion units.

Prior to completing the work, FSL completed a REM Design analysis under the assumption that the complex installed 13 SEER/80% efficient gas package systems on the existing leaky ductwork with the existing R-11 insulation. The result of the quick analysis report is as follows:

#### Cost Benefit Ratio

Assumption (46 apartments)		Per Unit	Complex
Estimated Annual Savings per Apartment		\$283	\$13,018.00
Estimated Life of the Project	15		
Present Value Factor	11.5		
Estimated Savings over Life of Project		\$3,254.50	\$149,707.00
Cost of M/C funded Weatherization (not including admin)	\$ 143,000.00		
Cost Benefit Ratio	1.05		

Based on experience, FSL determined that the duct leakage reduction of 400 CFM was possible. According to the Arizona Department of Commerce Energy Climate zone 2 provides for \$540 savings per 100CFM duct leakage reduction. With this in mind, the overall savings from duct leakage reduction was \$99,360. New sealed duct system cost \$86,400 which is a SIR of 1.15.

### **Scope of Work**

- Installed 29 15" ENERGY STAR refrigerators
- Installed 17 18" ENERGY STAR refrigerators
- Removed roof mounted evaporative coolers and gas furnaces located in interior closets and replaced with energy efficient roof mounted 13 SEER a/c-gas package units including all new sealed duct system. This included the electrical and plumbing repairs necessary to accommodate the new installations. Existing old duct system was used to provide for air exchange to relieve room pressures.
- Increased attic insulation from R-11 to R-30 using blown cellulose.
- Property owner installed CFL's in each apartment.

### **Funding Sources and Project Partners**

Maricopa County Human Services Department partnered with local public, private, non-profit and faith-based organizations to leverage the funding to complete this project. Weatherization funding consisted of funds from local utilities including Arizona Public Service (APS), Southwest Gas (SWG), along with federal funding from the Department of Energy, and LIHEAP programs along with a significant investment from the property owner, Maricopa County Housing Authority. Total project cost was \$337,420 with \$95,732.80 coming from the Weatherization program and utility funds, an additional \$21,000 from Arizona Public Service to cover refrigerators and the remaining balance \$220,687.20 came from the property owner, Maricopa County Housing Authority.



### Assistance Programs

### Arizona Assistance Programs



### Arizona Low-Income Energy Conservation Program (en español)

Whether you own or rent your residence, the Southwest Gas Conservation Program can assist you with money-saving home improvements to increase the energy efficiency of your home. Energy-saving measures are available to income-qualified customers, at no cost.

Examples of energy-saving measures are caulking, insulation, weather-stripping, ductwork repairs and windows.

In order to participate in this program, a customer must meet the income qualifications set forth by the U.S. Department of Energy's Weatherization Assistance Program.

Check the chart below to see if you qualify for the conservation program:

LOW-INCOME ENERGY CONSERVATION PROGRAM HOUSEHOLD INCOME GUIDELINES Effective July 1, 2008 through June 30, 2009	
Number of People Living in Household	Annual Income
1	\$15,600
2	\$21,000
3	\$26,400
4	\$31,800
5	\$37,200
For each additional person in your household, add:	\$5,400

To request the Low-Income Energy Conservation Program, call:

#### Douglas

**Southeastern Arizona Community Action Program (SEACAP)**  
283 W. 5th Street Safford, AZ 85546  
1(800) 293-1144    (928) 428-4653

#### Gila County

**Gila County Community Services Division**  
5515 S Apache Ave #200 Globe, AZ 85501  
(928) 425-7631 ext. 8693

#### LaPaz

**Western Arizona Council of Governments (WACOG)**  
224 South 3rd Avenue Yuma, AZ 85364  
(928) 782-1886

#### Mohave County

**Western Arizona Council of Governments (WACOG)**  
208 N. 4th Street Kingman, AZ 86401  
(928) 753-6247



**Assistance Programs**

**Arizona Assistance Programs**



**Maricopa County**

**Maricopa County-Human Services Department**

Community Services Division  
234 N Central, Suite 3000 Phoenix AZ 85004  
(602) 506-5911

**Mesa**

**Mesa CAN**

635 E Broadway Rd Mesa, AZ 85204  
(480) 833-9200 Ext. 251

**Morenci**

**Southeastern Arizona Community Action Program (SEACAP)**

283 W. 5th Street Safford, AZ 85546  
1(800) 293-1144    (928) 428-4653

**Phoenix**

**City of Phoenix-Neighborhood Services Department  
Housing Rehabilitation Section**

200 West Washington-4th Floor Phoenix, AZ 85003  
(602) 495-0700

**Pima County**

**Pima County Community Action Agency**

2797 E. Ajo Way Tucson, AZ 85713  
(520) 243-6777

**Pinal County**

**Community Action Human Resources Agency (CAHRA)**

311 North Main Street Eloy, AZ 85231  
1(877) 472-2472    (520) 466-1112

**Sierra Vista**

**Southeastern Arizona Community Action Program (SEACAP)**

283 W. 5th Street Safford, AZ 85546  
1(800) 293-1144    (928) 428-4653

**Tucson District**

**Tucson Urban League (TUL)**

2305 S. Park Avenue Tucson, AZ 85713  
(520) 791-9522

**Pima County Community Services Department CDBG**

2797 E. Ajo Way Tucson, AZ 85713  
(520) 243-6777

**Yuma District**

**Western Arizona Council of Governments (WACOG)**

224 South 3rd Avenue Yuma, AZ 85364  
(928) 782-1886

**Information on Other Services**

**Statewide Community Information & Referral Help Line**

1(800) 352-3792

**APPENDIX C**

**CONSUMER PRODUCTS  
PROGRAM**

# **APPENDIX C - CONSUMER PRODUCTS PROGRAM**

## **Program Materials**

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b. Southwest Webpage .....	54
c. Rebate Application .....	55

**REBATE**

**Southwest Gas customers  
may qualify for**

**\$75\***

**Purchase a 30-to-75 gallon  
high-efficiency natural gas  
water heater with an Energy  
Factor of 0.62 or higher.**

**Information and rebate application:  
[www.conservationsrebates.com](http://www.conservationsrebates.com)**

**\*Restrictions  
Apply**



**SOUTHWEST GAS**

**1-800-OK-GAS-OK**

**1-800-654-2765**



**Energy Efficiency Programs**

**Arizona Energy Efficiency Programs**



**Residential High-Efficiency Water Heater Rebate Program**

*The Natural Choice for Your Home*

If you're interested in saving energy, time and money, a high-efficiency natural gas water heater is the natural choice for your home. Enjoy plentiful hot water while lowering the operating cost and energy usage of less-efficient models. Southwest Gas is offering a \$75 rebate for a limited time on qualifying natural gas water heaters that will be installed in the residences of its Arizona customers. Qualifying water heaters can be purchased at any home appliance store, or through a licensed plumber.

**Rebate Guidelines...**

**Qualifying water heater rebates are available only on storage tank-style natural gas water heaters, 30 to 75 gallons with an Energy Factor (EF) of .62 or higher.** The higher the EF, the more efficient the water heater and the more energy and money you'll save.

**Eligibility / Limitations**

- Rebates are limited to Southwest Gas residential customers in Arizona who wish to purchase a water heater for their Arizona residence.
- The **\$75 rebate is limited to one per household** and does not apply to instantaneous or tankless water heaters.
- As long as funds are available, rebates will be applied toward purchases made **March through November 2009**. Due to limited funding, please submit your rebate application as soon as possible after purchase.

**Rebate Application**

To request a rebate application, please call **1-866-802-7790**. Or, complete the application online at **www.conservationsrebates.com**.

**Required Documents**

Along with the completed, signed rebate application including your Southwest Gas account number, submit a copy of your water heater invoice or paid receipt showing where purchased and date of purchase, **brand and model number**.

**Processing Time for Rebate**

Please allow 6-8 weeks to receive your rebate.

**Right to Confirm Eligibility**

Southwest Gas reserves the right to inspect any installation to confirm eligibility.



**SOUTHWEST GAS**

**March 2008 - November 2009**

**High-Efficiency Natural Gas  
Water Heater Rebate Program**

**\$75  
REBATE**

*The Natural Choice  
For Energy Efficiency*

Rebate  
Application No.

**■ ■ ■ APPLICATION AND OFFICIAL RULES ■ ■ ■**

Visit [www.conservationrebates.com](http://www.conservationrebates.com) to apply for a rebate online.

**QUALIFICATIONS:**

- All energy efficient equipment must be installed in a residential dwelling receiving natural gas service from Southwest Gas in Arizona.
- Offer is valid from **March 1, 2008 - November 30, 2009**, or until funds are depleted, whichever comes first. All applications must be postmarked by December 15, 2009.
- Water heater must be a natural gas model, 30 to 75 gallon storage tank style, with an **Energy Factor (EF) 0.62 or higher**.
- **A copy of your dated sales receipt or invoice must be submitted with this application form.**
- **Sales receipt must include purchase date, brand and model number.**
- **Online Applications: Do not mail in this form.** Please mail a copy of your receipt AND your online confirmation page in a DIFFERENT envelope.

**PLEASE NOTE:**

- Southwest Gas has partnered with Electric & Gas Industries Association (EGIA) for the administration of this Program.
- Do not include rebate application with your utility bill.
- For questions regarding the Program or rebate status, please contact the Program administrator, EGIA at **866-802-7790**, Monday through Friday 8:30 a.m. to 5:00 p.m.
- Customer must fill out and sign the application below or apply online at [www.conservationrebates.com](http://www.conservationrebates.com).
- Southwest Gas reserves the right to verify both the efficiency and installation of equipment before rebate is issued.
- Southwest Gas and EGIA are not responsible for items lost or delayed in the mail, or any rebate delayed due to incomplete or incorrect rebate applications.
- Southwest Gas and EGIA are not responsible for any taxes that may be imposed as a result of your receipt of any rebate from Southwest Gas.
- For more information, to verify eligibility, or confirm products, visit [www.conservationrebates.com](http://www.conservationrebates.com) or contact the Program administrator, EGIA, at **866-802-7790**.

**KEEP THIS STUB!**

*Retain this portion for your records. Return bottom portion with a copy of your sales receipt in the envelope portion of this application.*

Please complete the required information below:

**Would you have purchased and installed this high-efficiency water heater if Southwest Gas didn't offer a rebate?**  Yes  No

Rebate  
Application No.

**PURCHASE VERIFICATION SECTION**

Date Purchased	Brand	Model Number
Water Heater Purchased From		City

**APPLICANT INFORMATION SECTION**

*Please include a gas service account number, and mail with a photocopy of your sales receipt or invoice in attached envelope.*

Gas Service Account Number	Date Water Heater Was Installed		
Applicant First and Last Name	Phone		
Mailing Address	City	State	Zip
Installation Address (if different)	City	State	Zip
Signature	Date		

**VERIFICATION**

I acknowledge the water heater purchased has an Energy Factor(EF) of 0.62 or higher and will be installed at the owner's address.

Yes  No\*

Applicant Initials \_\_\_\_\_ Date \_\_\_\_\_

\*If no, model will not qualify for a rebate.

*Mail this form to:*

**SOUTHWEST GAS  
ENERGY EFFICIENCY REBATE PROGRAM**

3800 Watt Ave. Suite 105  
Sacramento, CA 95821

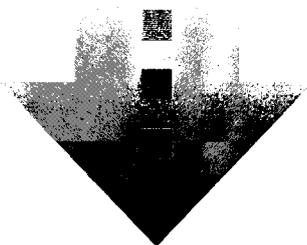
**OR APPLY ONLINE AT**

**[www.conservationrebates.com](http://www.conservationrebates.com)**

Visit [www.conservationrebates.com](http://www.conservationrebates.com) to:

- Apply For Your Rebate Online
- Print Out An Application
- Get Additional Program Details

## ***Have you enclosed a copy of your sales receipt or invoice?***



### ***Getting the most out of your new high-efficiency water heater.... the Natural Choice!***

Did you know that water heating is the third largest energy expense in your home? So when you're replacing an existing water heater or buying one for the first time, it's important to know that the higher the efficiency of the water heater, the more you'll save on energy costs. When choosing a water heater, carefully consider the unit's Energy Factor (EF), which is a measure of the overall efficiency of the water heater. The higher the number, the more efficient it is.

Some additional energy saving tips that may help lower your energy usage even more...

- Lower the thermostat on your water heater using the temperature adjustment on the control. A setting of 120° F provides comfortable hot water for most uses. Set the control knob to the lowest setting when you'll be away from home for extended periods of one week or more.
- Buying a water heater blanket may be an inexpensive way to save 4 to 9 percent on your water heating bill. However, before purchasing a blanket, check your manufacturer's instructions. In some cases, installing a water heater blanket may void your warranty.
- Use low-flow showerheads and water-conserving faucets.
- Insulate exposed, uncovered water pipes.
- Keep the screened area at the bottom of your water heater free of lint, dust, and oil, per manufacturer's instructions. For maximum performance, keep the screened area free from obstruction.

SOUTHWEST GAS  
ENERGY EFFICIENCY REBATE PROGRAM  
3800 Watt Ave. Ste. 105  
Sacramento, CA 95821

PLACE  
STAMP  
HERE

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Have you enclosed a copy of your sales receipt?

◆  
Did you provide your Southwest Gas account number?

◆  
Does name on rebate application match name on gas account?

**MARCH 2008 - NOVEMBER 2009  
HIGH EFFICIENCY NATURAL GAS WATER HEATER  
REBATE PROGRAM**

**... APPLICATION FORM ...**



**SOUTHWEST GAS**

*Thank you for making the Natural Choice for energy efficiency*

# **APPENDIX D**

## **COMMERCIAL EQUIPMENT PROGRAM PRE-RINSE SPRAY VALVE PROGRAM**

# **APPENDIX D - COMMERCIAL EQUIPMENT PROGRAM PRE-RINSE SPRAY VALVE PROGRAM**

## **Program Materials**

a. Brochure .....	59
b. Rebate Application .....	61
c. Southwest Webpage .....	64
d. Internet Expo Page .....	66
e. Spray Valve Installation form .....	67

## How Do I Apply For Rebates?

### Application Dates

Rebates are available for purchases made June 1 2009 - November 30, 2009 or until program funds are depleted, whichever comes first. Due to limited funding, please submit your rebate application as soon as possible after purchase. Applications will be processed on a first-come, first-served basis.

### Required Documents

Along with the completed, signed rebate application that includes your Southwest Gas account number, please submit a copy of your invoice(s) that lists where the appliance was purchased, the date(s) of purchase, and model number(s). **Note:** Appliance(s) must be installed, and verification performed by Southwest Gas, prior to the payment of any rebate.

59

### Processing Time for Rebate

Please allow 6-8 weeks to receive your rebate(s).

## More Ways to Save Energy, Money, and Resources

Along with the savings you may receive from these rebates, the Arizona Department of Water Resources will also install **FREE** water-saving pre-rinse spray valves at your dish-rinsing sinks.



## Saving Natural Resources is Good for the Environment

Energy-efficient spray valves not only reduce water waste -- approximately 50,000 gallons of hot water per year for a small restaurant -- but they also save on the energy used to heat the water, which in turn reduces your energy costs and helps conserve our natural resources.

## How do I request a FREE Spray Valve?

Except for a simple acceptance form at the time of installation, there is no paperwork required for installation of the free pre-rinse spray valves. However, to receive your spray valve, please call 1-800-654-2765. Free pre-rinse spray valves are available by reservation through December 31, 2009 or while supplies last, whichever comes first.

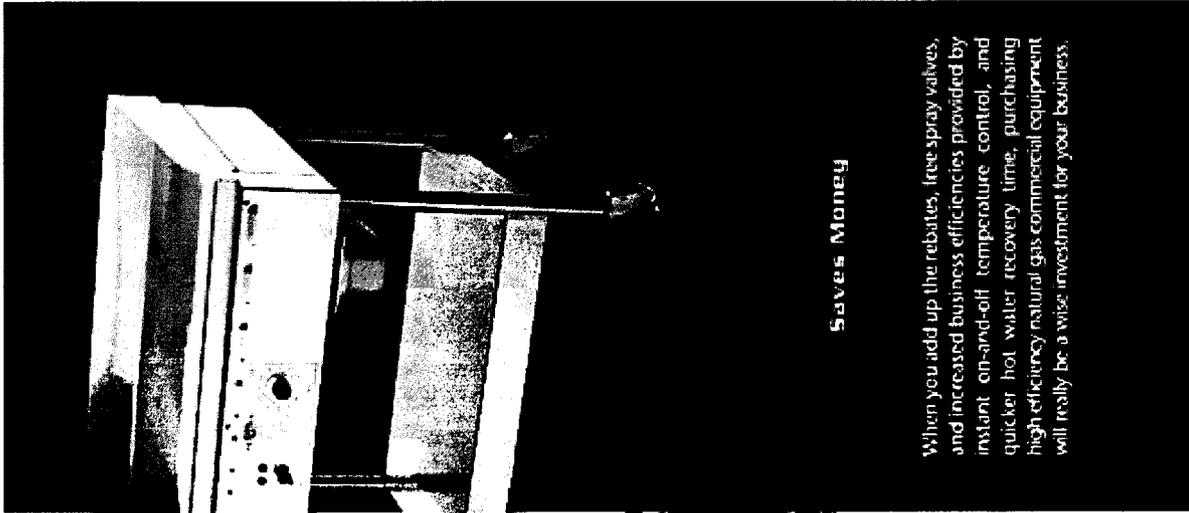
## High Efficiency

### Program Eligibility & Limitations

- Subject to the rebate program's limitations, all Southwest Gas commercial customers in Arizona are eligible for this program as long as they install new, high-efficiency natural gas water heaters, griddles, and steamers in their existing facilities; new construction is not eligible.\*
- Rebates are limited to new equipment only; used or rebuilt equipment is not eligible.
- Any individual rebate amount cannot exceed the purchase price of the new appliance.
- Rebates are limited to a maximum of two for each appliance listed per customer per year.

## SOUTHWEST GAS

For more information on how your business can save time, money, and the environment, call Southwest Gas at 1-800-654-2765 or go to [www.conservationsrebates.com](http://www.conservationsrebates.com)



## Saves Money

When you add up the rebates, free spray valves, and increased business efficiencies provided by instant on-and-off temperature control, and quicker hot water recovery time, purchasing high efficiency natural gas commercial equipment will really be a wise investment for your business.

- A customer is defined as a commercial business having a specific separate billing account with Southwest Gas.

# High-Efficiency Eco Eco



*The Natural Choice  
For Your Business, the  
Right Choice for the  
Environment*



**SOUTHWEST GAS**

5241 Spring Mountain Rd.  
Las Vegas, NV 89150-0002

**SOUTHWEST GAS**



If you're interested in saving energy, money, and helping the environment, replacing your old inefficient commercial equipment with **NEW**, high-efficiency models is just the ticket.

### **Saving Money Is Good for Your Business**

For a limited time, Southwest Gas commercial customers in Arizona may be eligible to receive up to **two rebates each** on the purchase and installation of high-efficiency natural gas water heaters, griddles, or steamers for their existing facilities.

### **Eligible Appliances, Requirements, and Rebate Levels**

<b>Water heater</b> Storage tank-style, commercial models.	Thermal efficiency rating must exceed 82%.	<b>\$10 per 1,000 Btu</b> Maximum of \$1,700 per qualifying appliance.
<b>Griddle</b> Infrared burners, heat pipes, or thermal fluid or steam. Solid-state controls with thermocouple embedded within griddle plate.	Efficiency rating of 38% or higher. Must meet or exceed heavy load cook energy efficiency.	<b>\$2,100</b> per qualifying appliance.
<b>Steamer</b> Pressure-less; Water-saving.	Efficiency rating of 38% or higher. Must meet or exceed heavy load cook energy efficiency. Maximum water use of 15 gal/hour.	<b>\$530</b> per qualifying appliance.

To determine appliance eligibility prior to purchase, and to obtain a rebate application, go to the following website, [www.conservationrebates.com](http://www.conservationrebates.com), or call 1-800-654-2765.



**SOUTHWEST GAS**

The Natural Choice  
For Energy Efficiency

**June 2008 - November 2009  
High-Efficiency Natural Gas  
Commercial Rebate Program**

**COMMERCIAL  
REBATES**

Rebate  
Application No.

**APPLICATION AND OFFICIAL RULES**

Visit [www.conservationrebates.com](http://www.conservationrebates.com) to apply for a rebate online.

**QUALIFICATIONS:**

- All qualifying energy efficient equipment must be **natural gas**, and installed at the business location of an **Arizona commercial** customer receiving natural gas service from Southwest Gas. **Rebates are limited to the replacement of existing equipment with new equipment only.**
- A customer is defined as a commercial business having a specific separate billing account with Southwest Gas.
- Offer is valid from **June 1, 2008 - November 30, 2009**, or until funds are depleted, whichever comes first. All applications must be postmarked no later than **60 days** after the purchase, or by **December 15, 2009**, whichever comes first.
- Qualifying water heaters must be storage tank-style commercial models with a **thermal performance greater than 82%**.
- Qualifying griddles and steamers must have an **efficiency rating of 38% or higher and meet or exceed heavy load cook efficiency.**
- Steamers must be **ENERGY STAR® qualified, pressureless models**, with water use at a maximum of **15 gallons per hour.**
- A **copy of your dated sales receipt or invoice must be submitted with this application form.**
- Sales receipt must include purchase date, brand and model number.

**PLEASE NOTE:**

- Southwest Gas has partnered with Electric & Gas Industries Association (EGIA) for the administration of this Program.
- Do not** include rebate application with your utility bill.
- Rebates are limited to no more than **two (2)** of each qualifying appliance type per customer in one year.
- For questions regarding rebate status, please contact the EGIA at **866-802-7790**, Monday through Friday 8:30 a.m. to 5:00 p.m.
- For more information, to verify eligibility, or confirm products, visit [www.conservationrebates.com](http://www.conservationrebates.com) or contact Southwest Gas at **800-654-2765.**
- Customer must fill out and sign the application below or apply online at [www.conservationrebates.com](http://www.conservationrebates.com).
- Online Applications: Do not mail in this form.** Please mail a copy of your sales receipt AND your online confirmation page in a DIFFERENT envelope.
- Southwest Gas will **verify both the efficiency and installation of equipment before rebate is issued.**
- Southwest Gas and EGIA are not responsible for items lost or delayed in the mail, or any rebate delayed due to incomplete or incorrect rebate applications.
- Southwest Gas and EGIA are not responsible for any taxes that may be imposed as a result of your receipt of any rebate from Southwest Gas.

**KEEP THIS STUB!**

Retain this portion for your records. Return bottom portion with a copy of your sales receipt in the envelope portion of this application.

Please complete the required information below:

Would you have purchased and installed this high-efficiency equipment if Southwest Gas didn't offer a rebate?  Yes  No

Rebate  
Application No.

**APPLICANT INFORMATION SECTION**

Please include a gas service account number, and mail with a photocopy of your sales receipt or invoice in attached envelope.

Gas Service Account Number				Applicant First and Last Name			
Business Name				Business Phone			
Business Installation Address				City	State	Zip	
Mailing Address (if different)				City	State	Zip	
Signature				Date			

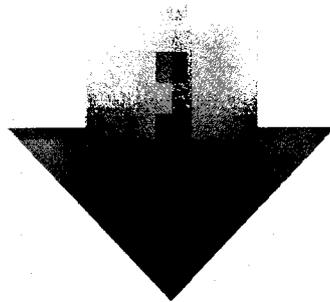
**HIGH-EFFICIENCY EQUIPMENT QUALIFICATIONS**

Natural Gas Appliance	Date Purchased	Date Installed	High-Efficiency Requirements	Brand	Model	Purchase Price	Available Rebate
<input type="checkbox"/> Water heater Storage tank-style, commercial models.			Thermal efficiency rating must exceed 82%.				\$10 per 1,000 Btu. Maximum of \$1,700 per qualifying appliance.
<input type="checkbox"/> Griddle Infrared burners, heat pipes, or thermal fluid or steam. Solid-state thermocouple embedded within griddle plate.			Efficiency rating of 38% or higher. Must meet or exceed heavy load cook energy efficiency.				\$2,100 per qualifying appliance.
<input type="checkbox"/> Steamer Pressure-less; Water-saving.			ENERGY STAR® qualified. Efficiency rating of 38% or higher. Must meet or exceed heavy load cook energy efficiency. Maximum water use of 15 gal/hour.				\$530 per qualifying appliance.

Visit [www.conservationrebates.com](http://www.conservationrebates.com) to:

- Apply For Your Rebate Online
- Print Out An Application
- Get Additional Program Details

***Have you enclosed a copy  
of your sales receipt or  
invoice?***



## **The Natural Choice for Energy Efficiency and the Environment**

Higher energy prices may be causing you to rethink your energy priorities, making high efficiency equipment more attractive than before.

Because commercial appliances use a large amount of energy, there is the potential for great energy savings and reduced spending on energy costs. You'll also be helping Arizona with water savings and less pollution. Now that's something to be proud of!

Additionally, your investment in better equipment could have a positive effect on your energy savings and business cash flow.

**SOUTHWEST GAS  
ENERGY EFFICIENCY REBATE PROGRAM  
3800 Watt Ave. Ste. 105  
Sacramento, CA 95821**

PLACE  
STAMP  
HERE

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Have you enclosed a copy of your sales receipt?

◆  
Did you provide your Southwest Gas account number?

◆  
Does name on rebate application match name on gas account?

**JUNE 2008 – NOVEMBER 2009  
HIGH EFFICIENCY NATURAL GAS COMMERCIAL  
REBATE PROGRAM**

**... APPLICATION FORM ...**



**SOUTHWEST GAS**

*Thank you for making the Natural Choice for energy efficiency*



**Energy Efficiency Programs**

**Arizona Energy Efficiency Programs**

**HOME**

**Commercial High-Efficiency Equipment Rebate Program**

*The Natural Choice for Your Business,  
the Right Choice for the Environment*

Southwest Gas commercial customers in Arizona may be eligible to receive up to **two rebates each** on the purchase and installation of **NEW** high-efficiency natural gas water heaters, griddles, or steamers for their existing facilities, for a limited time only.

Along with the savings you may receive from these rebates, the Arizona Department of Water Resources will also install **FREE** water-saving pre-rinse spray valves at your dish-rinsing sinks.

**Application Details**

Rebates are available for purchases made **June 1 through November 30, 2009 or until program funds are depleted**, whichever comes first. Due to limited funding, please submit your rebate application as soon as possible after purchase. Applications will be processed on a first-come, first-served basis.

**Eligible Appliances, Requirements, and Rebate Levels**

<b>Natural Gas Appliance</b>	<b>High-Efficiency Requirements</b>	<b>Available Rebate</b>
Water heater Storage tank-style, commercial models.	Thermal efficiency rating must exceed 82%.	<b>\$10 per 1,000 Btu.</b> Maximum of \$1,700 per qualifying appliance.
Griddle Infrared burners, heat pipes, or thermal fluid or steam. Solid-state controls thermocouple embedded within griddle plate.	Efficiency rating of 38% or higher. Must meet or exceed heavy load cook energy efficiency.	<b>\$2,100</b> per qualifying appliance.
Steamer Pressure-less; Water-saving.	Efficiency rating of 38% or higher. Must meet or exceed heavy load cook energy efficiency. Maximum water use of 15 gal/hour.	<b>\$530</b> per qualifying appliance.

**How Do I Apply For Rebates?**

To determine appliance eligibility prior to purchase, and to obtain a rebate application, go to the following website, **www.conservationrebates.com**, or call **1-800-654-2765**.

**Required Documents**

Along with the completed, signed rebate application that includes your Southwest Gas account number, please submit a copy of your invoice(s) that lists where the appliance was purchased, the date(s) of purchase, and model number(s). Note: Appliance(s) must be installed prior to the payment of any rebate. Southwest Gas reserves the right to verify both the efficiency and installation of equipment before rebate is issued.



**Energy Efficiency Programs**

**Arizona Energy Efficiency Programs**



**Processing Time for Rebate**

Please allow 6-8 weeks to receive your rebate(s).

**Program Eligibility & Limitations**

- All Southwest Gas commercial customers in Arizona are eligible as long as they install new, high efficiency natural gas water heaters, griddles, and steamers in their existing facilities.\*
- Rebates are limited to new equipment only; used or rebuilt equipment is not eligible.
- Any individual rebate amount cannot exceed the purchase price of the new appliance.
- Rebates are limited to a maximum of two for each appliance listed per customer per year. Rebates are subject to the program's limitations.

\* A customer is defined as a commercial business having a specific separate billing account with Southwest Gas.

**How do I request a FREE Spray Valve?**

Except for a simple acceptance form at the time of installation, there is no paperwork required. Energy-efficient spray valves not only reduce water waste -- approximately 50,000 gallons of hot water per year for a small restaurant - but they also save on the energy used to heat the water, which in turn reduces your energy costs and helps conserve our natural resources.

To reserve your spray valve, **please call 1-800-654-2765**. Free pre-rinse spray valves are available by reservation **through December 31, 2009**, or while supplies last, whichever comes first.



**SOUTHWEST GAS**

Call Steve Reyna:  
(602) 395-4053

If you're interested in saving energy, money, and helping the environment, replacing your old inefficient commercial equipment with **NEW** high-efficiency models is just the ticket.

**Saving Money is Good for Your Business**

For a limited time, Southwest Gas commercial customers in Arizona may be eligible to receive up to **two rebates each** on the purchase and installation of high-efficiency natural gas water heaters, griddles, or steamers for their existing facilities.

**Eligible Appliances, Requirements, and Rebate Levels**

<b>Water heater</b> Storage tank-style, commercial models.	Thermal efficiency rating must exceed 82%.	\$10 per 1,000 Btu Maximum of \$1,700 per qualifying appliance.
<b>Griddle</b> Infrared burners, heat pipes, or thermal fluid or steam. Solid-state controls with thermocouple embedded within griddle plate.	Efficiency rating of 38% or higher. Must meet or exceed heavy load cook energy efficiency.	\$2,100 per qualifying appliance.
<b>Steamer</b> Pressure-less; Water-saving.	Efficiency rating of 38% or higher. Must meet or exceed heavy load cook energy efficiency. Maximum water use of 15 gal/hour.	\$530 per qualifying appliance.



To determine appliance eligibility prior to purchase, and to obtain a rebate application, go to the following website:  
[www.conservatinnrebates.com](http://www.conservatinnrebates.com)  
or call  
1-800-654-2765.

**More Ways to Save Energy, Money, and Resources**

Along with the savings you may receive from these rebates, the Arizona Department of Water Resources will also install **FREE** water-saving pre-rinse spray valves at your dishwashing sinks.



**Saving Restaurant Resources is Good for the Environment**

Energy-efficient spray valves not only reduce water waste – approximately 30,000 gallons of hot water per year for a small restaurant – but they also save on the energy used to heat the water, which in turn reduces your energy costs and helps conserve our natural resources.

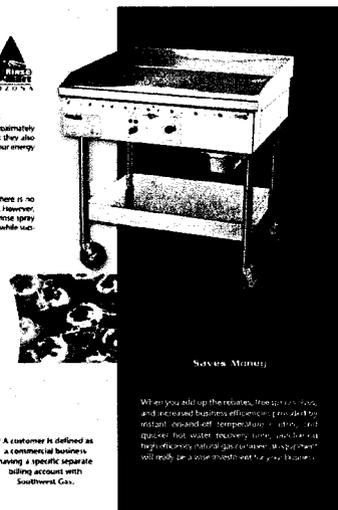
**How do I request a FREE Spray Valve?**

Except for a simple acceptance form at the time of installation, there is no paperwork required for installation of the free pre-rinse spray valves. However, to receive your spray valve, please call 1-800-654-2765. Free pre-rinse spray valves are available by reservation through December 31, 2008, at while supplies last, whichever comes first.

**High Efficiency**

**Program Eligibility & Limitations**

- Subject to the rebate program's limitations, all Southwest Gas commercial customers in Arizona are eligible for this program as long as they install new, high-efficiency natural gas water heaters, griddles, and steamers in their existing facilities; new construction is not eligible.\*
- Rebates are limited to new equipment only, used or rebuilt equipment is not eligible.
- Any individual rebate amount cannot exceed the purchase price of the new appliance.
- Rebates are limited to a maximum of two for each appliance listed per customer per year.



Saves Money!

When you add up the rebates, free pre-rinse valves, and increased business efficiency provided by instant upward of temperature control, and grease that water recovery, your investment in high-efficiency natural gas commercial equipment will truly be a wise investment for your business.

\* A customer is defined as a commercial business having a specific separate billing account with Southwest Gas.

**How Do I Apply For Rebates?**

**Application Dates**

Rebates are available for purchases made June 1, 2008 - November 30, 2009 or until program funds are depleted, whichever comes first. Due to limited funding, please submit your rebate application as soon as possible after purchase. Applications will be processed on a first-come, first-served basis.

**Required Documents**

Along with the completed, signed rebate application that includes your Southwest Gas account number, please submit a copy of your invoice(s) that lists where the appliance was purchased, the date(s) of purchase, and model number(s). **Note:** Appliance(s) must be installed, and verification performed by Southwest Gas, prior to the payment of any rebate.

**Processing Time For Rebates**

Please allow 6-8 weeks to receive your rebates!



**SOUTHWEST GAS**

For more information on how your business can save time, money, and the environment, call Southwest Gas at 1-800-654-2765 or go to [www.conservatinnrebates.com](http://www.conservatinnrebates.com)

**High-Efficiency CO2 EQ**

*The Natural Choice For Your Business, the Right Choice for the Environment*

**SOUTHWEST GAS**



ARIZONA  
© 2006 ADWR



**SOUTHWEST GAS**

City:	Date:
Installer:	
SWG Acct. #	

Franchise:  Yes  No      Additional Sites:  Yes  No

Business Name: \_\_\_\_\_

Installation Address: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Owner Name: \_\_\_\_\_

Water Provider: \_\_\_\_\_

City: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Phone: \_\_\_\_\_

Account #: \_\_\_\_\_

Water Meter Info:  Individual Meter  Combined Meter  Multiple Meters

Notes:

**SITE DATA**

<b>Food Service Type:</b> <input type="checkbox"/> Full Service <input type="checkbox"/> Limited Service <input type="checkbox"/> Cafeteria/ Buffet <input type="checkbox"/> Central Food Service Other: _____	<b>Establishment size:</b> <input type="checkbox"/> Very Small= 1-9 FT Empl. <input type="checkbox"/> Small = 10-50 FT Empl. <input type="checkbox"/> Medium = >50 FT Empl.	<b>Food Services:</b> <input type="checkbox"/> Breakfast <input type="checkbox"/> Lunch <input type="checkbox"/> Dinner
	<input type="checkbox"/> English <input type="checkbox"/> Other	Hours of operation Per Day: _____

**SITE SURVEY**

# Exist PRSV ____	# LFPRSV ____	# PRSV Remvd: ____	Avg PRSV Hours: ____	LF <input type="checkbox"/> Fisher <input type="checkbox"/> Niagra
-------------------	---------------	--------------------	----------------------	---

<b>Water Heater Info:</b> Type: <input type="checkbox"/> Gas <input type="checkbox"/> Electric Size: _____ Energy Provider: _____	<b>Dishwasher Info:</b> Dishwasher type? <input type="checkbox"/> Door <input type="checkbox"/> Conveyor Manufacturer _____ Model _____ Age of Dishwasher? <input type="checkbox"/> 0-1Yr. <input type="checkbox"/> > 1Yr.
--	---

<b>Toilet Info:</b> Low flow < 1.6GPF? <input type="checkbox"/> Yes <input type="checkbox"/> No	#Urinals _____ Waterless Urinals? <input type="checkbox"/> Yes <input type="checkbox"/> No # _____ Toilet Auto Flush? <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>Ice Maker Info:</b> Cooling System? <input type="checkbox"/> Water <input type="checkbox"/> Air <input type="checkbox"/> Unknown Manufacturer _____ Model _____
--	--	--

<b>Steamer Info:</b> Make: _____ Model: _____ Size: _____	Men's _____ Ladies _____	<b>Flow Rate:</b> Old valve gpm _____ New valve gpm _____	<b>Water Temp:</b> Old valve _____ New valve _____
--	-----------------------------	---	--

By initialing you agree to waive liability and give consent to replace the pre-rinse spray valve FREE of charge and release your old valve to the installer \_\_\_\_\_

By signing below, you acknowledge the spray valve is installed and working upon departure and you will not be charged for the valve or installation. You also acknowledge that your water data may be used to document water savings by the Arizona Department of Water Resources; however this data will not be published.

Signature \_\_\_\_\_ Date \_\_\_\_\_

For any questions please contact the AZ Rinse Smart Program at (602) 771-8423.

**APPENDIX E**

**TECHNOLOGY**

**INFORMATION CENTER**

**PROGRAM**

**APPENDIX E - TECHNOLOGY INFORMATION CENTER  
PROGRAM**

**Program Materials**

a. *Energy Line* Newsletter Samples .....69



# ENERGY LINE

a unique service for our commercial & industrial customers

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### Your Southwest Gas Energy Line

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6/15/2009

#### Teaming Up for Energy Savings

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Your older boiler system may be costing you money through wasted energy and unnecessary maintenance. Make sure that you have the right type of boiler that matches the needs of your facility.  
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The Leadership in Energy and Environmental Design (LEED) rating system for green buildings has recently been updated to address new technologies and environmental priorities.  
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## Teaming Up for Energy Savings

### Key Points

- Energy teams provide leadership in promoting energy conservation, implementing projects, and publicizing progress.
- Energy teams help break down resistance to change that is common in energy conservation projects.
- An effective energy team includes members from a variety of departments and employees from all levels of the organization.

If you want to build a conservation culture at your facility and find ways to better manage your energy resources, then consider forming an energy team. Your energy team should include members from a variety of different departments and employees at all levels of the organization. An energy team's many roles include the following: measuring and monitoring energy use, identifying inefficiencies, managing energy projects, building support for energy awareness, and reporting on progress. An effective energy team can increase the visibility of efficiency and conservation as an effective cost-saving tool and as an important part of overall corporate strategy.



### Why Now?

A number of factors have created an atmosphere in which companies are embracing energy efficiency and looking for creative ways to reduce energy costs. Our increasingly international marketplace has created a climate in which companies try to enhance their global competitive position through continuous improvement with an emphasis on cutting costs, reducing waste, and improving efficiency. The current global economic downturn has created increased pressure for companies to do more with less. Price volatility in energy markets has placed increased uncertainty in resource budgets. Companies must also set energy conservation and recycling policies in order to comply with state and federal environmental regulations, as well as voluntary standards such as ISO 14001. Supply constraints for traditional energy sources, as well as an aging infrastructure, could lead to potential power supply shortages and disruptions.

### Breaking Down Barriers

During any period of innovation, there is some organizational resistance to change. Some of the more common objections to energy-efficiency projects include the following:

- Change is not worth it. Energy-efficiency improvements would require investment in expensive new technologies that cost more than any potential energy savings.
- Utilities are not my job. Department managers may be reluctant to take part in energy conservation efforts if they feel that the savings will be credited to someone other budget.
- Shutting down equipment may cause start-up problems and lead to long-term maintenance issues.
- Conservation will reduce occupant comfort and even lead to unsafe working conditions.

Energy teams can provide leadership in removing these types of organizational barriers to conserving energy. They can help to demonstrate how energy-efficiency projects can save money over the long term through reduced operational and maintenance costs—while maintaining, or even increasing, building comfort.

### Forming an Energy Team

A successful energy team should have a strong cross-functional representation. A variety of skills, experience, and knowledge is needed to be creative and make change happen. It is also important to consider recruiting employees at all levels. While management provides leadership and can mandate projects, employees in the trenches, who actually use equipment day-to-day, provide a useful perspective.

Ideally an energy team consists of two levels—a steering committee and sub-committees. The steering committee includes representation from key stakeholders. The committee develops plans for measuring, monitoring, auditing, and reporting on energy use. It prioritizes tasks and objectives and develops teams to implement projects. A good energy team should consist of the following members:

1. A representative from maintenance for help in spotting energy-saving opportunities.
2. A plant engineer who can provide detailed information on energy consumption.
3. A financial representative for handling the budget.
4. A public relations or marketing representative who will promote energy team activities and publicize its successes.
5. A special events coordinator who will plan and organize energy team activities and events.

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6. A representative from the environmental/health and safety department who will ensure that energy-efficiency measures do not interfere with a safe and healthy work environment. Also, if applicable, the environmental/health and safety representative will push the team to meet the organization's ISO 14001 goals.
7. An executive sponsor who will ensure that your team's goals are aligned with corporate goals and provide authority for larger projects.

Do not stop here! Every business is different in the number and functions of its departments. For your energy team to increase its chances of success, you should try to include a representative from all of the departments in your business.

### **Making Change Happen**

The first priority of an energy team is to measure energy consumption. Review past energy bills to get an overview of energy consumption and install sub-meters to provide insight into specific energy use. To compare your energy use to similar facilities in your climate zone, try our [Commercial](#) and [Industrial](#) energy benchmark data tools.

An energy audit can provide a more detailed analysis of your facility and equipment, and will help to identify specific energy saving opportunities. Our [Facility Assessment Wizard](#) can be a helpful tool in beginning this process. Just spend a short amount of time answering a few questions about your facility and receive tailored energy-efficiency recommendations.

After likely candidates for energy-efficiency projects have been determined, the energy team will provide leadership in making recommendations, setting goals, seeing projects through to implementation, and reporting on progress. See [Show Me the Money! Financing for Energy Efficiency](#) for details about financing options for energy-efficiency projects. It is also important that the energy team publicize its activities by demonstrating how energy-efficiency projects are saving money and promoting the company's strategic goals.

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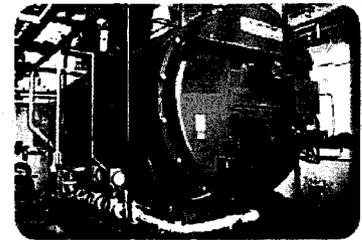
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## How Does Your Boiler Stack Up?

### Key Points

- The typical existing boiler is more than 30 years old and may operate far below the operating and efficiency standards of newer models.
- Replacing an older boiler with a new, energy-efficient system can save 10-30% on energy costs.
- When replacing a boiler, make sure that it is correctly sized to meet current heating loads.

In these days of higher energy prices and tighter operating budgets, many facilities are scrambling for ways to cut costs and improve efficiency. Now may be the perfect time to take a closer look at your boiler system. You may discover that your existing boiler no longer meets your facilities heating demands or is costing you money through wasted energy or unnecessary maintenance costs.



### The Trouble with Boilers

It is not exactly late-breaking news that boilers use a lot of energy. In fact, boilers make up about 40% of the total energy use in commercial and industrial facilities. It is also no secret that boilers emit air pollutants associated with the greenhouse effect and other environmental problems. Soaring energy prices and tighter emissions standards have created additional challenges for facilities all across the country that are already struggling to cut costs and meet operating budgets. Boilers are not getting any younger, either. The typical boiler is more than 30 years old, according to the American Boiler Manufacturers Association. These boilers likely operate well below the efficiency standards of current technology, and are probably less reliable than newer models.

### Upgrading to an Energy Efficient Model?

These issues have combined to increase interest in boiler efficiency and to drive sales trends toward smaller, more economical boilers. If you are one of the many facilities looking to cut operating costs and improve your environmental profile, now may be the time to revisit your boiler system. It could be that an upgrade will provide you with a system that can save significantly on energy costs while better meeting your facility's needs.

Boiler system energy consumption can be reduced 10%-30% by replacing an existing boiler with a new, energy-efficient system. This is one of the best opportunities for energy savings. Energy-efficient boilers have increased heating surface areas and improved controls for fuel and airflow over the range of load conditions.

To determine whether you should replace your boiler system, you need to understand your building's heating load and your existing boiler's efficiency. Natural Resources Canada has developed an online [Boiler Efficiency Calculator](#) to help managers quickly analyze the efficiency of boiler operations associated with heating and steam plants fired by natural gas and fuel oil. By estimating the efficiencies of steam boilers and high temperature water generators, such as those used in central heating and industrial steam generation, this tool will help you make an informed decision in regards to boiler system investments.

### Choosing the Right System

A variety of boiler types are used in commercial and industrial facilities for space and process heating. Choosing the right model for your facility or application is important for optimizing system performance and efficiency. Watertube and firetube boilers are the most commonly used systems, while a variety of packaged systems and other boiler types are used in specific applications. For more information, see [Boiler Types and Applications: An Overview](#).

### Optimal Sizing

If you are considering a boiler system replacement, proper sizing is critical. An over-sized boiler operates far below minimum efficiency, mitigating the cost benefits from switching to the newer system. When it comes to replacing a boiler system, the easiest thing to do is install a boiler of the same size. After all, the old system worked OK. Why mess with success? Installing a boiler that is larger than necessary may meet the facility's heating load requirements, but it can drive up installation costs, reduce efficiency, and increase maintenance.

Many boiler plants, particularly those used for space heating, face large seasonal or other variations in demand. The efficiency with which boilers convert fuel energy into steam or hot water drops off sharply at low load—when output falls below 40% of the maximum capacity rating. It therefore makes sense to select boiler sizes to match varying demand. A small boiler could be installed to operate at close-to-full load for periods of

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low demand; one or two larger boilers could handle peak loads.

In evaluating a boiler system's use and sizing, consider current and future heating and process steam requirements. More opportunities for improving energy efficiency may be revealed while the process and process equipment are being reviewed.

### Retrofit Strategies

Retrofitting existing boilers can dramatically improve the peak- and part-load efficiency of your boiler and extend the useful life of your heating systems. Your best options include these retrofit measures.

- **New Burners**—Efficient burners improve fuel combustion and reduce emissions of nitrogen oxide.
- **Temperature/Pressure Reset**—Temperature and pressure reset controls provide significant energy savings by minimizing fuel waste. Reset controls match the supply of steam with the demand for heat, instead of supplying steam at a higher pressure than is needed. The system water temperature is reset based on the outdoor temperature. If the outdoor temperature increases, the system water temperature is lowered.
- **Boiler Economizer**—A boiler economizer captures waste heat in the exhaust flue gases and uses it to preheat the boiler feedwater. When natural gas fuels the boiler, it is important to maintain the stack temperature at a minimum of 250°F to avoid condensation of the water vapor in the flue gases. With the use of an economizer, a boiler operating at a stack temperature of 500°F and 80% excess air would realize a 7% fuel savings.
- **Baffle Inserts**—Baffle inserts induce combustion gases to flow in a turbulent spiral pattern, which increases the efficiency of heat transfer.

### Consider Cogeneration

The most energy-efficient system for supplying both heat and electricity is a cogeneration system. These systems generate both reliable electricity and heat while reducing emissions and saving money. A cogeneration system consists of a gas turbine or reciprocating engine and a heat recovery steam generator, which is a type of boiler. If an old boiler requires major improvements, this may be the time to replace it with a cogeneration system.

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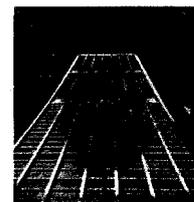
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## Green Buildings: LEED Is Updated

### Key Points

- The LEED rating system has been updated to address new technologies and environmental priorities.
- The new version alters the way credits and points are earned and identifies regional specific issues.
- New projects must register under the new version, while current projects can stay with the old system or upgrade with no additional registration fee.

On April 27, 2009, the U.S. Green Building Council (USGBC) launched the latest version of their Leadership in Energy and Environmental Design (LEED) rating system for green buildings. LEED Version 3 (v3) marks the continuing evolution of LEED to address new technologies and urgent priorities such as energy use and climate change. The goal of the USGBC and the LEED rating system is to help transform the built environment to sustainable building practices. To date, there are over 19,000 LEED registered projects, with nearly 2,500 achieving certification, according to the USGBC.



### What Is New in LEED v3?

The latest version of LEED is not completely new, but an overhaul of the existing commercial and institutional rating system. It incorporates a number of important changes that alter the way that points and credits are apportioned and earned, and reflects a new set of priorities and objectives.

- **Harmonization.** There are many different special rating systems for individual building types—such as schools or hospitals. Credits and prerequisites for these different ratings systems have now been consolidated and aligned so that they are consistent.
- **Credit Weightings.** Credits points have been adjusted to reflect their value in mitigating environmental impacts through energy efficiency and reducing greenhouse gas emissions.
- **Regionalization.** The LEED rating system now identifies regionally specific environmental priorities. Projects—depending on their location—can obtain bonus points for selected green credits that address regional environmental issues. Water conservation in the West and maximization of available sunshine in Florida are two examples of regional credits.

LEED v3 also updates LEED Online, the tool project teams use to manage registration and certification. The new version includes a set of new functionalities and enhancements designed to make the tool smarter and faster. The new version also moves the certification process to the Green Building Certification Institute, a non-profit organization affiliated with the USGBC. The move is designed to produce an improved certification process that is compliant with the International Standards Organization (ISO).

### How Does the Change Effect LEED Projects?

Projects currently under way can switch to v3 any time after April 27, 2009, or continue under the older Version 2. According to the USGBC, projects that choose to upgrade to the new version before October 24, 2009 will not have to pay a registration fee. There is a short grace period for new projects. After June 26, 2009 however, new projects will be required to register under v3.

The changes in LEED v3 do not apply to the LEED for Homes rating system. At this time, the new version impacts only commercial and institutional buildings and their existing rating systems: LEED for New Construction, Existing Buildings, Commercial Interiors, and Schools. LEED rating systems in development—such as Retail and Health Care—are not effected by the new version at this time.

### Natural Gas and LEED

Natural gas fueled technologies and systems still play a leading role in green building certification. For more information see, [In Green Buildings, Natural Gas is LEEDing the Way.](#)

### Want to Know More?

Visit the U.S. Green Building Council's Web site at <http://www.usgbc.org> or contact them at 1-800-795-1747.

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### Tailored Advice Saves Energy and Money

As the importance of environmental stewardship is realized in business sectors of all types, increasing the energy efficiency of products and processes can improve the company's bottom line exponentially, but sometimes it is hard to know where to start. Planning the most economical way to implement such programs can become a considerable issue to tackle without the proper resources.

No in-house energy expert? No problem. A wealth of information lies within every newsletter to help your company increase its energy efficiency and save money in the process.

Just by clicking on the [Commercial Energy Efficiency](#) or [Industrial Energy Efficiency](#) links, found in the **Tools You Can Use** section of the navigation menu of every newsletter, you can gain access to business-segment-tailored recommendations to lower energy costs and improve efficiency.

The customization of the Energy Efficiency Recommendations makes it an incomparable service. Offered to all of our readers at no cost, this service enables users to easily navigate through a wide variety of segments and functions to receive the most accurate recommendations. Users can also choose from five geographic-specific climate zones to ensure they are receiving the most accurate information for the company's specific situation.

Use the Energy Efficiency Recommendations to save money with innovative, yet easily implemented ideas.



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**APPENDIX F**

**DISTRIBUTE**

**GENERATION PROGRAM**

# **APPENDIX F - DISTRIBUTED GENERATION PROGRAM**

## **Program Materials**

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e. Southwest Webpage .....	89

**COMBINED HEAT and POWER**  
**Southwest Gas Incentive Program Application**

For questions regarding this application, please contact Key Accounts at (602) 395-4058

Project Name: \_\_\_\_\_ Date: \_\_\_\_\_

Project Address: \_\_\_\_\_

Project Contact Name: \_\_\_\_\_ Title : \_\_\_\_\_

Phone: \_\_\_\_\_ Cell: \_\_\_\_\_ E-Mail: \_\_\_\_\_

**Section I. Proposed Project**

**A. Size of Project in kW (or Hp if not producing electricity):** \_\_\_\_\_

**B. Project Description (e.g. 100 kW generator with waste heat to displace boiler load):**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**C. Size and Description of Proposed Equipment (e.g: 100 kW Caterpillar model XXX natural gas generator, 600,000 Btu/hour heat exchanger, electric switchgear, concrete supporting structure, process piping, etc).**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Section II. Existing Equipment**

**A. Size and Description of Pertinent Existing Equipment (e.g. 3,000,000 Btu/hour boiler, etc.)**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**B. Thermal load on site during normal operations:** \_\_\_\_\_ Btu/hour

**Section III. Costs**

**A. CHP Equipment Cost (Please list each major piece of equipment and related cost):**

1. _____	Cost: _____
2. _____	Cost: _____
3. _____	Cost: _____
4. _____	Cost: _____
5. _____	Cost: _____
6. _____	Cost: _____

**TOTAL Equipment Cost** Cost: \_\_\_\_\_

**B. CHP Installed Cost** (Please list elements of total installed cost, e.g. equipment, engineering, taxes, overhead, profit, etc):

- |          |             |
|----------|-------------|
| 1. _____ | Cost: _____ |
| 2. _____ | Cost: _____ |
| 3. _____ | Cost: _____ |
| 4. _____ | Cost: _____ |
| 5. _____ | Cost: _____ |
| 6. _____ | Cost: _____ |

**TOTAL Installed Cost:** \_\_\_\_\_ **Cost:** \_\_\_\_\_

**Section IV. Utility/Operation Information**

**A. Monthly utility bills** (Attach 12 monthly electric and gas utility bills showing the following:)

- Current monthly kW demand on site
- Current monthly kWh on site
- Current monthly natural gas use on site

**B. Operation**

Hours per day: \_\_\_\_\_ hours per day  
 Days per week: \_\_\_\_\_ days per week  
 Weeks per year: \_\_\_\_\_ weeks per year

**Section V. Projected Energy Savings and Fuel Efficiency**

Please enclose a copy of a preliminary project economic feasibility study. A final Engineering Study for this project, which has been stamped by an Arizona registered Professional Engineer (PE) will be required prior to award.

**A. Projected Energy Savings**

Reduction in kW demand: \_\_\_\_\_ kW  
 Reduction in annual kWh from grid: \_\_\_\_\_ kWh/year  
 Reduction in annual thermal use: \_\_\_\_\_ Btu/year  
 \_\_\_\_\_ therms/year  
 \_\_\_\_\_ kWh/year (if applicable)  
 Annual fuel use by prime mover: \_\_\_\_\_ therms

**B. Projected Fuel Efficiency** (during normal operation, using the higher heating value. Insert values into equation below as shown:)

Prime mover output: \_\_\_\_\_ Btu/hour  
 Heat recovery: \_\_\_\_\_ Btu/hour  
 Prime mover input: \_\_\_\_\_ Btu/hour

$$\text{Efficiency} = \frac{[\text{Prime Mover Output} + \text{Heat Recovery}]}{\text{Prime Mover Input}} \times 100\%$$

Efficiency = \_\_\_\_\_ %

Company official with responsibility for this project

Name (print): \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title \_\_\_\_\_

**Supplemental Information (to be completed by Southwest Gas)**

**Section VI. Projected Estimated Annual and Lifespan Emissions, Energy, and Water Savings**

**A. Emissions Savings**

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**B. Energy Savings**

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**C. Water Savings**

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**CHP Systems Can  
Help Arizona Businesses  
Increase Energy Efficiency  
And Save Energy Costs**

Southwest Gas commercial and industrial customers in Arizona have an opportunity to increase the energy efficiency and lower energy costs of their businesses. Customers may qualify for financial support up to 50 percent of the installed costs for combined heat and power (CHP) systems that meet requirements and energy-efficiency standards.

Supported by



INTERMOUNTAIN  
**CHP  
APPLICATION  
CENTER**



*The Natural Choice  
For Your Business*

**Combined  
Heat and Power**



The opportunity for you to save money and increase the energy efficiency of your business is only a phone call away. Contact Southwest Gas Key Account Management, 602-395-4058, for more information.



## Is a CHP System Right for Your Business?

These high-efficiency CHP systems, formerly known as cogeneration, produce localized, on-site power and heat from one fuel source, such as natural gas. They can vary in size from several kilowatts (kW) to several megawatts (MW) of produced electric power, and can be used in a variety of commercial, industrial and institutional applications.

### CHP might be right for your business if you have one or more of the following:

- High electricity prices (more than \$0.07 to \$0.08 per kWh)
- Long operating hours of 3,000 – 6,000 per year or more
- Significant heating, water heating or process loads
- A central heating and cooling system already in place
- Spark spread between self generation and utility purchase of approximately \$0.03 to \$0.04 per kWh
- An average electric load-to-peak load ratio greater than 0.7

### Program Funding

For a business to be eligible for funding, CHP technologies must achieve a total fuel efficiency of 60 to 70 percent or higher. This efficiency must be demonstrated during standard operations that will vary according to the type of facility where CHP is utilized. Incentive awards include the following levels:

- **\$500/kW** for CHP systems with minimum fuel efficiency of 70 percent, up to a maximum of 50 percent of the installed cost of any project.
- **\$450/kW** for CHP systems with minimum fuel efficiency of 65 percent, up to a maximum of 50 percent of the installed cost of any project.
- **\$400/kW** for CHP systems with minimum fuel efficiency of 60 percent, up to a maximum of 50 percent of the installed cost of any project.

### Project Evaluation and Selection

Southwest Gas and its Key Account Management Department will review and select qualified projects on a first-come, first-served basis.



Most CHP systems are configured to generate electricity or mechanical power, recapture the waste heat and use it for space heating, water heating, industrial steam loads, air conditioning, humidity control, water cooling, product drying or any other thermal need. Alternately, CHP may use excess heat from industrial processes and turn it into electricity.

Project applications not initially selected will remain active for three years, and will be considered prior to other projects submitted in later application cycles. The incentive program will continue until available funds are depleted. (Funding not used in one year cannot be carried over to the next.)

### Application Dates

Opening and deadline dates to submit applications can be found at [www.swgas.com](http://www.swgas.com)

### Application Requirements

This program is limited to industrial or commercial customers in Arizona. Interested customers are required to complete a program application form and include the following documentation:

- 12 months of gas and electric utility bills
- A feasibility or preliminary economic study of the proposed project

Contact Southwest Gas  
Key Account Management  
**602-395-4058**  
for more information.

*Submitting an application, however, does not guarantee funding. Projects will be evaluated on their projected fuel efficiency, as well as emission and water savings. An Arizona registered professional engineer (PE) study will be required prior to the final award.*





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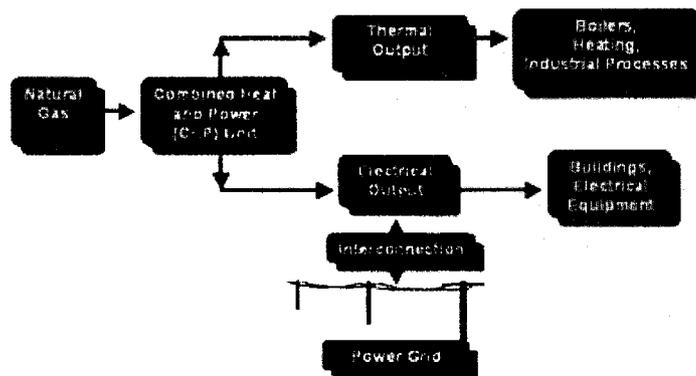
**Combined Heat and Power-Incentives Now Available in Arizona**

**Program Description**

Southwest Gas has a program designed for commercial and industrial customers in Arizona that encourages the installation of high efficiency combined heat and power (CHP) systems.

Formerly known as cogeneration, CHP systems will normally produce localized, on-site power generation. They can vary in size from several kilowatts (kW) to several megawatts (MW) of produced electric power. There are many benefits including greater efficiency, with related energy savings and lower energy costs.

CHP describes any system that simultaneously or sequentially generates electric or mechanical energy and utilizes the thermal energy that is normally wasted. Most CHP systems are configured to generate electricity or mechanical power, recapture the waste heat and use that heat for space heating, water heating, industrial steam loads, air conditioning, humidity control, water cooling, product drying or any other thermal need. Alternately, CHP may use excess heat from industrial processes and turn it into electricity.



CHP technologies will be required to achieve a total fuel efficiency of 60% or higher in order to qualify for funding. This efficiency must be shown during standard operations as defined by the customer. Standard operations will vary depending upon the type of facility where CHP is being utilized.

**Incentives**

- \$500/kW for CHP systems with minimum fuel efficiency of 70%, up to a maximum of 50% of the installed cost of any project.
- \$450/kW for CHP systems with minimum fuel efficiency of 65%, up to a maximum of 50% of the installed cost of any project.
- \$400/kW for CHP systems with minimum fuel efficiency of 60%, up to a maximum of 50% of the installed cost of any project.

**Complimentary Energy Consultation**

Interested in a free energy consultation from Southwest Gas? Please call your IGE or our hotline at 702-364-3063.

**ENERGY HISTORY**

When was natural gas first used as an energy source?

[View Answer](#)

**Energy Pricing & Future Projections**  
a weekly update

CHP proposals must show savings in one or more of the following areas: energy usage, energy demand, emissions, and water use. These savings will be estimated by comparing a baseline with and without the measures.

**Annual Funding Available**

- \$350,000 total available annually as incentives
- \$22,000 total available annually for funding of energy/design studies by consultants

**Program Limitations and Information**

This program will be limited to Southwest Gas Arizona customers. Southwest Gas Key Account Management engineers or its contractors may work with the customer or customer's consultants to prepare preliminary economic studies and environmental assessments to determine the feasibility of CHP projects.

**Measurement and Evaluation**

Southwest Gas Key Account Management Supervision will verify energy savings and demand reductions.

**Information**

Contact Brian O'Donnell (602-395-4058) at Southwest Gas for more information.

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Agreement
COMBINED HEAT and POWER (CHP) PROGRAM

Date:
Project Name:
Project Company:
Project Address:
Project Installed Cost: \$
Installation Incentive: \$
Engineering Study Incentive \$
Estimated Project Start Date:
Estimated Completion Date:
Contact Name:
Title:

I. PURPOSE

This Agreement between the Project Company ("Customer") and Southwest confirms Customer compliance with CHP program ("Program") requirements and clarifies the responsibilities of all parties. It also confirms CHP project ("Project") funding, and the schedule and requirements for payment of incentives. Finally, it serves as Customer certification that the Project will be installed and remain operational for a minimum of three (3) years.

II. REQUIREMENTS for PROJECT FUNDING (Customer to initial where indicated to signify acknowledgement)

- a. Project fuel efficiency (check one):
i. Seventy percent (70%)
ii. Sixty-five percent (65%)
iii. Sixty percent (60%)
Applicable incentive (check one):
\$500/kW
\$450/kW
\$400/kW
b. Savings (complete all that apply):
i. Energy usage kWh
ii. Energy demand kW
iii. Emissions
iv. Water
c. Verification of total Project cost: \$
d. Twelve (12) months of gas and electric utility bills have been provided
e. A copy of the project engineering study, signed and stamped by an Arizona registered Professional Engineer (PE) has been provided

### III. CUSTOMER AGREEMENTS

\_\_\_\_\_ initial

Customer agrees to install the Project as indicated in Section II of this Agreement.

Customer agrees that Project shall remain operational for a minimum of three (3) years after all incentive payments have been received.

Customer will demonstrate Project operation and energy savings for Southwest Gas.

Customer will sign compliance documents for authorization of each incentive payment as indicated in Section V.

### IV. SOUTHWEST GAS AGREEMENTS

Southwest agrees to provide the following:

- i. Initial and ongoing Project consultation as needed
- ii. Recommendations for qualified engineering studies
- iii. Verification of installation and energy savings
- iv. Ongoing verification of Project operation
- v. Calculation of:
  1. Emissions savings
  2. Water savings
- vi. Incentives for engineering studies and installation of Project in accordance with Program guidelines

### V. PAYMENT SCHEDULE

\_\_\_\_\_ initial

Payment for qualified engineering study (Study) will be made after Southwest receives a copy of the Study, signed and stamped by an Arizona registered PE. Customer will be required to sign a compliance document authorizing payment.

Payment of incentives (up to 50 percent of installed cost) will be paid according to the following schedule and will be based on **operational energy performance**. Customer will be required to sign a compliance document authorizing each payment. (Sample attached)

Initial incentive payment will be based on Project as planned.

- i. **Initial payment** – One-half of agreed upon total incentive after provision to Southwest of verified invoices for equipment purchase and signing of compliance document

Final incentive payment will be based on actual energy performance during operation, as verified by Southwest. Final payment may be adjusted up or down based on demonstrated energy performance.

- ii. **Final payment** – Remainder of agreed upon total incentive after Southwest verification of Project completion, initiation of operation, confirmation of actual energy performance, and signing of compliance document.

### VI. LIMITATIONS

Nothing in this Agreement shall be construed as limiting or affecting the legal authorities or management abilities of any of the parties. Either party to this Agreement may withdraw from this Agreement without penalty by providing written notice of termination to the other party prior to the payment of any incentives under the Program.

**VII. TERMINATION by CUSTOMER**

\_\_\_\_\_ initial

If Project is terminated by the Customer for any reason after any portion of incentives has been received, all monies paid to Customer must be refunded to Southwest within thirty (30) days of notification of Customer's intent to terminate.

**VIII. TERMINATION by SOUTHWEST**

If Project is terminated by Southwest due to breach of this Agreement by the Customer for any reason, then incentive payments shall be terminated and all monies previously paid for the Project must be refunded by the Customer to Southwest within thirty (30) days of written notification of Southwest's intent to terminate.

Southwest reserves the right to terminate this Program at any time for any reason; however, existing commitments will be honored through Project completion.

**IX. COMMUNICATION**

All communications concerning this Agreement shall be in writing and shall be delivered to each party at its address indicated or to such other address as either party may hereafter specify in writing.

This Agreement may not be amended except in writing executed by all of the parties hereto.

**X. ASSIGNMENT**

No assignment of this Agreement or of any payments which may be due hereunder shall be binding upon Southwest without its written consent.

**XI. COPY OF AGREEMENT**

Applicant hereby acknowledges receipt of a copy of this Agreement.

\_\_\_\_\_ initial

**XII. LEGAL JURISDICTION**

This Agreement is subject to the jurisdiction of the Arizona Corporation Commission, and the laws of Arizona shall govern the interpretation of this Agreement.

**Combined Heat & Power Program**

WHEREFORE, the parties have executed this Agreement as of the indicated date.

**Applicant**

Company Name

\_\_\_\_\_

\_\_\_\_\_  
Name and Title (please print)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**Southwest Gas Corporation**

\_\_\_\_\_  
John Hester, Sr. Vice President  
Regulatory Affairs & Energy Resources

\_\_\_\_\_  
Date



**Energy Efficiency Programs**

**Arizona Energy Efficiency Programs**



**Combined Heat and Power Program**  
*The Natural Choice for Your Business*

Southwest Gas commercial and industrial customers in Arizona have an opportunity to increase the energy efficiency and lower energy costs of their businesses. Most CHP systems are configured to generate electricity or mechanical power, recapture the waste heat and use it for space heating, water heating, industrial steam loads, air condition, humidity control, water cooling, product drying or any other thermal need. Alternately, CHP may use excess heat from industrial process and turn it into electricity.

**Is a CHP System Right for Your Business?**

These high-efficiency CHP systems, formerly known as cogeneration, produce localized, on-site power and heat from one fuel source, such as natural gas. They can vary in size from several kilowatts (kW) to several megawatts (MW) of produced electric power, and can be used in a variety of commercial, industrial and institutional applications.

**CHP might be right for your business if you have one or more of the following:**

- High electricity prices (more than \$0.07 or \$0.08 per kWh)
- Long operating hours of 3,000 – 6,000 per year or more
- Significant heating, water heating or process loads
- A central heating and cooling system already in place
- Spark spread between self generation and utility purchase of approximately \$0.03 to \$0.04 per kWh
- An average electric load-to-peak load ratio greater than 0.7

**Program Funding**

For a business to be eligible for funding, CHP technologies must achieve a total fuel efficiency of 60 to 70 percent or higher. This efficiency must be demonstrated during standard operations that will vary according to the type of facility where CHP is utilized. Incentive awards include the following levels up to a maximum of 50 percent of the installed cost of any project:

Minimum Fuel Efficiency	Incentive
70 Percent	\$500 per kW
65 Percent	\$450 per kW
60 Percent	\$400 per kW

**Project Evaluation and Selection**

Southwest Gas and its Key Account Management Department will review and select qualified projects on a first-come, first-served basis. Project applications not initially selected will remain active for three years, and will be considered prior to other projects submitted in later application cycles. The incentive program will continue until available funds are depleted. (Funding not used in one year cannot be carried over to the next.)

**Application Dates**

	Opening Date for Applications	Deadline for Applications
<b>Cycle 1</b>	April 15, 2008	June 30, 2008
<b>Cycle 2</b>	August 2, 2008	October 31, 2008



**Energy Efficiency Programs**

**Arizona Energy Efficiency Programs**

**HOME**



**Application Requirements**

This program is limited to industrial or commercial customers in Arizona. Interested customers are required to complete a program application form and include the following documentation: Twelve months of gas and electric utility bills and a feasibility or preliminary economic study of the proposed project.

For an application, click [here](#).

***Note:** Submitting an application, however, does not guarantee funding. Projects will be evaluated on their projected fuel efficiency, as well as emission and water savings. An Arizona registered professional engineer (PE) study will be required prior to the final award.*

**Contact Southwest Gas Key Account Management at 602-395-4058 for more information.**

**APPENDIX G**

**OFFICER**

**CERTIFICATION**

## **APPENDIX G – OFFICER CERTIFICATION**

**AFFIDAVIT IN SUPPORT OF SEMI-ANNUAL DEMAND SIDE MANAGEMENT REPORT**

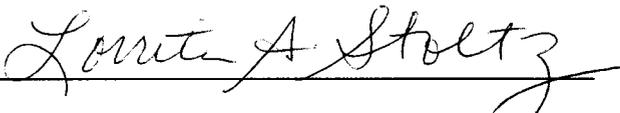
STATE OF NEVADA        )  
                                  ) ss.  
COUNTY OF CLARK     )

The undersigned, being first duly sworn, deposes and says that he has been informed and is competent to testify to the following:

1.           I am an officer of Southwest Gas Corporation, and my present position is Senior Vice President/Regulatory Affairs & Energy Resources.
2.           I have reviewed Southwest Gas Corporation's Semi-Annual Demand Side Management Report, dated September 28, 2009 and I am informed and believe that the information contained therein is true and accurate.
3.           I attest costs charged to Technology Information Center (TIC) program are not being recovered in base rates.

  
\_\_\_\_\_  
John P. Hester

SUBSCRIBED and SWORN to before me this 28<sup>th</sup> day of September 2009.

  
\_\_\_\_\_  
NOTARY PUBLIC in and for said County and State

