

Convenience Store and Service Stations EE

1. Projected Program Budget	\$	700,000
2. Projected Program Impacts		
MWh		1,798
MW (Summer Peak)		0.59
3. Program Cost Effectiveness		
TRC		0.60
PAC		2.45

4. Program Descriptors

Market Sector: Non-Residential (Convenience Stores & Service Stations)

Program Classification: Statewide

Program Status: New

5. Program Statement:

The Convenience Store & Service Station Energy Efficiency (CS/SS) Program will promote greater energy efficiency in new convenience stores. The program focuses on recovering heat that is rejected by refrigeration and ice maker equipment (to the geexchange heating and cooling ground loop system) where it can be used to heat domestic water and water for a car wash or other such application. Geexchange systems (a.k.a. geothermal or ground source heat pumps) heat and cool buildings at significant savings, 25 to 70 percent, compared to traditional heating and cooling systems. In the heating mode, a geexchange system brings the earth's natural warmth into the building and transfers the heat into each room or zone via a heat pump. In the cooling mode, they work in reverse, absorbing the heat from inside a building and transferring it to the cooler earth below. The Program will reach potential participants through outreach and marketing, and provide design assistance including soil thermal conductivity testing, field support and follow up services. The Geothermal Heat Pump Consortium (GHPC) will partner with two to three equipment vendors and installers to provide the design and installation assistance services proposed herein at preferred pricing to the CS/SS.

6. Program Rationale

The "Taking Convenience Store & Service Station Energy Efficiency to the Next Level Program (CS/SS Program) will promote greater energy efficiency in new convenience stores. The Geothermal Heat Pump Consortium (GHPC), a nonprofit organization, has partnered with three major turnkey geexchange providers: Trane Southern California, Trison Construction, and WFI Global, Inc. Together, the team will focus on a market—convenience stores and service stations—that is an ideal candidate for this unique hybrid adaptation of geexchange. Specifically, the team will target multi-facility owners and offer them a packaged deal to leverage economies of scale and ensure commitment to install and installations are secured within the project period.

The program is designed not to pay for these measures, but the team will provide owners with assistance and access to any other available SCE rebates, incentives or program opportunities as

applicable (i.e. emerging renewable technologies, such as LED exit lights, efficient lighting designs, proper infiltration and insulation, and daylighting).

7. Program Outcomes:

The Team's goal is to make sure the units get into the ground, energy is saved and the customers are satisfied. To finance these projects, the GHPC and its partners will, in addition to traditional financing, employ several alternative financing mechanisms and techniques to help secure these projects, including job pooling to achieve economies of scale, loop leasing to defray the cost of installations.

8. Program Strategy:

This Program will dramatically improve energy efficiency in convenience stores and service stations through the installation of geexchange, which will be installed in a total of 45 facilities throughout the SCE service territory. The Program Team will identify eligible multi-site franchise locations and/or chain operations through a targeted outreach and marketing effort. In cases where this state-of-the-art geexchange application is found to be a good technology fit for the particular store and the owner can be convinced of its merits, the Program Team will provide design assistance that will include a life cycle cost analysis, soil conductivity testing, and field support. The team will be able to provide to the project access to traditional and alternative financing mechanisms and help the facilities obtain additional Federal tax benefits, making them eligible for tax deductions of up to \$1.80 per square foot of facility space. Although all projects in this sector are potentially eligible, the team will focus on chain stores in order to secure faster installations and projects at multiple sites. They will work with key industry players that can support their effort and accelerate deployment, including the National Association of Convenience Stores, California Grocers Association Convenience Store Council, and California Independent Grocers & Convenience Stores.

9. Program Objectives:

The program will result in 1,798,497 kWh of direct electricity savings and 594 kW of direct demand savings in the near term. This would reduce CO₂ emissions by 2,201 metric tons per year, NO_x by 0.013 pounds per year and SO₂ by 0.026 pounds per year. These savings are equivalent to removing 486 cars from the road or planting 301 acres of new trees. Because geexchange systems do not consume water, these installations would save 235,000 gallons of water per year.

For the convenience store or service station, the benefit occurs right at the point of use, permanently lowering heating, cooling and water bills. Annual operating costs average ten cents per square foot, compared to about forty cents per square foot for conventional HVAC systems.

10. Program Implementation

The Program will commence within two weeks of the kick-off meeting. Customer and industry contacts, sales calls and outreach sessions would be scheduled within the first month. Initial installation commitments will begin roughly 120 days after initiation and continue through the two-year Program.

Task 1: Reassess Timeline, Marketing Plan & Pricing with SCE

The first task will be to make any necessary changes to the CS/SS Program Team's scope of work to ensure that SCE's expectations are fully met in this program.

Due date: Month 1

Deliverable: Meeting with SCE, revised timeline, marketing plan, budget (as requested).

Task 2: Assemble and Submit SCE Approved Purchase Order Kit

Due date: Month 1

Deliverable: No modifications are required.

Task 3: Building Tracking System

The Program Team will tailor an already existing program tracking systems to support ongoing internal and external monitoring of this program. It will be modeled on the system that is routinely developed for these types of programs, with enhancements or features that SCE requests. The program team will use this tracking system to compile and analyze program data on a real time basis. The database will be adapted to export data to an ASCII CSV flat file mapped into the reports that is supplied to SCE. It will contain information on installed projects (number of projects, total kW demand reduction, total kWh savings, estimated cost of install, estimated annual cost savings) and committed projects. Each project will have a tracking system project number and all relevant SCE information (account number, service address, etc.), information on site visits, scheduled construction, savings, program budget disaggregated and milestones achieved.

Due date: Month 2

Deliverable: Template for the tracking system in the design and final stage. Actual copy of tracking system provided upon request.

Task 4: Develop Marketing Materials and Obtain Approval from SCE

Due date: April 2006

Deliverables:

1. Four press releases
2. Presentation materials for upcoming personal meetings with prospective customers
3. One case studies of geoexchange installations in convenience stores and service stations
4. Industry marketing materials for trade association meeting booths we will man
5. Program brochure tailored to the convenience store and service station market in Southern
6. California that will be handed to nearly everyone we meet and mailed to targeted groups
7. Mass mailing to convenience store and service station owners and decision makers
8. Modifications to the GHPC website www.geoexchange.org to include information on this program and links for use by customers and trade allies involved in the program
9. Access to GHPC's toll-free 800 number manned by GHPC staff
10. Access to GHPC fulfillment center materials, which includes publications, videos and studies

Task 5: Implement Marketing Campaign

The CS/SS Program Team will directly market the program to the target sector in multiple ways:

- GHPC will issue several press releases to introduce the program to key audiences, working with organizations such as the National Association of Convenience Stores,

California Grocers Association Convenience Store Council, and California Independent Grocers & Convenience Stores to identify specific projects in Southern California.

- After contacting these key people, they will schedule one-on-one meetings to describe the program and the value proposition for geexchange.
- They will provide case studies of geexchange installations in similar establishments and encourage the prospective customer to contact the owner or project designer with questions.
- They will also provide the program brochure and a video describing geexchange in this sector. Once the program begins to develop they will bring in one of partner providers (Trane, Trison, or WFI) to work with the prospective customer early on to help establish the relationship and provide sales support.
- The Team will also promote the program at trade association conferences and meetings and conduct mailings to owners and decision makers, with an emphasis on chains that have multiple sites in the region and provide information through their website and toll-free 800 number.
- The Team will also contact all of the architects, engineers, installers and other service we know about in the region to inform them about this program.

At the outset, the Team will contact all of the architects, engineers, installers and other service providers that work with the CS/SS market segment that we know about in the region to inform them about this program and get qualified leads from them. We ultimately expect to have 100 or more face-to-face meetings, which will typically be held at the customer's offices. Our goal is to cultivate existing relationships between our trade allies and CS/SS owners and decision makers.

Due date: March 2007

Deliverable: Summary of marketing plan implementation activities in Monthly Reports.

Task 6: Enroll Customers

The Program Team will enroll customers in this program in a manner that is somewhat different from other programs. In this program, customers will be provided with Design Assistance to help demonstrate the feasibility of the project and if needed provided with a thermal conductivity test to help determine the actual length and ultimately cost of the ground heat exchanger and are then given the opportunity to choose an installer on their own or they can use one of our partner providers. The team's role will be to advise customers on geexchange system and give them the technical assistance and general troubleshooting that is needed when a new technology is being adopted.

Due date: March 2007

Deliverable: Summary of customer enrollment activities in Monthly Reports.

Task 7: Perform Program Services

Upon completion of task 5, subsequent activities will center around design assistance, alternative financing, and necessary follow-up activities.

Design Assistance: The design assistance task will attempt to eliminate the knowledge barriers and technical difficulties that jeopardize the successful execution of energy efficiency projects that are complex in scope. The Program Team will provide design assistance for 45 projects, working closely with design practitioners and other key players by utilizing an approach that features geexchange in the context of all building elements. Project representatives will include

engineers, architects, and design experts skilled with designing and implementing energy efficient construction techniques. These experts will conduct energy audits, review design documents, verify life cycle cost analyses that were prepared, and provide assistance with a variety of design and other project documents as required. Overall, program intervention will be aimed at getting commitments to install geexchange systems at 45 convenience stores and service stations in SCE's service territory.

Financing Activities: The Project Team will work with several financial institutions that offer financing of geexchange installations. To ensure success (and minimize problems), the Team will focus on alternative financing approaches that have proven successful in the past such as standard loans, innovative loans, loop leasing, chauffage, loop guarantee and performance contracting.

Due date: March 2007 for design assistance to secure commitments. November 2007 to provide installation, project and financing support as needed.

Deliverable: Summary of all design assistance and follow up activities conducted in Monthly Reports.

Task 8: Inspect Jobs

The Program Team will inspect activity at each step in the design and installation process.

Due date: Inspections will be completed at the end of each project through December 2007

Deliverable: Description of all inspection activity contained in Monthly Reports to SCE, including the name of the customer, the name of facility, purpose of the visit, issues identified and resolution.

Task 9: Remedy Installation Issues and Re-inspect Corrected Jobs

Customers will be protected by the contractual agreement entered between them and the partner providers through warranties on equipment and loop and/or performance guarantees. Nevertheless, in cases where a problem does arise, the team will first alert SCE of the issue, then personally work with the customer, contractors and other parties to achieve a resolution. They will report back to SCE on the ultimate outcome.

Due date: Remedy issues (if any) through December 2007

Deliverable: Description of problems as they emerge, actions taken, and resolution.

Task 10: Perform Customer Satisfaction Surveys

Surveys of all participating customers will be conducted, covering all 45 locations, as well as customers who begin the process and drop out. The Program Team will conduct the surveys on 2 occasions (mid program and program end) over the duration of the program to reflect the pattern of installations that emerge. The surveys will be conducted by telephone because of the historically low completion rate associated with written surveys, and the opportunity phone interview gives to clarify questions and/or responses.

Due date: December 2006 and December 2007

Deliverable: Customer satisfaction survey instruments, Analysis of results of surveys.

Task 11: Address Customer Satisfaction Issues

The Program Team will prepare a survey analysis which will help develop an "action plan"

based on findings. The Program Team will resolve any problems that are identified in these surveys, and undertake mid-course correction where the surveys identify any deficiencies in program administration.

Due date: December 2006 and December 2007

Deliverable: Survey analysis, action plan, description of changes to program

Task 12: Invoice SCE

Due date: Monthly -- Ongoing

Deliverable: Monthly invoices, along with monthly reports.

Task 13: Perform Program Reporting

The GHPC team will submit SCEJ's required workbooks each month and an ASCII flat file generated by the program tracking system. These documents will validate the energy savings and all program activity in the relevant period. The GHPC team will submit program summary reports and any ad hoc reports that are needed.

Due date: Monthly – Ongoing

Deliverables: Monthly Reports and supporting spreadsheets submitted to SCE

Task 14: Program Ramp Down

Two months before the end of this two-year program, the Program Team will begin ramping down the program activities. This will include the completion of surveys, closure of marketing activities and recruitment of participants, completion of design assistance work, and added assistance to implement any other actions expected of the team prior to the program's conclusion.

Due date: December 2007

Deliverables:

1. Field the final customer satisfaction survey and analyze results
2. Seek closure (go/no go) on projects that are stalled in the pipeline
3. Cease active program marketing and outreach aimed at finding new customers (all 45 installations should be in the works at this point)
4. Accelerate efforts to complete outstanding jobs
5. Implement what other actions SCE expects at this stage of the program

Task 15: Shut Down the Program

The Program Team will shut down the program in the final month. The Final Report and invoice would ideally be submitted to SCE in February 2008, but can be moved to December 31, 2007, if required by SCE guidelines.

Due date: December 2007 / February 2008

Deliverables:

1. Submit Final Report to SCE
2. Submit final invoice to SCE
3. Implement other actions SCE expects at this stage of the program

Task 16: Respond to Miscellaneous Utility/CPUC Data Requests

The Program Team will respond to all SCE and CPUC data requests on an as-requested basis over the course of the program, and the months following its conclusion.

Due date: Ongoing through December 2007

Deliverables: Written response to all data requests within 2 business days. Full access to any documents requested by SCE and/or CPUC.

Task 17: Follow Up with Remaining and New Customer Issues

The team will work diligently to resolve any and all issues that arise.

Due date: Ongoing through December 2007

Deliverables: List of customers contacted for follow up, actions taken, and description of how these actions resolved the issues

Task 18: Submit Final Program Report

The Program Team will submit a final program report that describes the program in terms of its achievements, challenges, goals attained and lessons learned.

Due date: February 2008

Deliverable: Final Report

11. Customer Description:

Customers in this program are defined as convenience stores and service stations—either existing or planned—that are located within the SCE service territory. In all, there are approximately 4600 such establishments in the SCE territory. A total of 45 projects will be designated “customers” insofar as the team will work with each of these project teams to implement geexchange systems. The GHPC will focus on multi-facility owners and offer them a package deal or individual store owners with convenience stores and service stations that are either planned for construction or scheduled for a major renovation in the near future. Together, these projects represent a significant energy consumer group.

12. Customer Interface: Please see Task 6 (Above).

13. Energy Measures and Program Activities:

13.1. Measures Information: Installation of 45 Geothermal Systems.

13.2. Energy Savings and Demand Reduction Level Data:

Gross Unit Annual Electricity Savings: 39966.6 kWh/unit

Demand Savings: 13.2 kW/unit

13.3. Non-energy Activities (Audits, Trainings, etc.): Please see Task 4, 5 and 7 (Above)

13.4. Subcontractor Activities: The team is led by the GHPC, which is a non-profit organization that has been implementing large-scale programs for more than a decade. Other major partners in the team include Trane, WFI Global, Inc., and Trison Construction.

13.5. Quality Assurance and Evaluation Activities: Please see Task 8 & 9 (Above).

13.6. Marketing Activities: Please see Task 5 (Above).