CYPRESS LTD *For PGE Customers*

Incentive Application Form

Shift & Save®

Instructions: *Please confirm you are using the most recent Application Form by verifying the revision date above, and going to your Program Administrator's website (www.shiftnsave.com). Please include all required information with your submittal.*

☐ New ☐ Retrofit ☐ Ice Bear ☐ SCWS ☐ IMIOC

Application Number:_____
(Administrator Use Only)

1. Customer Information

Gov't or Company Name		
Contact Name		
Mailing Address		
City	CA	Zip
Parent Company if Applicable		
Phone		
E-mail		
Application Date		
System Owner if not Customer		

2. Sponsor/Authorized Payee

Gov't or Company Name		
Contact Name		
Mailing Address		
City	CA	Zip
Phone		
E-mail		
Additional Information		

Does Customer authorize incentive to be paid directly to sponsor? (Check one). Yes? ☐ No? ☐

3. Project Site information

Site Contact			
Site Address	City	CA	Zip
Mailing Address	City	CA	Zip
Contact Phone	Contact E-mail		

Utility Information

Current PGE Electric Rate	PGE Service Acct. Number
PG&E Acct Manager	Phone

Administrative Use Only

Total Estimated Peak Shift (from Feasibility)	kW
Estimated Installation Incentive if installed by 7/31/2008	
Estimated Installation Incentive if installed by 7/31/2009	
Estimated Installation Incentive if installed by 4/30/2010	
Estimated Installation Incentive if installed by 4/30/2011	

4. Installation Contractor Information

Contact Name		
Mailing Address		
City	CA	Zip
Parent Company if Applicable		
Phone		
E-mail		

5. Entity Responsible for Feasibility or T24 Information

Contact Name		
Mailing Address		
City	CA	Zip
Phone		
E-mail		

6. Customer Agreement with Program Guidelines

Agreement by Authorized Host Customer	
Name	
Title	
Date	

I agree that I have not received incentives for the same peak load shift system from any utility, state, or local peak load shift program. Yes? ☐

I certify that the information on the incentive application is true and correct. Yes? ☐

I have read and agree to the Terms & Conditions Yes? ☐

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› PROGRAM TERMS AND CONDITIONS

Review the following Program Requirements to determine if your Proposed Project meets the qualifications for this program, and you agree with the following Terms & Conditions.

› PROGRAM OVERVIEW

The Cypress/PG&E *Shift & Save*® program provides for the installation of Thermal Energy Storage (TES) systems for the purposes of storing thermal cooling capacity during off-peak hours and/or partial-peak hours in order to meet thermal cooling load in subsequent on-peak hours. The Program's targeted customers are bundled service, commercial, industrial, and agricultural customers as either a retrofit or new construction application in PG&E's electric service territory.

› PROGRAM REQUIREMENTS

Double-Dipping: Proposed projects must not apply for or take incentives or services for the specific measures and kW savings provided under this Program from another utility, state, or local program. Under this program, funding from bond measures is not considered to be an incentive and is not subject to double dipping criteria. In some cases, funding can be supplemental to other program funding (such as Savings By Design) if incremental energy savings can be identified and justified.

Project Feasibility Study: A PFS will conducted by the TES applicant or designated customer Consultant on proposed installation sites to determine the applicability and savings of the TES equipment to the specific load and use. Studies shall be reviewed by a professional Mechanical Engineer, licensed and registered in the State of California. Studies need to be complete, professional reports with an Executive Summary, a Project Summary Sheet, and sequentially numbered pages and appendices in MS Word or Acrobat PDF electronic format. The up-front kW amount attributed to each TES used for the incentive amount will be determined using the customer's installed equipment ratings and approved by PG&E. The PFS should include:

- Description of the recommended TES equipment to be installed;
- Analysis of current peak usage (kW) and energy consumption (kWh) for the equipment whose peak electrical usage is shifted to off peak
- Estimated electricity energy savings (gross kWh), demand reduction (gross kW)
- Estimated Project completion date;
- Cost-effectiveness
- Equipment specifications, if applicable, that meet the Program requirements;
- TES data monitoring planning
- After the Customer and Consultant have (i) agreed upon the TES to be installed, (ii) Customer has reviewed the PFS, and (iii) Consultant/Customer has confirmed with Cypress that funding is still available; Consultant/Customer will submit the PFS to Cypress for its review and approval. Project cannot move forward without Cypress approval of the PFS.

› APPLICATION INSTRUCTIONS

1. Customer Information

Input information for the PG&E Customer for whom the project is being proposed. If the Customer is owned by a Parent Company, provide that information. If the proposed system is Owned by another entity, provide that information.

2. Project Site Information

Input information for the proposed Project Site, including a Site Contact (if different from the primary Company Contact provided above). Input PG&E Service Account information for the Project Site

3. Installing Contractor Information

Input information for the Contractor who will be installing the Project. If the Contractor is not known at time of application, provide once selected.

4. Engineer of Record Information

Provide information for the Project's Engineer. Licensed Engineer is required for verification of Feasibility Study.

5. Customer Agreement Criteria

Application must be signed by an Authorized Company Representative certifying information provided is accurate and program terms are agreed to

› INCENTIVE RESERVATION REQUIREMENTS CHECKLIST

The following items are required for evaluation and reservation of Program Incentive funds. Not all items are required at submittal of Application.

- Completed Program Application, Reviewed & Approved by Cypress and PG&E
- Site PFS, Completed and Approved
- Data Monitoring Equipment installed and operating
- Site Access Agreement, Completed & Executed by Customer as needed
- Statement of Operation provided by Customer indicating that Site Operation for duration of Program timeline will be as modeled in Site Feasibility Analysis and Energy/Economic Models
- Customer must be a PG&E Bundled customer in good standing
- Program Incentives will not be paid until systems are installed, and Project has been closed as 'Substantially Complete'.

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› SITE DATA MONITORING:

Measurement points

- Electric demand (kW) of all chilled water plant equipment
- Upon the TES to be installed, (ii) Customer has reviewed the PFS, and (iii) Consultant/Customer has confirmed with Cypress that funding is still available; Consultant/Customer will submit the PFS to Cypress for its review and approval. Project cannot move forward without Cypress approval of the PFS.
- Savings Calculations: Determine the financial savings for the proposed Measure(s) using the Customer's actual PG&E electric usage from the prior two (2) years. If two (2) years of prior electric usage is not available, then the PFS shall be based on the amount of data available.

For New Construction/Remodel/Tenant Improvement bundled service

- Feasibility analysis will be done by the consulting designers, engineers, employed by the new construction, remodel, and tenant improvement project owners. Title 24 compliance will be validated by EnergyPro, or MICROPAS

Internet Access

- The Participant is to provide internet access for data monitoring of TES
- 1. A Cat 5 (10/100) connection with function internet connection
- 2. A Static IP address (Private or Public) or other acceptable means to communication to data monitoring equipment

Permanent Load Shifting//Demand Reduction

- Proposed projects must demonstrate long-term, verifiable, cost-effective peak electric demand reduction.

Site Access

- As part of PG&E's Peak Load Shifting Program ("Program"), the program manager or its contractor requires access to the Participant's site(s) to verify and/or access the customer installed data collection and monitoring devices ("Devices") that allows PG&E and/or its consultant to evaluate the effectiveness of the installed peak load shift Measures. Therefore the Participant agrees to install the needed monitoring devices and grants access to the site(s), for which it is applying for incentives.
- Facility thermal cooling load (tons) (includes secondary pump energy if possible
- Outdoor ambient temperature (°F)
- A BTU meter may be used to gather instantaneous and integrate thermal cooling load data

Data logging

The instantaneous values for all sensors shall be locally totalized every 15 seconds, then averaged and recorded every 5 minutes. Data shall be transferred to the Implementer's central server once a day or more. Data shall be collected manually, if on-line access is not available.

Verification

Monitored sites will be considered in operation when the chilled water pumps were operated and the Measure met its thermal cooling load at less than or equal to its Specified Measure On-Peak Hour Electric Demand level.

Full metering shall be conducted at 100 percent of all SCWS and IMIOC installations, the selection of such sites being subject to PG&E approval. Full metering will measure pre and post thermal cooling loads, electric demand and energy use, and pertinent independent variables such as outdoor ambient temperature. The goal is to determine energy savings and peak electric demand reduction within ±5 percent uncertainty using measurement methods in the IPMVP, Option B Retrofit Isolation, or ASHRAE Guideline 14: Measurement and Demand Savings, Retrofit Isolation.

If this Agreement is terminated for any reason, Cypress, Ltd. (program manager) shall not be liable to the installer or owner of equipment for damages or compensation of any kind. Cypress, Ltd. and/or PG&E reserves the right to determine eligibility for the life of this Agreement. Negligence. In the performance of this Agreement, each Party assumes responsibility for, and will indemnify and hold harmless the other Party from and against damages due to its own negligence, including responsibility for the negligence of its employees, contractors, subcontractors and agents, and for the claims of third parties resulting from such negligence. Incidental and Consequential Damages. NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR ANY INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES. Both funding and the conditions of the program are subject to the jurisdiction of the California Public Utilities Commission (CPUC) and shall be subject to such changes or modifications as the CPUC may, from time to time, direct in the exercise of its jurisdiction. If there are changes in the program, Cypress, Ltd. will endeavor, but cannot guarantee, to provide a reasonable period of time before changes go into effect. Applicant understands that should this Program be modified in any way or terminated by order of any government entity, this Agreement shall be revised or terminated consistent with that order. All applications are subject to verification of unit delivery. Cypress, Ltd. retains final authority to calculate incentive payments under this Agreement.

Term/Acronym	Definition
ACM	*Alternative Calculation Method*
ASHRAE	*American Society of Heating, Refrigerating and Air-Conditioning Engineers*
Badge Number for PG&E Electric Meter	*The unique identifier of the electric revenue meter(s) that is used to measure the electric usage at the Customer's facility.*
Baseline Demand	*The hourly peak demand of a conventional cooling system prior to installation of TES/ISAC devices.*
Baseline Demand For A Retrofit	*The Baseline Demand for an ISAC retrofit shall be an estimation based on a) product type, b) age, and c) approved manufacturer's tables derived from CEC Title 24 ACM manual. The Baseline Demand for SCWS and IMIOC retrofit shall be based on using Energy Pro, eQuest, Trane Trace or approved equivalent whole building simulation software.*
Baseline Demand For New Construction	*The Baseline Demand for an ISAC or TES new construction unit shall be derived using the EnergyPro tool to simulate a minimally compliant Title 24 HVAC cooling system.*
Building	*The unique identifier as established by the customer.*
CEC	*The California Energy Commission.*
Contracted Permanent Load Shift	*The amount of Permanent Load Shift that the Implementer has committed to PG&E under this Agreement.*
Cost-Effectiveness	*An indicator of the relative performance or economic attractiveness of any energy demand side management investment or practice when compared to the costs of energy produced and delivered in the absence of such an investment.*
CPUC	*The California Public Utilities Commission.*
CPUC Approval	*A final and non-appealable order issued by the CPUC approving the PLS Program and PG&E's entry into this Agreement, without modification or condition unacceptable to either Party in its sole discretion, as reasonable and assuring the full recovery by PG&E of all of its costs hereunder, subject only to a review of the reasonableness of PG&E's administration of this Agreement.*
Customer	*A residential, commercial, industrial, agricultural customer on a PG&E electric rate schedule. Customer does not include customers of other energy suppliers, such as direct access or community choice aggregation.*
Demand Side Management	*Programs designed for utility customers to promote energy efficiency and/or peak load reduction.*
Design Review	*All comments and recommendations by approved Design Professional.*
Double-Dipping	*Obtaining incentive or rebate dollars from multiple programs for the same energy or demand savings*
Dual Test	*The requirement that an energy efficiency activity pass both the TRC and the PAC cost-effectiveness test.*
Effective Date	*As defined in section 1.4.2 of this Agreement.*
EM&V	*Evaluation, Measurement and Verification*
Energy Neutrality	*The assurance that the system that includes the new Measure consumes equal to or less energy than a minimally-compliant Title 24 system. Energy Neutrality may be established by approved simulation or estimation methods.*
Feasibility Study Number	*Unique number issued by Implementer for each Feasibility Study.*
HVAC	*Heating, Ventilating, and Air Conditioning.*
Ice Storage Air Conditioning or ISAC	*A class of thermal energy storage systems that uses a refrigerant system to make and melt ice and a pumped liquid-overfed evaporator for delivering conditioned air. Existing air-cooled Direct Expansion Packaged Rooftop Units, Single Vertical Packaged Units, Ductless Mini-Splits, and Split Residential cooling systems can be modified to create these systems.*
	Currently approved models include the following:
Installation Contractor Training Certificate	*All installation contractors shall be provided training by the storage device manufacturer or Implementer and signed certificate indicating successful completion of training.*
Installation Factor	*The Installation Factor is equal to the Number of On-Peak Days for Measure divided by the Number of On-Peak Days for Current Summer Season. Shall be determined for each ISAC unit. The Installation Factor cannot be less than zero (0) or greater than one (1).*
Installation Number	*Unique number issued by Implementer as part of the Commissioning Report for the installation of each Measure.*
Installation Payment	*As defined in Exhibit B*

Term/Acronym	Definition
Interest Rate	*For any date, the lesser of: (a) the per annum rate of interest equal to the prime lending rate as may from time to time be published in The Wall Street Journal under "Money Rates" on such day (or if not published on such day on the most recent preceding day on which published), plus two percent (2%), and (b) the maximum rate permitted by applicable law.*
Internal Melt Ice-On-Coil or IMIOC	*A type of TES system in which ice is formed on submerged pipes or tubes, through which a secondary coolant is circulated. Cooling is discharged by circulating warm coolant through the pipes or tubes, melting the ice from the inside.*
IPMVP	*International Performance Measurement Verification Protocol*
Load Shift For Measure	*The amount of Permanent Load Shift in kW for a specific Measure as determined by the Feasibility Study. Load Shift For Measure includes the Permanent Load Shift for both Retrofit Installations New Construction Installations.*
Load Shift For Retrofit Measure	*The amount of Permanent Load Shift in kW for a specific Measure for a Retrofit Installation as determined by the Feasibility Study.*
Measured Permanent Load Shift	*The maximum hourly average electric demand shifted from On-Peak Hours for a given project and Baseline. Average must contain 60 samples*
Measure	*TPermanent installation and commissioning of a PG&E approved device. Such devices must achieve Permanent Load Shift while maintaining Energy Neutrality. PG&E approved Measures are limited to the Measures identified in Exhibit A.*
Measure Installed Date	*A Measure is considered installed when construction and functional testing has been completed and the commissioning report has been submitted to PG&E. The Measure Installed Date shall be determined separately for each Measure.*
Measure Verified Date	*The date that PG&E verified the Measure. Shall be determined for each ISAC TES unit.*
New Construction or New Construction Installations	*Installation of a Measure at one or more of the following:* *1. A site wherein no structure or site footprint exists;* *2. Addition or expansion of an existing building or site footprint; or* *3. Addition of new load, as in the example of an existing site adding a new process.*
Newly Installed Load Shift	*The sum of Load Shift For Measure where the Measure Installed Date is between August 1 of the prior Program Year and July 31[1] of the current Program Year and for which an Installation Payment has not been received.*
Number of Load Shift Days for Measure	*For ISAC units: The number of On-Peak Days that the Measure met its thermal cooling load without any compressor electric demand occurring during that day's On-Peak Hours; shall be determined for each ISAC unit.* *For SCWS and IMIOC systems: the number of On-Peak Days that the Measure met its thermal cooling load at less than or equal to its Specified Measure On-Peak Hour Electric Demand level; shall be determined for each system.*
Number of On-Peak Days	*Summer Season: The number of weekdays excluding PG&E Holidays; Winter Season: (0)*
Off-Peak Hours	*Summer Season: Period from 00:00 to 08:30 and 21:30 to 24:00 weekdays, all day Saturday, Sunday and Holidays* *Winter Season: Period from 00:00 to 08:30 and 21:30 to 24:00 weekdays, all day Saturday, Sunday and Holidays*
On-Peak Hours	*Summer Season: Period from 12:00 to 18:00 on weekdays, excluding PG&E Holidays; Winter Season: None*
Owner Project Requirements	*Owner's expectations for the project and facility requirements such as intended operating schedule, occupancy requirements, operations and maintenance staff requirements, utility rate projections, economic assumptions, range of control options, performance goals*
PAC	*Program Administrator Cost*
Partial-Peak Hours	*Summer Season: Period from 08:30 to 12:00 and 18:00 to 21:30 weekdays, excluding PG&E Holidays* *Winter Season: Period from 08:30 to 21:30 weekdays, excluding PG&E Holidays*
Performance Assurance	*The collateral to be provided by Implementer in the form of either (i) cash, (ii) a Letter of Credit, or (iii) a guaranty all as more fully set forth in Section 7 of the Trane/PG&E Agreement, or any other form of security acceptable to PG&E*
Performance Factor	*Equal to the Number of Load Shift Days for the Measure divided by the Number of On-Peak Days for Measure. Shall be determined for each ISAC unit and for each SCWS and IMIOC system.* *For ISAC units where this is less than 90 percent, the Performance Factor shall be considered zero (0).* *For SCWS and IMIOC systems where this is less than 97.5 percent, the Performance Factor shall be considered zero (0)* *The only exception to this requirement is for a data acquisition failure of less than 48 contiguous hours per month.* *PG&E, at its sole discretion, may decrease the percentage levels shown above on a case-by-case basis. Such reductions, should they occur, shall not set a precedence for future or further decreases.*

Term/Acronym	Definition
Permanent Load Shift or Permanent Load Shifting	*A reduction in an end-user's on-peak electric demand that is a direct result of the permanent installation and operation of PG&E approved TES systems. Such devices must store thermal cooling capacity during the Off-Peak and/or Partial-Peak Hours in order to meet thermal cooling load in subsequent On-Peak Hours.* *Permanent Load Shift must be measurable, repeatable, reliable, and sustainable.* *For the purposes of this program, load shift of each Measure will be an assumed number derived by simulation or estimation using actual on-site equipment and operating hours, and not by on-site measurement.*
Persistence Payment	*As defined in Incentive Payment Structure Section of this Application.*
Persistence Payment for Measure	*As defined in Incentive Payment Structure Section of this Application.*
PG&E	***P**acific **G**as and **E**lectric Company*
PG&E Contract Manager	*The PG&E Authorized representative responsible for administering this Contract, monitoring Contract activities, deliverables, and expenses for PG&E and authorizing invoices for payment.*
PG&E Holidays	*Summer Season: Memorial Day, Independence Day, Labor Day* *Winter Season: New Year's Day, Presidents' Day, Veterans' Day, Thanksgiving Day, and Christmas Day* *The dates will be those on which the holidays are legally observed.*
PG&E Service Agreement Number	*The PG&E issued unique identifier shown on the PG&E monthly energy invoice as Service ID#.*
PGC	***P**ublic **G**oods **C**harge*
PLS	***P**ermanent **L**oad **S**hift or **P**ermanent **L**oad **S**hifting*
PPP	***P**ublic **P**urpose **P**rogram*
Program Years	*Calendar years 2007, 2008, 2009, 2010, and 2011.*
Project	*The installation of Measure(s) at a Customer facility.*
Retrofit or Retrofit Installations	*Installation of a Measure at existing building.*
Service City	*The city in which the site is located. Specified as part of the Feasibility Study.*
Service ID#	*Same as PG&E Service Agreement Number*
Site Name	*Unique name issued by Implementer for this site. Specified as part of the Feasibility Study.*
Specified Measure On-Peak Demand Hour Electric Demand	*For ISAC systems, 0.3 kW* *For SCWS and IMIOC systems, the specified level of electric demand (in kW) the chiller system is not to exceed during On-Peak Hours*
Storage Device Model Number	*Manufacturer's model number of storage device.*
Summer Season	*May 1 through October 31 of each Program Year.*
TES	***T**hermal **E**nergy **S**torage*
Thermal Energy Storage	*Any technology or system where cooling load is met using ice, chilled water or brine from stored thermal energy. Approved examples include Ice Storage Air Conditioning (ISAC), Stratified Chilled Water Storage (SCWS), and Internal Melt Ice-On-Coil (IMIOC).*
Thermal Load Creep	*An unfavorable condition where the ability of a TES system to shift the design thermal cooling load is negatively impacted due to an increase in the total ton-hours required. This can occur when there is insufficient time to charge storage because of an increase off-peak and partial-peak load or the on-peak load exceeds available storage capacity.*
TRC	***T**otal **R**esource **C**ost*
Turnkey Program Management	*Full and Comprehensive program management requiring no support services by the Utility other than oversight.*
Utility Electric Rate Schedule	*The electric rate schedule under which PG&E bills the customer's site for electricity. Must be consistent with the corresponding value in the Feasibility Study.*
Weekdays	*Monday thru Friday*
Winter Season	*November 1 through April 30 of each Program Year.*