

SUMMARY PROFILE REPORT

BPProgID: NR37

ProgramName: **CAMP - Compressed Air Management Program**

Implementing Organization: **SBW, PG&E**

Program Synopsis

The Compressed Air Management Program (CAMP) was designed to achieve at least 12 million kWh of verified demand savings through the installation of efficient compressed air systems. CAMP targets large industrial customers to retrofit existing compressed air systems through energy efficient modifications.

CAMP offers both an implementation incentive and a maintenance incentive that is awarded if the customer buys into a 3-year maintenance program. CAMP implementers carry out the performance assessment, provide technical support during implementation, and verify savings measures.

Program Type

Incentive

- PrescriptiveRebates
- CustomIncentivesSPC
- BillCreditsRateDiscounts
- Services
- DirectInstallation
- FinancingLoansLeasing
- FreeMeasures
- InHousePlusSubs
- IncentiveOther

Information and Training

- GeneralEducation
- MailAudit
- TelephoneAudit
- OnSiteAudit
- OnLineAudit
- DesignAssistance
- FeasibilityStudies
- EndUserTraining
- TradeAllyTraining

Program Focus

Primary Market Events Targeted

- AllMarketEventsTargeted
- NewConstructionRenovation
- ExistingConstructionAll
- ExistingConstructionRetrofit
- ExistingConstructionNaturalReplac
- ExistingConstructionEarlyRetire

Primary Program Focus

- EndUser
- SupplySide
- EndUserAndSupplySide

Residential End User Target Markets

- ResidentialALL
- SingleFamily
- MultiFamily
- MobileHome
- LowIncome

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ResOther

Commercial/Industrial End User Markets

Commercial

- All
- Offices
- Retail
- Restaurant
- Public (govt.) Facilities
- Grocery Store
- Health Care
- Education
- Lodging (Hotels/Motels)
- Warehouses
- Other (specify:)

Industrial

- All
- Other (specify:)

Other

- Other (specify:)

Market Barriers

- | End User | Supply Side |
|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> Information or Search Costs |
| <input type="checkbox"/> | <input type="checkbox"/> Performance Uncertainties |
| <input type="checkbox"/> | <input type="checkbox"/> Asymmetric Information and Opportunism |
| <input type="checkbox"/> | <input type="checkbox"/> Hassle or Transaction Costs |
| <input type="checkbox"/> | <input type="checkbox"/> Hidden Costs |
| <input type="checkbox"/> | <input type="checkbox"/> Misplaced or Split Incentives |
| <input type="checkbox"/> | <input type="checkbox"/> Product or Service Unavailability |
| <input type="checkbox"/> | <input type="checkbox"/> Externalities |
| <input type="checkbox"/> | <input type="checkbox"/> Non-Externality Pricing |
| <input type="checkbox"/> | <input type="checkbox"/> Inseparability of Product Features |
| <input type="checkbox"/> | <input type="checkbox"/> Access to Financing |
| <input type="checkbox"/> | <input type="checkbox"/> Bounded Rationality |

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- Organizational Practices or Customs
- Irreversibility
- Other End User
- Other Supply Side

Customer Sizes Targeted (C/I only)

- VerySmall
- Small
- Medium
- Large

Supply Side Actors Targeted

- | | |
|---|--|
| <input checked="" type="checkbox"/> SupplySideActorNotProgFocus | <input type="checkbox"/> TradeAssociations |
| <input type="checkbox"/> AorEFirms | <input type="checkbox"/> WholesalersDistributors |
| <input type="checkbox"/> Manufacturers | <input type="checkbox"/> Retailers |
| <input type="checkbox"/> Realtors | <input type="checkbox"/> EnergyServiceCompanies |
| <input type="checkbox"/> Developers | <input type="checkbox"/> NonProfitNotForProfitGroups |
| <input type="checkbox"/> Builders | <input type="checkbox"/> Govt |
| <input type="checkbox"/> Contractors | <input type="checkbox"/> Other |

Types of measure/end use technologies

- ALL MEASURES**

HVAC

- Multiple Measures*
- High Efficiency DX/HP
- High Efficiency Chillers
- High Efficiency Room/Terminal
- Economizers
- Control Systems
- Variable Speed Drives
- Occupancy Sensors
- Duct Sealing and Balancing

Lighting

- Multiple Measures*
- Compact Fluorescents
- Electronic Ballasts
- Reflector Systems
- Efficient Fluorescent Lamps (T-8, T-5, etc.)
- Lighting Controls
- Occupancy Sensors
- High Intensity Discharge
- Operations and Maintenance

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- Operations and Maintenance
- Equipment Testing/Tune-up
- Commissioning
- Retro-commissioning
- Space Heating
- Heat Pump
- Other (specify:)

- Day lighting
- Other (specify:)

Water Heating

- Multiple Measures*
- Load Control (Cycling)
- High Efficiency
- Insulation Blankets
- Low-Flow Showerheads
- Low-Flow Aerators
- Solar Assisted
- Operations and Maintenance
- Other (specify:)

Appliances

- Multiple Measures*
- Refrigerators
- Dish Washers
- Clothes Washers
- Clothes Dryers
- Office Equipment
- Plug Load
- Other (specify:)

Motors

- Multiple Measures*
- High Efficiency
- Variable Speed Drives
- Operations and Maintenance
- Other (specify:)

Building Envelope

- Multiple Measures*
- Insulation
- Infiltration Control
- Glazing and Glazing Control
- Operations and Maintenance
- Windows
- Other (specify:)

Industrial Process

- Multiple Measures*
- Compressed Air
- Motors
- Pumps
- Other (specify:)

Refrigeration

- Multiple Measures*
- High Efficiency
- Controls
- Variable Speed Compressors
- Multi-Stage Compressors
- Operations and Maintenance
- Commissioning

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Other (specify:)

Other (specify)

Other (specify:)

Program Context

Initially operated by PG&E, CAMP is now run through its contractor, SBW. CAMP was originally geared towards market transformation and focused on motivating the vendor community to adopt CAMP as a business model and earn profit by promoting it in the market. It did not offer financial incentives. The current SBW-run CAMP program began on June 7, 2002 and ended on December 31, 2003. The focus of this recent version shifted away from market transformation to resource acquisition, aiming to get projects in and maintained on a turnkey basis.

Program Components

Program Management

Four main actors: the CPUC, Investor Owned Utilities (IOU), Implementers (SBW), and participants (PG&E customers) are involved in the operation of CAMP. Both the CPUC and IOU hold management roles. The CPUC serves as the management authority that authorizes funding, reviews project progress, determines payment amounts, and resolves disputes between the IOU and Implementers. IOUs are charged with oversight responsibility and management of implementers, and also serve as a liaison between the CPUC and Implementers. Their duties include signing contracts, reviewing documentation and making payments to the implementer for the CPUC. Both a CPUC and IOU Agreement Representative are assigned to each CAMP program.

A private turnkey contractor (SBW) implements CAMP and is responsible for marketing, recruitment, and completion of documentation (quarterly reports and invoices). A lead engineer serves as the primary customer interface, and is in charge of the assessment verification, updates to the project tracking database, the Recommended Maintenance Practices Report, and technical support to CAMP customers during implementation. A Marketing Manager ensures payments are made. SBW also performs the ongoing commissioning maintenance. Finally, participants (PG&E customers) are required to implement the recommended energy efficient measures in a timely fashion for verification. Customers may hire vendors to complete installation, and may choose from a list of qualified providers offered by SBW. The maintenance program is supervised by a qualified provider chosen by the customer.

Implementing Organization

- Utility
- Nonprofit
- Govt
- Private
- IOOther

Implementation Structure

- InHouse
- TurnkeyContractor
- InHouseAndSubcontractors
- Other

Reporting and Tracking

A database tracks project milestones, work hours of the engineering staff, energy savings, costs, and information regarding the amount of incentives allocated. It can generate reports to

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manage costs and schedules. The database is used to prepare quarterly progress reports for the CPUC which contain customer name and site address, recruitment status, PG&E account number, measures proposed, estimated energy savings and implementation costs, measures implemented, verified savings, number of hard to reach customers recruited, number of participation agreements signed, number of notice of intents sent, the amount of incentive payments made, and the number of completed performance assessments, presentations, and savings verifications completed. The customer documents the cost of the maintenance program himself.

Verification and Quality Control

Verification is a commissioning activity conducted by SBW. Before and after monitoring/measurement of energy consumption is conducted according to a measurement plan, and includes a post-installation site visit to reinstall monitoring equipment and inspection of the installed measures. The procedure often involves taking 3-second measurements (overnight or 8-12 hours), and a one-minute regime (7-10 days). The engineering model will be modified with realistic data in order to more accurately estimate actual energy savings and determine the final incentive amount. A Savings Verification Report (describing measures, final implementation incentive, costs, savings, recommendations for corrective actions) and a Recommended Maintenance Practices Report are completed and the former is sent to the Marketing Manager for review of incentive calculations. A senior engineer will then review all elements of the package. The Program Implementer also performs the ongoing commissioning maintenance. For 2003, this involves a 2-year installation visit and a 4-year after visit.

Quality Control consists of a peer review system for the engineering team. SBW also conducts an expert engineering review for a sample of 10 projects (33%) to uncover flaws in the engineering analysis. CAMP also has formal Quality Assurance Procedures: (1) the marketing manager makes a special effort to identify eligible candidates; (2) the project team must determine project eligibility during recruitment prior to conducting an assessment; (3) Project staff are properly trained in all CAMP procedures prior to implementation; (4) Qualified Maintenance Providers must meet certain criteria and attend SBW training; (5) Senior staff review assessment and verification report to ensure correct calculation of the incentive.

Participation Process

Potential CAMP participants are first screened to determine eligibility. Eligibility is limited to PG&E customers (mostly industrial, some commercial) with permanently installed in-service compressed air systems greater than 200 hp, whose primary supply pressure is between 75 – 150 psi, and where the product of hp and annual operating hours of the portion of the plant served is greater than 800,000. Centrifugal or rotary vane compressors are ineligible.

Once eligibility is confirmed, potential customers complete and submit to the Marketing Manager a Participation Agreement, which defines eligibility criteria, responsibility of parties, and the scope of CAMP services. A lead engineer will then contact the customer, and review documentation to determine which compressed air system has the greatest potential for energy savings. That system will receive a Performance Assessment. If more than one system is deemed suitable, the CAMP Marketing Manager will determine whether or not to conduct multiple assessments.

The Performance Assessment consists of SBW inspecting the plant to determine baseline performance using field notes and software tools (LogTool, AirMaster+). The lead engineer then develops a list of possible measures to improve performance and runs them through the software to create efficiency scenarios. The engineer determines the best measure package, calculates savings, and estimates costs. Once this is complete, the customer or its vendor can install the measure(s). SBW provides no-cost technical support during implementation. After

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installation and commissioning, the savings verification is performed. Since the incentive payment is based on actual savings, SBW recommends measure adjustments to customers before post-installation verification in order to confirm proper operation and ensure an accurate incentive amount.

The Implementation Incentive is paid within 60 days of submission of the savings verification. The Recommended Maintenance Practices Report and a list of qualified maintenance providers are also given to the customer, who has 30 days from submission of the Savings Verification Report to choose to enter into a 3-year maintenance contract with a qualified provider. If the customer chooses to sign the Maintenance Report and the qualified provider is approved, the Marketing Manager will recalculate the incentive to include the maintenance incentive, enter the amounts into the tracking database, and send the rebate check to the customer.

Outreach, Marketing and Advertising

SBW is responsible for all marketing and recruitment activities. Using a marketing list of eligible plants, the Marketing Manager carries out direct marketing through mail (brochures), trade shows, and ultimately by phone to try to get an agreement to allow an engineer to visit the customer's site. SBW estimates about half of customers visited actually participate in CAMP. To date, about 27 plans out of the 500 contacted have participated in CAMP.

Installation and Delivery

CAMP offers a two-part financial incentive. The Implementation Incentive is 2 cents/annual kWh saved with a 60% project cap. The Maintenance Incentive is 2 cents/annual kWh saved capped at 100% of the cost of the program, and contingent upon the customer's purchase of a 3-year maintenance program from a qualified provider. Both are one-time only incentives. Customers also receive no-cost assessments, free technical assistance during implementation, and a free subsequent tune-up during the maintenance phase. The technical support offered can be very large (averaging \$20,000-\$25,000), sometimes even exceeding the implementation cost.

Program Evaluation

A process and impact evaluation will be conducted by Ridge and Associates.

Quantitative Data

Program Year: 2002 to 2003

- Participation rate is available
- Cost Breakdown is available
- Net Savings Breakdown is available
- Net-to-Gross is available
- Total Resource Cost Data is available

Quantative Data Summary:

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Only Savings Data, TRC, and Participant Test data are available for 2002. Projected participant data are available for 2003-2004.

List Of Key Sources

CAMP 2002 Implementation Plan

Workbook SBW 2002 - 2003 Implementation Plan Program Budget.xls

CAMP Program Manual SBW 2002-2003

Proposal 2004-2005

Contact Information

Name	Michael Baker
Title	
Company	
Phone	(425) 8270330 Ext.
Email	MBaker@sbwconsulting.com