

NightBreeze EE Program

1. Projected Program Budget	\$	487,000
2. Projected Program Impacts		
MWh		152
MW (Summer Peak)		0.44
3. Program Cost Effectiveness		
TRC		0.80
PAC		0.80

4. Program Descriptors

Market Sector: residential
Program Classification: SW
Program Status: INDEE

5. Program Statement

The NightBreeze Energy Efficiency Program (NEEP) Introduces and supports commercialization of the NightBreeze technology by leveraging the Southern California Association of Government (SCAG) relationships with city administrations to reach local builders and encourage them to install NightBreeze units in new residences. The objective is to mainstream this technology

6. Program Rationale

NightBreeze integrates HVAC with a fresh air ventilation system that saves energy, improves indoor air quality, and enhances comfort. It was designed to eliminate the need for air conditioning in mild climates and reduce the size of air conditioners in hotter climates, while providing improved indoor air quality and comfort. The system maximizes free nighttime cooling through a smart ventilation system and is ideally suited for the Southern California climate.

7. Program Outcomes

The primary outcome of the program is to make significant inroads to mainstreaming the technology.

8. Program Strategy

- Identify cities with high residential new construction activity
- Leverage city relationships with the developers to encourage them to install NightBreeze units – higher incentive levels will be provided to mitigate the initial performance uncertainties for the developer. NEEP will initially offer an incentive of \$1500 per unit to developers. The total cost of the NightBreeze unit is \$2850. Based on initial discussions with two developers, we expect the \$1500 incentive to be close to the incremental cost for the measure and enough to make it an attractive proposition to the developer;

- Install 150 NightBreeze units in the targeted new residential communities – initially be installed in the “model” homes typical in a residential new construction site – which will allow all new homebuyers to review the product and ultimately choose it as an option;
- Provide extensive easy to understand literature about the NightBreeze technology in the model homes – including simple technical and financial advantages;
- Monitor its performance with the objective of documenting energy savings and to create case studies;
- Provide training to the developers to ensure that installations can be completed for future units;

9. Program Objectives

- Case studies will be developed. The units will be carefully monitored and energy savings documented. Case studies will be developed to support energy and demand savings leading to broader market acceptance.
- Overcome market barriers. Once the results are documented, NEEP will work with city administrations and building departments to overcome builders’ reluctance and move toward market acceptance.
- Expanded installations. The \$1500 incentive, which will cover incremental costs, will facilitate the installation of 150 units in the residential market.
- Energy savings and demand reduction. Because NightBreeze delivers superior cooling and dramatically reduced energy consumption, significant energy and demand savings will be demonstrated.
- Mainstream Nightbreeze into SCE’s programs. This is the primary objective of NEEP. SCE is already planning to offer Nightbreeze through the residential new construction program in 2006-2008. NEEP will introduce and commercialize this technology in 2006, and hence streamline its being mainstreamed into the SCE residential new construction program. NEEP will lead to broader market acceptance, and will help bring the NightBreeze cooling system to Southern California’s robust residential construction market.

10. Program Implementation

Task 1. Re-assess Implementation Timeline, Marketing Plan, and Staffing Rates or Unit Pricing with SCE for Inclusion in the Purchase Order

Task 2. Assemble and Submit SCE Approved Purchase Order Kit.

Task 3. Build Tracking System.

The team will develop a database to track the data element requirements for the program. These include:

- The date of initial contact
- Recommendation
- Date of contract signing
- Date of installation of NightBreeze unit
- Rebate approved

- Verification/approval of installation by SCE
- Date of verification

Task 4. Develop Marketing Materials and Obtain Approval from SCE.

Marketing materials will be developed about the unit to be placed in model homes. In addition, a website, that includes case studies and has more information about the technology, will be developed. Builders as well as home owners will have the information needed to choose NightBreeze during the purchase process.

Task 6. Enroll Customers NEEP will enlist the participation of new home developers partly through governmental leverage involving support of SCAG and approval authorities of member agencies. Training sessions with the developers and builders will help explain the product's advantages, and the documentation of the energy savings from the initial installations will help to clarify NightBreeze's advantages. In addition, the marketing outreach program will create a demand for the program among new home buyers. Ultimately, builders will offer the NightBreeze system as an option to new home buyers. This approach will be the basis to introduce NightBreeze to the Southern California market and begin to commercialize it to the mainstream residential market.

Task 7. Install Energy Efficient Hardware, Issue Customer Rebates, and/or Perform Program Services Davis Energy Group, designer of NightBreeze and the program's subcontractor, will oversee the supply availability and installation of NightBreeze units.

The program will:

- Work through SCAG and the cities to reach builders and developers
- Provide training session on the NightBreeze system
- Schedule installations
- Perform installation
- Verify installation and issue rebates

Task 8. Inspect Installed Jobs

An Intergy representative will visit each completed installation site, with the site visit expected to be within 15-30 days of installation completion. The representative will have a list of the units installed and will complete a verification report. The representative will visually check for any installation problems. All discrepancies will be entered into the program-tracking database, and a corrective action work order will be issued to the subcontractor. As part of the energy savings demonstration, a specific percentage of projects will be monitored to verify actual energy savings. The monitoring equipment will measure and log:

- Outside ambient conditions such as temperature and humidity;
- Interior (conditioned space) conditions such as temperature and humidity;
- Temperature control set points for unit;
- Instantaneous current, voltage, power draw, and power factor of the unit.

Data collected during the monitoring phase will be analyzed to document actual energy savings. The results of the monitoring will be used to build case studies, and the case studies will be used as marketing collateral.

Task 9. Remedy Installation Issues

Any installation issues that arise from the inspection will be noted, and subcontractors will take corrective actions. Issues and corrective action will be noted in the program's database and reports.

- **Re-inspect Corrected Jobs**

Intergy will re-inspect corrected jobs and will complete a verification form.

Task 10. Perform Customer Satisfaction Surveys

NEEP will conduct follow-up customer satisfaction surveys with all participating builders and new home buyers so that evaluations may be made for the program and the contractor. Customer satisfaction surveys will be conducted so that participants may comment on the program and the contractor. Intergy may conduct surveys of installations either by mail or by telephone. The results of the survey as well as any revisits will be entered into the database management tool.

Task 11. Address Customer Satisfaction Issues

Any unsatisfactory issues from the survey will be corrected within ten working days and a follow-up customer satisfaction survey conducted. The results of the survey as well as any revisits will be entered into the database management tool.

Task 12. Invoice SCE for Completed Jobs

Invoices will be sent to SCE on a monthly basis.

Task 13. Perform Program Reporting

On a monthly basis NEEP will submit to SCE a) the EEGA Program Workbook, b) the Program Narrative, and c) the CSV flat files; files will be uploaded online to EEGA as per SCE's required reporting process.

Task 14. Program Ramp Down

The NEEP program will begin ramping down by October 2006. All final projects will be underway by November 2006; completion is anticipated by December 2006.

Task 15. Shut Down Program

Program shut down will be December 30, 2006.

Task 16. Respond to Miscellaneous Utility/CPUC Data Requests

Any miscellaneous data requests will be responded to within ten working days. All program data will be archived and available to support any data requests.

Task 17. Follow Up with Remaining and New Customer Issues

Any remaining customer issues will be followed up within 30 days of program shut down. Any corrective action needed will be completed immediately.

Task 18. Submit Final Program Report

After program shut down, and all follow up issues have been completed and resolved, NEEP will submit a final report that reviews the program's progress and NightBreeze Energy Efficiency Program Page 18 accomplishments. The report will cover:

- Program Achievements—How many NightBreeze units were installed? Were the goals met? Was the program cost effective?
- Program Challenges—What were the significant obstacles that were overcome? Were builders and developers receptive? Were buyers interested and responsive to the incentive?
- Goal Attainment—Did the program reach its goal of million kWh? Was the informational component effective? Did it finish within budget?
- Lessons Learned—Could the program have accomplished more? Were builders receptive to energy efficiency concerns?
- Program Improvement Recommendations—What improvements could have been made to help the program be more successful?

11. Customer Description

New residential housing development

12. Customer Interface

A marketing approach that leverages the Southern California Association of Government (SCAG) relationships with city administrations to reach local builders and encourage them to install NightBreeze units in new residences.

13. Energy Measures and Program Activities

13.1 Measures Information

Night Breeze HVAC

13.2.1 Energy Savings and Demand Reduction Level Data

1013 kwh/unit

(gross unit annual electric savings)

13.3. Non-energy Activities (Audits, Trainings, etc.)

Not Applicable.

13.4. Subcontractor Activities

Homebuilders (to be determined)

13.5. Quality Assurance and Evaluation Activities

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13.6. Marketing Activities

Marketing activities are defined in Program Implementation.