

PERALTA COMMUNITY COLLEGE DISTRICT
Board of Trustees Agenda Report
For the Trustee Meeting Date of March 27, 2012

ITEM #

ITEM TITLE:

Consider Approval to Apply for a PG&E Zero Net Energy Pilot Program Grant for Technical and Design Assistance for the Laney Sustainability Center

SPECIFIC BOARD ACTION REQUESTED:

Approval is requested to apply for a PG&E Zero Net Energy Pilot Program Grant for Technical and Design Assistance for the proposed Laney Sustainability Center. The maximum amount of the grant is \$300,000.

ITEM SUMMARY:

The Zero Net Energy Pilot Program is a PG&E grant program that will provide detailed technical assistance, design assistance, performance evaluation and possible cost sharing for projects that:

- Have aggressive energy efficiency goals and plan to have on-site renewable generation
- Are grid-tied and served by PG&E
- Have an energy performance target of at least 50% beyond Title 24 requirements

Zero net energy means that the amount of energy conserved, through efficient building design and occupant behavior, combined with onsite renewable energy production does not exceed the amount of energy that the building consumes from the grid (i.e., in this case, PG&E supplied energy).

The grant would be used for the proposed Laney College Sustainable Building Center. The funding provided under this grant would be used to provide design and technical assistance through firms selected by PG&E. The firms would work in coordination with the District project design team. A grant would be beneficial to the District by significantly reducing the design costs for the Laney College Sustainability Center in the immediate term and our energy costs over the long term. The District submitted a placeholder application for this grant on March 15, 2012. Additional documentation must be submitted in order to complete the application. It is anticipated that the grants will be awarded at the end of this year. Board approval of the grant application submittal is requested.

SOURCE OF FUNDS (AND FISCAL/BUDGETARY IMPACT):

Submission of the grant application does not obligate the District financially. If the grant is awarded and accepted, the District is obligated by terms of the grant to commit funds for the project. The District has engaged a consultant to prepare a construction cost estimate.

BACKGROUND/ANALYSIS:

The Laney Sustainability Center, which is in the conceptual stage, will serve as a comprehensive training center and showcase for energy efficiency and sustainability. It will include classrooms and laboratories for student studies in energy efficiency/renewables technologies and sustainable building methods. The total square footage for the center will be approximately 5,000, with a total assignable square footage (ASF) of approximately 4,000. The center will consist of two buildings, a 2,000 ASF demonstration home and a 2,000 ASF multi-purpose/exhibit hall to provide additional classroom or meeting space for multiple departments. Fulfilling the "living classroom" concept, the structures will be designed and constructed in a collaborative process among the departments of Carpentry, Environmental Controls Technology, Architecture, Electricity and Electronics, and Construction Management. The project will serve as an interdisciplinary design-build project and provide an experiential process for students. Once completed, the living classrooms will serve as ongoing testing labs for energy efficiency, electric, HVAC and solar installation courses. The center will be built to meet certification mandates of the Living Building Challenge. Among other stringent qualifications, the Living Building Challenge mandates zero net energy project performance and elevates sustainability requirements beyond LEED Platinum certification.

DELIVERABLES/SCOPE OF WORK:

The PG&E Zero Net Energy Pilot Program grant would provide detailed technical assistance, design assistance, performance evaluation and possible cost sharing for the Laney Sustainability Center.

ANTICIPATED COMPLETION DATE:

The placeholder application was submitted to PG&E on March 16, 2012. It is anticipated that the grants will be awarded by the end of this year.

ALTERNATIVES/OPTIONS:

Not applicable.

EVALUATION AND RECOMMENDED ACTION:

Approval is recommended to apply for a PG&E Zero Net Energy Pilot Program Grant for Technical and Design Assistance for the proposed Laney Sustainability Center.

OTHER DEPARTMENTS IMPACTED BY THIS ACTION (E.G. INFORMATION TECHNOLOGY):

YES _____ No X

COMMENTS:

No additional comments.

WHO WILL BE PRESENTING THIS ITEM AT THE BOARD MEETING? (VICE CHANCELLOR)

Vice Chancellor Ikhara

(****Board contract approval is subject to negotiation and execution by the Chancellor.)

DOCUMENT PREPARED BY:

Prepared by: Dr. Sadiq B. Ikharo Date: March 22, 2012
Vice Chancellor for General Services

DOCUMENT PRESENTED AND APPROVED BY:

Presented and approved by: Dr. Sadiq B. Ikharo Date: March 22, 2012
Vice Chancellor for General Services

FINANCE DEPARTMENT REVIEW

Finance review required Finance review *not* required

If Finance review is required, determination is: Approved Not Approved

If not approved, please give reason: _____

Signature: Ronald Gerhard Date: _____
Ronald Gerhard, Vice Chancellor of Finance

GENERAL COUNSEL (Legality and Format/adherence to Education Codes):

Legal review required Legal review *not* required

If Legal review is required, determination is: Approved Not Approved

Signature: Thuy Thi Nguyen Date: _____
General Counsel

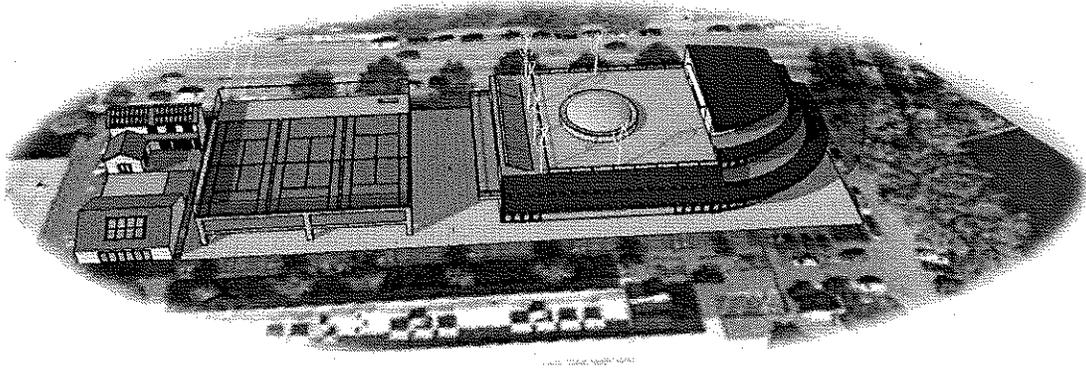
CHANCELLOR'S OFFICE APPROVAL

Approved, and Place on Agenda Not Approved, but Place on Agenda

Signature: Wise E. Allen Date: _____
Wise E. Allen, Chancellor

Laney College Sustainable Building Center

2/6/12



Imagine a new kind of educational space where students

- can access the latest green building, energy efficiency, and solar technologies within a single facility
- transform their classroom into a dynamic, “living laboratory” which reinforces conceptual knowledge with hands-on practice
- develop insights and skills to gain jobs and productive careers in a growing green construction and energy economy
- can be inspired to collaborate with others and make a difference in their communities and the world

This is **THE DREAM** which cannot wait.

RATIONALE

Why should a Sustainable Building Center (SBC) be constructed at Laney College? With the rise of global climate issues and need for clean energy technologies, comes the opportunity to raise the consciousness of students and the general public. Currently, the Bay Area has no such comprehensive showcase and training center. The SF Pacific Energy Center and Stockton Energy Training Center, both operated by PG&E, provide non-credit classes for businesses and construction professionals; however, they are not targeted at students seeking certificate or degree programs. Likewise, energy efficiency research facilities at Lawrence Berkeley National Lab or UC Berkeley are difficult to access and mostly reserved for scientists and academicians.

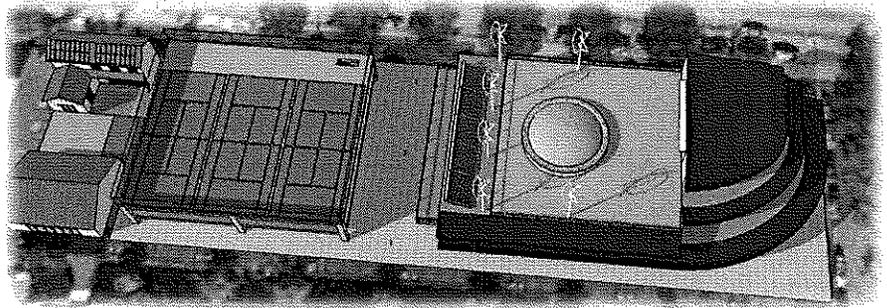
Laney College is well-poised to fill this gap. To start, Laney has long been committed to providing for-credit career and technical education for the construction industry and allied professions. Emphasis on hands-on learning is a hallmark of its programs. In addition, it has steadily increased its focus on green jobs training, energy efficiency, and high-performance environmental control technology with support from NSF grants, private and state green workforce development grants, & the American Reinvestment and Recovery Act (ARRA).

The State of California is also in the process of passing legislation that will mandate Zero Energy technology for all new commercial buildings by the year 2030. “Zero energy” means that the amount of energy produced on-site by renewable sources equals the amount of energy consumed by a building. The construction of a Zero Energy training center is Laney

College's opportunity to lead by example. Laney will foster the next generation of building designers and technicians by training them in a learning environment that exhibits the best practices of the high performance building industry. The Center will also be a model of excellence that sets the trend for the rest of the United States.

OBJECTIVE

To build an SBC on the Laney campus that will demonstrate best practices in the design and construction of Zero Energy buildings, serve as a national model of excellence in high performance building, and function as a high performance building training center.



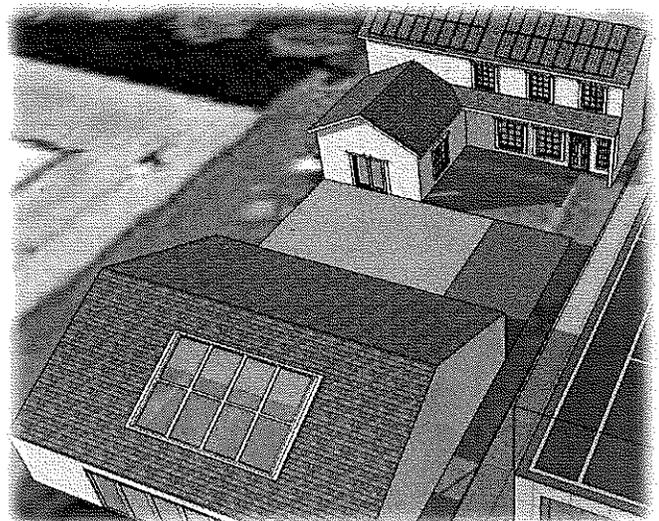
The SBC will consist of the "Living Classrooms," two energy efficient buildings used for hands-on training and instruction. Laney College will be the first in the Bay area to champion this type of public, high performance building program and encourage direct student involvement in its design and realization. Once constructed, the Living Classroom will serve as a physical model of high performance building design standards such as: LEED (Leadership in Energy and Environmental Design), Passive House Standards (German and Austrian), the Living Building Challenge (International Living Future Institute), Architecture 2030, and Minergie (Swiss Standard).

The SBC will attract positive attention for Laney College, the Peralta Community College District, and the city of Oakland, and it will serve as an invaluable training and resource center for decades to come.

The Center

The future Center is proposed for the western end of the Laney College tennis courts along E. 10th Street. It will occupy the space of a single tennis court and follow strict design and construction guidelines to ensure that the most sustainable measures are achieved.

The Center will consist of two buildings, a 2000 sq. ft. demonstration home and a 2000 sq. ft. multi-purpose/exhibit hall to provide additional classroom or meeting space for multiple departments. Fulfilling the "Living Classroom" concept, the structures will be designed and constructed in a collaborative process between the departments of Carpentry, Environmental Controls Technology, Architecture, Electricity and Electronics, and Construction Management. This project will serve as an interdisciplinary design/build project and provide an experiential process for students. Once completed, the Living Classrooms will serve as ongoing testing labs for energy efficiency, electrical, HVAC, and solar installation courses. Over time, students will also have the opportunity to renovate the buildings through



modifications and upgrades of different building systems.

The Center is intended to be a true model of sustainability and will embody many design features including:

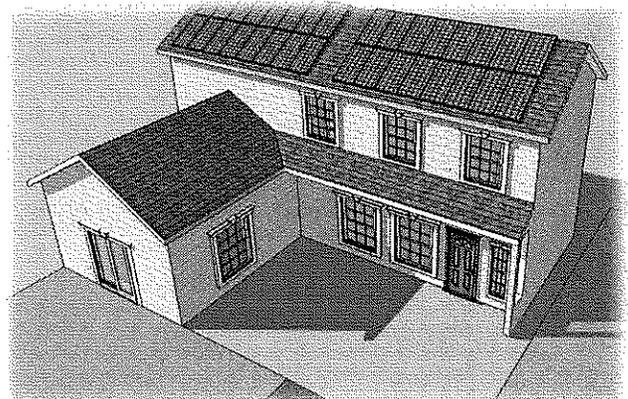
- Passive solar and daylighting design
- Onsite energy production using solar electric, solar thermal, or small wind devices
- High efficiency lighting, HVAC systems, and advanced controls
- Green or cool roofs to reduce “heat island” effects
- Sustainable site management including native landscaping and rainwater collection
- Much more

Other Benefits & Conclusion

What are some other benefits from the SBC?

- Such a facility will put Laney “on the map” as THE premier center for studies in energy efficiency/ renewables technologies and sustainable building methods.
- Tours can be conducted for high school and college students, instructors, professionals, building owners, government officials, community groups, and interested laypersons. The Center will stand as a tangible testament of sustainability in practice.
- Industry vendors, LBNL, and other universities will have opportunities to share their research and/or donate their latest equipment for display and instructional use.
- Building trades unions and other organizations might rent the facilities for their own events and training activities or contract with Laney for their educational needs.
- Excess energy production can be used to power other campus buildings and infrastructure, thereby reducing the need to obtain energy from utilities.
- Other departments using the multi-purpose hall will be able to expose their students to green building and clean energy concepts and methods.

Laney College has demonstrated the ability to transform its programs to meet the urgent needs of the present with an eye towards the future. With the construction of the Sustainable Building Center, the College will provide a badly needed asset to both the Peralta district and the community-at-large. Furthermore, it will affirm Laney’s leadership and commitment to the social, economic, and environmental issues which test our strength and values. *It is an idea and a reality which cannot wait.*



January 26, 2012

REQUEST FOR IDEAS:

Design and Technical Assistance for New Community-Scale, Commercial, and Residential Projects With Zero Net Energy Goals

**PACIFIC GAS & ELECTRIC COMPANY
ZERO NET ENERGY PILOT PROGRAM**

The Pacific Gas & Electric Company (PG&E) Zero Net Energy (ZNE) Pilot Program is seeking to assist residential, commercial, and community-scale projects that have zero net energy performance goals. PG&E would prefer that projects be in the early stages of entitlement and design in order to participate in design assistance and performance assessment as part of the ZNE Pilot Program. However, PG&E is willing to consider projects at later stages including design development, construction documents, construction and completion and post-occupancy monitoring.

All projects must have aggressive energy efficiency goals and plan to have on-site renewable generation.

All projects must be grid-tied and served by PG&E to be eligible for the design and technical assistance.

Overall, the major energy performance targets for projects to be considered in this program are:

- At least 50% beyond Title 24 for all project types

All technical assistance offered to selected projects during the 2010-2012 program cycle must occur before the end of the program cycle on December 31, 2012.

Background

In its 2008 *California Long Term Energy Efficiency Strategic Plan*, the California Public Utilities Commission set the goal of zero net energy (ZNE) for all residential new construction by 2020 and all commercial new construction by 2030. The Zero Net Energy (ZNE) Pilot Program is a Pacific Gas and Electric Company-specific local non-resource program that supports the Strategic Plan by initiating research, development, and demonstration (RD&D) projects around ZNE buildings.

As part of these strategic efforts, the Pacific Gas and Electric Company (PG&E) ZNE Pilot Program is seeking to provide detailed technical assistance, design assistance, and possible cost sharing of certain advanced energy efficiency measures for developers and design teams building cutting-edge new homes, commercial buildings, and community-scale projects. For accepted projects, the focus of the design assistance will primarily be on building and/or community-scale load reduction and energy efficiency.

Project Design and Technical Assistance Overview

The PG&E ZNE Pilot Program is seeking to provide design assistance, technical assistance, and performance evaluation to selected projects at significant levels depending on the size of the project, the energy efficiency and renewable energy targets, and the project completion timeline. There are three types of projects that can be offered design assistance through the Zero Net Energy Pilot Program:

- Community-scale projects: eligible for up to a maximum of \$300,000 in design assistance, technical assistance, and performance evaluation services;
- Commercial projects: eligible for up to a maximum of \$200,000 in design assistance, technical assistance, and performance evaluation services; and
- Residential projects: eligible for up to a maximum of \$100,000 in design assistance, technical assistance, and performance evaluation services;

On a case-by-case basis, PG&E may consider cost-sharing of innovative energy efficiency technologies.

Funding will not be provided directly to projects or to project design teams but will be used to provide design and technical assistance through firms selected by PG&E ("ZNE Consultants"). These firms will work in coordination with project design teams and the ZNE Pilot Program throughout the consultation process.

PG&E anticipates selecting a number of residential, commercial, and community-scale projects through this RFI. However, the number of projects selected at this time will depend on the quality and diversity of the projects that respond. The Zero Net Energy Pilot Program is primarily focused on new construction and is seeking new construction projects but will consider a major retrofit for design assistance if it has sufficiently aggressive energy efficiency goals or a ZNE goal.

PG&E's principal objective in providing this assistance is to reduce barriers to the design, construction, and operation of zero net energy buildings in California. PG&E is especially interested in replicable and scalable solutions. PG&E also seeks to examine the design process and project performance of ZNE projects, to determine how best to influence future PG&E program offerings around zero net energy. These goals will inform which projects, design teams, and consulting firms are selected to participate in the program. PG&E plans to conduct marketing, outreach and educational activities that make use of the lessons learned during the course of working with the ZNE Pilot Program's design and technical consultation participants and will expect project participants to assist with these education and outreach efforts through participation in case studies and possibly via public presentation.

As an organizing construct, PG&E will be using a five-stage model to describe the project development and construction process. Consulting firms selected and paid by PG&E ("ZNE Consultants") will help project design teams progress through the ZNE Pilot Program using the five stage model below:

- Stage 1: Pre-Design & Schematic Design
- Stage 2: Design Development
- Stage 3: Construction Documents
- Stage 4: Construction & Completion
- Stage 5: Performance Monitoring

Note: PG&E does not expect projects to get through all stages of design by the end of the 2010-2012 program cycle. Technical assistance will be tailored to each project based on the individual project stage and the ZNE program timeline.

There are certain expected activities and outcomes and certain required deliverables at the end of each stage. Generally, the first three stages will be considered the portion of the program during which the ZNE Consultant will provide "design and technical assistance;" the fourth and fifth stages will be considered the portion of the program during which the ZNE Consultant will provide "performance

assistance and assessment.” The ZNE Consultants will help project design teams meet the energy performance targets, assist the design teams with technical and modeling solutions, and will be responsible for providing the project deliverables (documentation) to PG&E at the end of each stage.

Project Category Definitions

For the purposes of PG&E’s ZNE Pilot Program, community-scale projects are defined as containing more than one building, and may include both commercial and residential buildings. The ZNE Pilot Program is most interested in mixed-use complexes, multi-family complexes, advanced residential new construction at the community scale, and projects focused on compact and/or transit-oriented development. PG&E prefers that projects be at the early stages of entitlement, planning, or design. Projects should have the objective of exceeding Title 24 by at least 50% through energy efficiency measures and plan to include significant on-site clean distributed generation.

A commercial project is defined here as a non-residential project that is not industrial or agricultural. The commercial sector includes small and large offices, restaurants, retail, food stores, refrigerated and unrefrigerated warehouses, schools, colleges, health care facilities, lodging, and other types of buildings. PG&E prefers that commercial new construction projects be in the early stages of entitlement, planning, or design, be primarily a commercial project, plan to exceed Title 24 by at least 50% through energy efficiency measures, and plan to include significant on-site clean generation.

A residential project can be single-family or multi-family, where each unit is individually metered. If single-family, it may be a custom home, production home (2 or more units), or duplex (2 attached units). If multi-family, it may be townhomes (3 or more attached units), low-rise (fewer than 4 stories), or high-rise (more than 4 stories). A residential project may also be prefabricated or a mobile home. The residential new construction projects will need to be in the early stages of entitlement, planning, or design, be primarily a residential project, plan to exceed Title 24 by 50-75% and plan to include significant onsite clean distributed generation.

Program Services

The five stages for each type of project (as detailed in Appendix A) are representative of the anticipated design and technical assistance services that the ZNE Consultant may be expected to deliver, depending on the needs of a given project. The services have been segmented into five categories: Collaboration, Design & Modeling Analysis, Codes & Standards, Project Performance, and Documentation (detailed in Appendix A). At each stage, the ZNE Consultant will work with the project design team and ZNE Program Representative to deliver the services and will be responsible for timely reporting and completion of deliverables.

Because each project will have independent project schedules and deadlines, PG&E does not expect projects to get through all stages of design by the end of the 2012 (which corresponds to the end of the current utility program cycle). Deadlines for ZNE Pilot Program deliverables will be established on a project-by-project basis. Program applicants will be asked to describe the status of their project with respect to the five phase model, detailing the progress anticipated during the 2012 timeframe.

As noted, PG&E prefers to work with residential and commercial projects that are in the first three stages (from the five stage model). Projects must plan to fully complete at least one stage during the

program period (by December 31, 2012). PG&E expects community-scale projects to have a feasible timeline and specific goals to be reached by the end of 2012.

PG&E does not expect every project to need all listed forms of design assistance. The specific scope of work will be negotiated on a project-by-project basis once projects are selected.

Appendix A lists the anticipated design assistance and performance assessment services for each stage for projects at the individual building scale (commercial and/or residential projects) and for community-scale projects. Deliverables to be produced or provided at each stage by the ZNE Consultants, in coordination with design teams, are also listed.

Long-Term Performance Monitoring

While a number of buildings have recently been designed to be zero net energy projects, there is still a critical information gap about how these buildings actually perform. PG&E, pending available funding, intends to monitor project performance after the construction of projects selected to receive design and technical assistance and to document best practices and lessons learned. It is possible that PG&E may select one or more "late stage" or completed projects as a means of documenting a high level of energy performance and demonstrating the diagnostic value of such information in ongoing performance.

All projects will be documented as detailed case studies which will be disseminated through the PG&E website and educational workshops. Applicants that are selected by PG&E and served through the ZNE technical assistance program will be required to share their project results.

PG&E Program Cycles

Energy efficiency programs at PG&E are approved by the California Public Utilities Commission (CPUC) in three-year program cycles. The Zero Net Energy Pilot Program was approved on June 7, 2010, and will run until the end of the current program cycle, December 31, 2012. During this program cycle, PG&E has committed to providing design and technical assistance to a number of residential, commercial, and community-scale projects. PG&E is also interested in conducting in-depth performance assessments of late-stage and recently completed ZNE/very high-performance projects. Applicants will be required to characterize the stages of their project that are anticipated to be complete by December 31, 2012. In the event that the program is funded beyond this date, project activities may be continued subject to CPUC approval and availability of funds.

Other PG&E Incentive & Rebate Programs

The ZNE Pilot Program encourages projects to take full advantage of PG&E's energy efficiency and distributed generation rebate and incentive programs. For projects that intend to participate in other programs that offer funding or incentives for design assistance (such as Savings by Design or the California Advanced Homes Program), notification of and coordination with PG&E staff will be required.

Application Process

Applications will be reviewed as they are received. All applications must be received before the final deadline to be considered.

Applications for assistance will be made by way of a competitive application process. Project applications with zero net energy performance goals will be accepted from building owners, developers, and/or design teams. The project must be grid-tied and served by Pacific Gas and Electric Company. The project and/or property owner must sign the application.

Project applications shall be submitted electronically on the "Power Advocate" (www.poweradvocate.com) web portal no later than the time and date shown thereon for closing bids. PG&E will not accept proposals submitted in any manner other than through the "Power Advocate" system.

The Power Advocate web portal allows participants in this RFI process to:

- See RFI documents,
- Submit questions,
- Review posted answers, and
- Submit the project application.

To be added to the Power Advocate web portal, email info@resourcerefocus.com with the subject line "ZNE RFI – add to Power Advocate." Include your name, title, organization, phone number and email. Also include names and contact information for any other members of the organization who will need access during the application process.

Applicants may submit questions regarding this Request for Ideas up to the closing date and time for questions. Applicants should not ask other PG&E employees questions about this application process, but should submit all questions to PG&E via Power Advocate. Questions will be answered as soon as possible, and both questions and answers will be posted on Power Advocate and made available to all Applicants. If an Applicant has a problem with Power Advocate, please contact Anna LaRue by email at anna@resourcerefocus.com or Noelle Cole by email at noelle@resourcerefocus.com.

Applicants shall supply the information specified below in its proposal and submit it in the format that corresponds to the following outline. All submission documents must be uploaded in the SUBMITTALS section of Power Advocate.

Qualified Responses

Qualified responses must be fully responsive to the requirements of the RFI and be received by the closing date and time stipulated.

Schedule - Key Dates and Activities

This is a "rolling" deadline – applications will be reviewed as they are received for inclusion into the program. All applications must be received before the final deadline to be considered.

Key activities and target dates are set forth below. PG&E may change these dates at its sole discretion.

Event	Format	Date
RFI Issue Date	Electronic	1/26/2012
Question Submission Period	Electronic	2/10/2012

closes		
Issuance of Q&A Responses	Electronic	2/17/2012
Final RFP Submission Due	Electronic	3/02/2012
Review and Clarification Period	N/A	3/9/2012
Final Project Selection Process	N/A	3/16/2012
Project Selection Announcement	Team contacts notified by staff	By 3/30/2012

Required Elements of the Project Application

Project proposals shall not exceed 20 pages in length, excluding any requested appendices. **Project proposal documents must explicitly contain the following five sections in the listed order to be considered responsive. Project proposals shall be submitted electronically as a PDF document:**

1. A clear application cover sheet indicating project type, project location, and designated project contact person.
2. Cover letter signed by an authorized representative of the project, certifying the accuracy of the information in the proposal, and acknowledging the project team's intent to fully participate in and take advantage of the design assistance, technical assistance, and performance assessment services offered through the Zero Net Energy Pilot Program. The letter must also state that the project will be grid-tied and will be served by PG&E;
3. A concise overview of primary members of the design team, with brief descriptions of any experience with energy efficient or zero net energy projects;
4. Provide details on the status of the project characterized in terms of the five project stages to be used by the ZNE Pilot Program. This is a required component for all proposals. Include a clear budget and timeframe (including milestones) for stages to be completed before December 31, 2012;
5. Other relevant project documentation:
 - A concise overview of the project program and goals, including location, climate zone, client (if any) and anticipated number of occupants. Include a site plan with a north arrow. Information on relevant energy efficiency baseline metrics already being considered for the project;
 - A concise overview of any reach codes, green codes, or local codes with which the project is anticipated to comply and which may affect energy efficiency goals;
 - A description of how the other members of the design and construction team will be chosen, if they have not yet been selected.
 - A preliminary description of the design and technical assistance that the project anticipates needing, including analysis of loads, building systems and technologies, integration of renewables, analysis of design options, etc.

Evaluation Elements for Project Proposal Consideration

A PG&E evaluation team will determine the projects that best meet the objectives of the ZNE Pilot Program. Project selection will be competitive. PG&E will select participants at its sole discretion. At its

sole discretion, PG&E may reject any project application that is conditional or incomplete, contains any alterations from the format required by this RFI, or contains other defects or irregularities of any kind.

All proposals will be evaluated based on the following criteria:

- Feasibility - The project has a high likelihood of success within the required timeframe of the ZNE Pilot Program.
- Skill & Experience - The applicant has adequate ability to implement the proposed project and energy goals.
- Innovation - The project is innovative, comprehensive and integrated, addresses new technologies and is expected to catalyze change.
- Fills Gaps - The project addresses areas that are not currently being addressed by identifying and resolving barriers to energy efficiency and/or focuses on underserved segments of the market, such as low-income projects.
- Applicability & Transferability - The proposed project will create a model that can be replicated by, or transferred to, other parties. In other words, applicants selected will not ultimately be unique in their ability to implement this type of project.
- Leveraging & Scalability - The proposed project will be participating in other programs or research efforts and represents a building sector with broad applicability.
- Commitment to Energy Efficiency - Applicants must demonstrate commitment to energy management through previous participation in utility energy programs; partnerships with PG&E or other entities enabling resource management or climate planning; an established energy reduction plan; establishment of GHG targets; or other similar actions.
- Geographic & Project Type Diversity - If sufficient applications are submitted, and as funding permits, the Program will fund a variety of geographic areas and project types (urban, suburban, rural, low income, transit-oriented, warehouse, office, hospitality, educational) in order to evaluate how best to design zero net energy buildings in the PG&E service territory.