STATE OF CALIFORNIA
ETP
EMPLOYMENT TRAINING PANEL

# Training Proposal for:

# Bloom Energy Corporation

## Agreement Number: ET09-0423

Panel Meeting of: **January 23, 2009**

ETP Regional Office: **San Francisco Bay Area** Analyst: T. Teles

## PROJECT PROFILE

Contract Type: Critical Proposal
Economic Development

Industry Sector(s): Green Technology

Counties Served: Santa Clara

Repeat Contractor: ☐ Yes ☒ No

Union(s): ☐ Yes ☒ No

Priority Industry: ☒ Yes ☐ No

No. Employees in CA: 222

No. Employees Worldwide: 308

| Turnover Rate % | Manager/ Supervisor % |
|---|---|
| 10% | 17% |

## FUNDING DETAIL

| Program Costs | Substantial Contribution | Total ETP Funding |
|---|---|---|
| $681,720 | $0 | $681,720 |

| In-Kind Contribution |
|---|
| $1,227,096 |

## TRAINING PLAN TABLE

| Job No. | Job Description (by Contract Type) | Type of Training | Estimated No. of Trainees | Range of Hours | | Estimated Cost per Trainee | Post-Retention Wage |
|---|---|---|---|---|---|---|---|
| | | | | Class / Lab | CBT | | |
| 1 | Critical Proposal | Advanced Technology, Business Skills, Computer Skills, Continuous Improvement, Manufacturing Skills | 299 | 24-200 | 0 | $2,280 | $23.00 |
| | | | | Weighted Avg: 120 | | | |

**Minimum Wage by County:** $14.18 for Santa Clara County

**Health Benefits:** ☒ Yes ☐ No This is employer share of cost for healthcare premiums – medical, dental, vision.

**Used to meet the Post-Retention Wage?:** ☐ Yes ☒ No

Although employer provides health benefits, they are not being used to meet Post-Retention Wage**.**

| Wage Range by Occupation | |
|---|---|
| Occupation Title | Wage Range |
| Engineering Staff | |
| Manufacturing Staff | |
| Operations Staff | |
| Administration Staff | |
| Facilities Staff | |
| Manufacturing Technician | |
| Sales/Service Staff | |
| Manager/Supervisor | |

## INTRODUCTION

In this proposal, Bloom Energy Corporation (Bloom Energy) seeks funding for retraining as outlined below:

Bloom Energy was founded in 2002 and is a manufacturer of solid oxide fuel cells (SOFC) that are used in on-site power generation systems. Bloom Energy has two facilities in Santa Clara County with 222 employees in California.

This project is a Critical Proposal as defined in Title 22, California Code of Regulations (CCR), Section 4402.2 because it is part of an economic development effort that involved state and local entities assisting Bloom Energy to add a new facility in California.

In order to meet manufacturing goals and business needs, Bloom Energy is requesting funding from the ETP to train 212 current employees and 87 new employees. The company has developed a training plan that will increase technical skills, expand its manufacturing operation, and provide improved customer service.

Bloom Energy Corporation is eligible for ETP-funded training under Title 22, CCR, Section 4416(i)(2) for companies having out-of-state competition.

## PROJECT DETAILS

Bloom Energy representatives state that over the next two years the company plans to increase its manufacturing capacity by opening a new manufacturing facility.

### Green Business Operations

According to the company representatives, Bloom's on-site power generation systems utilize an innovative fuel cell technology with roots in NASA's Mars program. The systems provide efficient energy generators with reduced operating costs and lower greenhouse gas emissions. By generating power where it is consumed, the systems offer increased electrical reliability and improved energy security while providing a path to energy independence. The United States fuel cell market is projected to grow eleven times over the next nine years, representing a tremendous growth opportunity. In order to capitalize on this growth, the company is expanding its operations and manufacturing capacity. Bloom is currently looking for a new manufacturing space that will increase manufacturing capacity and employee count. The company expects to have the new facility operating in 2009. The technology is new which requires significant training of technical and production employees. Training to implement continuous improvement processes and practices for the current and future workforce will also be provided as follows.

**Advanced Technology** training will be essential as the company implements Oracle applications across the organization. Engineers, technicians, and other key staff will be trained in advanced Oracle applications and systems. Engineering staff will be trained in Solidworks (CAD) and Windchill (PDM) to ensure that they have the skills needed to use state-of-the art software design and equipment and respond to the increasingly complex production requirements.

**Computer Skills** training in Oracle applications will be provided to all staff. Training will be customized to specific jobs and occupational groups.

**Business Skills** training will be provided to all occupations. This training will focus on product planning, communication, teambuilding, and leadership. The training will provide professional level skills for Bloom's team-oriented environment and trainees will gain an increased understanding of internal and external customer service. Further, the rapidly expanding customer base requires additional training for service staff in order to meet service delivery goals.

**Continuous Improvement** training will move the company to a team environment that will change the mindset throughout the organization. Training in lean, just in time, six sigma, statistical process control, American Production and Inventory Control Society (APICS) training, problem solving, and root cause analysis will be given to production and engineering staff, as well as managers and warehouse personnel, to enable employees to gain the skills to solve problems, measure, and analyze processes for improvement.

**Manufacturing Skills** training will prepare the production workforce to handle the increased skill demands that come with the increase in production and with the new facility that will open in 2009. As manufacturing grows, Bloom will be upgrading to state-of-the-art equipment that requires a multi-million dollar operational investment and employees will need to be trained on the new equipment.

**Advanced Technology**

The Advanced Technology (AT) skills will enable technical staff to use the tools required to customize internal computer systems as well as for the creation of future products. The company will train engineers, technical staff, and other key staff on design technologies customized for the fuel cell technology. Staff will be trained in the software and hardware needed for the following systems: Windchill/Agile, Solidworks, Aspen Plus, and InfoPlus21. Bloom Energy is requesting the Critical Proposal AT rate of $27 per hour for these courses which are far more costly to deliver than typical classroom training because they require the use of expensive hardware and specialized software. These courses will be delivered by a combination of internal trainers and outside technical experts at an estimated instructor cost of $30-$50 per hour. The trainer-to-trainee ratio will be 1:10 for AT to allow in-depth coverage and personal attention from the instructor.

**Commitment to Training**

Bloom Energy currently provides new employee orientation, training on labor relations and laws, and general occupational safety training. Skills training is provided as needed. Bloom Energy does not currently have a training budget.

Bloom Energy represents that ETP funds will not displace the existing financial commitment to training. Indeed, Bloom Energy anticipates that the opportunity for enhanced training made possible by ETP funds will encourage an ongoing financial commitment in this area.

Bloom Energy represents that safety training is, and will continue to be, provided in accordance with all pertinent requirements under state and federal law.

## RECOMMENDATION

For the reasons set forth above, staff recommends approval of this proposal, including the increased reimbursement for this Critical Proposal to assist a company that is expanding its manufacturing capacity in California.

## DEVELOPMENT SERVICES

N/A

## ADMINISTRATIVE SERVICES

N/A

## TRAINING VENDORS

To Be Determined

# Exhibit B: Menu Curriculum

## Class/Lab Hours

**(24 – 200)** Trainees will receive any of the following:

### BUSINESS SKILLS

- Effective Communications
- Budgeting/Finance for Non-Finance
- Strategic Planning
- Negotiations
- Organizational Change Management
- Customer Service
- Voice of the Customer
- IP Management (Intellectual Property)
- Project Management
- Teambuilding
- Leadership
- Decision-Making
- Conflict Management

### COMPUTER SKILLS

- Oracle Applications

### CONTINUOUS IMPROVEMENT

- Statistical Process Control (SPC)
- ISO9000
- Just-in-Time
- Lean
- Root-Cause Analysis
- Project Management
- Measurement System Analysis (MSA)
- Design for Manufacturing
- Taguchi Methods
- Quality Improvement
- Design of Experiments
- Process-Flow
- Production Math
- Internal Audit
- Process Control
- Statistical Methods

### ADVANCED TECHNOLOGY

- Windchill/Agile
- Solidworks (CAD)
- Aspen Plus
- InfoPlus21

**MANUFACTURING**

- Inventory Control
- American Production and Inventory Control Society (APICS)
- Oracle Applications
- Equipment Maintenance
- Production Scheduling
- Nonconforming Material Control
- Assembly Procedures
- Operations Theory
- System Maintenance
- Process Improvement