STATE OF CALIFORNIA
ETP
EMPLOYMENT TRAINING PANEL

Training Proposal for:

Soitec Solar Industries LLC

Agreement Number: ET15-0166

Panel Meeting of: June 27, 2014

ETP Regional Office: San Diego **Analyst:** J. Davey

PROJECT PROFILE

Contract Attributes:	Job Creation Initiative Priority Rate Retrainee	Industry Sector(s):	Manufacturing Green Technology Priority Industry: ☒ Yes ☐ No
Counties Served:	San Diego	Repeat Contractor:	☒ Yes ☐ No
Union(s):	☐ Yes ☒ No		

Number of Employees in:	CA: 200	U.S.:200	Worldwide: 1,291
Turnover Rate:	11%		
Managers/Supervisors: (% of total trainees)	4%		

FUNDING DETAIL

Program Costs	-	(Substantial Contribution)	(High Earner Reduction)	=	**Total ETP Funding**
$979,800		$0	$0		$979,800

In-Kind Contribution:	100% of Total ETP Funding Required	$1,200,000

TRAINING PLAN TABLE

Job No.	Job Description	Type of Training	Estimated No. of Trainees	Range of Hours		Average Cost per Trainee	Post-Retention Wage
				Class / Lab	CBT		
1	Retrainee Priority Rate	Business Skills, Computer Skills, Continuous Improvement, HazMat, Mgmt. Skills, Mfg. Skills, PL - Mfg.Skills	211	8-200 Weighted Avg: 100	0-30	$1,800	$15.60
2	Retrainee Priority Rate Job Creation	Business Skills, Computer Skills, Continuous Improvement, HazMat, Mgmt. Skills, Mfg. Skills, PL – Mfg. Skills	240	8-200 Weighted Avg: 125	0-30	$2,500	$13.00

Minimum Wage by County: San Diego County: Job 1: $15.60 Job 2: $13.00

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 ☐ Maybe

$3.05 per hour may be used to meet the Post-Retention Wage.

Wage Range by Occupation

Occupation Titles	Wage Range	Estimated # of Trainees	
	Job 1 & Job 2	**Job 1**	**Job 2**
Administrative Staff		30	7
Engineering Staff		10	4
IT Staff		3	1
Managers		8	1
Production Staff 1		35	16
Production Staff 2		115	210
Supervisors		10	1

INTRODUCTION

Soitec Solar Industries LLC is wholly-owned subsidiary of Soitec Solar Inc. (Soitec), a multinational corporation headquartered in France. Soitec manufactures and installs Concentrated Photovoltaic (CPV) modules and related equipment. CPV converts concentrated sunlight directly to electricity via a photovoltaic effect (the creation of voltage or electric current in a material upon exposure to light). The parent corporation has installed CPV systems worldwide and has operated in commercial power plants in Spain since 2008.

Soitec began operations in California in early 2011, when it received approval by the California Public Utilities Commission for five new Power Purchase Agreements (PPA) with San Diego Gas & Electric. These five agreements represent an energy generation capacity of 155MW. As well, Soitec has been approved for a PPA with the Imperial Solar Energy Center West project, in affiliation with Tenaska Solar Ventures LLC, that is capable of generating another 150MW.

Soitec will produce CPV systems for these PPAs from its new manufacturing plant which is located in Rancho Bernardo, within the city limits of San Diego. This is a large plant with 165,000 square feet, purchased in 2011 at a total cost of $140 million. This plant is manufacturing fifth-generation CPV with enhanced features and performance characteristics specifically designed for large-scale utility power plants. In particular, the fifth generation is designed to improve Levelized Cost of Electricity (LCoE), and is capable of boosting energy generation by up to 30% in efficiency.

PROJECT DETAILS

Prior Performance

Soitec hired and trained approximately 200 newly-hired workers at the plant in Rancho Bernardo under its prior ETP Agreement which ran from April 2012 to April 2014 with 100% performance (ET12-0348). However, this plant has not reached full production capacity. In order to meet demand under the PPAs, Soitec must continue training for the incumbent workers. Soitec also plans to hire and train another 240 workers.

In summary, training under this proposal is for 211 incumbent workers and 240 newly-hired workers at Rancho Bernardo.

Retrainee - Job Creation

In support of job creation, the Panel is offering incentives to companies that commit to hiring new employees. Under the Retrainee-Job Creation program in Fiscal Year 2011/12, training for newly-hired employees will be reimbursed at a higher rate and trainees will be subject to a lower post-retention wage.

Soitec has committed to hiring 240 new employees (Job Number 2) under this proposal to meet their expanded business and production demands. To be eligible for reimbursement under this Job Number, the trainees must be hired within the three-month period prior to Panel approval or during the term of contract.

Temporary to Permanent Hiring

The 240 trainees in Job Number 2 will be hired and trained under Panel guidelines for “temporary to permanent” employment. Soitec will retain these employees through a temporary agency, with the intention of hiring them into full-time, permanent positions after training.

These trainees must be determined eligible to participate in ETP-funded training before the start of training, while on payroll with the temporary agency. (Unemployment Insurance Code Section 10201(c).) However, the retention and post-retention wage requirements cannot be satisfied until after they have been hired by Soitec. Until then, Soitec will not receive progress payments.

Substantial Contribution

Soitec's Rancho Bernardo facility earned in excess of $250K in the most recent agreement; however, the 131 nelwy-hired retrainees were trained under the Job Creation initiative. Therefore, they are not subject to the substantial contribution.

Green/Clean Operations

Soitec's solar technology (CPV), developed over a decade ago, is more efficient and performs better than conventional solar systems, particularly at locations with extremely hot ambient temperatures and dry weather conditions. The Company is one of the leading manufacturers of green/clean products in the world.

Training Plan

Soitec has developed an extensive training plan and metrics that entail all aspects of each employee's job duties. Managers are tasked with assessing the needs of each new hire with respect to the needs of the department and the organization. A training plan is then created to identify the skills that are required for the job and that will benefit the employee to perform to his or her fullest potential, as outlined below.

Business Skills (12%) - Training will be taught to all new employees to help them understand Soitec's philosophy and culture, learn product function and application and to grow their skill base as the manufacturing processes begin and continue. Courses will cover Basic understanding of Solar Cell/CPV Module/CPV System, General Introduction to production, integrating Soitec Corporate Culture, Soitec products and application in customers' final products, Information Security, Understanding the aim and main stakes of the San Diego Project. This will establish each employee's role and expected contribution, as well as Quality & Process ownership, work instruction standardization and the understanding of Product/Process/Material Development. In addition to the above selected trainees will receive training in Project Management, Supply Chain, and Sales/Business Development as needed.

Manufacturing Skills (20%) - Production Staff 1 & 2 will receive training in basic understanding of Solar Cell/CPV Module/CPV System, Quality/Process ownership and work instruction standardization. Specific training in topics such as understanding of product/process/material development and Introduction, understanding the main principles and operation of equipment will also be delivered. Training in production processes will establish employees' production efficiency, maintain high levels of productivity and meet corporate goals and customers' expectations.

Continuous Improvement Skills (25%) - Training will be given to all employees in Process Improvement, Root Cause Analysis/Problem Solving, Lean Six Sigma and 5S and Failure Modes & Effective Analysis. This training will help control costs, minimize waste, identify and resolve problems, and provide the highest quality products, essential for continued growth and long term success.

Management Skills (5%) - Leadership Training and Management Skills will be taught to Managers and Supervisors to enable them to lead their teams effectively.

Computer Skills (10%) - Training will be delivered to Managers, Supervisors, Administrative, Engineering and Production Staff. This training will enable employees to effectively use the Company's automated systems to efficiently apply internal processes and procedures and

improve the ability to communicate and share information with both internal and external customers.

Hazardous Materials Skills (5%) - Training will be delivered to all new employees in Hazardous Material Handling and Control, Disaster and Emergency Response Plan, Workplace Health and Safety and Security/Environmental Policy/HSSE Organizational Structure. The training will ensure that employees follow all protocols related to chemical handling and waste material treatment to ensure employee and environmental safety. Although some training is regulatory, the training included in this project is above the required mandated hours.

PL–Manufacturing Skills (20%) - Production Staff 1 & 2 will receive training in basic understanding of Solar Cell/CPV Module/CPV System, Quality/Process ownership and work instruction standardization. Specific training in topics such as understanding of product/process/material development and Introduction; understanding the main principles and operation of equipment will also be delivered.

The Panel recently adopted regulations to authorize reimbursement for training delivered in a Productive Laboratory (PL) setting. PL trainees may produce goods for profit as part of the training in the courses identified in the Curriculum and with no more than 5 trainees per instructor. The instructor must be dedicated to training delivery during all hours of training, and special attendance rosters will be used to assist in monitoring.

Due to the technical nature of its production process, and the fact that most trainees will be newly-hired, Soitec intendes to provide hands-on training to a total of 300 Production Staff and Engineering Staff. This training is designed to ensure that staff understand the proper use and/or application of equipment and processes. Training on machinery cannot be duplicated in a classroom setting.

PL training will address product quality, productivity, and safety. All training will be overseen by a Trainer or Supervisor/Manager. Most trainees will receive up to 80 hours of PL as needed, depending on their specific needs and occupations. The hours per module and the competencies have been identified in the Curriculum. In most cases, the trainer-to-trainee ratio for PL training will not exceed 1:3. However, for newly-hired retrainees in Job Number 2, the trainer-to-trainee ratio may be as high as 1:5 due to shift demands, scheduling, and the need to get as many trainees fully trained as quickly as possible.

CBT-Business Skills (3%) - This training will be offered to all staff in ancillary skills related to Business Finance Basics, Strategic Cost Management, Systematic Selling, Running Effective Meetings, Negotiation Skills, Supply Chain Strategies and other skills. This training will allow trainees to reinforce the classroom training.

Commitment to Training

Soitec represents that ETP funds will not displace the existing financial commitment to training. Soitec anticipates that the opportunity for enhanced training made possible by ETP funds will encourage an ongoing financial commitment in this area. In addition to ETP funding, Soitec spends $250,000 annually at its California facility since it was established in 2012.

Soitec represents that safety training is, and will continue to be, provided in accordance with all pertinent requirements under state and federal law. In addition, that ETP funding will not replace the current training budge, but will enable Soitec to meet its aggressive goals of starting and operating the new California facility and creating jobs as planned.

RECOMMENDATION

Staff recommends approval of this proposal.

PRIOR PROJECTS

The following table summarizes performance by Soitec under an ETP Agreement that was completed within the last five years:

Agreement No.	Location (City)	Term	Approved Amount	Payment Earned $ %
ET12-0348	San Diego	4/2/12-4/1/14	$300,000	$300,000 (100%)

Soitec tracked 15,286 eligible ETP training hours equal to $300,000 (100%). The final closeout invoice has been submitted and is in process.

DEVELOPMENT SERVICES

Soitec retained Caltraining in Upland to assist with development of this proposal free of charge.

ADMINISTRATIVE SERVICES

Caltraining will also perform administrative services in connection with this proposal for a fee not to exceed 13% of payment earned.

TRAINING VENDORS

To Be Determined

Menu Curriculum

Class/Lab Hours: 8-200

Trainees may receive any of the following:

CONTINUOUS IMPROVEMENT

Best Manufacturing Practices -1
Lean Principles of Manufacturing
- 5s
- Six Sigma
- Value Stream Mapping
- Total Productive Maintenance

Process Improvement – 1
Single Minute Exchange of Die
Team Building -1, 2, 3
Position Orientation
Individual Growth and Improvement
- Communication Skills
- Time Management
- Presentation Skills
- Effective writing

8D – Eight Disciplines – Root Cause Analysis
Franklin Covey Theories
- Leading at the speed of trust
- 7 Habits of highly effective people

Continuous Improvement - Quality

FMEA (Failure Modes & Effective Analysis)
- FMEA: Intro, Advanced, Refresher

SPC (Statistical Process Control)
- SPC: 1, 2, 3, 4

Basic MSA (Measurement Statistical Analysis)
Total Quality Management
- Design of Experiment

Material Science
- Understanding the Product
- Physics 1, 2, 3
- Molecular Training
- Plasma and Bonding Training

Quality Management System
- Soitec Quality Procedures
- Quality Management Orientation & Corporate Compliance

Quality/Process Ownership and Work Instruction Standardization
- Quality Product: Corrective and Preventive Actions to Deal with Customer Claims and Non-Conformity
- Quality Documentation System: Guidelines to Write Procedures. (GED or Electronic Document Management)

BUSINESS SKILLS

Basic understanding of Solar Cell/CPV Technology
- Basic Solar Cell/Chip and Module Function
- CPV Module Process Flow Overview

- CPV Systems Introduction
- Visit test tracker and get Introduction

Introduction to Production and Operation
- Product Introduction
- Soitec History
- Soitec Global Organization

Integrating Soitec Corporate Culture
- Application of Soitec's Products
- Information Security Systems

San Diego Projects – Main Stakes and Individual Roles
- San Diego Projects – 1
- San Diego Projects – 2

Understanding of Product/Process/Material Development and Introduction
- Equipment Commissioning and Process Qualification
- Change Request Procedure
- TIER 1 - Feasibility and Product Design Procedure
- TIER 2 - Functional Specification/Validation Procedure
- MRR 1 (Manufacturing Readiness Review) - Frozen Design Specification/Process Optimization
- MRR 2 - Pre-Production Procedure

Soitec Global Process
- Understanding Soitec's customers
- Soitec's relation to the market and global demands
- Current and future solar projects

Soitec Electronic Division
- Products and their application
- Division demands and constraints
- Electronic division's relation to solar

Business Skills - Finance

Risk Management

Accounting
- Measuring ROI
- Net Value
- Accounting 1, 2, 3

US Accounting Practices
- Compliance with government practices

Bookkeeping

Business Skills - Project Management

Organizational Objectives
- Aligning goals, maintaining communication between teams

Project Operating Management
- Setting deadlines, identifying needs

Project Assessment

- Identifying needs for project management, integrating considerations, taking ownership

Project Transitions

- Communicating needs and project goals
- Effective transition between managers

Business Skills - Supply Chain

Shipping and Receiving Best Management Practices

- Ergonomics, Space Utilization & Organization

Management for Supply Chain

- Management Strategies, Process Training

Framework and Problem Solving

Supply Chain Strategies 1

- Aligning Strategies; Efficiency and Cost Savings

Supply Chain Strategies 2

- Responsiveness for Supply Chain Management

Business Skills - Sales & Business Development

Soitec Finances

Understanding the Market

Implementing Solutions

COMPUTER SKILLS

Material Requirement Planning – 1 (MRP)

Manufacturing Execution System – 1 (MES)

MS Office – Intermediate/Advanced

Corporate Systems

- Paylocity
- PeopleSoft
- Kronos
- Google Apps

MANAGEMENT SKILLS (manager and supervisor trainees only)

Effective Meetings for Leaders

Finance for Technical Managers

Leadership Development

- Leading Others
- Accountability
- Setting Expectations

Supervisory Skills

Team work and Organization

- Assigning Teams and Team Leaders
- Creating and Building Teamwork

HAZARDOUS MATERIALS

Maintain a Healthy and Safe Environment

- Control and Care of Hazardous Materials
- Hazmat Disaster Plan
- Security Standards and Environmental Policy

MANUFACTURING SKILLS

Using Method to Detect, Analyze and Correct Anomalies (to manage your activity)

- Introduction and Operation Training for Equipment at Heatspreader Assembly
- Introduction and Operation Training for Equipment at Laser Wafer Saw
- Introduction and Operation Training for Equipment at Die Attach, Pick and Place and Reflow
- Introduction and Operation Training for Equipment at Thin (Au) Wirebond Process
- Introduction and Operation Training for Equipment at Singulation and Elect Testing Process
- Introduction and Operation Training for Equipment at Bottom Plate Washing Process

Understanding the Main Principles and Operation of Equipment

- Introduction and Operation Training for Equipment at Screen Printing
- Introduction and Operation Training for Equipment at Pick & Place and UV Cure
- Introduction and Operation Training for Equipment at Heavy Wirebonding
- Introduction and Operation Training for Equipment at Plasma treatment/Coating
- Introduction and Operation Training for Equipment at Cell Testing
- Introduction and Operation Training for Fanuc Robot System and Automation Control at Module Line
- Introduction and Operation Training for Fanuc Robot System, Automation Control and MIG Welding at Frame Assembly Line
- Machine Orientation, Set-Up, Programming, Calibration and Maintenance of Equipment at Laser Saw
- Machine Orientation, Set-Up, Programming, Calibration and Maintenance of Equipment at Die Attach
- Thin Wire Bond (AuWB) Machine Orientation: Set-Up, Program, Calibrate, and Maintenance
- Machine Troubleshooting and problem solving

Maintenance on Soitec Equipment

- Pick and Place Maintenance
  - Machine Orientation, Set-Up, Programming, Calibration and Maintenance of Equipment at Pick and Place
- Heavy Wire Bond Maintenance (AlWB)
  - Machine Orientation, Set-Up, Programming, Calibration and Maintenance of Equipment at Heavy Wire Bond (Aluminum)
- Fanuc Robotic System Maintenance
  - Machine Orientation, Set-Up, Programming, Calibration and Maintenance of Fanuc Robotic System
- Equipment Configuration
- Equipment Maintenance for Grenzebach Machine
- MFG-Equipment Maintenance Safety Training (Not to exceed 10% of training)

In Depth Understanding of Process Steps, Materials, Material Handling, Quality Controls

- Process In-Depth Orientation and Process Control Plan/FMEA Review at Solar Cell Assembly
- Process In-Depth Orientation and Process Control Plan/FMEA Review at Bottom Plate Assembly
- Process In-Depth Orientation and Process Control Plan/FMEA Review at Heatspreader & Bottom Plate Glass Pre-Wash
- Process In-Depth Orientation and Process Control Plan/FMEA Review at Module Assembly
- Process In-Depth Orientation and Process Control Plan/FMEA Review at Frame Welding Assembly

Operate Metrology Equipment
Operation and Data Acquisition of Metrology Procedure and inspection Process Control System
Equipment Operations for Module (Grenzebach)

CBT Hours
0-30

BUSINESS SKILLS

Doing Business in the Americas (25 hours)
Business Finance Basics (1 hour)
Strategic Cost Management (6 hours)
Systematic Selling – Gaining Commitment and Following up (1 hour)
Systematic Selling – The complete Program (8 hours)
Operations Management (6 hours)
Acting efficiently on a team (1 hour)
Individual Leadership Power (1 hour)
Running Effective Meetings (1 hour)
Workplace Hazardous Materials & Information Systems (.75 hour)
Communicating as a Team (1 hour)
Negotiating Skills for the Professional (1 hour)
Strategies for Meeting Goals (1 hour)
Project Management (5 hours)
Supply Chain Strategies 1: Aligning Strategies; Efficiency and Cost-Savings (2 hours)
Supply Chain Strategies 2: Responsiveness & Advanced Topics (2 hours)
Product and Process Design for Supply Chain Management (2 hours)

PRODUCTIVE LAB TRAINING

PL Hours:
8-80

PL - MANUFACTURING SKILLS

Methods to Detect, Analyze and Correct Anomalies for Machine Operation –

- Heatspreader Assembly
- Laser Wafer Saw
- Die Attach, Pick and Place and Reflow
- Thin (Au) Wirebond Process
- Singulation and Elect Testing Process
- Bottom Plate Washing Process

Understanding the Main Principles and Operation of Equipment

- Screen Printing
- Pick & Place and UV Cure
- Heavy Wirebonding
- Plasma treatment/Coating
- Cell Testing
- Fanuc Robot System and Automation Control at Module Line and Frame Assembly LIne
- Laser Saw and Die Attach
- Thin Wire Bond (AuWB) Machine
- General Problem-solving

Equipment Maintenance

- Pick and Place Maintenance
- Heavy Wire Bond
- Fanuc Robotic System
- General Configuration
- Grenzebach Machine
- MFG-Equipment Maintenance Safety Training* (Not to exceed 10% of training)

Process Steps, Materials, Material Handling, Quality

- Solar Cell Assembly
- Bottom Plate Assembly
- Heatspreader & Bottom Plate Glass Pre-Wash
- Module Assembly
- Frame Welding Assembly

Operate Metrology Equipment for Data Acquisition and Control

- Process Control System
- Grenzebach Machine

*Safety Training cannot exceed 10% of total training hours per-trainee.

Note: Reimbursement for retraining is capped at 200 total training hours per trainee, regardless of the method of delivery.