Training Proposal for:

New Technology Training Institute

Agreement Number: ET16-0154

Panel Meeting of: September 25, 2015

ETP Regional Office: North Hollywood **Analyst:** E. Fuzesi

PROJECT PROFILE

Contract Attributes:	Retrainee Priority Rate SB <100 SET HUA	Industry Sector(s):	Services Green Technology Priority Industry: ☒ Yes ☐ No
Counties Served:	Los Angeles, Ventura, San Diego, Orange	Repeat Contractor:	☒ Yes ☐ No
Union(s):	☐ Yes ☒ No		
Turnover Rate:	≤20%		
Managers/Supervisors: (% of total trainees)	≤20%		

FUNDING DETAIL:

Program Costs	+	Support Costs	=	Total ETP Funding
$90,200		$6,255 8%		$96,455

In-Kind Contribution:	50% of Total ETP Funding Required	$86,570

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 SET	Commercial Skills	45	8-200	0	$1,155	$20.55
				Weighted Avg: 60			
2	Retrainee SET HUA SB<100 Priority Rate	Commercial Skills	16	8-200	0	$2,780	$11.30
				Weighted Avg: 100			

Minimum Wage by County: Job Number 1 (SET Frontline): $20.55 statewide.
Job Number 2 (SET HUA): $11.30 per hour for Ventura County; $11.95 per hour for San Diego County; $12.02 per hour for Orange County; and $11.98 per hour for Los Angeles 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 ☒ Maybe
Participating employers may use health benefits to meet the Post-Retention Wage.

Wage Range by Occupation		
Occupation Titles	Wage Range	Estimated # of Trainees
Job Number 1		
Solar Energy Practicioner		45
Job Number 2		
Solar Energy Practicioner		16

INTRODUCTION

Founded in 1999, New Technology Training Institute (NTTI) is a private, for-profit training agency specializing in training Solar Energy Practicioners. In the past, the school has trained IT professionals in various computer certification programs for Southern California employers. However, since 2009, NTTI has been focusing on the Solar Energy Practitioner Program, targeting the renewable energy industry due to a growing demand in that field.

NTTI is accredited by the North American Board of Certified Energy Practitioners (NABCEP) and the Council on Occupational Education (COE). NTTI is also approved by Bureau for Private Postsecondary Education, and endorsed by various governmental agencies such as Employment Development Department (EDD), Workforce Investment Act (WIA), Trade readjustment Allowances (TRA), Veteran Administration (VA), the South Bay Workforce Investment Board, and I-Train.

NTTI is eligible to contract with ETP as a private training agency. NTTI's core group represents 98% of the requested funding. This is NTTI's fifth Agreement with ETP.

PROJECT DETAILS

In recent years, solar energy systems have become economically feasible due to technological breakthroughs that have increased efficiency and output of solar panels. The improved technology has allowed for cost reduction and more efficient solar panels and the development of wireless inverters and charge controllers. These technological developments create the need for new workforce skills as NABCEP adjusts the learning objectives of the certification program to reflect changes in technology.

Incentives from utility companies and government entities have also contributed to the decrease in cost of solar systems. It has led to a very rapid growth of this industry with an average of 25% annual revenue growth in recent years, according to the American Solar Energy Society. The popularity of solar panels, in turn, has raised the need for skilled and certified practitioners to install and service solar panels and related equipment in homes and businesses.

Training Plan

NTTI will provide a structured training program to help employers upgrade employee skill sets, and earn an industry-recognized certificate from an accredited institution. Additionally, Small businesses are rarely able to conduct thorough training on their own due to time and budget constraints. Training usually only consists of basic job skills to complete a particular job. According to the Contractor's market research and assessment, while small business employers require more skills from their workforce, they do not have the necessary expertise, resources or qualifications to provide needed training.

NTTI's Curriculum was developed according to NABCEP standards. The 100-hour program is center-based, consisting of classroom theory and hands-on lab. It was designed to provide a solid foundation of basic skills for entry level practicioners including mechanical/electrical design and installation and maintenance/troubleshooting of modules, inverters, and other components.

Commercial Skills (100%) – Training will be offered to all trainees to learn industry and market requirements. Photovoltaic (PV) Applications and Safety Basics modules help students identify common types of PV system applications, safety hazards, and practices. Electricity Basics and Solar Energy Fundamentals define basic terminology, and explain best practices, key electrical parameters, and outputs. System Components modules teach principles of component operations, functions, and specifications while System Sizing principles cover the factors, values and effects of power and energy production using calculations and online tools to meet customer objectives. Mechanical Design includes roofing system requirements and weather sealing methods. Other modules in the Curriculum cover electrical diagrams, PV configuration, electrical conductors, grounding, labeling, and requirements for permits, inspections, and code-compliance.

Impact/Outcome

Students will demonstrate a basic understanding of PV systems and prepare for the NABCEP PV Entry Level exam. Candidates must demonstrate knowledge of the fundamental principles of the application, design, installation and operation of PV Systems to be certified.

Commitment to Training

NTTI represents that ETP funds will not displace the existing financial commitment to training. Safety training is, and will continue to be, provided in accordance with all pertinent requirements under state and federal law.

- Training Infrastructure

Two qualified in-house trainers (NABCEP certified, real-life work experience, and extensive teaching experience) will provide the training. One full-time staff and one-part time staff will be in charge of general administration, scheduling training, ETP administration, recruitment, and needs assessments.

Special Employment Training (SET)

Under SET, the participating employer is not required to demonstrate out-of-state competition. To qualify under SET, trainees must be earning at least the statewide average hourly wage at the end of the retention period.

HUA

All trainees in Job Number 2 work in a High Unemployment Area (HUA), with unemployment exceeding the state average by at least 25%. The participating employers' locations in Los Angeles, Ventura, Orange, and San Diego Counties qualify for HUA status under these standards.

- **Wage Modification**

These trainees in Job Number 2 qualify for the Standard ETP Minimum Wage rather than the Statewide Average Hourly Wage. The Panel may also modify/reduce the ETP Minimum Wage for these trainees by up to 25% if post-retention wages exceed the start-of-training wages. NTTI is requesting the wage modification to the reduced standard wage of $11.30 per hour for Ventura County; $11.95 per hour for San Diego County, $11.98 per hour for Los Angeles County; and $12.02 per hour for Orange County. Trainees in this proposal work in entry level positions, looking to increase their marketability and opportunity for wage progression. Earning their NABCEP Certificate will enable them to earn higher wages in the competitive field of solar energy.

Marketing and Support Costs

NTTI is requesting 8% support costs. The majority of NTTI's marketing is conducted through advertisements in industry-specific publications and online. The school also maintains extensive relationships with EDD, various Worksource Centers, Workforce Investment Boards, veteran representatives, and a network of private companies and business associations. Support Costs will cover NTTI's marketing efforts, and recruitment of additional participating employers. Staff recommends the 8% support costs.

Training Agency Certification

Training agency eligibility requires certification by an independent third-party, as required for the type of school and course of study. Most schools must also be licensed by the Bureau of Private Postsecondary Education (BPPE), created in statute effective January 1, 2010.

In keeping with the Panel's standards, NTTI is eligible as a training agency based on the following:

- BPPE licensure valid until September 30, 2015
- Certification by NABCEP
- Approval for WIA funding under the I-TRAIN program
- Successful past performance with ETP

Tuition Reimbursement

In accordance with Title 22, California Code of Regulations, Section 4412.1, NTTI represents that students enrolled in the ETP-funded program will not be charged tuition, fees, or any other costs associated with training. The representation will be made a condition of the Agreement.

RECOMMENDATION

Staff recommends approval of this proposal.

PRIOR PROJECTS

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

Agreement No.	Location (City)	Term	Approved Amount	Payment Earned $ %
ET13-0420	Los Angeles	6/30/13-6/29/15	$67,970	$67,970 (100%)
ET12-0180	Los Angeles	11/28/11-11/27/13	$93,380	78,399 (84%)
ET09-0475	Los Angeles	3/9/09-3/8/11	$135,750	$14,681 (11%)

ET09-0475: This New Hire only Agreement was designed to train and place 10 Computer Engineers, and 30 Home Health Aides and Nurse Assistants. Training was 190 to 200 hours per person and included another CalWORKS Welfare-to-Work component. 18 trainees were enrolled, and four (4) were placed into employment eligible for reimbursement.

After training began, the Contractor determined that wages for Home Health Aides and Nurse Assistants were declining to well below the ETP minimum wage requirement. Consequently, NTTI was not able to place any of these trainees into appropriate employment. NTTI subsequently requested an Amendment to delete these two occupations from the contract, and instead created a Job Number for 26 Solar Energy Practitioners, a demand occupation.

After the Amendment was approved, the Contractor had seven months to complete training. NTTI enrolled four trainees, of which three completed training and one completed retention. There was insufficient time to recruit, train, place, and retain unemployed trainees once the Amendment was approved.

After experiencing the risks and difficulties of administering a New Hire program, NTTI discontinued New Hire training and designed a more conservative training plan for just one occupation, Solar Energy Practitioner.

DEVELOPMENT SERVICES

N/A

ADMINISTRATIVE SERVICES

N/A

TRAINING VENDORS

N/A

Exhibit B: Menu Curriculum

Class/Lab Hours

8-200 Trainees may receive any of the following:

COMMERCIAL SKILLS

- Photovoltaic (PV) Markets and Applications
  - History of PV Technology and Industry
  - Markets and Applications for PV
  - Types of PV Systems
  - Associate Key Features and Benefits of PV with Applications

- Safety Basics
  - Safety Hazards of Operational and Non-Operational PV Systems
  - Safety Hazards, Practices and Protective Equipment During PV System Installation and Maintenance

- Electricity Basics
  - Difference between Energy and Power
  - Basic Electrical Terms
  - Use of Digital Multi-Meter
  - Calculation of Simple Circuit Values

- Solar Energy Fundamentals
  - Basic Solar Terms
  - True (Solar) South & Magnetic (Compass) South Given a Declination Map
  - Basic Solar Movement and Effect of Earth Tilt
  - Solar Position Using Solar Path Diagrams
  - Angular Effects on the Irradiance of Array
  - Factors that Reduce/Enhance Solar Irradiation
  - Average Solar Irradiation on Various Surfaces
  - Conversion of Solar Irradiation into a Variety of Units
  - Effect of Horizon on Solar Irradiation
  - Use of Solar Pathfinder or Sun Charts

- PV Module Fundamentals
  - How a Solar Cell Converts Sunlight into Electric Power
  - Key Points on a Typical IV Curve
  - Key Output Values of Solar Modules Using Manufacturer Literature
  - Effect of Environmental Conditions on IV Curve
  - Effect of Series/Parallel Connections on IV Curve
  - Measurement Conditions for Solar Cells and Modules
  - Expected Output Values of Solar Module under a Variety of Environmental Conditions
  - Construction of Solar Cells of Various Manufacturing Technologies
  - Performance and Characteristics of Various Cell Technologies
  - Components and Construction of a Typical Flat Plate Solar Module
  - Calculate the Efficiency of a Solar Module
  - Purpose and Operation of Bypass Diodes
  - Typical Deterioration/Failure Modes of Solar Modules
  - Major Qualification Tests and Standards for Solar Modules

- System Components
  - Most Common Solar Module Mounting Techniques (Ground, Roof, Pole)
  - Features and Benefits of Different Solar Mounting Techniques
  - The Relationship between Solar Module Cell Temperature and Environmental Conditions
  - Purpose & Operation of Main Electrical Balance of System (BOS) Components (Inverter, Charge Controller, Combiner, Ground Fault Protection, Battery, Generator)
  - Key Specifications of Main Electrical BOS Components (Inverter, Charge Controller, Combiner, Battery, Generator)

- PV System Sizing
  - Interaction of Typical Loads with IV Curve
  - Load Demand for Stand-Alone and Grid Interactive Service
  - Typical System Electrical Output Derating Factors
  - Estimated Peak Power Output (Direct Current (DC) and Alternating Current (AC)
  - Array and Inverter Size for Grid-Connected System
  - Estimated Monthly and Annual Energy Output of Grid-Connected System
  - Relationship between Array and Battery Size for Stand-Alone Systems
  - Array, Battery and Inverter Sizes for Stand-Alone System

- PV System Electrical Design
  - Series/Parallel PV Array Arrangement Based on Module and Inverter Specifications
  - BOS Components Appropriate for Specific System Requirements
  - Voltage Drop between Major Components

- PV System Mechanical Design
  - Relationship between Row Spacing of Tilted Modules and Sun Angle
  - Mechanical Loads on a PV Array (Wind, Snow, Seismic)

- Performance Analysis and Troubleshooting
  - Typical System Design Errors
  - Typical System Performance Problems
  - Performance Problems & Typical Causes
  - Equipment Needed for Typical System Performance Analysis
  - Actual System Power Output vs. Rated or Expected Values
  - Typical Locations for Electrical/Mechanical Failure

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

Participating Employers in Retrainee
Multiple Employer Contracts

Contractor's Name: New Technology Training Institute	CCG No.: ET16-0154
Reference No: 15-0302	Page 1 of 1

PRINT OR TYPE IN ALPHABETICAL ORDER

Company: American Solar Direct

Address: 217 N. Sunset Ave.

City, State, Zip: Industry, CA 91744

Collective Bargaining Agreement(s): N/A

Estimated # of employees to be retrained under this Agreement: 50

Total # of full-time company employees worldwide: 400

Total # of full-time company employees in California: 400

Company: Precise Air Systems

Address: 5467 San Fernando Rd. West

City, State, Zip: Los Angeles, CA 90039

Collective Bargaining Agreement(s): N/A

Estimated # of employees to be retrained under this Agreement: 20

Total # of full-time company employees worldwide: 70

Total # of full-time company employees in California: 70