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**Low Income Energy Efficiency Workforce Education & Training
(WE&T) Pilot Project**

**Report to Energy Division
Of
Pacific Gas & Electric Company, PG&E Energy Training Center, Quality
Conservation Services, Synergy Companies,
And
Southern California Gas Company, TELACU, Community Enhancement Services
March 31, 2011**

Decision (D.) 08-11-031, Ordering Paragraph 35 required the California Public Utilities Commission's Energy Division to issue a Request for Proposal (RFP) to recruit and train residents of disadvantaged, low income communities to install energy efficiency measures in households as part of the California Public Utilities Commission-authorized Low Income Energy Efficiency (LIEE) program managed by Pacific Gas and Electric Company (PG&E), Southern California Gas Company (SoCalGas), Southern California Electric Company (SCE), and San Diego Gas and Electric Company (SDG&E) (collectively the Investor Owned Utilities or IOUs).¹ Proposal teams were required to include partners from educational institutions, LIEE implementation contractors, and IOUs. Each team proposed to develop and implement a certificate program (offered through an educational institution) that included both in-class and hands-on training that could be used to train students in the core competencies they would require to find work as Energy and Weatherization Specialists in the IOU LIEE programs.

Energy Division's public bidding process resulted in the selection of two winning bidders: Los Angeles Trade Technical College (LATTC) in SoCalGas service area and the San Francisco Office of Economic and Workforce Development (SF OEWD) team in PG&E's service area. Energy Division requested PG&E to administer the contract and funds for the two pilots on behalf of the other IOUs.

PG&E developed contracts for both the LATTC and SF OEWD pilots, and co-funding agreements between the three other IOUs to pay for their share of the costs as authorized in D.08-11-031. Additionally, all parties on the pilot teams were involved with creating and signing a memorandum of understanding (MOU) governing their pilot partnership.

¹ The LIEE program, also know as Energy Partners at PG&E, was renamed effective January 2011. The program is now known statewide as the Energy Savings Assistance Program. However, much of this pilot training occurred prior to the program's rename, and this report will continue to refer to the program alternately as either LIEE or the Energy Savings Assistance Program.

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San Francisco Office of Economic and Workforce Development/ City College of San Francisco Pilot Project

The City and County of San Francisco Office of Economic and Workforce Development (SF OEWD) collaborated with City College of San Francisco (CCSF) to expand SF OEWD's CityBuild Academy to include a comprehensive Certificated LIEE Training Initiative.

CityBuild was started as a mayoral initiative in 2005 by Mayor Gavin Newsom in response to community, developers, contractors and trade unions call for a comprehensive and consolidated construction workforce training and referral system. CityBuild, through the Mayor's Office of Economic and Workforce Development (OEWD), is a public/private/community and labor partnership designed to train and place economically disadvantaged residents in good paying, upwardly mobile, and career path employment in construction. CityBuild's components include a construction skills training academy, employment placement assistance, and a participant tracking and reporting system.

CityBuild is a City managed network of community, educational and trade union partners working together to provide real employment pathways in construction for disadvantaged communities with multiple barriers to employment. Nonprofit CBOs serve as CityBuild's outreach, recruitment, assessment and supportive service arm working with clients and enrolling them in the CityBuild Academy. City College of San Francisco provides the training facility, in-kind use of construction tools, equipment and faculty for the training. Trade unions provide access to their apprenticeship programs and union members to provide introductory "hard skills" training for specific trades. CityBuild staff work with contractors to provide employment opportunities through San Francisco's "First Source Ordinance" local hiring program.

The purpose of including a specialized LIEE Training Initiative within CityBuild was to prepare participating students with the necessary skills and certifications required to market and install energy efficiency measures not only for the IOU's LIEE program but for the federal Low Income Home Energy Assistance Program (LIHEAP) as well. The combination of skills and certifications needed for both the LIEE Program and LIHEAP was expected to open greater employment pathways as energy specialists and weatherization specialists for economically disadvantaged individuals to work in the growing energy efficiency and weatherization industry. The Low Income Energy Efficiency WE&T Pilot was expected to train and place an initial 25 low income residents for entry level positions as Weatherization Specialists and Energy Specialists. SF OEWD partnered with two PG&E LIEE Program contractors active in the Bay Area - Quality Conservation Services (QCS) and Synergy Companies - to provide ride-along field experience and the potential of employment at the end of their training.

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PG&E Energy Training Center Comments

The PG&E Energy Training Center (ETC) in Stockton collaborated with the SF OEWD-CCSF WE&T pilot project to develop a training curriculum preparing students for jobs as LIEE program Energy and Weatherization Specialists. CCSF held two special training sessions in 2010. The classes were held on July 14-16 with seven students attending and again on December 14-16 with six students attending. The purpose of this LIEE-focused CCSF training was to help students acquire the type of background knowledge they'd need to apply successfully for jobs as Energy or Weatherization Specialists with one of the LIEE contractors.

Currently, all LIEE contractors must attend either an eight day training or a five day training at the ETC before they are allowed work in the field. The eight-day training session is required for PG&E Certification as an Energy Specialist (ES). These are the first LIEE representatives that a customer sees, and the Energy Specialist is the person who will establish whether the occupants and the home qualify for the program. They also provide energy education and assist customers in the application process for available appliances, where appropriate. The PG&E ETC students must pass two final exams specific to LIEE polices and procedures to earn their certification before working in the field. The five-day training class is for Weatherization Specialists (WS), who install most program measures, such as weather-stripping or the replacement of broken window glass.

For this pilot, the ETC staff worked with CCSF staff to develop a CCSF curriculum that could duplicate most of the ETC's topics. This would reduce student time at the ETC, lower contractor costs, and possibly lessen the time between a student being hired and being able to attend certification training. The ETC staff put together sessions to complete the mandatory training topics. The ETC continued to provide all the LIEE-specific training, while CCSF provided introductory energy efficiency and weatherization training. For example, CCSF trainers taught students *how* to install weather-stripping, while the ETC taught students how to determine *when* to install the weather-stripping pursuant to LIEE policies and procedures. Other types of CCSF training would include energy basics, such as heat transfer or appliance energy use, customer service skills and common energy savings practices. LIEE-specific program training covered at the ETC would include what specific appliances could be replaced through the LIEE program. Students who completed the CCSF energy efficiency curriculum through this WE&T Pilot only had to attend and pass a special three-day Energy Specialist Certification class, instead of attending the full eight-day session.

CCSF students in the two Energy Specialist pilot sessions held at the ETC were, for the most part, attentive, participatory, and generally demonstrated a working knowledge of the topics covered by CCSF. As expected, while the limited training time at the ETC did not allow much time for review, when students were asked about specific topics, some students consistently demonstrated a better knowledge of the material than other students. The ETC curriculum did not review definitions, and application of the three forms of heat transfer (all topics which should have been covered in CCSF training), and some students

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did not demonstrate the requisite knowledge of these basics. Approximately half of the students expressed more interest in becoming a Weatherization Specialist instead of an Energy Specialist, but no Weatherization Specialist classes were offered to CCSF students because no positions were available with participating WE&T Pilot contractors.

One area of concern to the ETC instructors was the students' minimal knowledge of energy efficiency practices and the differences those practices would make within the same appliance family. The limited class time at the ETC prevented review, clarification, and/or introduction of practices that are critical to LIEE's energy reduction efforts by customers. If we were to continue this training partnership, the ETC and CCSF will need to review respective curriculums to determine areas of improvement. Students and instructors of both classes believed the ETC material was delivered at a condensed and fast pace, due to the number of program-specific rules and the volume of required paperwork.

Listed below are some discussion points for any future training at CCSF and the ETC:

- CCSF should further emphasize a wider variety of energy efficiency practices for students to offer as examples in customer homes, as appropriate for the customers' situation and equipment.
- When possible, allow interested LIEE contractors to interview students before attending training at the ETC. This may provide additional motivation to perform well in class.
- Expand customer contact curriculum covering soft skills and outreach at CCSF. Students need to be comfortable speaking with new potential customers about energy efficiency education provided as part of a LIEE Program visit.
- The ETC Energy Specialist training should be expanded from 3 to 4 days. Material would be delivered at a less accelerated pace, allowing for some review of CCSF material, such as customer contact and energy efficiency practices.

Final exams for the ETC three-day training required a score of 70% or better to pass. Students were given their scores and permitted to review all missed questions before leaving on the last day. All students that passed were presented with a LIEE Energy Specialist certificate. All CCSF students completed and passed the course.

QCS Comments

QCS hired six graduates from the WE&T pilot: two installers, one telemarketer and three Energy Specialists (ES). At the time of writing this report, the Energy Specialists are just starting to work in LIEE, so QCS is unable to provide feedback on their success at this time. The telemarketer is also a recent hire, and is still too new to be evaluated properly. The two installers are working out quite well in LIEE.

Some of the challenges QCS experienced were:

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- Several graduates made appointments with QCS for interviews but did not show up for the interview or notify QCS that they were not going to show up.
- Several graduates were unable to fill out a job application to a level QCS would consider professional and necessary for working on the LIEE Program. QCS suggests preparing students to complete job applications and paperwork to be part of any future curriculum.
- Several graduates were unable to pass QCS's internal background screening for the DMV and one had a criminal background issue that prevented the candidate from being registered with the California State Licensing Board as a Home Improvement Salesperson (CSLB HIS certification is required to work as an Energy Specialist in LIEE). QCS suggests background issues be cleared prior to the student being able to participate in the CityBuild LIEE training course.
- QCS made offers of employment to three additional graduates. These individuals accepted the offer of employment but then did not show up for training and the first day of work.

For three ESs, QCS needed to have an interpreter sit in on the interview. While these individuals passed the CityBuild course and subsequent training at PG&E without an interpreter, QCS is concerned they may have difficulty communicating with English-only-speaking customers. Hopefully these candidates were just nervous during the interview and they will be able to work with English-only-speaking customers. If not, QCS may have some challenges with keeping them employed.

All in all, QCS is very appreciative of having the opportunity to hire persons already trained and certified to work in the LIEE Program.

Synergy Comments

There were six individuals who were interviewed and hired as Energy Specialists. Synergy requested badge IDs for all six of them, but only two scheduled ride-along appointments with RHA. One rescheduled her ride-along a few times and said she had issues finding a babysitter to complete her ride-along. One completed his ride-along and signed up a hand full of customers the first pay-period, but did not return to work after that point. The remaining four individuals did not seem interested.

The training and the concept of the WE&T pilot program was viewed positively by Synergy, but the firm felt that there should be a stringent screening process of each applicant before the investment of time, money, and training is spent on a person.

Los Angeles Trade Technical College Pilot Project

The Low Income Energy Efficiency (LIEE) Program Workforce Education and Training (WE&T) Pilot developed by the Los Angeles Trade Technical College (LATTC) provides a great value to students looking for jobs in the field of weatherization and other emerging green-related industries. The LATTC campus is located within a targeted low-income area in the City of Los Angeles and draws their students from the surrounding

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communities. The median household income in the 90015 zip code is \$18,533, which is significantly lower than the US average (\$56,604); this area primarily represents the inner city neighborhood of Pico Union Heights in the Downtown Los Angeles area.

LATTC is an industry leader in their commitment in bringing current and future technology and innovative programs to their campus. They have a strong industry and community network which also includes close ties with local political representatives which provides LATTC with resources, support and leverage. LATTC is deeply committed to diversity and inclusivity by outreaching to local marginalized communities and recruiting them to participate in LATTC's educational offerings. LATTC was recently designated by the State of California as a LIHEAP-training facility.

SoCalGas' Observations

LATTC's facility is adequate for proper hands-on training which is vital for instruction in weatherization installation services. The installation course allows students of all skill levels to participate in training and education in the energy efficiency field. The cohorts are comprised of the students within each skill level; LATTC provides training from basic to advanced levels.

The basic level cohort provides students with the opportunity to learn how to properly use various hand and power tools used for the proper installation of various LIEE measures. Students in the advanced level learn how to install the measures in accordance with the installation standards for measures provided in the LIEE program. Since LATTC courses are offered at an accelerated pace, students have the opportunity finish a cohort within a short period of time. LATTC specifically worked with the industry partners to create a realistic class schedule and timeline to also meet the demands for trained students. LATTC did a good job in leveraging their existing skills training center to include LIEE Program-specific measures to add to their existing curriculum.

SoCalGas has conducted a basic review of the following Curriculum packages that LATTC provided during January and February 2011:

- Combustion Basics Curriculum Package
- Measurement and Calculations Curriculum Package
- Hand and Power Tool Curriculum Package

Due to the detailed policies and procedures required of LIEE, the enrollment and assessment cohorts were not as successful as the weatherization students. Education and Assessment (E&A) activities are more "policy based," while weatherization activities are more "hands-on." SoCalGas requires that both E&A and weatherization students pass a pre-assessment test. The E&A students are required to attend a five-day E&A training class. To participate in either SoCalGas E&A or weatherization training classes, students are required to pass a background test prior to registering with the SoCalGas LIEE Program. SoCalGas training classes include Utility-specific training such as company policies, customer interaction skills and safety.

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The LATTC cohort referrals struggled with successfully completing both the E&A pre-assessment test and E&A five-day training requirements, which include a final exam. LATTC abandoned its initial plan to provide pre-enrollment and assessment training and instead focused on basic skill training with the inclusion of some E&A training elements. The re-focused E&A cohorts were successful in increasing their basic skills level or familiarity with the LIEE Program to be able to meet the SoCalGas requirements and, ultimately, obtain a position with the hiring industry partners (though not at the levels of the weatherization students).

Another obstacle was that some students had limited access to transportation and could not explore opportunities with LIEE contractors outside of the urban area of Los Angeles. Additionally, some students could not consider opportunities with LIEE contractors outside of the LATTC area because their school schedules were not flexible. Although many students were interested in obtaining a job with a participating contractor, very few were willing or able to travel.

TELACU's Experiences

The East Los Angeles Community Union (TELACU) explains that the funding and support they received through the LATTC pilot was very helpful. TELACU was given the opportunity to hire and train more employees. Without the funding, TELACU may have not been able to train 18 weatherization installers and five assessors. LATTC was able to pool several resources and ensure that the upfront screening process of the candidates was completed before TELACU interviewed them. LATTC administered a basic skills test and made sure that the candidates had completed background and DMV requirements which saved TELACU a lot of time and gave them the opportunity to interview the most qualified candidates. TELACU was able to supplement the WE&T pilot funding with another workforce grant that provided more opportunities for on-the-job training and, eventual, hiring.

TELACU stated that at each LATTC job fair, there were several students who expressed interest in the weatherization field. The LATTC two week basic training offered its students the fundamental concepts of what jobs in the weatherization field entail. The thirteen (13) weatherization installers are still working, 10 of which are working on their own (not "job shadowing"). TELACU hired five Outreach Specialists, to perform enrollment and assessment, but only one is still working with them.

Community Enhancement Services' Experience

Community Enhancement Services (CES) explains that up to this point it has been a great experience. The LATTC staff has been very diligent about returning their calls and keeping them informed on the number of students they have available for hire. The students that were sent to CES for an interview were prepared with the required documents such as a resume and DMV printout. The students that completed LATTC training were very knowledgeable with the weatherization field and, particularly, the type

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of work that they were looking for. Therefore, the LATTC students had an advantage over other prospective applicants.

Community Enhancement Services hired three (3) LATTC students in 2010. One will become a crew leader by the end of April and the other two are currently crew members. All three have met their expectations and are on their top performing crews. Overall they are pleased with LATTC and hope to work further with them in the future.

PG&E ETC Review of the LATTC Curriculum

The submitted energy efficiency and weatherization measures installation curriculum is quite comprehensive. The submitted materials were generally thorough within each topic covered. LATTC's curriculum PowerPoint slides provided a simple and easy to follow path through the chosen topic. The instructors guides provided to the ETC are written for an instructor who does know the science, and the guides emphasize what needs to be covered specific to the LIEE Program. The provided student objectives are also consistent with LIEE Program goals and are generally measure specific.

LATTC curriculum materials provided to the ETC staff demonstrate a bias toward measures and installation standards training. There was little material related to educating LIEE customers on their energy use. The LATTC curriculum materials were more focused on "hard" skills than on the "soft" skills also required for successful LIEE workers. Appropriate practices such as proper refrigerator temperatures, suggested lighting choices, efficient appliance use (i.e. clothes dryer, dishwasher, or electronic equipment operation) was not included. There were no included sections on customer contact skills, customer energy education practice, or LIEE paperwork and documentation materials.

Additionally there were a few technical details that do not match the current Statewide LIEE Weatherization Installation Standards manual. Most of the provided training examples did coincide with the Installation Standards Manual, with these noted exceptions: furnace clean and tune, there is no age stipulation regarding insulating a water heater, there is no Installation Standards requirement that a water heater in a garage must be on an 18" platform. In the classroom materials, these errors were found: radiation is heat movement through infrared frequencies not light waves, in un-insulated homes the greatest heat loss is through the ceiling not the attic, there are more than two types of infiltration. Watts or kilowatts are described as units used by an energy company. Energy companies use terms specific to energy use i.e. watt hours and kilowatt hours.

The State of California Department of Community Services and Development (CSD) Weatherization Assistance Program (WAP) is not a stand-alone program it is part of Low Income Home Energy Assistance Program (LIHEAP).

A graduate of LATTC would be welcome to attend PG&E's Weatherization Specialist training one day update, and would not have to attend the other four days of the WS

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class. Graduates who would be interested in the Energy Specialist position would have to attend all eight days of the ES certification class because the LATTC training provides only a small portion of the ES material PG&E covers as required for working in its LIEE Program.

SoCalGas' Recommendations on LATTC's WE&T Pilot

LATTC is one of the most technologically advanced training centers in California and is working toward integrating both LIEE and LIHEAP-related material into their existing Green Workforce Education & Training programs. LATTC is also deeply committed to providing higher education and trade training to low-income communities. LATTC is recognized by industry and political leaders for this commitment and has a strong resource network that assists the campus in maintaining access to education to almost 13,000 students (as of 2009).

The following summarizes SoCalGas' recommendations:

1. LATTC to improve knowledge of CPUC, LIEE and general regulatory environment and requirements. Energy Division, Contract Administrator, and/or participating utility to conduct orientation meeting for pilot stakeholders.
2. LATTC to *significantly* improve communication channels and time-driven responses. Specifically, LATTC should increase the transparency of materials and activities developed with pilot funds and progress towards completion of pilot requirements.
3. LATTC to appropriately assign resources to fulfill pilot and contractual obligations, including development materials and implementation plan.
4. Include electric utility participation in LIEE training certification requirements and development and job training opportunities.
5. LATTC to continue providing Basic Skills Training to increase aptitude of student population. Also, continue collecting data on barriers to training participation and job placement that are characteristic to low-income students.

LATTC to improve knowledge of CPUC general regulatory requirements.

Though LATTC is extremely experienced with grant management, their unfamiliarity with the regulatory structure and requirements proved to be an obstacle. SoCalGas conducted several preparation meetings with LATTC when they were awarded the pilot bid. SoCalGas continued to provide guidance to LATTC, especially when PG&E and the Energy Division were not receiving timely responses early in the pilot period.

The Contract Administrator (and/or Energy Division and the participating Utility) may consider an orientation meeting with all stakeholders. This would include spending time upfront to educate LATTC about the Commission's oversight role and the importance of providing timely responses to Commission and utility inquiries regarding the progress of

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their work and meeting contractual deadlines. This may also be included in the terms of their contract. It would also be helpful to outline each participant's role (Energy Division – Sponsor, PG&E – Contract Administrator, SoCalGas – participating Utility, LATTC – Winning WE&T bidder) in the WE&T pilot implementation.

SoCalGas recognizes that all three entities made an above and beyond effort to educate LATTC, provide this guidance and explain expectations. This included regular conference calls, on-site meetings hosted by both LATTC and SoCalGas, a joint meeting with the Northern California winning bidder and a tour of the PG&E training center and LATTC campus.

SoCalGas consistently reached out to LATTC to provide support and to emphasize the importance of key partnership elements, as well as the criticalness of providing timely responses to PG&E and the CPUC's Energy Division staff. At times, SoCalGas was completely cut-off from LATTC's plans or progress updates which may have led to LATTC initially developing the pilot off scope. LATTC, at times, removed itself from coordination with SoCalGas and developed commitments with LIEE industry partners that may not have been in alignment with LIEE WE&T Pilot objectives and/or goals. SoCalGas had to intercede on behalf of PG&E and the Energy Division and communicate directly with LATTC Workforce and Economic Development Department's Vice President. LATTC was vocal about the restrictions of LIEE at the WE&T Forum in UC Berkeley, which was not conducive to a positive working relationship with PG&E, SoCalGas or the Energy Division as this perspective was not previously shared.

LATTC to significantly improve communication channels and time-driven responses.

There were significant and vital communication gaps with LATTC that led to a disruption of the partnership and pilot progression and almost terminated LATTC's involvement in the pilot. This includes approximately three months of unanswered phone calls and emails, which was almost 25% of the total pilot period. SoCalGas and LATTC partnered in a Summer Green Workforce program prior to the WE&T pilot and clearly outlined the Utility-specific and LIEE requirements. At times, SoCalGas was required to request information from participating LIEE contractors in order to provide updates to the CPUC LIEE monthly report, PG&E and the Energy Division. The participating Utility should be included in email correspondences, including the WE&T monthly report distribution, in order to assist the Energy Division and Contract Administrator with timely progression towards milestone delivery.

LATTC to appropriately assign resources to fulfill pilot and contractual obligations.

SoCalGas highly recommends that LATTC administer adequate resources to manage any future LIEE-related partnerships. SoCalGas also recommends LATTC significantly increase their knowledge of utility programs regulated by the CPUC, especially in their development of their LIHEAP training center. LATTC has the capacity to provide E&A and weatherization training outside of Utility-specific requirements. However, SoCalGas would not recommend LATTC's involvement in E&A training based on their struggle in understanding and accepting the importance of LIEE Program and regulatory policies.

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E&A training to Outreach Specialist is a critical piece in the Utility's management of LIEE in properly enrolling eligible customers and correctly assessing the homes for future installations. SoCalGas does not recommend LATTC for Natural Gas Appliance Testing-related training due to the lack of staff knowledge and/or facility equipment at this time.

Include electric utility participation in LIEE training certification requirements.

SoCalGas recommends input from the IOUs offering electric measures to be considered in the final WE&T pilot recommendations and Statewide LIEE Certification process. Since electric measures are part of the curriculum, it would be beneficial to extend the partnership with Southern California Edison (SCE) and San Diego Gas & Electric (SDG&E) to make this a true LIEE Program training. Currently, there are no direct job placement opportunities with SCE or SDG&E contractors. LATTC has stated they attempted to include LIEE electric measures, but SoCalGas is not aware of their progress.

LATTC to continue providing Basic Skills Training to increase aptitude of student population.

In order to manage students' expectations, SoCalGas recommends minimizing the classes' emphasis on job placement. SoCalGas would benefit from increased coordination with LATTC such as a report listing all participants provided on a monthly basis to help address any potential training duplication. This would also assist SoCalGas in prioritizing placement of LATTC students in pre-assessment testing sessions and/or E&A classes. In order to improve the SoCalGas and LATTC partnership, SoCalGas' contractors recommend extending the LAATC courses from two weeks to at least a month; offering some type of reimbursement for tools and supplies to the contractors; and extending the contractor reimbursement and training period to at least 90 days. The suggested timelines were from the participating industry partners, but the overall workforce needs of SoCalGas LIEE Contractor Network should also be considered.

SoCalGas still believes that in spite of the administrative and resource challenges that LATTC experienced during the pilot period, that LATTC is the Southern California industry leader in workforce training and has deep-rooted community associations that exemplifies the spirit of LIEE's goal to increase workforce, education and training in low-income communities. SoCalGas looks forward to a continued relationship with LATTC in finalizing the CPUC WE&T Pilot, as well as establishing a long-term partnership to develop LATTC's training center to meet the needs of the LIEE Program Contractor Network workforce.