

Investment Area:

Technology Demonstration and Deployment

Electricity System Value Chain:

Demand-side Management

Issues and Barriers:Technology Demonstration and Deployment

While many technologies exist, and more are being developed, the proper deployment of these technologies must be proper, effective, consistent and repeatable. Part of this issue is that current industry solutions to improper deployment of technologies (new or old) are fractionated by a lack of demand-side management that is consistent and goal-oriented. Many different trades do not consider the impact of their technology on the other coexisting technologies, and vice-versa. The "Whole Building Approach" must be applied here to ensure the best reduction of energy usage with the least cost to implement and maintain.

One of the barriers to proper deployment is the lack of a workforce that is trained in these technologies and their use of a consistent, standardized method that achieves the goals while integrating all the various factions that contribute to the energy usage of the buildings.

Another issue is that there is not adequate tracking of all data to determine if manufacturers, distributors, designers, permit issuers, and installers are actually doing the necessary steps to achieve the predicted savings.

Market Facilitation

Market facilitation must include consumer safety and education for the adoption and implementation of properly installed and maintained energy features. Consumers need confidence in the equipment, the installer and the building manager in order to accept the need for improvements and to be willing to spend money to participate.

Another issue is that there is such a fragmented process from design to installation to ongoing maintenance over the life cycle of the equipment and other energy efficient features.

There are currently a multiplicity of programs, incentives, technologies and market actors that each acts individually rather than through a standardized, repeatable, reliable, and consistent process that can be easily tracked through data acquisition and the subsequent accountability provided through use of the data.

Initiative Description and Purpose:Technology Demonstration and Deployment Initiative:

To help ensure proper deployment, a comprehensive program that provides WE&T to the construction industry workforce; Architects, Designers, Planners, Contractors/Sub-contractors/Installer/Technicians, Building Owners/Facility Energy Managers, Business Development & Sales personnel and Real Estate Professionals, and others. Incentivize Public and Private Industry Partnerships [adopt and utilize the CEC-CEWTP model Private Industry, Community Colleges/CSU, Workforce Investment Boards, Employment/Labor Industry Alliances, Industry specific Non-Profit Organizations, State and Local Governments] to collectively deploy "standardized accredited training programs" with industry specific recognized Job Task Analyses, (JTA's), Knowledge, Skills and Abilities (KSA's) and workforce competencies. Incentivize Public and Private Workforce Education and Training programs and collaborations with state and nationally accredited educational training programs [pre-apprenticeship, apprenticeship, industry specific training] with recognized credentials and incentivized community-employer on-the-job training opportunities. Support of public and private accredited training programs with state and nationally recognized industry credentials assures effective deployment of skilled workforce. Consumer confidence in a quality skilled workforce with effective program market branding, drives market demand and the utilization of a credentialed workforce which positively impacts energy saving

California Energy Commission

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improvement of the built environment. Mandate Third Party Quality Assurance and/or installation verification, such as Acceptance Testing, *along with data acquisition* that identifies and captures consistent, reliable, accurate, reproducible and pertinent building information. Data acquisition also demonstrates achievement of State energy reduction goals achieved through use of the standardized processes implemented by a properly and effectively trained workforce. Further achievement of the State's goals can be attained through alignment with and deployment of the best practices derived from the CEC-CEWTP model; California and DOE Zero Energy Ready Homes and Buildings; cost effective technologies; development and standardization of workforce JTA's, KSA's and workforce competencies. On a broader basis, incentivize community outreach and education programs to demonstrate and delineate opportunities for becoming ZERO NET ENERGY Communities.

Market Facilitation Initiative:

Creation of mandatory guidelines and policies for publicly funded program(s) to ensure proper deployment of energy-efficient equipment; incentivize consumer purchases of energy-efficient equipment and incentivize consumers for permitted equipment installation [includes registry of equipment, data tracking, workforce information, assurance of achievement predicted savings, and industry-credentialed quality assurance]. Properly fund and incentivize WE&T Public and Private Industry Partnerships/collaborations of community group focused on market based solutions for their existing and next generation skilled workforce.

Stakeholders:

California Energy Commission , IOU's and POU's, Department of Energy , Industry Standards Organizations, State and National recognized Private Industry Specific Training Providers with Accredited Training Programs and credentialing entities, Community Colleges and California State Universities through their Residential and Non-Residential Construction departments, and Organized Labor programs, Workforce Investment Boards/EDD/ETP, employment and Labor Alliances, California Apprenticeship Programs, California Conservation Corps, and Non-Profit Organization Industry Specific Accredited Training Programs and Local Governments.

Background:

California Energy Commission Building Energy Efficiency Standards for both residential and nonresidential buildings.

California Energy Commission, Clean Energy Workforce Training Program (CEWTP) a public and private initiative to identify clean energy workforce needs, build regional capacity in clean energy sector development, delivery of industry relevant training for workforce: existing, under-employed, displaced workers and new workforce entrants. Industry participants: CA Workforce Investment Board, Green Collar Job Council, Employment Training Panel, Department of Education, CA Community Colleges Chancellors Office, Private Industry Training Providers, IBEW, NECA, Employment Development Departments, IOU's and POU's, Non-Profit Industry Specific Organizations and Local Area Government

The U.S. Department of Energy (DOE) and Energy Efficiency Renewable Energy (EERE) and National Renewable Energy Laboratory (NREL) have collaborated with the weatherization and home performance industry to develop the *Workforce Guidelines for Home Energy Upgrades* document *Guidelines for Quality Work and Skilled labor*.

American National Standards (ANSI) as the voice of the U.S. standards and conformity assessment system, the American National Standards Institute (ANSI) empowers its members and constituents to strengthen the U.S. marketplace position in the global economy while helping to assure the safety and health of consumers and the protection of the environment. American National Standards Institute (ANSI), coordinator of the U.S. voluntary standardization system announced a partnership with the Interstate Renewable Energy Council (IREC) designed to help bolster the American workforce for the growing number of clean energy jobs of the future. The joint ANSI-IREC accreditation services assesses whether a certificate program's curriculum, educational process, and management system meet industry expectations, resulting in the issuance of a market-valued certificate.

ANSI-IREC 14732 Accreditation for Energy Efficiency and Renewable Energy Certificate Programs is the first specialty accreditation for certificate programs offering safe, high quality training for the renewable energy and energy efficiency industry. A broad range of certificate programs can now demonstrate market value and improve their training through a comprehensive application and assessment process.



Program accreditation ensures organizations maintain conformance to the highest quality and standards and provides the tools needed in today's competitive and ever-changing landscape.

Interstate Renewable Energy Council (IREC) ***"A workforce trained to competency-based standards that are market valued leads to safer, more cost-effective clean energy use, which boosts consumer confidence and supports the expansion of solar and other renewable energy installations across the country."***

Jane Weissman, IREC President and CEO Institute

Justification:

- Building career pathways to achieve stackable accredited certificates of achievement and recognized industry credentials for clean energy/generation workforce
- Identifying relevant competencies/curriculum for expansion of an California HERS Non-Residential Performance Program
- Identify, align, strengthen and leverage stakeholders Public (CTE Pathways-CC & CSU)(CA Conservation Corps and Pre-Apprentice/Apprenticeship/Labor)(Economic Development Alliances) and Private (Industry 3rd party credentials) coalition engagement by broadening existing education and training programs (credit, for-credit, non-credit courses with industry recognized credentials) by co-mapping JTA's, KSA's and industry specific competencies
- Provides Community Colleges and State Universities a faster way to get their curricula aligned with industry specific curricula without going through lengthy accreditation processes
- Update skills and education of Community College/CSU qualified teacher/faculty for CA HERS Non-Residential Performance Program approved instructor and deployment of educational/training programs
- Programs can be based in part on the existing CEC Building Performance Contractor model. This WE&T Industry specific model can be leveraged across many CTE pathways-Community Colleges/CA. State University, WIB's, Industry Associations related pre-apprenticeship/apprenticeship programs, Economic Development Alliances to expand this geographic footprint throughout the state and this approach also builds a platform through which training can be rapidly deployed in response to evolving CA HERS Non-Residential protocols, codes and standards, and best practices
- Data acquisitions, measurement/verification metrics and accountability for confidence that the goals are actually being met

Why this is appropriate for public funding:

Energy use in California is different than in the greater United States, therefore our energy efficiency market and workforce needs an integrated and standardized set of tools that can be scaled and customized for underserved non-residential sectors and the alignment with California (built environment) long-term Energy Efficiency Strategic Action Plan.

Rater Payer Benefits: Yes to These

- ✓ Promote Greater Reliability
- ✓ Potential Energy and Cost Savings
- ✓ Increased Safety
- ✓ Societal Benefits
- ✓ Environmental Benefits
- ✓ GHG Emissions, etc.
- ✓ Waste Reduction
- ✓ Economic Development

Respectfully Submitted,



Barbara Hernesman and Michael E Bachand

