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## Workforce Barriers to Meeting California's Energy Efficiency Mandates. Sept. 2016

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Mounting evidence indicates that workforce quality has become a barrier to Energy Efficiency goals for the built environment set by AB 32 in 2006<sup>1</sup>. SB 350, the Clean Energy and Pollution Reduction Act of 2015, calls for a doubling of these goals, potentially creating thousands of new jobs but adding further concern about workforce quality related to achieving the state's mandates. California needs a plan to meet the SB 350 workforce challenge.

### **Current Situation**

#### *Lack of Qualified Workers Leads to Poor Energy Efficiency*

California employment totaled approximately 321,000 Energy Efficiency workers in 2015. Just under three-quarters of firms (73%) report difficulty finding qualified workers in 2015; two in 10 employers report that hiring was "very difficult." The top two reasons for difficulty were lack of experience, training, or technical skills (44%), and insufficient qualifications, certifications, or education (31%)<sup>2</sup>.

Heating, Ventilation and Air Conditioning (HVAC) is a good example of the workforce barrier. 40% of the Energy Efficiency workforce is employed in HVAC positions<sup>2</sup>. The California Energy Commission estimates that up to 50% of new HVAC systems and up to 85% of replacement systems are not installed and maintained to a quality level of specification<sup>3</sup>. Significant capacity shortages exist. The state's training institutions supply about half of the 2,000 new HVAC workers needed annually<sup>4</sup>.

#### *Ownership of the Workforce Challenge is Fragmented*

Community Colleges, certified Apprenticeship programs, private training institutions, and community-based organizations all provide Energy Efficiency workforce training. Major utilities offer high-quality training and the California Workforce Development Board provides funds to train youth, veterans, and career-transitioning workers. All of these operate with separate funding streams, and none map their training programs specifically to workforce priorities associated with SB 350.

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<sup>1</sup> UC Berkeley Don Vial Center on the Green Economy, [Workforce Issues and Energy Efficiency Programs: A Plan for California's Utilities](#), 2015

<sup>2</sup> Advanced Energy Economy, *California Advanced Energy Employment Survey 2016*

<sup>3</sup> Energy Market Innovations, Inc., *HVAC Educational Needs Assessment*, submitted to Southern California Edison August 2012

<sup>4</sup> California Community Colleges Centers of Excellence, 2016

## **The Opportunity**

### Policy Convergence

SB 350 rulemaking is paralleled by implementation of several other policies:

- AB 758 Existing Buildings Energy Efficiency Action Plan
- AB 802 Energy Efficiency (Benchmarking for Commercial Buildings)
- Title 24 Energy Efficiency Building Code, 2016 Standards
- Business plan filings with the CPUC by the Investor Owned Utilities

These policies align to create new standards for Energy Efficiency performance, raising the bar for workforce quality.

### Funding Convergence

Major funding streams create opportunities for 2016-17 and beyond:

- \$200M in California Community College Strong Workforce Funds that help bridge the skilled workforce gap of 1.5M workers across all sectors in 2025
- Workforce Development Board allocation of funds from the Federal Workforce Innovation and Opportunities Act
- \$30M in ratepayer funding for the Investor Owned Utilities (IOUs) Workforce Education & Training programs
- \$15M in the California Energy Commission's Electric Program Investment Charge for "Market Facilitation", including workforce development

### Industry Alignment

Industry alliances are coalescing around SB 350 workforce priorities:

- A statewide Energy, Construction, & Utilities Sector industry advisory council co-chaired by the Building Owners & Managers Association (BOMA) and the California Community Colleges
- The Western HVAC Performance Alliance (WHPA), an association of 200+ HVAC manufacturers, distributors, contractors, utilities, and educators
- The California Advanced Lighting Controls Training Program (CALCTP) industry advisory panel chaired by the UC Davis California Lighting Technology Center
- A coalition of industry, Labor, education, and community advocates advising the CPUC on workforce provisions in the IOUs proposed 2017 business plans
- Pending launch of the BOMA "Zero Net Ready Challenge" to incentivize Energy Efficiency investments in commercial buildings
- An initiative by the International Facility Management Association (IFMA) to bridge the annual shortage of an estimated 6,000 Facility Managers in California

As illustrated above, industry is engaging in multiple, but isolated, collaborative efforts with educators, Labor, and community-based organizations to meet the SB 350 workforce challenge. This convergence of opportunities, along with emerging industry alliances, creates a strong platform for a new workforce development framework.

## **Elements of the Solution**

No one organization can “own” the SB 350 workforce challenge. However, proper integration and structuring of existing alliances can produce an effective framework through shared ownership. This structure can be made real by incorporating alliance stakeholders into a legal entity that is chartered to meet the challenge and given authority to braid funds from multiple sources in fulfilling that charter.

### Characteristics

The key is strategic initiatives squarely focused on the SB 350 workforce challenge and executed through the “braiding” of multiple funding streams in a synchronized manner across all stakeholder organizations – utilities, community colleges, certified apprenticeship programs, private training institutions, Workforce Development Boards, and community-based organizations. Success factors include but are not limited to:

- Governance that produces synchronization of initiatives and resources
- Authority through access to funding that supports the initiatives
- Research into strategic use of funds by occupation and geography
- Application of evidence-based models and innovation to create new ones
- Common accountability and metrics applied to workforce outcomes
- Reliable assessment of workforce outcomes on achieving SB 350 mandates
- Measureable impact on the economy, job creation, and social equity

### Stakeholder Engagement

A loose alliance of stakeholders offers potential as the initial basis for a legal entity that can successfully develop and execute initiatives:

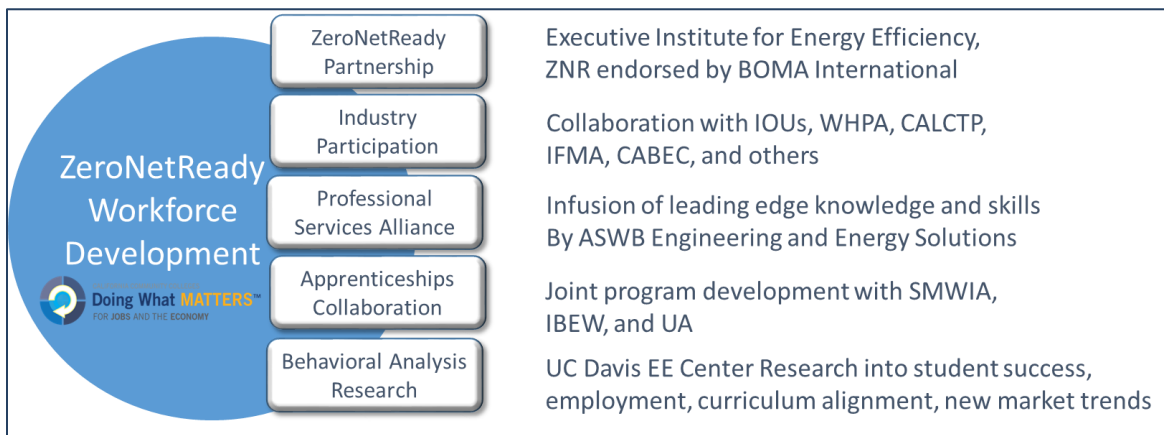


Figure 1. Current Stakeholder Alliances

These stakeholders currently partner with the California Community Colleges on workforce initiatives focused on Energy Efficiency in commercial buildings. Many of these partnerships extend to initiatives with the utilities, the CPUC, and the CEC. Stronger integration of the above partnerships is needed through labor market research and strategic development rather than one-off projects that characterize these relationships. Deeper engagement of Workforce Development Boards, Economic Development Agencies, and community-based organizations would complete the alliance.

### Funding

Significant funding siloes already exist that support programs among entities charged with workforce development. At a minimum, they need to be synchronized for maximum leverage in developing the SB 350 workforce. Optimally, the siloes would give way to a more strategic funding method. While strategically braiding these funding streams may be adequate to drive marginally greater impact, additional resources are needed make a quantum improvement in the workforce quality required for SB 350. Funding is needed to:

- Research the labor market to directly address SB 350 workforce priorities
- Prioritize investments across occupational categories and geographies
- Design and execute regional initiatives that can be replicated statewide
- Innovate in building evidence-based models that deliver meaningful outcomes
- Track workforce performance and impact on clean energy and pollution reduction mandates, economic development, job creation, and social equity
- Provide the state with meaningful data that can help drive policy

The absolute value of investment needed for these functions is currently being quantified, and will be refined through stakeholder and policymaker dialog.

### Facilitation

An attractive option for facilitating alignment of stakeholder engagement and strategy development is the California Community Colleges' *Doing What MATTERS for Jobs and the Economy*<sup>5</sup> framework. Within this framework, a 10-person team managing the Energy, Construction, & Utilities (ECU) Sector<sup>6</sup> has built working relationships with the stakeholders shown in Figure 1, which initially could enable the alliances necessary for meeting the SB 350 workforce challenge. Additionally, this team can provide meaningful data to alliance partners about success factors (page 3) that are part of its current initiatives.

The ECU Sector team will facilitate Strong Workforce funding to the California Community Colleges to align with priorities identified by industry, educators, Workforce Development boards, Economic Development Agencies, and Community Based organizations. Facilitation will occur within a regional framework and in collaboration with regional conveners as mandated by Strong Workforce terms and conditions. While the ECU Sector Team will begin the facilitation process, it is important that this alignment effort be integrated into regional planning conducted by the Workforce Development Boards and Economic Development Agencies.

Initial facilitation began in July 2016 and will continue through annual approval cycles for the Strong Workforce Fund.

A process has not been defined for developing and funding a legal entity chartered to meet the SB 350 workforce challenge. This process likely will be managed through an effort parallel to but coordinated with Strong Workforce funding allocation to the colleges.

### **Value Proposition**

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<sup>5</sup> [www.doingwhatmatters.cccco.edu](http://www.doingwhatmatters.cccco.edu)

<sup>6</sup> [www.ECUsectorDWM.com](http://www.ECUsectorDWM.com)

The ECU Sector Team proposes to partner with Economic Development Agencies to position its initiatives for meeting the SB 350 workforce challenge within the following economic context:

- *Increasing investments in high performance commercial buildings*
  - ... Reliably meeting economic objectives of enhancing asset value, reducing operating costs, and increasing occupancy rates
  - ... Though installation, operation, and maintenance by a workforce that meets California's quality and compliance standards
- *Minimizing GHG emissions and energy usage in commercial buildings*
  - ... Managing the evolution of technology in high-performance buildings that cost-effectively achieves Zero Net Energy over time
  - ... Enabled by a workforce that evolves at the rate of technological progress, applying new competencies in building automation, distributed energy resources, and energy analytics
- *Creating family-wage jobs and assuring social equity*
  - ... Increasing numbers of members of underserved populations in high-demand, high wage, high-skill Energy Efficiency career fields
  - ... Supported by career pathways especially designed for entry by at-risk and underserved populations
- *Funding these initiatives from existing sources*
  - ... Accessing ongoing funding streams from multiple sources to integrate workforce investments for maximum impact
  - ... Aligning investments across currently-siloed organizations to match industry's strategic workforce priorities
- *Building on existing stakeholder alliances*
  - ... Leveraging relationships across the spectrum of stakeholders to link their economic goals to Energy Market Transformation strategies
  - ... Creating an economic perspective on strategic development of the workforce
- *Measuring impact and making refinements*
  - ... Applying the Community College System's currently-available metrics and reporting systems and linking to economic, GHG, and energy use reduction outcomes reporting
  - ... Continuous innovation in developing and applying evidence-based models for meeting the SB 350 workforce challenge

### **Next Steps**

The ECU Sector Team is meeting with key stakeholders explore development of a regional model through which this Value Proposition can be delivered. Through these

preliminary conversations, if successful, a regional strategy can be developed, including as many elements of the Value Proposition as appropriate.

This regional strategy, when implemented, will inform plans for replication and scaling across the state.

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