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California Energy Commission  
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**Comments of the UC-Berkeley Donald Vial Center on Employment in the Green Economy on the California Energy Commission's First Triennial Investment Plan for the Electric Program Investment Charge (EPIC) Program (Docket No. 12-EPIC-01)**

Dear Commissioners and Staff:

We applaud the effort that went into the draft plan and appreciate EPIC's attention to ours and others' comments on workforce. We appreciate the CEC's attention to this area and their acknowledgement of the importance of workforce planning in driving commercial scale deployment of energy efficiency and clean energy investments. We present comments that we believe could strengthen EPIC's efforts in the area of workforce education and training, which detail oral comments we made at the Sept 27 workshop.

Although we support certain elements of S15 and S16, we feel the draft plan does not clearly identify the workforce barriers that need to be overcome to advance our clean energy economy, leading to solutions that are not sufficiently targeted. EPIC's workforce portfolio should be aimed at tackling strategic workforce problems that impede market growth for innovative technologies, using limited resources to target specific identified opportunities. It should also be careful to avoid duplicating existing efforts, and should build off California's existing workforce development infrastructure.

We appreciate the CEC's recognition "that a well-trained workforce will increase the quality of clean energy infrastructure" (p.143), and believe that uncertainty regarding the quality of installation is an important market barrier that EPIC should address. We also appreciate the CEC's emphasis on a greater need to link training to labor market demand.

The draft plan characterizes the main workforce *problem* as follows: "the clean energy industry currently lacks sufficient tools and resources to align workforce training with labor demand". The draft plan's *solution* to this problem is to prioritize "activities to assist in bridging the gaps between job seekers and employers" (p. 143).

We agree that training that does not provide strong and explicit pipelines into jobs and good careers is a problem, and we would applaud any decision to eliminate ratepayer funding for such training programs. We also believe that the tools and infrastructure to carry out demand driven training already exist, and should be better resourced. In the *2011 Workforce Education and Training Needs Assessment*, we documented existing infrastructure and tools that have a long record of success in linking training to demand. In

the non-residential construction sector, the state-certified apprenticeship programs have a stellar record in demand-driven training. For occupations where few or no apprenticeship programs currently exist, such as for the residential construction occupations or professional occupations, we recommend the development of sector strategies that contain the key components of the apprenticeship model, or that provide a pipeline into apprenticeship programs. Sector strategies are based on a commitment by a group of employers within a sector to join together to develop training programs in which they commit to co-fund or hire, thus making the link between employers and training programs explicit and firm.

The *Needs Assessment* also recommended that workforce training and education investments should seek to incorporate skill and knowledge upgrades into the existing public or publicly regulated institutions that have a primary responsibility for training for the most prominent occupations that carry out clean energy work. The *Needs Assessment* demonstrated that 2/3 of workers are in traditional construction trades occupations like electricians, sheet metal workers, etc., and another 1/6 are in the professional occupations such as architects, engineers and construction managers. For the construction trades occupations, the main publicly regulated (and privately financed) institution that carries out both entry level training and skills upgrade training for incumbent workers is the state-certified apprenticeship system. For the professional occupations, the main pre-employment training is through colleges and universities, with upgrade training regulated by professional organizations and licensing boards through continuing education requirements. Working with these institutions to incorporate new skills and knowledge is much more effective than to propagate stand alone classes disconnected from these state-wide institutions.

We also provided evidence in the *Needs Assessment* that the major challenge to procuring a skilled and engaged workforce to support the clean energy sectors won't be solved by investments in training alone, but rather must be addressed through the adoption of clear, high-level skill certifications and standards for participation in ratepayer programs and in the implementation of codes and standards. Thus, efforts to establish or determine skill standards and contractor prerequisites are also a strategic area for investment.

As an overarching recommendation, we suggest that in order to contribute to better statewide coordination on clean energy workforce development, EPIC should create a panel of workforce agencies and experts to oversee the development of the workforce component of EPIC's portfolio. We believe this panel, described in our previous comments, could accomplish many of the goals that EPIC lays out in S15 and S16 in a way that makes use of California's existing infrastructure and resources in the area of workforce development.

With these observations we have specific suggestions below:

*S15.1 Proposed Funding Initiative: Develop a Standardized Methodology to Access Job Creation and Net Jobs*

Proposal: We propose dropping the CEC workforce study outlined in the proposed plan and replacing it with an RFP process for research on key barriers and strategic opportunities related to workforce issues identified in the CPUC Energy Efficiency Proceeding, in the Don Vial Center's *Needs Assessment* and elsewhere.

Reasons for dropping: The stated purpose of S15.1 is to procure annual data in order to "determine which job skills are required and which training programs to develop" (p. 144). We feel that further investment predictive jobs data is unneeded at this time, though such a Needs Assessment may be useful at five-year intervals. There have been a number of recent studies projecting job creation in the clean energy sectors in CA (including our own, which is mentioned in the plan), and so we feel that emphasizing predictions of job creation is duplicative. The Don Vial Center's *Needs Assessment* already predicted job growth at the finest grain possible given current data availability.

Most importantly, predictions of job growth will not solve the identified problem, which is the lack of alignment between training and jobs. The reason for the disconnect between training and job creation in California's clean energy sectors is not primarily due to a lack of accurate data, it is due to the lack of approaches to training that create specific pipelines into jobs, as described above

Alternative proposal: We propose that the CEC institute an RFP process for research on key barriers and strategic opportunities related to workforce issues identified in the CPUC Energy Efficiency Proceeding, in the Don Vial Center's *Needs Assessment* and elsewhere. This should include research on the costs and benefits of worker skill standards and contractor pre-qualifications; on methods to incorporate early workforce planning into the commercialization process in order to avoid market confusion and poor quality installation; on the impact of state energy policy on job quality and job access (i.e. are there pathways for disadvantaged workers into energy related careers and good jobs?). It should also include research and data collection on actual hiring practices, compensation, employee turnover, training and other factors. This would allow analysis of the impact of these conditions on the quality of installation and operation of clean energy technologies, and help assess how the CEC can support high-road employers. These areas of research have been identified as strategic priorities in the CPUC Energy Efficiency Proceeding and have also been addressed by stakeholders in the EPIC comments.

The RFP process should be developed as a partnership between the CEC and the State Labor and Workforce Development Agency, and the call for proposals and actual selection process should include input from both energy and workforce experts. The CEC should also link this program to an initiative to seed a research center at the University of California or the California State University System modeled after the technology centers such as the UC Davis Advanced Lighting Center (see below).

Funding: We recommend that this research be funded at \$500,000 per year, with multi-year proposals accepted if they are necessary for rigorous research.

*S15.2 Proposed Funding Initiative: Provide Grants for the Development or Enhancement of Training and/or Apprenticeship Programs to Support Clean Energy Deployment Programs in IOU Service Territories*

Proposal 1: Apprenticeship We are very pleased to see that the CEC intends to work with the Division of Apprenticeship Standards via interagency agreement (p. 146) to support the development of energy related skills certifications. As we noted in our previous comments, the findings of the *Needs Assessment* suggest that the state-certified apprenticeship system should be at the core of workforce development initiatives in the energy efficiency sectors. We suggest that EPIC's collaboration with DAS should build from and contribute to the collaboration that is being developed between DAS and the investor-owned utilities on energy efficiency workforce training standards.

DAS has presented the IOUs with an MOU that lays out a framework for establishing a joint working relationship and collaboration on the workforce skill standards in energy efficiency. The goal of the partnership is to identify and incorporate skills upgrades, and verify competence in clean energy knowledge, skills and abilities for all those participating in the statewide training system. Supporting this partnership meets the criteria for a strategic investment because it is state-wide and invests in the training system that has the most stellar record in terms of alignment with demand, leveraging of private investments, and other features detailed elsewhere.

The first stage of the partnership will involve the IOUs and subject matter experts identifying the skills required to safely and effectively install and maintain emerging HVAC energy efficiency technologies, and comply with code upgrades. DAS will then work with state-certified apprenticeship programs in the HVAC industry to review curriculum and existing certifications to assess how well these skills are addressed. Should any gaps be identified in training, the IOUs and DAS will work together to develop upgrades to apprenticeship curriculum and train-the-trainer courses.

We believe that this current effort offers a good foundation for working with apprenticeships, and we suggest that EPIC could contribute to the partnership and support its expansion to other energy efficiency sectors. Specifically, EPIC could contribute by filling in budget gaps for developing new curriculum or train-the-trainer courses, provide funding for incumbent worker upgrade training, and assessment of certifications.

EPIC should fund the DAS and the Employment Training Panel (ETP), and the CEC can employ the already developed working relationship with ETP and use its grant selection and accountability process for incumbent worker training. For curricula development and train-the-trainer activities, the CEC should help the DAS fill budget gaps that may occur but should expect co-funding from the IOUs.

Funding: This state-wide partnership should be funded at \$2 million per year. This level of funding is suggested because it is in the range of the CALCTP training initiative, referenced in our previous comments and a model for this proposed initiative. CALCTP required an initial investment of \$500,000 for curriculum and certification development and later received a \$5 million dollar grant for training from the U.S. Department of Labor. A \$2

million dollar annual investment would allow for the development of several CALCTP-like journey upgrade training on key emerging technologies and code changes which can help promote rapid commercialization of these technologies and code compliance.

Proposal 2: RFP for residential or professional occupations Since the apprenticeship proposal outlined above only addresses the non-residential construction trades occupations, other efforts are needed to seed state-wide partnerships between the main existing public or publicly regulated institutions that are responsible for training and educating workers in other key occupations, i.e. the professional occupations and residential sector occupations. The EPIC plan should invite proposals that will create plans to incorporate curriculum upgrading and skills certifications in public colleges and universities, continuing education arms of licensing bodies, or other organizations. The proposals should share the same system-oriented and state-wide approach as the apprenticeship proposal outlined above.

Funding: We recommend annual funding of \$200,000 to fund 2-3 planning grants that could later be considered for funding for their implementation phase.

*S16.1 Proposed Funding Initiative: Create a Web Portal That Connects Innovators, Investors, Educators, Job Seekers, and Policy Makers to Facilitate Wide Spread Adoption of New Clean Energy Technologies Within Communities Statewide.*

Proposal: We recommend that the proposal to include an on-line job matching initiative be dropped.

Reasons for dropping: In the *Needs Assessment* we were tasked with evaluating options for a CPUC-sponsored Employment Information Systems (EIS) web portal and providing suggestions on how to proceed. We offered the following recommendations:

“First, the CPUC should not create a new job board specific to the energy efficiency sectors. There is very limited data on the effectiveness of EIS in improving outcomes for job placement, and furthermore these niche jobs are not projected to be in high demand. Second, EIS is clearly the responsibility of workforce agencies not energy regulators. The federal government has already committed enormous resources to providing employment information services via the One-Stops. ... Rather than try to reinvent the wheel, we suggest that the CPUC encourage state action to improve the One-Stop system in California so that it can better collaborate” (*Needs Assessment* p. 263).

We also offered the following caution that bears repeating for EPIC:

“Building career pathways is an extremely complex process, and our study just scratched the surface of understanding how this works in the energy efficiency sectors in California. Stepping into this arena can actually be a disservice to workers if the CPUC portal provides superficial information rather than the in-depth set of career development services that can support job seekers in developing successful careers related to energy efficiency and other demand-side activities” (*Needs Assessment* p. 263).

Alternative proposal: We recommend that the EPIC plan include seed funding for a University-based Center on the Clean Energy Workforce modeled after the technology centers that the CEC has seeded in the past, such as the UC Davis Advanced Lighting Center. The CEC-funded scoping plan for a Center for the Clean Energy Workforce authored by the Don Vial Center in 2011, describes a full menu of functions, but our recommendation here is focused on research. This Center would carry out research and could administer the RFP process for strategic research described in S15.1 and our previous comments. We would be happy to provide more information on this proposal if desired.

Funding: We recommend that the University based Center for a Clean Energy Workforce be funded at \$300,000 per year and follow the protocols for co-funding that are required for the technology centers.

We appreciate the CEC's efforts to incorporate stakeholder feedback into the EPIC investment plan, and we look forward to continuing to participate in its development.

Sincerely,  
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