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<th><strong>Docket Number:</strong></th>
<th>16-OIR-02</th>
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<td><strong>Project Title:</strong></td>
<td>SB 350 Barriers Report</td>
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<tr>
<td><strong>TN #:</strong></td>
<td>212857</td>
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<td><strong>Document Title:</strong></td>
<td>California Conservation Corps - Energy Corps Comments: On 8/12/16 Workshop on Barriers of Low-Income and Disadvantaged Communities</td>
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<tr>
<td><strong>Description:</strong></td>
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<td><strong>Filer:</strong></td>
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<td><strong>Organization:</strong></td>
<td>California Conservation Corps - Energy Corps</td>
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<td>Public Agency</td>
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On 8/12/16 Workshop on Barriers of Low-Income and Disadvantaged Communities

Presentation

Additional submitted attachment is included below.
The CCC & Energy Conservation  
- Background & Context -  

- **California State Agency**: A department of the Natural Resources Agency, the California Conservation Corps (CCC) was established in 1976 by Governor Jerry Brown.

- **26 Operational Centers Statewide**: 7 Residential and 19 Non Residential CCC centers.

- **Workforce Development**: Over a 40 year period, the CCC has provided exemplary work/learn based job training and work experience for more than 120,000 thousand young Californians between the ages of 18 and 25 (and returning Veterans through age 29).

- **Long History of Energy Programs and Projects**: The CCC has provided many Energy Efficiency (EE) and Renewable Energy (RE) programs and projects in partnership with State and Federal agencies, companies of all types, Contractors, Utilities, City and Local governments.

- **Continuum of Education**: Classroom and lab based training provided by University and Energy Industry expert partners, followed by extensive ‘on-the-job’ professionally supervised work experience and training. The CCC has a substantial and well established statewide infrastructure and support network of CCC resources, operational centers, and staff capable of delivering EE and RE services for Sponsor and Client programs and projects.

- **EE \ RE Program & Project Design**: The CCC provides EE and RE project and program design and implementation development services to Sponsors and Clients on a ‘no cost’ consultative basis.

- **CCC & Local Corps**: The CCC and the 14 local California Corps (certified annually by the CCC) can provide capable, well trained and managed, cost effective, and ‘high availability’ EE and RE program and project resources throughout California.
The Energy Corps Program is designed to meet the following goals:

- **Create Job Opportunities – Through Energy Industry Training and Work Experience**
  - For energy industry and other workforce entrants; including young adults, recently returned veterans, and others.
  - Develop ‘next generation’ of energy industry workers through a tiered program of training, on-the-job education, and extensive energy industry work experience.

- **Save Energy, Reduce Operating Costs, Reduce GHGE**
  - Conduct ASHRAE compliant ‘no cost’ and ‘low cost’ Energy Opportunity Surveys that collect and provide all energy efficiency information necessary to identify, calculate, maximize, and ‘capture’ the available energy savings benefits.
  - Perform ‘low cost’ Energy Efficiency ‘Retrofit’ installations that generate substantial and sustainable energy use reductions, cost reductions, and GHGE savings.

**Energy Corps Funding Sources:**

- **Directly Funded State, Federal, and Local Programs**
  Such as the Proposition 39 “Clean Energy Jobs Creation Fund”, CEC\ARRA funded

There are currently 4 CCC Energy Opportunity Survey Crews & 6 Energy Efficiency Retrofit Crews Operating from CCC Centers Located Statewide
CCC Energy Corps
- Proposition 39 Funded Services For LEAs -

Prop 39 Funding
Direct Allocation to CCC

Distribution of 2,000+ California LEAs

Prop 39 Funding
Distribution From CDE to LEAs

CCC & Participating Local Corps Providing ‘No Cost’ & ‘Low Cost’ EE & RE Services Statewide For LEAs

* ‘Low Cost’ Energy Opportunity Surveys
* ‘Low Cost’ EE Retrofit Projects
* ‘No Cost’ EE Presentations

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Proposition 39 Funded Service Offerings For LEAs

1. ‘Low Cost’ Energy Opportunity Surveys For LEAs
   - Energy Opportunity Surveys
     - Whole Building Survey
     - HVAC Systems
     - Control Systems
     - Plug Load
     - Building Weatherization

2. ‘Low Cost’ Retrofit Projects For LEAs (Materials & Related Costs Only)
   - Energy Efficiency Retrofits
     - Retrofit Direct Installs
     - Retrofit Projects Under Contract
     - Post Install Checks
     - Maximize Utility Rebates

3. ‘No Cost’ & ‘Low Cost’ Energy Efficiency Classroom Presentations, Cooperative Education and other Educational Opportunities Provided For LEAs

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Energy Opportunity Survey Training: Corpsmembers are professionally trained to conduct American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) compliant whole building “Energy Opportunity Surveys” to assess the condition of buildings, identify EE opportunities and establish building performance baselines.

Valuable Energy Data: Collected by professionally trained Corpsmembers helps to create a more comprehensive statewide energy efficiency database for use by state & local EE planners.

Survey Content: Each CCC “Whole Building” Energy Opportunity Survey includes the following:


Survey Data Analysis & Reports: Analysis of the data and preparation of the final reports is performed by Energy Corps Program Partner UC Davis Energy Efficiency Center (‘UCD EEC’) and other Energy Corps Partners and providers. This includes utility bill information to track energy use over time, benchmarking to determine a baseline of energy use, identification EE savings opportunities, and calculating available estimated potential savings, & preparation of the Survey Report.

Content of Energy Opportunity Survey Consisting of Items Circled Above in Blue and Yellow
ASHRAE Compliant Energy Opportunity Surveys are Created and Implemented as follows:

**Design Survey**
- Based on Industry Standards
- ASHRAE Compliant Energy Efficiency (EE) audit process & methods created in partnership with industry experts & stakeholders

**Whole Building Surveys**
- CCC Survey Crews Deployed Statewide
  - Building envelope condition – square footage, windows
  - Sub-systems – Lighting, HVAC and control systems
  - Plug Loads

**Data Collection Methods**
- Use Paper Survey or ‘Tablet’ Based Survey Tools to record & transmit data
- Upload data to Analysis Partner and enter into statewide database

**Analysis & Recommend Changes**
- Energy Corps Partner Analyzes and Recommends:
  - Retrofits
  - O & M Process Changes
  - Behavioral Changes & ‘Best Practices’

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The CCC’s ASHRAE compliant Energy Opportunity Survey Data Collection and Reports provide energy use data and recommendations necessary to support the improvement of Energy Efficiency in any type of building.
Lighting Retrofits:
Since the Autumn of 2015, CCC Energy Corps Crews have installed various lighting and controls technologies throughout the State totaling **67,288 Lighting Fixtures** and **3,991 Lighting controls**. The following are some examples of the types of Lighting technologies installed to date:

**Lighting Fixtures**
- 50W Led Troffer Retrofit Kit ZY-R7-50W
- 175W MH Wall Wash Downlight
- 39W LED Small Area Flood
- 42W LED Medium Wall Pack
- Phillips LED Strips
- 130W LED Shoebox
- Philips 32w EVO LED kit
- Ceiling mounted LED outdoor drum fixture
- LED High Bays

**Lighting Controls**
- WattStopper Occupancy Sensor
- Lutron MS wall switch Sensor
- Daintree Wireless Controls
**Status: Energy Corps Proposition 39 Services:** In January of 2014, the CCC’s ‘Energy Corps’ began to deploy 10 Crews of trained and supervised Corpsmembers to provide ASHRAE compliant ‘Whole Building’ Energy Opportunity Surveys (energy audits) for Local Educational Authorities (LEAs) throughout California. In 2015 the Energy Corps began providing EE Retrofit Installation Services. The results of CCC Proposition 39 funded services to date is as follows:

**Project Information**

<table>
<thead>
<tr>
<th>LEAs Requesting Services</th>
<th>426</th>
</tr>
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<tbody>
<tr>
<td>Number of Schools Sites Requested</td>
<td>1,319</td>
</tr>
<tr>
<td>Number of Completed Projects</td>
<td>1,267</td>
</tr>
<tr>
<td>Total Energy Surveys Completed</td>
<td>1,232</td>
</tr>
<tr>
<td>Total Buildings Surveyed</td>
<td>12,238</td>
</tr>
<tr>
<td>Total Square Footage Surveyed</td>
<td>68,952,014</td>
</tr>
<tr>
<td>LEA’s Surveyed Total</td>
<td>345</td>
</tr>
<tr>
<td>LEA’s Surveyed Over 6000 ADA</td>
<td>64 (19%)</td>
</tr>
<tr>
<td>LEA’s Surveyed Under 500 ADA</td>
<td>281 (81%)</td>
</tr>
<tr>
<td>LEA’s Surveyed Over 50% FRPM</td>
<td>249 (72%)</td>
</tr>
</tbody>
</table>

| Total Retrofit Projects Completed | 96 |
| Total # of Lighting Retrofits | 69,561 |
| Total # of Controls Retrofits | 3,991 |
| Estimated Annual KWH Impact/YR | 4,448,988 |
| Estimated CO2 Reduction (M-Tons) | 1,058 |
| LEA’s Retrofitted Total | 30 |
| LEA’s Retrofitted Over 5000 ADA | 3 (28%) |
| LEA’s Retrofitted Under 5000 ADA | 21 (72%) |
| LEA’s Retrofitted Over 50% FRPM | 16 (63%) |

<table>
<thead>
<tr>
<th>Training Information</th>
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<tbody>
<tr>
<td><strong>Corpsmembers:</strong></td>
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<tr>
<td>Survey Training</td>
</tr>
<tr>
<td>OSHA 10/30 Training</td>
</tr>
<tr>
<td>Retrofit Training</td>
</tr>
<tr>
<td>Presentation Training</td>
</tr>
<tr>
<td>Energy University Courses</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

| **Staff:** | **Trainees** | **Hours** |
| Survey Training | 41 | 2,152 |
| OSHA 10/30 Training | 23 | 290 |
| Retrofit Training | 20 | 1,600 |
| Presentation Training | 0 | 0 |
| Energy University Courses | 5 | 25 |
| **Total** | **542** | **51,657** |
### CEC/CCC ESJ Program Results:
- **260** Jobs Created
- **8,800** Small Retail Stores Visited
- **6,200** EE Surveys Completed
- **5,100** Stores Retrofitted
- **21,000** Retrofit Direct Installs
- **1,800** ‘Post Install’ Checks
- **62 + Million kWh** (annual)
- **$5.2 + Saved** (annual)
- **97 %** Customer Satisfaction Rate

### Energy Corps Programs
#### 2011 to 2012: Statewide ‘Pilot’ Program Leading to Current Energy Corps Program Model

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The ESJ Program was a very successful CEC Energy Program. It worked with IOU and MOU and related EE Programs Statewide, and was delivered to “Hard to Reach” Store Owners and Operators in more than 20 languages by Corpsmembers – who were frequently from the same communities.

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Energy Industry Employment Opportunities:

- The Energy Industry Needs Many New Employees with Energy Efficiency Audit & Retrofit Training
- Current Energy Industry Employees are Retiring in record numbers
- Demand for Energy Use & Efficiency Increasing
- Current Trained Energy Industry Workforce Can Not Meet Demand for Energy Industry Growth

Energy Corps trained Corpsmembers are part of the Solution for the Energy Industry!

Perspectives from the Energy Industry...

1. Energy Industry Rife With Opportunities But Labors To Find Skilled Workforce

   Magnitude of the Talent Shortage
   - Available jobs expected to double from 1.7 million to 3 million
   - 72% of energy executives believe the ability to attract quality candidates to the energy industry will have a significant impact on North American competitiveness in the decades to come
   - 58% of executives say their company “struggles to find the talent it needs.”
   - 74% say the problem will get worse in the next five years.
   - 66% of employers say they expect the number of energy industry jobs to increase in the next five years

2. Excellent Paying Jobs!

   Energy Auditor Salary Ranges

   @ 2 years - Average Energy Auditor Salary $59K

3. Training Components

4. Energy Corps Trains For All ‘Levels’

5. Source: https://www.recruiter.com/salaries/energy-auditors-salary/

1, 2, 3, 4: Source: http://www.manpower.us/Website-File-Pile/Webinar-Recordings/Manpower/Energy-Webinar-Presentation_061114

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For more information about the CCC’s Energy Corps, please visit the CCC Website: http://www.ccc.ca.gov/work/programs/prop39/Pages/default.aspx