POWERING FORWARD

Powering Up an Inclusive Clean Energy Workforce
Sep. 9, 2020 | 2:00-3:15 pm ET
Examines the unique impacts facing clean energy industries during the COVID-19 epidemic, along with the vital role of our sectors in our future economic recovery.
Thanks to our partner on this episode:

THIRD WAY
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a coalition of companies and trade associations

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CLEAN ENERGY BUSINESS NETWORK
the small business voice for the clean energy economy

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- BCSE Resilience & Reliability Dialogue
- *Powering Forward* webinar series
- Hill briefings
ANNOUNCEMENTS

- American Made Challenges Program
  - Energy Program for Innovation Clusters (9/10)
  - I AM Hydro (9/30)
  - Solar Prize Round 4 (10/8)
  - Waves to Water (11/30)

- National Clean Energy Week (9/21-25)

- Sign-on letter
  - Support clean energy in economic recovery

- CEBN Funding Database
  - Now open to public
COVID-19 IMPACTS ON CLEAN ENERGY

Source: BW Research
How Clean Energy Businesses Can Survive and Thrive After Covid-19

THIRD WAY
Understanding the impact on the clean energy industry

• The clean energy industry employs over 3 million workers and was poised for sustained growth this year.

• We asked business leaders across the industry about the impact of Covid-19 on their workforce, sales, federal programs or other resources they utilized for help, and their views on which policies provide help.

• We received over 250 responses across a range of clean energy sectors, including 170 qualitative policy recommendations.
Key Findings

• The Paycheck Protection Program (PPP) was a success for clean energy: Half of respondents took advantage of the program.

• Dark clouds ahead: If Federal assistance runs out, 46% of respondents said they will have to lay off workers, lower worker wages, cut worker hours, or cease operations.

• Two thirds of businesses said their customers have either delayed or postponed orders.

• Industry needs the federal government to take action with a combination of supportive policies.
Percentage of Respondents Active in the Following Clean Energy Business Sectors

- Solar
- Battery storage
- Wind
- Energy efficient methods
- Electric grid efficiency and upgrades
- Electric/Hybrid/Hydrogen vehicles
- Other
- Energy conservation goods and services
- Biomass
- Energy star or high efficiency appliances
- Geothermal
- Hydroelectric power

Source: Third Way Clean Energy Survey and co-author’s calculations. Response to Question 9: “Clean Energy Sector: Does your company directly or indirectly support any of these clean energy activities? This includes development, manufacturing, construction, financing; installation, service or maintenance, consulting, supply parts, or other related activities? (check all that apply)”
Business Impact From Covid-19 Pandemic

Source: Third Way Clean Energy Survey and co-author’s calculations. Response to Question 1: “Overall, how has your business been affected by the Covid-19 pandemic?”
Financial Assistance Tapped By Businesses Since March 1st

*Small Business Administration Economic Injury Disaster Loans

Source: Third Way Clean Energy Survey and co-author's calculations. Response to Question 3: "Federal Government or Other Financial Assistance: Since March 1, has your firm RECEIVED or does it EXPECT TO RECEIVE financial assistance from any of the following sources? (Check all that apply)"
What's Next For Businesses After Federal Support Or Other Sources Of Funding Are Exhausted?

- Layoff or Furlough Workers
- Reduce Worker Hours
- Reduce Salaries & Wages
- Seek Loans
- Shutter Business
- No Additional Actions

Source: Third Way Clean Energy Survey and co-author’s calculations. Response to Question 4: “When funds received under any of these Federal Programs or other sources are EXHAUSTED will your business? [Check all that apply]”
**Customer Orders Shifted Due To Covid-19**

- **Delayed/Postponed Orders**
- **Reduced Orders**
- **Cancelled Orders**
- **No Change**
- **Increased Orders**

**Expected Change In Revenue/Sales Over The Next 3 Months**

- **Decrease**
- **Increase**
- **No Change**
- **Uncertain**

*Source: Third Way Clean Energy Survey and co-author’s calculations. Response to Question 14: “Due to Covid-19, OVERALL have your customers: [Select all that apply]”*

*Source: Third Way Clean Energy Survey and co-author’s calculations. Response to Question 11: “Revenue/Sales Expectations: Over the next 3 months what change do you expect to your REVENUE/SALES?”*
Name 3 Policy Solutions — Federal, State, Or Local Government — Most Helpful For Recovery And Expansion

- New tax credits
- Tax credits into cash grants
- Public infra. investment
- Low interest loans
- Customer purchase subsidies
- Reduced regulation
- PPP funds flexibility
- Reduced trade barriers
- License or permit changes
- Accelerated depreciation
- Workforce training
- Don't know/not sure
- Zoning law changes

Source: Third Way Clean Energy Survey and co-author’s calculations. Response to Question 15: “Which THREE of the following policy solutions at the Federal, State, or Local government level would MOST help your company recover and expand? [Check Up To Three]”
Call for more comprehensive climate policies

• A substantial majority of businesses we surveyed voiced support for legislation to combat climate change and promote clean energy.

• We received 170 write-in, open ended comments regarding climate change and policy solutions to address it as well as the transition to clean energy solutions.

• 90% of comments were supportive of policies to address climate change and promote clean energy technologies.
Let’s hear from them directly

• “We cannot keep 'kicking this can down the road'. Carbon sequestering, clean energy tax credits, actual penalties for polluting emitters would all make a difference.”

• “We see how vulnerable our economy is to disruption tiny in scale to climate change. ALL government sponsored programs and stimuli should have some positive impact on achieving sustainability goals.”

• “[Major climate legislation] would allow us to hire more and increase our capital expenditures, resulting in additional U.S. based manufacturing.”
Powering Forward: Powering Up an Inclusive Clean Energy Workforce
Biography Highlights Of

Timothy Alan Simon, Esq.

- Former CPUC Commissioner
- Former Appointments Secretary for Governor Schwarzenegger
- Former Adjunct Professor of Law, UC Hastings and Golden Gate University
- Former Board Member, California Green Jobs Workforce Development Board
- Former Chairman, the Gas Committee of National Association of Regulatory Utility Commissioners
- Member, National Petroleum Council appointed by Dr. Steven Chu and Dr. Ernest Moniz
- Chairman, California Black Chamber of Commerce
- Board of Trustees, University of San Francisco
- Board of Directors, American Association of Blacks in Energy
- Co-Founder, National Utility Diversity Council
Overview

- California’s Clean Energy Context
  - California Public Utility Commission General Order 156
    - Honorable Gwen Moore

- National Clean Energy Context
  - Washington Clean Energy Transition
  - Maryland, Illinois, Mississippi, Arkansas
  - NARUC Subcommittee on Supplier and Workforce Diversity

- Potential Workforce Opportunities
CA’s Trends by % Change 2000 - 2017

California Air Resource Board:  https://ww2.arb.ca.gov/ghg-inventory-data
CA’s Greenhouse Gas Emissions

- 41% · Transportation
- 24% · Industrial
- 9% · Electricity in State
- 6% · Electricity Imports
- 8% · Agriculture
- 7% · Residential
- 5% · Commercial

15% Combined

California Air Resource Board: https://ww2.arb.ca.gov/ghg-inventory-data

424.1 MMTCO₂e
2017 TOTAL CA EMISSIONS
CPUC General Order 156:

Utility Supplier Diversity Program

- Focus on creating an inclusive supply chain
- CPUC General Order requires all investor-owned electric, gas, water and telecommunication utility companies with gross annual revenues in excess of $25 million to develop and implement programs to increase the utilization of women-, minority-, disabled veteran-, and LGBTQ-owned enterprises.

- In 2019, telecommunication and utilities procurement:
  - $12.7 billion from diverse suppliers
  - 33.2% of the total procurement budget

- AB 2758 (Bradford, 2010) expanded GO 156 to renewable energy.

- SB 255 (Bradford, 2019) expanded GO 156 to CCAs, energy service providers, distributed energy resource contractors, and energy storage systems.
In Memory of

The Honorable Gwen Moore
(October 28, 1940 - August 19, 2020)

Former California Assemblymember Gwen Moore was the architect and driving force behind the ground-breaking legislation that required the CPUC to issue General Order 156.
Balanced Energy - Resource Planning:
CA Total System Electrical Generation

2019 Total CA System Electric Generation in Gigawatt Hours

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>California In-State Generation (GWh)</th>
<th>Percent of California In-State Generation</th>
<th>Total Imports (GWh)</th>
<th>Percent of Imports</th>
<th>Total California Energy Mix (GWh)</th>
<th>Total California Power Mix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>248</td>
<td>0.12%</td>
<td>7,985</td>
<td>10.34%</td>
<td>8,233</td>
<td>2.96%</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>86,136</td>
<td>42.97%</td>
<td>8,921</td>
<td>11.55%</td>
<td>95,057</td>
<td>34.23%</td>
</tr>
<tr>
<td>Oil</td>
<td>36</td>
<td>0.02%</td>
<td>0</td>
<td>0.00%</td>
<td>36</td>
<td>0.01%</td>
</tr>
<tr>
<td>Other (Waste Heat / Petroleum Coke)</td>
<td>411</td>
<td>0.20%</td>
<td>11</td>
<td>0.01%</td>
<td>422</td>
<td>0.15%</td>
</tr>
<tr>
<td>Nuclear</td>
<td>16,163</td>
<td>8.06%</td>
<td>8,782</td>
<td>11.37%</td>
<td>24,945</td>
<td>8.98%</td>
</tr>
<tr>
<td>Large Hydro</td>
<td>33,145</td>
<td>16.53%</td>
<td>7,458</td>
<td>9.66%</td>
<td>40,603</td>
<td>14.62%</td>
</tr>
<tr>
<td>Unspecified</td>
<td>0</td>
<td>0.00%</td>
<td>20,376</td>
<td>26.38%</td>
<td>20,376</td>
<td>7.34%</td>
</tr>
<tr>
<td>Non-Renewables and Unspecified Totals</td>
<td>136,139</td>
<td>67.91%</td>
<td>53,533</td>
<td>69.32%</td>
<td>189,672</td>
<td>68.30%</td>
</tr>
<tr>
<td>Biomass</td>
<td>5,851</td>
<td>2.92%</td>
<td>936</td>
<td>1.21%</td>
<td>6,787</td>
<td>2.44%</td>
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<tr>
<td>Geothermal</td>
<td>10,943</td>
<td>5.46%</td>
<td>2,318</td>
<td>3.00%</td>
<td>13,260</td>
<td>4.77%</td>
</tr>
<tr>
<td>Small Hydro</td>
<td>5,349</td>
<td>2.67%</td>
<td>296</td>
<td>0.38%</td>
<td>5,646</td>
<td>2.03%</td>
</tr>
<tr>
<td>Solar</td>
<td>28,513</td>
<td>14.22%</td>
<td>5,577</td>
<td>7.22%</td>
<td>34,090</td>
<td>12.28%</td>
</tr>
<tr>
<td>Wind</td>
<td>13,680</td>
<td>6.82%</td>
<td>14,569</td>
<td>18.87%</td>
<td>28,249</td>
<td>10.17%</td>
</tr>
<tr>
<td>Renewables Total</td>
<td>64,336</td>
<td>32.09%</td>
<td>23,696</td>
<td>30.68%</td>
<td>88,032</td>
<td>31.70%</td>
</tr>
<tr>
<td>System Totals</td>
<td>200,475</td>
<td>100.00%</td>
<td>77,229</td>
<td>100.00%</td>
<td>277,704</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

In 2019, 34% of California’s electrical generation came from Natural Gas.

Historical Natural Gas Usage:

- 2010: 41.90%
- 2011: 35.30%
- 2012: 43.40%
- 2013: 44.31%
- 2014: 44.49%
- 2015: 44.00%
- 2016: 36.48%
- 2017: 33.67%
- 2018: 34.91%
- 2019: 34.23%

The duck curve is a problem statement, not a solution.

The duck curve is a graph of power production over the course of a day that shows the timing imbalance between peak demand and renewable energy production.
Potential Workforce Opportunities

- Jobs versus Careers
  - STEM
  - Positions of substance (i.e. contract negotiation, energy management services, architects, electrical & civil engineers)
- Careers for the future
- Changing Energy Markets
  - Resilience
  - Reliance
  - Balanced Energy - Resource Planning Opportunities
  - Alternative Fuel Vehicle Infrastructure
- Focus on engaging communities in planning distributed energy
- Diversify not only by HB-1 Visas, but also by including historically excluded communities
  - HBCU
  - Outreach to Diverse High Schools
Thank You & Contact Info

TAS STRATEGIES

https://www.tasstrategies.com/
LinkedIn:
https://www.linkedin.com/in/live4jazz
Facebook:
https://www.facebook.com/timothyalansimon
Twitter: http://www.twitter.com/tasstrategies
Shaun Garrison

Director of Congressional Affairs
Solar Energy Industries Association

SEIA LINKS:

- Abigail Ross Hopper: Prioritizing Equity in the Clean Energy Transition
- Solar Diversity Study (2019)
- Diversity Best Practices Guide
SOLAR INDUSTRY BY GENDER, RACE AND ETHNICITY

Solar Workforce:
- 73% White
- 8% Black
- 9% Asian
- 8% Two+ Races
- 2% Other

U.S. Workforce:
- 78% White
- 12% Black
- 6% Asian
- 4% Other

Women:
- Solar Workforce: 26%
- U.S. Workforce: 47%

Hispanic:
- Solar Workforce: 17%
- U.S. Workforce: 17%

For more information, visit TheSolarFoundation.org/Diversity
The COVID-19 pandemic cut carbon emissions down to 2006 levels.
# Competencies of the Sustainable Energy Workforce

## Knowledge
- STEM
- English
- Customer Service

## Skills
- Critical Thinking
- Active Listening
- Complex Problem Solving

## Abilities
- Problem Sensitivity
- Oral Comprehension
- Deductive & Inductive Reasoning

*Powering Up an Inclusive Clean Energy Workforce | September 9th, 2020 | Camille J. Moore*
KNOWLEDGE CAN BE ACQUIRED.
SKILLS CAN BE DEVELOPED.
ABILITIES CAN BE SHARPENED.

THANK YOU!
A BCSE Snapshot

- Summer 2020 survey of BCSE members
  - Energy efficiency, natural gas and renewable energy members.
  - Balanced responses from across 3 sectors, 1/3 of BCSE membership
- Responses are from a broad and diverse set of businesses
  - 53% of respondents have a workforce development policy in place
  - 71% of respondents have a diversity and inclusion policy in place
- Workforce Development and Diversity and Inclusion policies are two different issues, with different objectives
Workforce Development

• Top current workforce development activities:
  • Apprenticeship or training programs
  • Educational partnerships
• Top federal government workforce-related programs utilized: Military veterans, Department of Labor Apprenticeship program
• Top areas for additional federal government support:
  • Educational partnerships
  • Trainings for underrepresented groups
Barriers to Implementation

- Limited staff and financial resources
- Internal awareness, adoption, and employee involvement
- Lack of training tied to real projects
- Lack of qualified and diverse labor pools. Geographic limitations.
- Challenge to perform day-to-day job and train for future job
- Pandemic cut off pipeline, need for more virtual/online opportunities
- Finding qualified individuals and diverse candidates
Opportunities Ahead

- Advocacy that highlights well-paying clean energy jobs and career paths, especially to displaced and underrepresented communities
- Knowledge sharing among industries: benchmarking and best practices of companies.
- More virtual trainings and learning opportunities, industry-specific
- Educational programs for children & students
  - Encourage STEM and technical fields
  - 6-12th grade programs that introduce energy and energy careers, Targeted outreach to expand inclusion and diversity of students.
Applying for PPP Loan Forgiveness?

- PPP program has been a lifeline to many businesses, but requirements are complex and confusing.

- The loan forgiveness process is evolving and sophisticated.

- Weaver can help! For example, we can:
  - Determine the amounts and expenses eligible for forgiveness
  - Compute average FTEEs across multiple periods
  - Estimate forgiveness amounts under various dynamic scenarios
  - Review required forgiveness documentation before you submit to your lender

Contact us to learn about Weaver’s Forgiveness Calculator and a free initial consultation:

**Beau Butler**  
beau.butler@weaver.com  
832.320.7985

**Ryan Irby**  
ryan.irby@weaver.com  
972.448.9274