

Strong Workforce Program

Energy, Construction, and Utilities Regional Advisory Meeting

Proceedings

February 19th, 2021

Virtual - Zoom

Introduction

The Los Rios Community College District, in partnership with Valley Vision, and in collaboration with Sierra College and Yuba Community College District, invests Strong Workforce funding to organize and convene Regional Advisories. The objectives of the Regional Advisories are to build strong relationships between employers, educators, and workforce that:

- Provide timely information on skills gaps and workforce needs, informing partners on major industry trend information;
- Improve the efficiency of the advisory process for educators and employers;
- Reflect a regional view of workforce needs and assets;
- Provide opportunities for more systemic, ongoing engagement that includes workforce partners in key industry sectors.

Regional Advisory meetings help inform decisions on needed investments and enhancements for Career Education (CE) programs to help fill the growing demand for middle-skill positions. This meeting proceedings report includes key findings, best practices, and minutes from the Spring 2021 Regional Advisory meeting focused specifically on careers in Energy, Construction, and Utilities.

Valley Vision supports a robust talent pipeline through our multiple 21st Century Workforce initiatives. We prepare our regional workforce for the future by addressing skills gaps, advancing research, aligning efforts and strengthening systems. Valley Vision's workforce efforts are supported by the Sacramento Employment and Training Agency (SETA), Golden Sierra Workforce Development Board (WDB), North Central Counties Consortium, Yolo WDB, City of Sacramento, local community college districts and others.

The Strong Workforce program provides Career Education opportunities to increase social mobility and fuel regional economies with skilled workers.

Key Findings

- Overall, the Energy, Construction, and Utilities (ECU) sector was only slightly impacted by the effects of COVID-19, as compared to other sectors statewide and regionally. In contrast to many sectors which are struggling to employ workers and return to pre-COVID-19 levels, the ECU sector gained jobs over the course of the pandemic. Our region's percentage of ECU jobs increased by 1.8% in the last year, while statewide ECU jobs only increased 0.2%
- The stability of an ECU-related job may lead individuals to switch to this industry, and result in the need for reskilling or upskilling of workers. Many ECU employers may seek to educate their workers to use updated technology as the sector experiences increased automation.
- The potential of climate change policy under a new presidential administration will massively impact the ECU sector on all fronts. With a possibility of large amounts of renewable energy, and jobs in energy storage, solar and wind energy, the construction of smart buildings and smart cities, and the electrification of many areas, comes the promise of a spike in job growth.
- Programs are needed to provide students and prospective ECU workers with the training, tools, and on-the-ground experience necessary to thrive within this sector. While some ECU sector positions require a degree, many job positions can be filled by entry level employees, who have an opportunity to thrive in this sector by acquiring stackable credentials and on-the-ground work experience.

Meeting Proceedings

Industry Insights, Economic, Policy, and COVID-19

This data is presented by economist Dr. Robert Eyler, President of Economic Forensics and Analytics, Inc. and Economics Professor at Sonoma State University.

What Economists Are Watching in 2021

Economists are examining stimulus under the Biden-Harris administration, as well as how well vaccines are distributed and used nationally. The pandemic's effects have hit lower income households the hardest, but also offer unique opportunities for workforce training. For the latent workforce, many will not find jobs they once held returning, leading them to turn to other industries - including construction, energy, and utilities.

Labor Data on a National and State Level

Construction jobs were declared essential over the course of the pandemic, which kept a large portion of the construction workforce employed, however, this was not the trend everywhere in California. Despite this, California EDD & EFA data has shown that construction jobs suffered more during the 2008 recession than they did during the COVID-19 pandemic. In the 2008 recession, many industries took nearly 18 months to recover economically, while the recession due to COVID-19 has taken around 18 weeks. In most major industries, employment levels should return to pre-COVID levels by the end of 2023.

Luckily, the Sacramento region was not as heavily affected by the pandemic as other areas in the state of California, leading to Sacramento needing less time overall to recover from the effects of the pandemic. In contrast to many other industries, construction in California has shown positive growth during COVID at a rate of 0.2%, and was one of the few industries to show any growth during the pandemic. (Figure 1) However, while focusing specifically on Sacramento, California EDD & EFA Data shows that the construction industry has shown a 1.8% growth rate during the pandemic - much higher than the rest of the state. (Figure 2)

Figure 1: Jobs Lost in California from April - December 2020

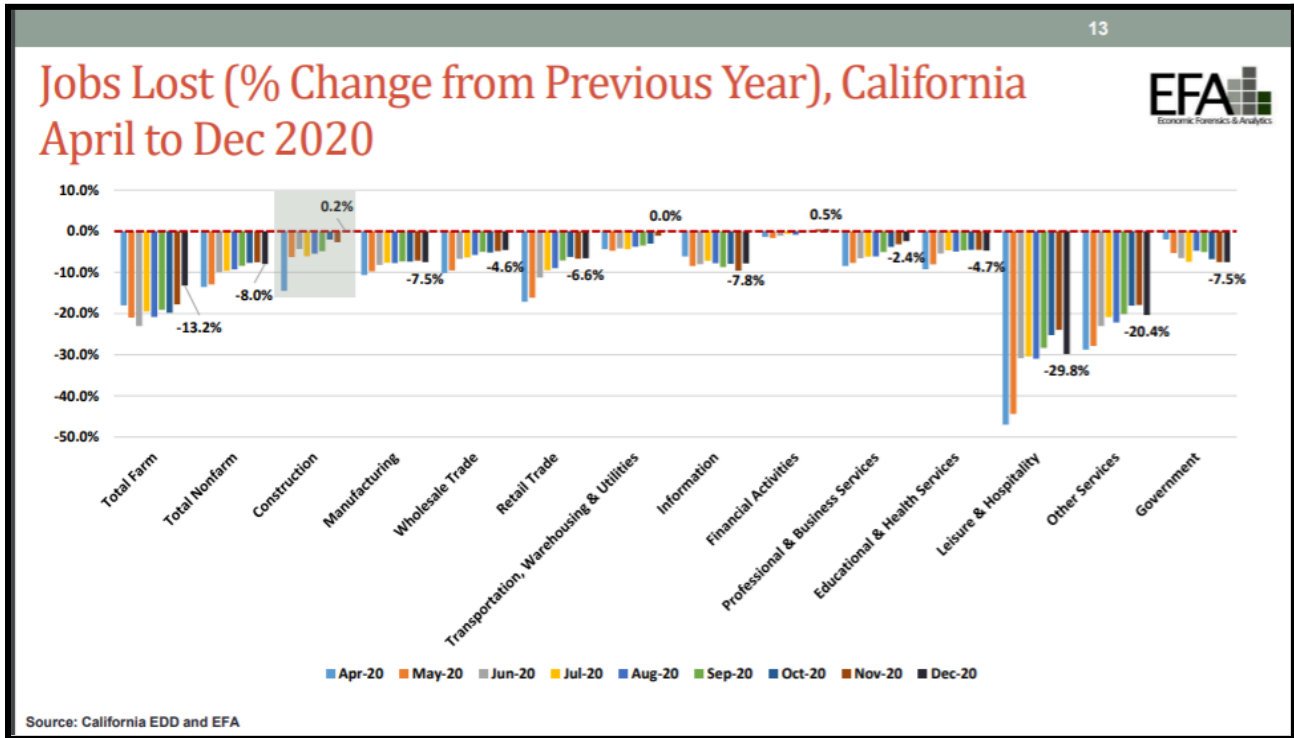
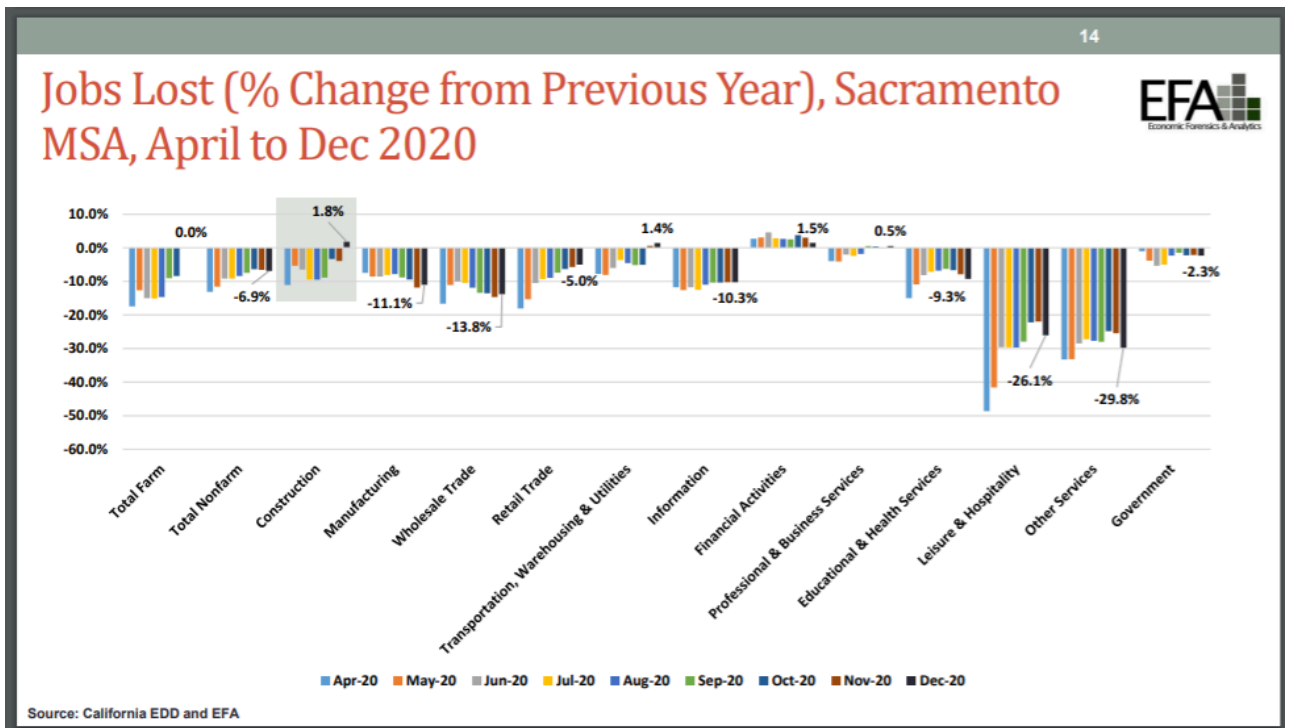


Figure 2 - Jobs Lost in Sacramento Region from April - December 2020



Different Outcomes for Different Workers

Workers throughout a variety of sectors experienced the pandemic in different ways. As increasing pressure was placed on the government to provide more economic stimulus, and the demand for social services rose, non-profit organizations felt increased urgency to provide for communities. There has also been great concern regarding rental and apartment vacancies nationally - which leads to uncertainty regarding whether lower wage workers can safely remain in their homes, or be protected by eviction moratoria. The future of work is also defined by the ability or inability for local businesses to hire employees once the economy improves - or risk these employees moving geographically, or to another job sector.

ECU Industries: Opportunities & Challenges

- Challenges:
 - Economic recovery and the “shadow effect” - indeterminate when the economy will recover
 - Cost of business rising due to COVID-19, which may potentially slow down rehiring,
 - Slower economy means a lag in revenue due to less building projects, as well as deferred maintenance/improvements
 - Office space vacancy & construction slowdown due to virtual work may create lower demand conditions
 - Lingering issues with COVID-19 and social policy
- Opportunities:
 - Climate change focus with new president - Will solar and wind finally see mass adoption?
 - Is fiscal policy focusing on future energy markets coming to finance these jobs?
 - Will biomass get more focus in upcoming policy?
 - Electricians, installers, and natural resource workers may potentially be in high demand as leaders look to green energy

Construction Employment

As mentioned previously, continued building construction during the COVID-10 pandemic held many construction jobs in place. Overall, construction firms fared far better than individual contractors at maintaining employment. As a tip for the future of the industry - the building of residential construction is an excellent litmus test for the job demand of the future.

The Future of the ECU Industry: What Is/Is Not Forecasted

Many within the ECU industry may find potential for a “Green New Deal” under the new presidential administration, leading experts to pose questions like:

- Will the Biden Administration provide fiscal investment on clean energy and broadband?
- Will the emphasis be on commercial or residential construction?
- Will electric vehicles be a focus of future construction?
- How large will a potential investment be, and will entrepreneurship utilize this investment?

Additionally, an aging contractor workforce will soon give way to another one. In light of this change - industry experts ponder whether or not the idea of being outside, building something, and generating clean energy will attract a younger and more environmentally conscious audience. Simultaneously, individuals who have lost jobs in other industries may turn to the trades when looking for job security. Combined, these factors may open up new opportunities for college majors like project management and construction management, perhaps with an environmental focus.

Learning From Disasters

While utilities have been the focus of recent disasters - when looking at a more environmentally-conscious future, they may have the opportunity to be saviors in the future. Many experts suggest that events like the failing electrical grid in Texas may lead the way for states nationally to consider a microgrid, or other electrical solutions.

Labor Market Information Overview

For additional industry context, Ebony J. Benzing, Research Manager at North/Far North Centers of Excellence (COE) at Los Rios, provided information from labor market data and Burning Glass Technologies, such as:

- Occupational/job data
- Job postings information
- Certificates and degrees conferred from regional community colleges

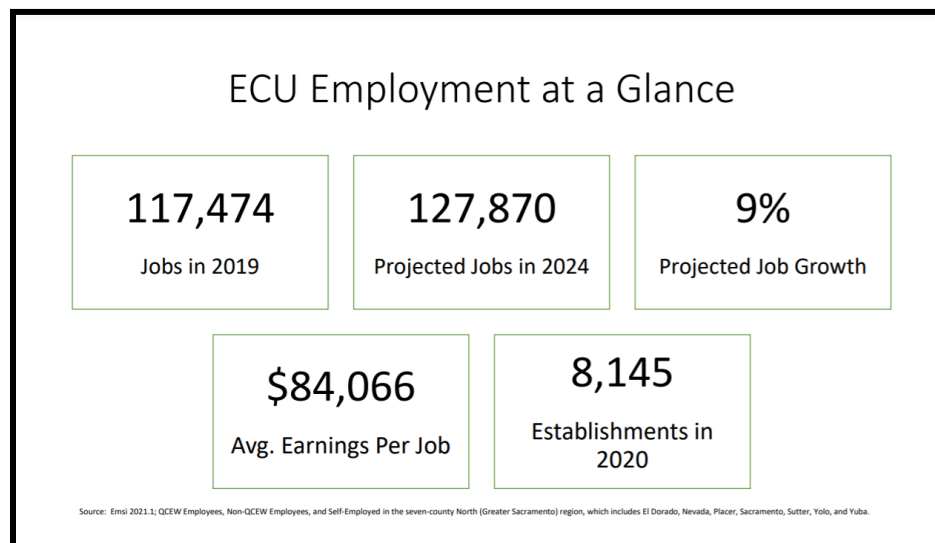
This information was designed for understanding local labor market conditions, determining skills and credentials needed, examining employment outlook for students, identifying which community college programs were ripe for investment, and better understanding industry needs overall.

Energy, Construction, and Utilities Breakdown

The ECU sector is made up of 57 specific industries, with 260 occupations within those industries, and 24 TOP Code Programs throughout the community college system. Subsectors of Energy, Construction and Utilities include: Utilities, Construction, Telecommunications, Architecture/Engineering and Related Services, and Waste Management/Remediation.

While looking at the future of employment for the ECU sector, jobs are projected to increase by over 10,000, with a projected job growth of 9% - nearly double the Sacramento Region as a whole's 4% projected job growth. (Figure 3) Average earnings are based on all classes of work - from lower wage clerks to top office executives. However, average earnings are greater than the average Sacramentan household income, which sits around \$65 K per year; ECU jobs average around \$84K per year.

Figure 3 - Energy, Construction, and Utilities Employment



ECU Workforce Demographics

55% of the ECU workforce is white, while 32.6% is Hispanic. On the lower end of the spectrum, 6.2% of the workforce is Asian, and 3.5% is Black. Less than 3% of the ECU workforce identifies as either 2 or more races, American Indian/Alaskan Native, or Native Hawaiian/Pacific Islander.

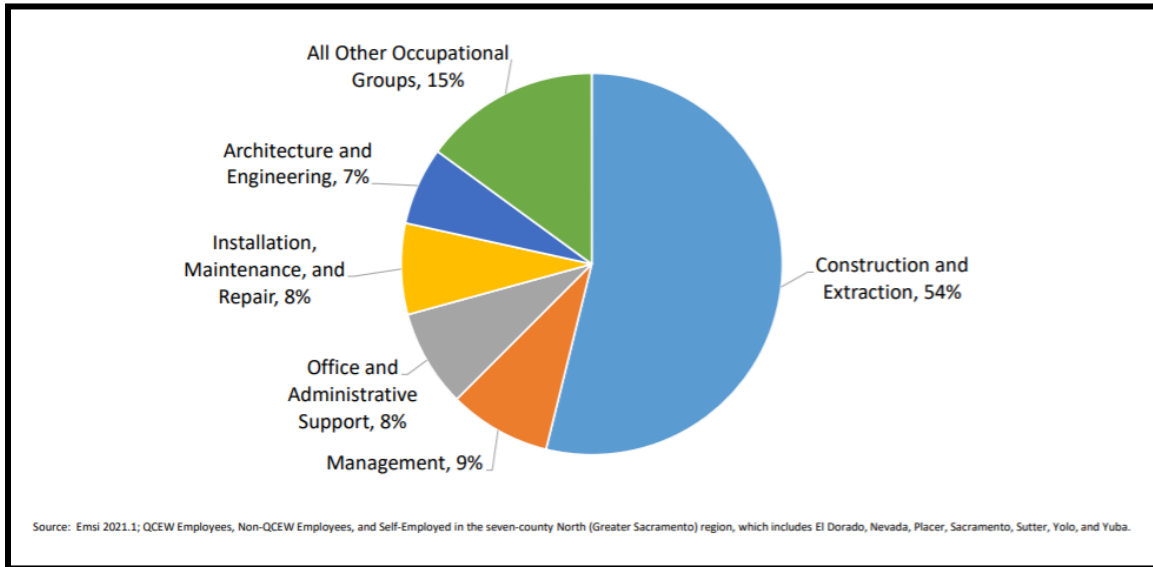
At 68%, a majority of the ECU workforce is between the ages of 25-54. The next largest demographic is aged 55-64, and comes in at 17% of the workforce. Ages 65+ and 19-24 make up 7% of the workforce, respectively, with less than 1% of

the workforce aged 14-18 years old. Regarding gender, males make up 80% of the workforce, whereas females make up 20%.

Occupations within ECU

85% of ECU Sector Employment is found in five major occupational groups, with office staff and management supporting these groups, as you can see in Figure 4, below.

Figure 4 - Occupational Groups within ECU



For a further breakdown of the critical occupations and projected employment within these groups, refer to Figure 5, below. This chart details where employment numbers were at in 2019, as opposed to where they are projected to be in 2024.

Figure 5 - Critical Occupations and Projected Employment

Occupational Group	Industry Group		Greater Sacramento			
	Employment (2019)	Share of Region's Jobs (2019)	2019 Jobs	2024 Jobs	Projected Growth	Avg. Annual Openings
Construction Trades Workers	54,608	90%	60,702	66,414	9%	6,949
Other Management Occupations	6,590	19%	33,921	35,764	5%	2,932
Other Installation, Maintenance, and Repair Occupations	5,945	29%	20,196	21,461	6%	2,107
Engineers	4,301	32%	13,461	13,991	4%	974
Business Operations Specialists	4,169	7%	63,000	65,791	4%	6,066
Other Office and Administrative Support Workers	4,046	9%	42,882	42,473	(1%)	4,649
Supervisors of Construction and Extraction Workers	4,010	82%	4,887	5,343	9%	560
Top Executives	2,391	12%	20,033	20,905	4%	1,679
Electrical and Electronic Equipment Mechanics, Installers, and Repairers	2,173	41%	5,257	5,191	(1%)	532
Material Moving Workers	2,170	4%	55,419	56,478	2%	6,994
Drafters, Engineering Technicians, and Mapping Technicians	2,007	42%	4,777	4,924	3%	464
Other Construction and Related Workers	1,856	51%	3,632	3,882	7%	437
Totals	94,268	29%	328,168	342,617	4%	34,344

Source: Emsi 2021.1; QCEW Employees, Non-QCEW Employees, and Self-Employed in the seven-county North (Greater Sacramento) region, which includes El Dorado, Nevada, Placer, Sacramento, Sutter, Yolo, and Yuba.

Job Postings Data

Burning Glass Labor Insights, an online job posting aggregator, searched for positions using ECU industry definitions. Job postings are not 100% equal to the number of hiring positions, but Burning Glass removes nearly all duplicate job postings. Burning Glass found that 16,532 new jobs were posted online from January 1, 2019 through January 31, 2021 in the ECU sector. Between this 13-month period, there was a 16% decline in job postings as compared to previous years, however job posting numbers have been continually rising for the past 10 years. In Figure 5 (below) you will find the top 10 employers, occupations, and job titles in relation to the total job posting data.

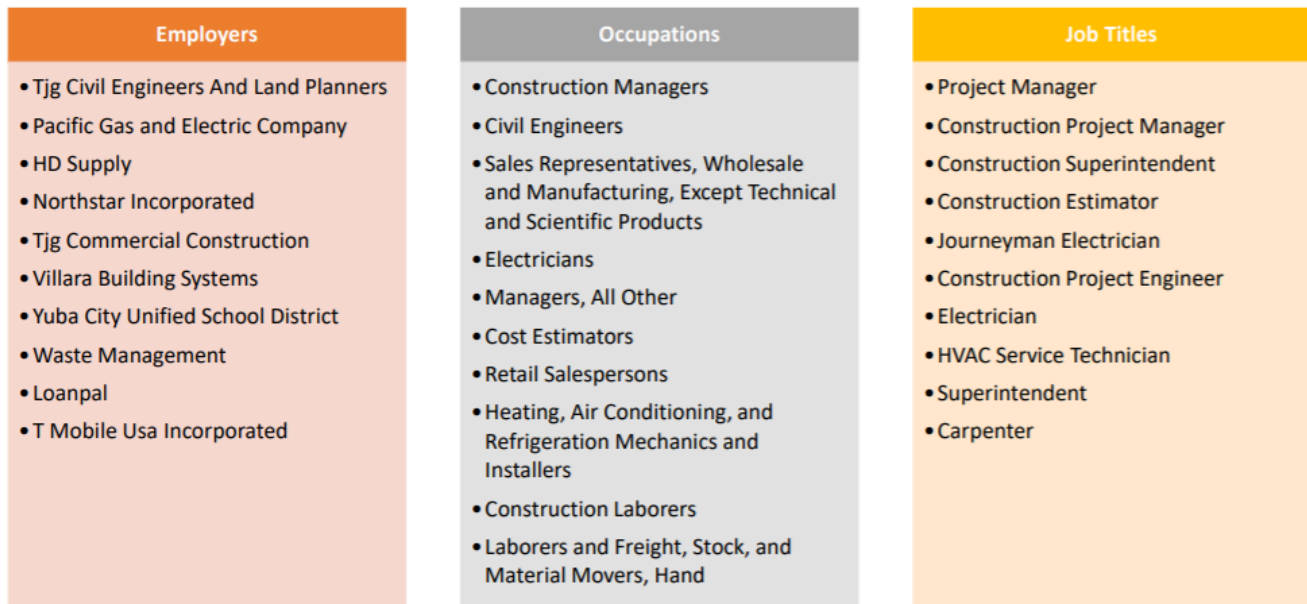


Figure 5 - Top 10 Employers, Occupations & Job Titles

When examining the job posting data, Burning Glass also reviewed the top skills employers were looking for. You will find these skills broken into 3 categories in Figure 6 (below): Specialized Skills, Foundational Skills, and Technology Skills.

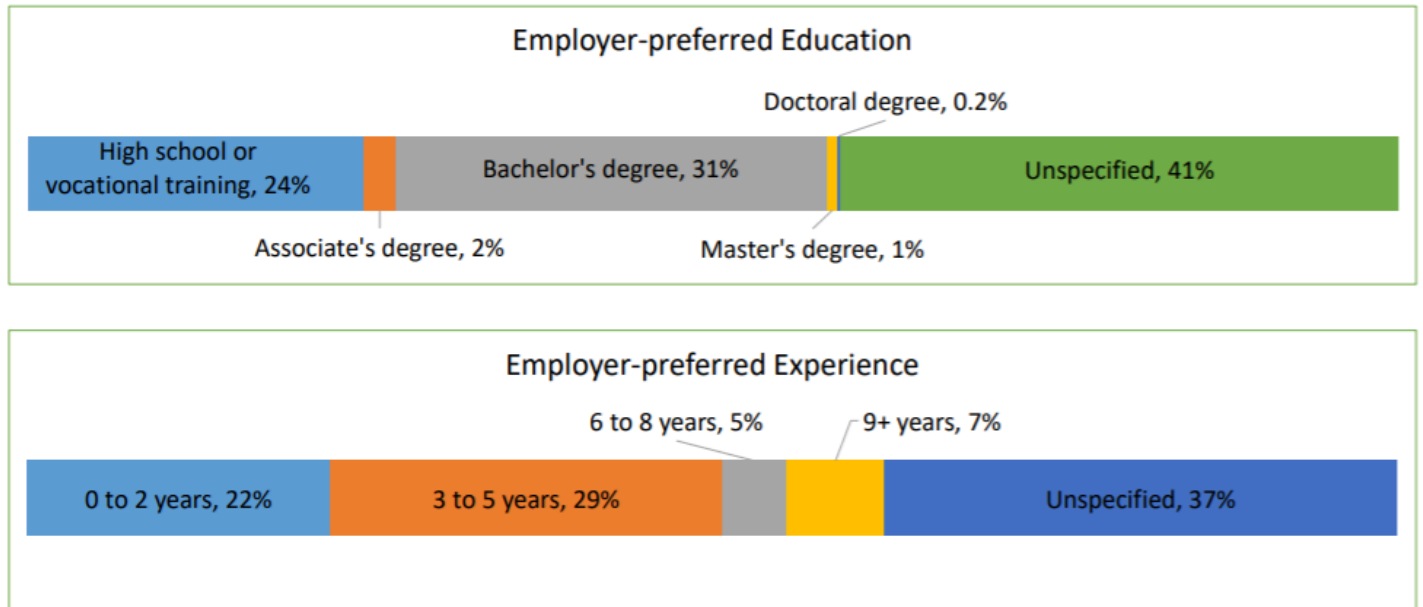
Figure 6 - Top Skills Employers Are Looking For



Burning Glass Data: Education and Experience

Burning Glass also examined what employers were looking for in job posting descriptions in regards to education and work experience from the 13-month time frame. Figure 7 (below), details the levels of employer-preferred education and experience for the entirety of job postings in the ECU sector.

Figure 7 - Employers' Most Requested Education & Experience



Source: Burning Glass Labor Insights

Hard-To-Fill ECU Jobs

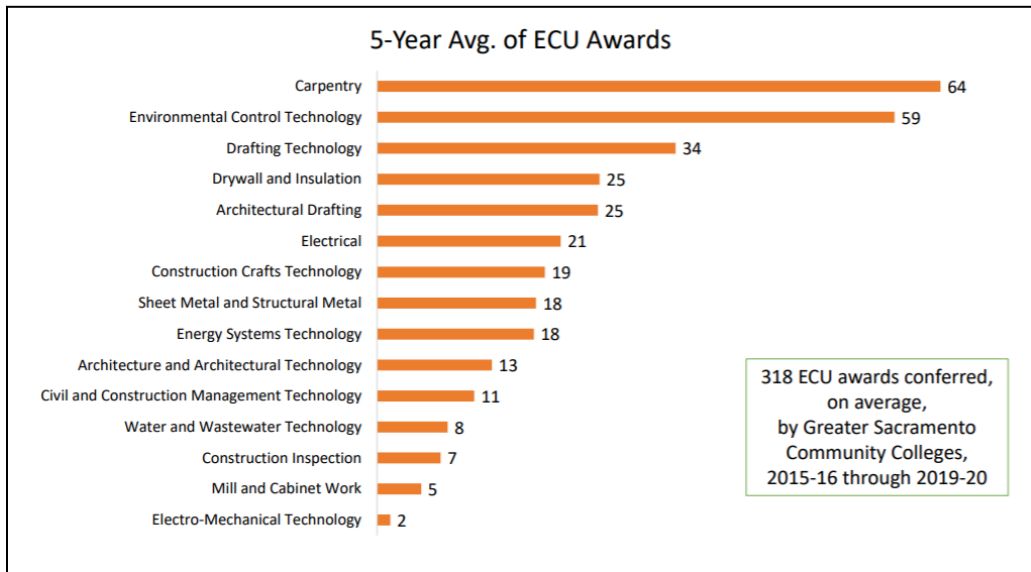
Additionally, Burning Glass data found jobs within the ECU sector that were consistently difficult to fill, averaging between 54-61 days to fill these positions. These occupations included:

- Solar PV Installers
- Solar Sales Representatives and Assessors
- Electrical Power-Line Installers and Repairers

Community College Training Programs

Not all community colleges in our region offer ECU-related programs for students, but many offer certification programs or Associate Degree programs for students. From the 2015-2016 school year to the 2019-2020 school year, Greater Sacramento Community Colleges conferred 318 ECU awards. These awards can be seen, broken down by sub-sector, in Figure 8, below.

Figure 8 - 5 Year Average of ECU Awards for Greater Sacramento Community Colleges



Other Considerations

The COVID-19 pandemic has accelerated trends related to artificial intelligence and automation, which is affecting the ECU sector. Effects can be seen in the usage of drones, and automated heavy machinery. This has resulted in the need for upskilling (workers gaining new skills in order to complete their jobs) and re-skilling (workers learning new skills in order to learn how to carry out new types of jobs) within the workforce. Looking to the future - we must provide help for workers and residents in order for them to catch up to the technological changes happening around them, and teach workers technology-proof skills.

Policy/Market Drivers: Legislative Review

Updates on state and federal policy, as well as drivers for the ECU market was shared by Gregg D. Ander, FAIA, the Managing Director of Gregg D. Ander, LLC, and a Senior Fellow at Guidehouse Consulting.

Policies drive markets and create opportunities involving environmental protections, climate change, social equity, and market impacts, the outcome is game-changing, and forms a transformative pathway. Many of these policies, especially regarding environmental measures, input codes and standards on the building and construction industry.

Federal Activities/Initiatives

- Comprehensive Infrastructure Bills
 - Prospective updates for roads, bridges, water/wastewater, and seismic upgrades
 - Possibility of significant investment weaving climate change and environmental protection opportunities within an infrastructure bill to jumpstart the economy
- Federal Energy Regulatory Commission (FERC)
 - FERC provides regulation and guidance for the energy industry
 - In January 2021, FERC began Order 2222, which allows Distributed Energy Resources (DER's) to support transmission systems
 - This includes battery storage, renewable solar, even potentially electric vehicles

State Level Initiatives/Activities

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- CA Senate Bill 100 (De Leon) would provide a 100% Renewable Portfolio Standard
 - California is currently at 40%, but over generating nearly every day, which creates a storage market for energy
- CA Senate Bill 49 (Skinner) will develop regulations for building assets to facilitate flexible loads
 - This includes chillers, air handlers, multiple speed drives on motors, and other different assets within buildings
 - SB 49 allows excess renewable energy to be sold to the market, resulting in:
 - Load management standards
 - Smarter Buildings
 - Advanced Automation and Artificial Intelligence
- Executive Order B-48-18 (Brown) will input 5 million electric vehicles by 2030
- AB 2127 (Ting) called an electric vehicle charging infrastructure assessment
 - Found that the state will need 1.5 million electric vehicle chargers
- Executive Order N-79-20 (Newsom)
 - Calls for all new cars and light duty trucks to be Zero Emission Vehicles by 2035
 - Internal combustion engines will not be available for purchase in CA after 2035

Final Data Points

Many of these policies are bold, and would advance and accelerate decarbonization in buildings, transportation, and power sectors, as well as making electrification a common strategy. California has the 5th largest economy in the world, giving it market pull. Apple's Cupertino, CA headquarters are home to the world's largest photovoltaic system. 800,000 electric vehicles (half of all EVs in the US) are within California. 41 local governments in California have adapted electrification reach codes, with 60 more governments in the process. 56% of California gas pipelines are 50 years old or older, which will lead to future policies and work regarding energy. The future of California lies in smart buildings, smart cities, and smart grids for energy. Additionally, California will continue to see an emphasis in environmental protection, social equity, climate mitigation, and offshore wind.

Industry Insights Panel

- **Speakers:**
 - **Tony Sciarra - Workforce Development & Education Programs, Tesla**
 - **Susan Wheeler - Workforce Development, Sustainable Communities, SMUD**
 - **Ralph Ahlgren - Founder, President and Chief Technical Officer, Soleeva Energy**
 - **Jeffrey Panasiti - Vice President of Operations, Lennar Homes**
- **Question: What foundational or technical skills are necessary for your prospective organizations for entry level positions in your companies?**
 - Having a good attitude, willingness to work on roofs/heights
 - Critical thinking skills
 - Fundamental electrical skills
 - Workers who can demonstrate team work, ingenuity, integrity
 - Data analytics, AI, customer service & finance experience
- **Question: What new technology/equipment are you launching at your companies that community colleges could consider incorporating into their courses? What skills/technologies are becoming obsolete in terms of equipment regulation laws?**
 - New technology includes solar roofing with photovoltaic cells - with accompanying skills like fundamental electrical background
 - The ability to safely and consistently perform work
 - Colleges should continue to focus work on cyber protection, battery storage, energy efficiency, data reading, and low carbon, and photovoltaic technologies

- More important for individuals to have the basic desire to learn skills, as opposed to coming into roles with prior knowledge
- Skilled workers becoming obsolete - many workers are learning how to do portions of a certain job, but not the entirety of the job
- **Question: How has COVID impacted your hiring demands and forecasting projections, both on the short and the long term? Has COVID impacted what you anticipate hiring will be like in the future?**
 - For Tesla, COVID did not have a big impact, although some employees were furloughed, and some contracts let go & rehired
 - Tesla made a profit during the pandemic
 - SMUD did not lay off employees during the pandemic - instead invested in current workforce to ensure they were prepared for the future
 - Provided job training and information for individuals in the community
 - Important for businesses to offer opportunities to underserved communities and low wage workers
 - Careers in smart technology moving forward - will become increasingly important in the future
 - Soleeva Energy's technology development continued, but field work was curtailed
 - Permitting processes have been shut down, or extremely delayed
 - Not the market that has impacted the business - but the jurisdictions
 - If this continues - need for jurisdictions and government agencies to move faster
 - Kept 95% of employees, thanks to Federal Payroll Protection Act
 - Lennar Homes having difficulty meeting demand due to impacted supply chains
 - Home-building industry impacted as people work from home, and potentially move into new homes
 - Winter storms in Texas affecting supply chains in California
 - Perception of industry
 - Individuals who have work done on their home form perception of entire industry from workers in their homes
 - Younger people believe construction is a "hard" way to make a living
 - "Different type of hard" - putting things together, solving problems, and feeling greatly rewarded when neighborhoods are completed
- **Question: What entry level positions do you have available (including internships, work-based learning opportunities)?**
 - Tesla offering start-service program for manufacturing and energy
 - Employers have a duty to be a shepherd in their communities - and market their jobs, not just rely on community colleges
 - All entry level technicians and manufacturers will go through start programs, and Tesla is hoping to build large network of crew leads through start-service program
 - Interested in running bootcamp and trainings through community colleges
 - Focus on building solid externships on the community college level
 - SMUD - Utilities need a micro segment to teach interested workers about different fields
 - Provide paid internships for high school and college students, and provide scholarships
 - Limited resources for the number of internships they can provide
 - Big on work-based learning
 - Career Ambassador Program - professionals going into the community to educate others about their careers
 - Soleeva Energy - trying to offer career path that features mentoring & localized job training
 - Giving an entry level worker a career path leads to employee retention
 - Very important that students learn the basics of construction before getting on a rooftop
 - Allows students to progress faster into business

- Training workers in finances, project management
- Community Colleges need to focus on exposing students to collaborative work
 - Students can get hands on experience prior to graduating
- Lennar Homes
 - Entry level positions include construction customer care, salesforce, accounting, and purchasing
 - Higher focus on hiring rather than internships
 - Started a construction training program across the United States
 - 5.5 month program
 - Covers all construction of a home, from beginning to end
 - Partnered with Harvard Business School to aid in shaping builders into mentors for training programs

Conclusion

This advisory meeting was closed out by encouraging participants to reach out to Orion Walker, Regional Director for Employer Engagement for Energy, Construction, and Utilities at the North Far North Center for Excellence. Participants were also informed of Valley Vision's upcoming Climate, Justice, and Jobs Summit - which may feature additional subject matter similar to what was covered in this advisory. Overall, the ECU sector is moving full steam ahead, with a huge breadth of career opportunities, and a growing need to train workers up into various positions. Orion Walker can connect programs with employers throughout the region to make these connections possible, and should be a point person for anyone with questions post-advisory. Individuals can email Orion Walker at: walkeror@butte.edu