CAELI District Innovation Webinar

Educating for a Green Economy

Featuring:
Siria Salas, The Energy Coalition
Sarah Whiting, Ten Strands

May 29, 2025

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Nate Ivy

Instructional Coach

Fremont Unified School District

nivy@fusd.k12.net

Map Padlet

The slide shows a Padlet map interface titled ":Padlet" displaying a map of California and Nevada with numerous magenta location pins.

Left panel entries:

Amy Frame + 30 • 19d

CAELI District Innovation Hub Webinars

Please add a map pin for you and your organization. Include a website or LinkedIn link.
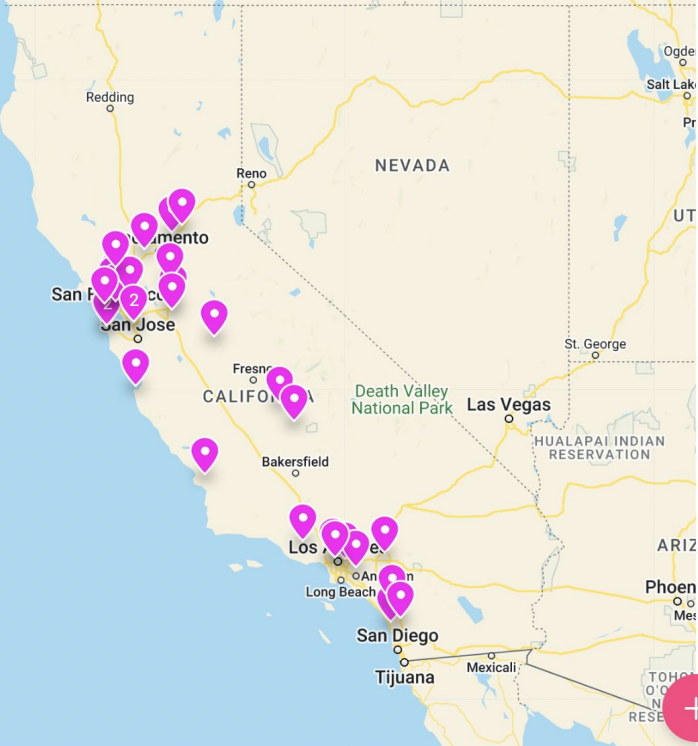
Manteca, CA, USA
Kristine Stepping, Durham Ferry...

1910 Magnolia Ave, Los Angeles, CA 90...
Wildwoods + LA STEM Collective

55 Music Concourse Dr, San Francisco,...
California Academy of Sciences

San Luis Obispo, CA
San Luis Obispo, CA

Fremont Unified School District, Tech...

Right panel card:

Amy Frame 4h

Visalia, CA

tenstrands.org

Ten Strands: Environmental Literacy for all California Students

Amy Frame, Ten Strands, Director of Strategic Partnerships (https://www.linkedin.com/in/amy-frame-273967100/)

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Click the + sign to add your name, location and links.

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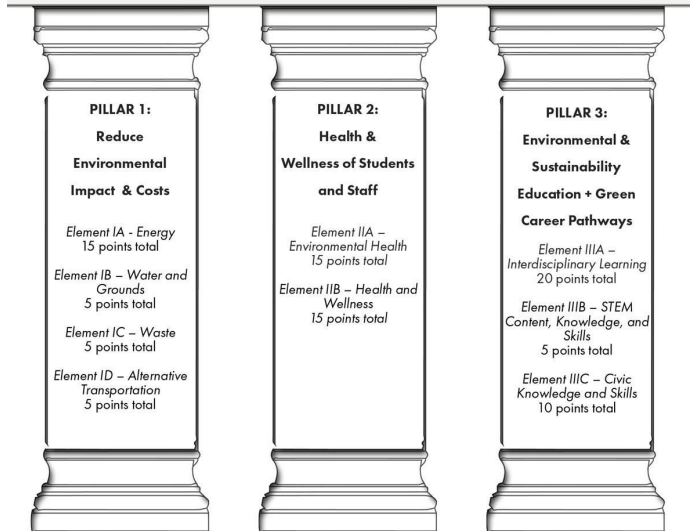
District Innovation Hub Goals

1. **Build a community** of district practitioners and partners.
2. Create, curate and **share** environmental literacy and sustainability **resources.**
3. **Build capacity** for district planning for environmental literacy and sustainability.
4. Cultivate, support, and **showcase leading edge exemplars**.
5. Research, design, and deliver the best green district support strategies.

District Innovation Hub

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Systems Approaches

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GREEN RIBBON SCHOOLS

PILLAR 1:
Reduce Environmental Impact & Costs

Element IA - Energy
15 points total

Element IB – Water and Grounds
5 points total

Element IC – Waste
5 points total

Element ID – Alternative Transportation
5 points total

PILLAR 2:
Health & Wellness of Students and Staff

Element IIA – Environmental Health
15 points total

Element IIB – Health and Wellness
15 points total

PILLAR 3:
Environmental & Sustainability Education + Green Career Pathways

Element IIIA – Interdisciplinary Learning
20 points total

Element IIIB – STEM Content, Knowledge, and Skills
5 points total

Element IIIC – Civic Knowledge and Skills
10 points total

4Cs Whole Systems Framework for Environmental and Climate Action in Schools

Adapted from Sustainable Schools Project & Plymouth University: Andra Yeghoian - 2013

CAMPUS	CURRICULUM	COMMUNITY & CULTURE
Operations across the buildings and grounds model sustainable and resilient practices, minimize disruptions for learning, and serve as a lab for learning.	Curriculum integrates Environmental and Climate Literacy as well as principles and practices for Solutionary Teaching and Learning.	Evidence exists within the "walk" and the "talk" of the school community for prioritizing sustainability and resiliency, and developing strategic partnerships with community based organizations.

Constituents

Students · Faculty and Staff · Administrators · Community Partners and Families

STUDENTS · LEADERSHIP · CULTURE & CLIMATE · COMMUNITY · EQUITY · GREEN SCHOOLS · SUSTAINABILITY · HEALTH · STAFF · CURRICULUM & INSTRUCTION · FACILITIES & OPERATIONS · FACULTY

Agenda

4:00 - 4:10   Welcome and Connections

4:10 - 4:50   Call to Action: Educating for a Green Economy

4:50 - 5:00   Q&A

5:00 - 5:05   Closing, Feedback, and Resources

5:05 - 5:30   Breakout Room Discussions

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Introductions

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Data Science Director*
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Siria Salas
Program Manager
The Energy Coalition
ssalas@energycoalition.org

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How do you define a *green* economy?

A *green* economy is defined as an economy that is focused on the reduction of carbon emissions, resource efficiency, social inclusivity, and the prevention of the loss of biodiversity and ecosystem services.

Types of Green Careers

According to the [U.S. Department of Labor's Occupational Information Network](#) (2010), it is useful to breakdown the different types of green economy jobs into the following three categories:

- **Changing Skill Green Occupations:** These fields are adding new tasks or specialty areas because of the demand for green goods and services.
- **Higher Demand Green Occupations**: In these fields, the job duties are not changing but the occupation itself will probably grow because of the increased demand for green goods and services.
- **New Green Occupations**: These are jobs that are emerging because of green and environmental sustainability trends in various industries and sectors.

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Why Prepare Students for Green Careers?

1. California policy and standards set up an expectation that we teach about climate and environmental issues.

2. Green careers will give the students I serve access to high wage, high growth job opportunities.

3. More students going into green careers is needed to mitigate and adapt to climate change.

4. The students I serve want to make a positive difference with the career they choose.

Which reason resonates with you?

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Call for Environmental Literacy in CTE

California Standards for Career Ready Practice

12. Understand the **environmental,** social, and economic **impacts of decisions.**

Career-ready individuals understand the interrelated nature of their actions and **regularly make decisions that positively impact** other people, organizations, the workplace, and **the environment**. They are aware of and utilize new technologies, understandings, procedures, and materials and adhere to regulations affecting the nature of their work. They are cognizant of impacts on the social condition, environment, workplace, and profitability of the organization.

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Master Plan for Career Education

"By building these talent pipelines, the state can power economic growth and create more resilient communities in strategic sectors such as education, health care, and **climate**."
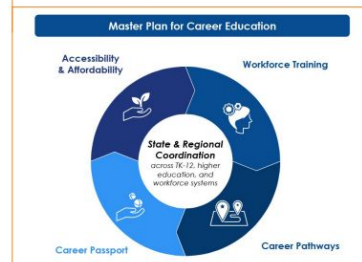
"A coordinated effort is crucial for capitalizing on programmatic funding opportunities and adapting to the demands of a workforce increasingly shaped by artificial intelligence and **climate imperatives**."

GOVERNOR GAVIN NEWSOM

December 2024

California Master Plan for Career Education

EXECUTIVE SUMMARY

The Master Plan for Career Education will prepare all learners for the workforce of tomorrow by guiding California in its efforts to strengthen career pathways, prioritize hands-on learning and real-life skills, and advance access and affordability through streamlined collaboration and partnership so that all Californians can navigate toward career-sustaining jobs.
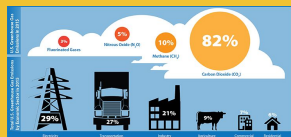
Master Plan for Career Education

Accessibility & Affordability — Workforce Training

State & Regional Coordination across TK–12, higher education, and workforce systems

Career Passport — Career Pathways

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Foundation in CA Statewide Policy and Expectations

Campus & Operations

Reduce Emissions
SB32 & CA EO B-30-15

Energy Usage: Reductions and Shift to Renewables *Title 24 Part 6*

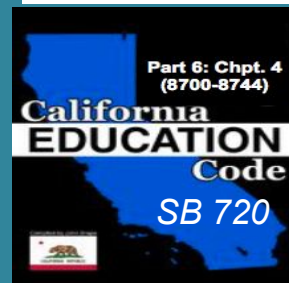**Zero Waste**
AB 341 and 1826
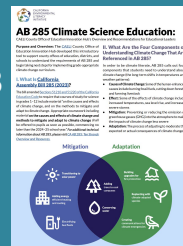*AB 1219 & SB 557*
SB 1383

Water Conservation as a Way of Life
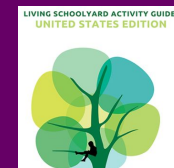*CA EO B-37-16*
AB 1343 & SB 1413

Curriculum & Instruction

Part 6: Chpt. 4 (8700-8744)

California EDUCATION Code

SB 720

CALIFORNIA'S ENVIRONMENTAL PRINCIPLES

AB 1548 *and* AB 285

AB 285 Climate Science Education:

Visionary Guidelines

A Blueprint For Environmental Literacy

CALIFORNIA GREEN RIBBON SCHOOLS

LIVING SCHOOLYARD ACTIVITY GUIDE UNITED STATES EDITION

ACR 128

California Children's Outdoor Bill of Rights

Explore Policies and Expectations at: **CA Mandates and Expectations for Environmental and Climate Action in TK-12 Schools**
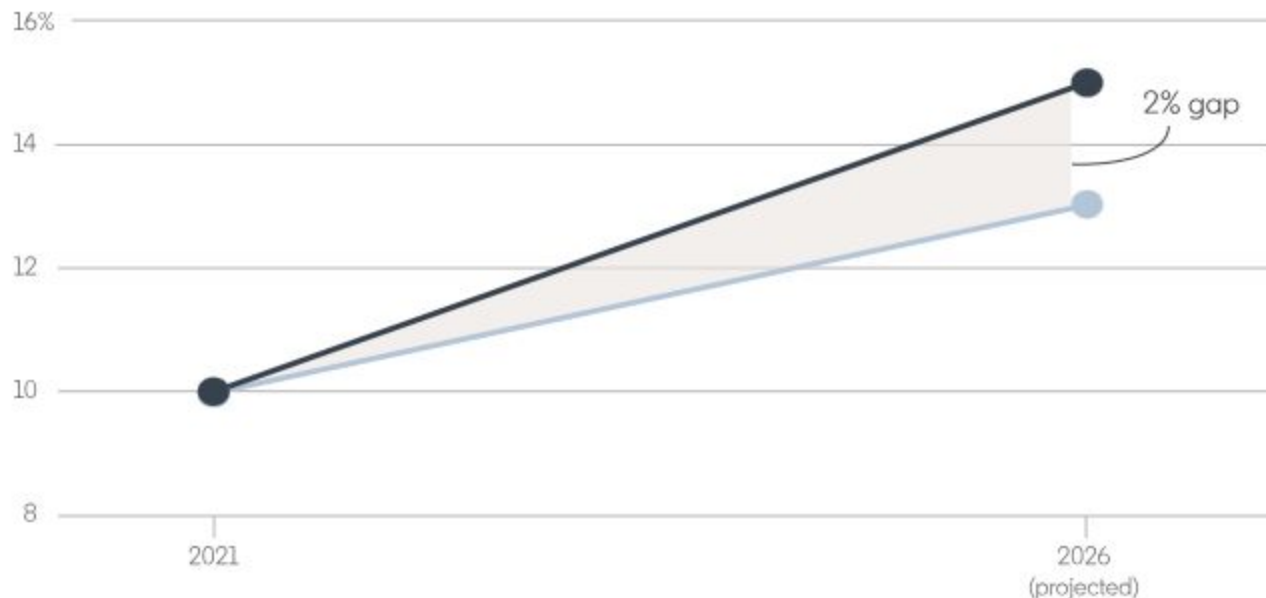
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"Despite jobs requiring green skills increasing 8% annually over the past 5 years, green talent is growing by just 6%.

This imbalance will result in a skills gap by 2026"

At the current pace, demand for workers with green skills will surpass supply

Demand determined from share of green job postings. Supply determined from the share of members who have skills for green jobs.

16%

14

12

10

8

2021

2026
(projected)

2% gap

World Economic Forum

Future of Jobs Report 2025

Future of Jobs Report 2025

Five key labour-market drivers

Technological change

Green transition

Demographic shifts

Geoeconomic fragmentation
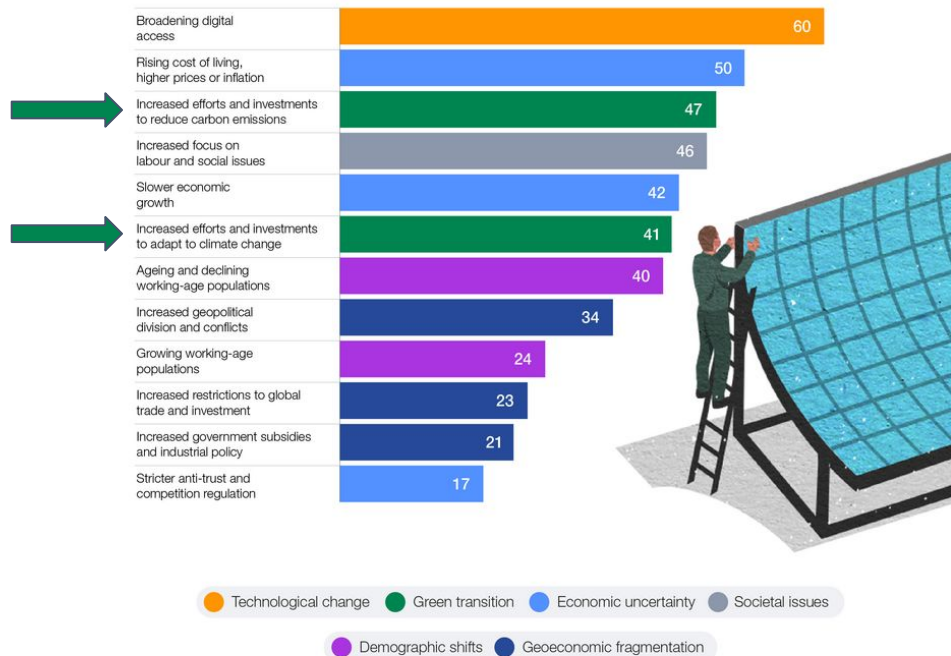
Economic uncertainty

Transformative Trends

"Climate-change mitigation is the third-most transformative trend overall – and the top trend related to the green transition – while climate-change adaptation ranks sixth with 47% and 41% of employers, respectively, expecting these trends to transform their business in the next five years."

Digital access, cost of living and green transition trends are driving business transformation

Share of employers surveyed that expect each macrotrend to drive organization transformation by 2030

Trend	Value
Broadening digital access	60
Rising cost of living, higher prices or inflation	50
Increased efforts and investments to reduce carbon emissions	47
Increased focus on labour and social issues	46
Slower economic growth	42
Increased efforts and investments to adapt to climate change	41
Ageing and declining working-age populations	40
Increased geopolitical division and conflicts	34
Growing working-age populations	24
Increased restrictions to global trade and investment	23
Increased government subsidies and industrial policy	21
Stricter anti-trust and competition regulation	17

● Technological change ● Green transition ● Economic uncertainty ● Societal issues

● Demographic shifts ● Geoeconomic fragmentation

Source: World Economic Forum. (2025). *Future of Jobs Report 2025*.

Job Growth

"Green and energy transition roles, including Autonomous and Electric Vehicle Specialists, Environmental Engineers, and Renewable Energy Engineers, feature within the top fastest-growing roles."

Fastest growing and declining jobs by 2030

WORLD ECONOMIC FORUM

↑ Top fastest growing jobs	↓ Top fastest declining jobs
1 Big data specialists	1 Postal service clerks
2 FinTech engineers	2 Bank tellers and related clerks
3 AI and machine learning specialists	3 Data entry clerks
4 Software and applications developers	4 Cashiers and ticket clerks
5 Security management specialists	5 Administrative assistants and executive secretaries
6 Data warehousing specialists	6 Printing and related trades workers
7 Autonomous and electric vehicle specialists	7 Accounting, bookkeeping and payroll clerks
8 UI and UX designers	8 Material-recording and stock-keeping clerks
9 Light truck or delivery services drivers	9 Transportation attendants and conductors
10 Internet of things specialists	10 Door-to-door sales workers, news and street vendors, and related workers
11 Data analysts and scientists	11 Graphic designers
12 Environmental engineers	12 Claims adjusters, examiners and investigators
13 Information security analysts	13 Legal officials
14 DevOps engineers	14 Legal secretaries
15 Renewable energy engineers	15 Telemarketers

In-Demand Skills

"Climate trends are also expected to drive an increased focus on environmental stewardship, which has entered the Future of Jobs Report's list of top 10 fastest growing skills for the first time."


Future of Jobs Report 2025

WORLD ECONOMIC FORUM

Top 10 fastest growing skills by 2030

1. AI and big data
2. Networks and cybersecurity
3. Technological literacy
4. Creative thinking
5. Resilience, flexibility and agility
6. Curiosity and lifelong learning
7. Leadership and social influence
8. Talent management
9. Analytical thinking
10. Environmental stewardship

Cognitive skills Self-efficacy Working with others Management skills Technology skills Ethics

Note: The skills selected by surveyed organizations to be increasing most rapidly in importance by 2030.
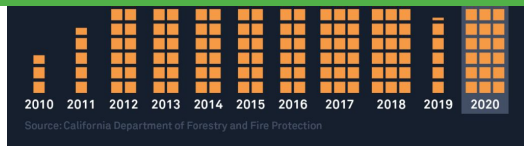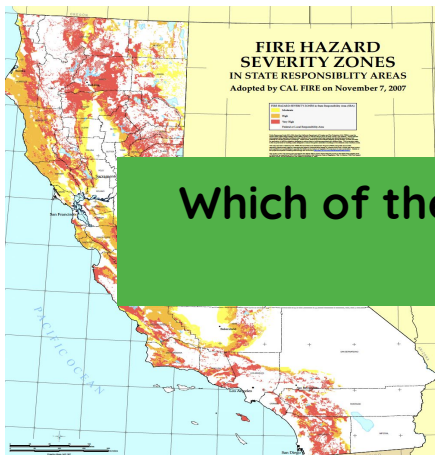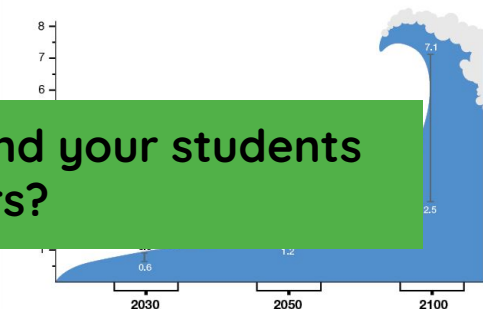**Source:** World Economic Forum. (2025). *Future of Jobs Report 2025.*

Which of these climate-related crises have you and your students experienced during the past 5 years?
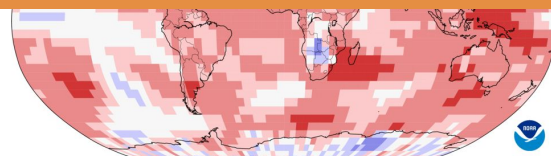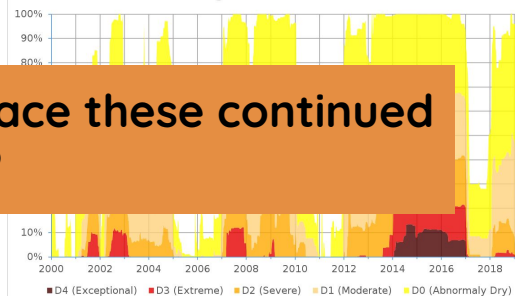
How prepared do you and your students feel to face these continued climate impacts in the future?

Support for Our Students

1. The students I serve have the guidance and resources they need to learn about available green careers.

2. The students I serve have the guidance and resources they need build knowledge, skills, and experience in the green careers they are interested in.

3. The students I serve have the guidance and resources they need to identify the pathways to obtaining a green career.

4. The students I serve have the guidance and resources they need to easily transition to their identified pathway, from high school through to career.

Strongly Disagree	Disagree	Agree	Strongly agree
1	2	3	4

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2024

Call to Action: Educating for a Green Economy

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Call to Action Overview

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The Need

- Environmental systems are under critical pressure

- California policies are creating good green jobs

- Green career education is needed to inform, inspire, and empower students to thrive in green jobs

Part 1:
The Need for Green Career Education

Student at Skyline High School in Oakland working with We Share Solar. Photo by Musiquito Media

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The Vision

- Every job is a climate job

- Equitable access to quality green career information and skills education

- Students and job seekers are empowered to achieve California's climate and economic goals

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The Challenges

- Lack of a Shared Understanding of Priority Green Careers

- Issues with Coordination Among California's Agencies

- Limited Coherent Standards and Pathways

- Unequitable Access to Green Career Education

Which of these challenges do you most relate to?

Part 3:
Challenges of Educating for a Green Economy

Challenge 1: Lack of a Shared Understanding of Priority Green Careers
Challenge 2: Lack of Coordination Across California's Agencies
Challenge 3: Lack of Coherent Standards and Pathways
Challenge 4: Lack of Equitable Access to Green Career Education

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Recommendation 1: Statewide Strategic Planning though Creating a Roadmap

- Establish a convening organization and leader to facilitate the creation of a Green Career Roadmap with an equity-informed lens.

- Gather labor market data that identifies Priority Green Careers.

- Foster statewide collaboration through the Roadmap process

Part 4:
Recommendations for Educating for a Green Economy

Recommendation 1: Statewide Strategic Planning - Phase 1
Recommendation 2: Coordinated Implementation - Phase 2

The following recommendations are designed to facilitate research-based, coordinated, green career education and workforce development that is aligned with statewide industry needs.

Student Engineers Participating in the Municipal Water District of Orange County Water Distribution System Engineering Design Challenge

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Recommendation 2: Coordinated Implementation

- Collaboration at the state and regional level

- Attract & align funding to Priority Green Careers

- Regularly updated labor market research

- Standards and universal environmental literacy

- Teacher recruitment and capacity building, including training and curriculum

- Bridge the gaps in the green career journey

- Statewide green career awareness and student recruitment campaign

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Promising Practice Profiles

What Gives Me Hope

Thurston Middle School
Certification Students

Sustain OC Foundation's
Sustainable Campus Challenge
Finale
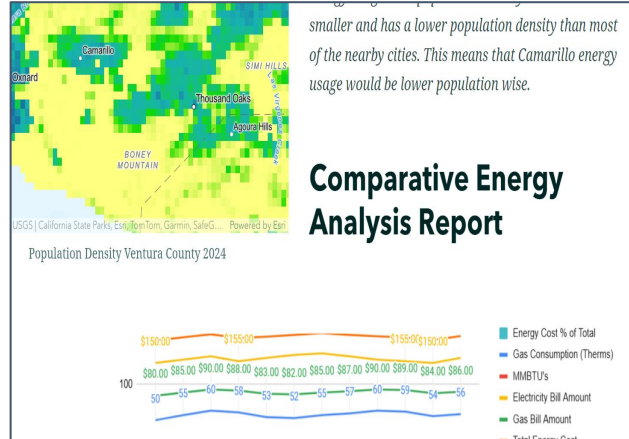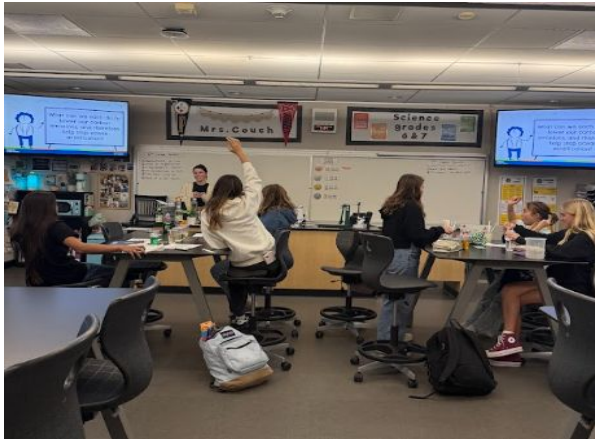
Logan, TEC Cohort 6 Intern

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Resources and Getting Involved

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Call to Action

Educating for a Green Economy

Scan to download the report

Achieving carbon neutrality in California by 2045 will require an estimated four million new green jobs. A roadmap for how we will fill the need and train students for these high-wage, high-growth careers does not currently exist.

The California Environmental Literacy Initiative has developed a call to action report to advocate for the creation of a statewide strategic plan to secure equitable access for TK–16 students to the high-quality green careers essential to a sustainable future.

Learn more about Green Career education and get involved!

Join the CAELI Green Career Education Initiative

- Create equitable access to the high-growth, high-wage green careers essential to creating a sustainable future.

- Facilitate the development of an environmentally-literate workforce by fostering the integration of career and environmental education into TK–16 Career Technical Education and other academic coursework.

- Find new ways to provide all students equitable pathways to high-wage careers, jobs, and trades that support a green economy.

Visit ca-eli.org to learn more

Learning opportunities on the CAELI Partner Portal

The Portal promotes environmental literacy by building educator awareness of community-based partners (CBPs) and their products and services to foster educator-CBP relationships for increased student enrichment and engagement.

By connecting educators with community-based and industry partners who can provide work-based learning and other environmental literacy opportunities, students can build skills and experience in green career pathways.

If you are a community-based or industry partner who offers green career learning opportunities, please add your programs to the Partner Portal today!

Scan to access the Partner Portal

Links to resources

- [The Future of Jobs Report 2025 | World Economic Forum](#)

- [Green Economy Overview for K-12 Educators - Energy, Environment, and Utilities](#)

- [USGBC-CA - Career Center](#) + [Green Schools](#)

- [Architecture Construction & Engineering Students ACES](#)

- [LACI Fellowship Program](#)

- [San Mateo County Office of Education - Middle School Green Career Awareness Modules](#)

Slides: https://bit.ly/DIHGreenCareers

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Links to resources

- WorkforWater.org

- GetintoEnergy.org

- Rising Sun Center for Opportunity

- mwdoc.com/weea

  - Download FREE water and energy career brochures in nine (9) languages

- Green Building Career Map

- Green Workforce Connect

- Career One Stop: Green Careers

- Free Career Pathways Tool

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Links to Resources

- [Center of Excellence for Labor Market Research](#)

- [Facilities Management - ADA Compliant Flyer](#)

- [WLAC Non-Credit Climate Certificates Flyer](#)

- [Energy is Everything](#) a program of [The](#) [Energy Coalition](#)

- [Energy and Environmental Design curriculum](#) a program of [SEI](#)

- [NEED Curriculum Resources](#)

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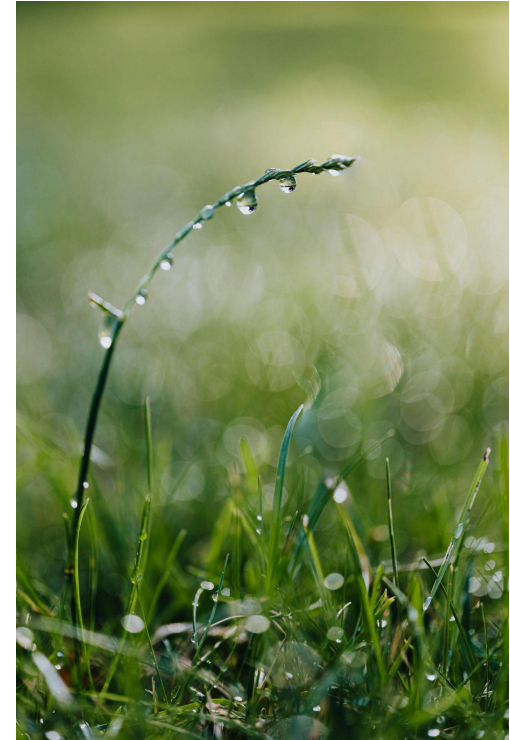
Join the CAELI Newsletter to Get Updates on Sector Specific Webinars

https://ca-eli.org/newsletter-sign-up/

**Watch the recording of our
Energy, Environment and Utilities Webinar.**
CAELI Green Career Webinars on Energy, Environment, and Utilities
Passcode: i==2a+O&

**Register for our next webinar on the
Arts, Media, and Entertainment Sector this July!**
https://bit.ly/greencareerart

Appreciation, Reflection, & Commitment

Take a moment to reflect on today's presentation, and the work still to come:

★ *What is something you appreciate about this work?*

★ *What questions do you still have?*

★ *What is your next step?*

Share one of your thoughts in the chat.

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District Innovation Hub Webinar Closing, Feedback, and Resources

CAELI Webinar Archive

Energy is Everything: From Classroom to Action

Webinars

District Innovation Hub

April 24, 2025

Learn with Green Schoolyards America

Webinars

District Innovation Hub

March 27, 2025

Building Bridges: Sharing Resources, Strengthening Community

Webinars

Community-Based Partner Program Leaders

April 25, 2025

Equitable Hiring and Retention Practices

Webinars

Community-Based Partner Program Leaders

February 5, 2025

The Key to Authentic, Rigorous, and Engaging Learning

Webinars

District Innovation Hub

January 30, 2025

Building Bridges: Sharing Resources, Strengthening Community

Webinars

Community-Based Partners

Community-Based Partner Program Leaders

March 21, 2025

Climate Literacy Principles & Guidelines

Webinars

District Innovation Hub

February 26, 2025

Green Careers in Energy, Environment, and Utilities

Webinars

Green Career Initiative

February 5, 2025

CAELI District Innovation 2022-23 Webinar Series

Webinars

Administrators, Community-Based Partners, Families, Students, Teachers

CAELI County Office of Education (COE) Innovation Hub 2020 Webinar Series

Webinars

Administrators, Community-Based Partners

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District Innovation Webinar Feedback

aframe@tenstrands.org (not shared) Switch account

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Name

Your answer

Organization

Your answer

What did you enjoy, appreciate, or learn from today's meeting?

Your answer

Meeting Feedback & Suggestions Link:

https://forms.gle/X7Y6Kj5iQMFGNKi9A

Contact:

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Partnerships Programs Specialist
pgoncharova@tenstrands.org

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Breakout Rooms

What gives you hope?

- If you have one, tell a good news story:

  - *What gives you hope*? Or…

  - *I do this work because of/for…*

  - *Some examples of student success stories, good green career programs/pathways, resources, industry partners, community-based partners, etc.*

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The Present

Given the imperatives for preparing our youth for a green economy:

1. **Where are our current educational programs on track to support the fulfillment of these commitments?**

2. **Where are the gaps in resources, investments, and methods?**

3. **What supports could you use in the short term to get started/expand programs?**

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The Future

In thinking about an ideal future, what would an optimal educational ecosystem to support green career pathways look like?

What would this look like if we did it right?

What milestones along the way would show we are on the right path?

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Breakout Rooms

1. **What gives you hope?** Sharing stories of success.

2. **The Present:** Challenges & resources

3. **The Future:** Vision for full integration.

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