

# Energy, Environment, and Utilities

## CAELI Green Career Webinar Series

February 2025



CALIFORNIA  
ENVIRONMENTAL  
LITERACY  
INITIATIVE

# Agenda and Moderator Introductions

- **Energy, Environment, and Utilities Sector Overview**
- **Industry Needs and Opportunities**
- **Promising Practice**
- **Q&A with the Panel**
- **Resources & Getting Involved**



**Liz Christy**

*Education Programs Manager*  
US Green Building Council-CA  
[elizabeth@usgbc-ca.org](mailto:elizabeth@usgbc-ca.org)



**Siria Salas**

*Program Manager*  
The Energy Coalition  
[ssalas@energycoalition.org](mailto:ssalas@energycoalition.org)



**Sarah Whiting**

*Client Engagement and Data  
Science Director*  
Ten Strands  
[switing@tenstrands.org](mailto:switing@tenstrands.org)



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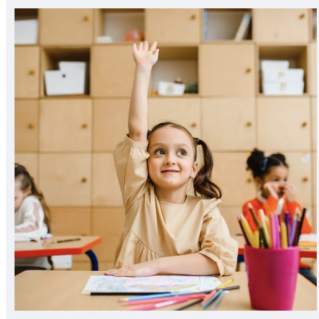
# LA Wildfire Relief and Resources

## Indoor and Outdoor Air Quality on Campus

- USGBC California Cleaner Air Greener Schools Program - Air Quality Sensors, filter replacement, purifiers
- Email [Elizabeth@usgbc-ca.org](mailto:Elizabeth@usgbc-ca.org) if you are in the LA area or enroll on our Green Schools Page.

**Wildfire Defense for Schools**, campus hardening and defensible space maintenance training.

- Wildfire Defense Toolkit



Enroll your class today!

Are you an educator or a school representative? Submit an application to request the introduction of Sustainability Fundamentals at your school!





**LA County Recovers**



# **Disaster Recovery Centers**



**Resource Center for Environmental and  
Climate Action Changemakers in TK-12  
Schools**



**BACKGROUND KNOWLEDGE AND FRAMEWORK RESOURCES FOR TRAUMA  
INFORMED PRACTICES WITH AN ENVIRONMENTAL AND CLIMATE LENS**



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# Upcoming Wildfire Training

Wildfire Defense  
Certificate Training for  
Construction  
Professionals



DATE: February 12, 2025  
TIME: 4:30 PM

[LEARN MORE](#)

Wildfire Defense for  
Landscape Professionals  
Certificate Training



DATE: February 25, 2025  
TIME: 4:30 PM

[LEARN MORE](#)

Capacitación de  
Certificado de Defensa  
contra Incendios para  
Profesionales de la  
Construcción



DATE: March 12, 2025  
TIME: 5:00 PM

[LEARN MORE](#)

Scan here to register:



# Matchmaking

## Matchmaking to Support Green Rebuilding Efforts

The rebuilding process after a wildfire is a collective effort, and your contribution—whether it's a need, resource, or expertise—can make a significant difference. If [your community needs support](#) or you have valuable resources, materials, or knowledge to share, we invite you to fill out the forms on the right. Our goal is to connect those in need with the resources and professionals that can help build more sustainable, resilient communities.



- **Materials**
- **Contractors**
- **Landscape Restoration**
- **Insurance**
- **Temporary Housing**



## What do you or your community need?

Are you in need of resources for your home or community? Fill out [this form](#) to get more information on green rebuilding strategies, wildfire-resistant materials, landscapes, or anything your fire-affected community needs.

## Do you have resources to provide?

## Do you have expertise and knowledge to offer?

Find expertise and support today through our [Professional Directory](#)

# The Green Economy

The term “Green Economy” has been used in many different ways, and includes many different examples. It generally includes themes related to zero carbon, resource efficiency, circular economy and zero waste practices, and a socially inclusive/responsible economy. A simple way to think about the Green Economy is that it is everything we do in the regular economy, but with the integration of environmentally sustainable policies, practices, and design principles.

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:

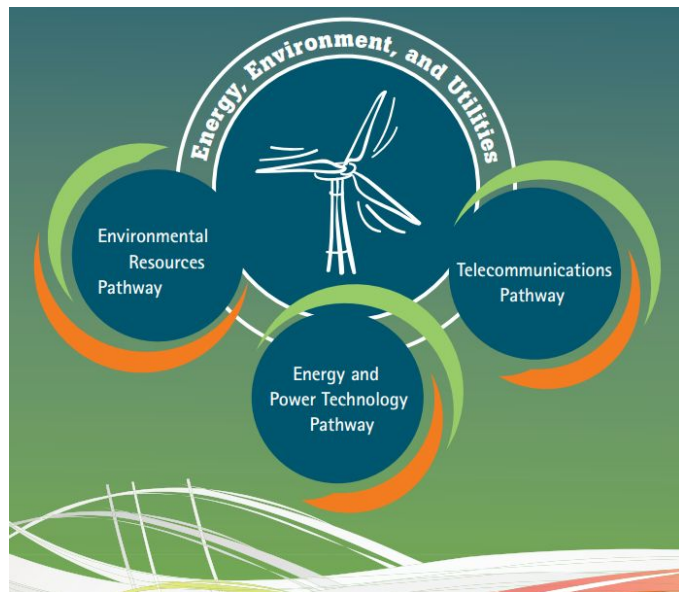
- **Changing Skill Green Occupations:** These fields are adding new tasks or specialty areas because of the demand for green goods and services.
- **Higher Demand Green Occupations:** In these fields, the job duties are not changing but the occupation itself will probably grow because of the increased 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.

We believe that ALL jobs could and should  
be Green Jobs!



# Energy, Environment, and Utilities Sector

- Occupational projections for this sector are expected to generate **~1,434,900 total job openings** between 2018-2028, equating to an average of 143,490 job openings per year.
  - Workers in this sector earn an average annual salary of \$68,357 (source: [Centers of Excellence for Labor Market Research](#))
- The 2024 U.S. Energy and Employment Report shows that the energy workforce overall **added over 250,000 jobs in 2023; 56% of those were in clean energy.**
  - Clean energy employment increased by 142,000 jobs in 2023**, accounting for more than half of new energy sector jobs and growing at a rate more than twice as large as that for the rest of the energy sector and the U.S. economy overall.
  - The construction sector added nearly 90,000 energy jobs, growing 4.5%, almost double the economy-wide construction employment growth of 2.3%.
  - California (545,207), had the greatest number of clean energy jobs.** (Source: Dept of Energy, [DOE Report Shows Clean Energy Jobs Grew at More Than Twice the Rate of Overall U.S. Employment](#) )



[CTE Model Curr Stds: Energy, Envir, & Utils - Standards and Framework \(CA Dept of Education\)](#)



# Call for Environmental Literacy in CTE



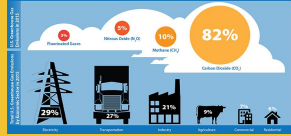
## 12. Understand the **environmental**, social, and economic **impacts of decisions**.

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.

# 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*

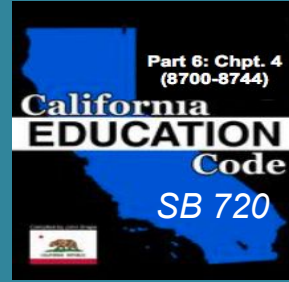
**Zero Waste**  
AB 341 and 1826  
AB 1219 & SB 557  
SB 1383



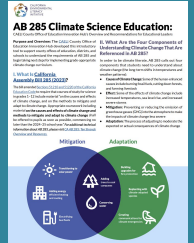
**Water Conservation as  
a Way of Life**  
CA EO B-37-16  
AB 1343 & SB 1413



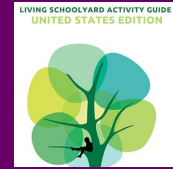
## Curriculum & Instruction



**AB 1548  
and  
AB 285**



## Visionary Guidelines



**ACR 128**



# Panelists



Jessica Clabaugh  
Government Finance Officer  
Borrego Water District



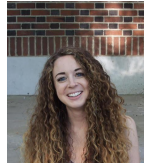
Tiffany Baca  
Executive Director  
Water Energy Education Alliance



Casey Novell  
Program Manager  
The Energy Coalition



Vanessa Shin  
Associate Manager of Community Relations  
Peninsula Clean Energy



Shay Hart  
Workforce Initiatives & Alumni Manager  
Rising Sun Center for Opportunity



Jan Quilantang  
Formal Educator  
Oxnard High School District



Gilbert Blue Feather Rosas  
Director of Sustainability & Adaptation  
Modesto City Schools



Kirk Anne Taylor  
Executive Director  
Climate Action Pathways for  
Schools (CAPS)

# Jessica Clabaugh - Borrego Water District



Jessica Clabaugh is a government finance officer for the Borrego Water District which pumps from one of the first basins to be adjudicated under the Sustainable Groundwater Management Act(SGMA) thru cooperation with all parties pumping water from the basin. Jessica administers a basin-wide Prop 68 Grant implementing groundwater protection projects in a Severely Disadvantaged Community (SDAC) thru cooperation with The Energy Coalition, The Borrego Valley Stewardship Council, Borrego Springs Unified School District, University of California Irvine and the Borrego Springs Watermaster. Jessica earned a BA in Mathematics from SDSU(2004) and completed the educational requirements for a CPA with vast experience in the construction and hospitality industries before being recruited into government finance.



# Tiffany Baca - Water Energy Education Alliance



Tiffany Baca is an award-winning communications strategist recognized for driving initiatives that inspire action. A champion of environmental literacy and workforce development, Tiffany collaborates with California leaders to assure students of all ages have access to impactful learning experiences that prepare them to address larger statewide and global challenges. As Executive Director of the Water Energy Education Alliance, Tiffany leads a unified effort to advance workforce initiatives, ensuring sustainable career pathways to high-quality, in-demand jobs in water and energy.



# Water Energy Education Alliance

*A Bridge Between Employers, Educators, & Workforce*



250+ ORGANIZATIONS STATEWIDE

## EMPLOYERS

Water & Wastewater Providers, Energy  
Providers, Contractors

## EDUCATORS/ADVOCATES

Non-Formal & Formal Education  
K-12, Community Colleges, Universities,  
Trade Schools, & ROPs



RESOURCES



PARTNERSHIPS



DATA &  
INFORMATION



STRATEGIES



Current Employees  
Training & Development



Future Workforce

## Jobs of Today (sample\*)

### Water/Wastewater Treatment Operator

Median Income \$75K    High School Diploma or GED    State Certification

### Power Plant Operator

Median Income \$85K    High School Diploma or GED    State Certification and License

### Water Distribution Operator

Median Income \$65K    High School Diploma or GED    State Certification

### Environmental Compliance Inspector

Median Income \$70K    High School Diploma or GED    State Certification

### Meter Reader

Median Income \$45K    High School Diploma or GED

### Electrician

Median Income \$70K    High School Diploma or GED    State Certification

### Laboratory Technician

Median Income \$65K    Associates/Bachelor's Degree

### Water Resource Specialist

Median Income \$90K    Bachelor's Degree

### Accountant

Median Income \$90K    Bachelor's Degree

### Commercial Diver

Median Income \$50K    High School Diploma or GED    Certification

\*In a 2018 report, Brookings Institute identified **212** water and wastewater occupations



## Jobs of Tomorrow (sample\*)

### Energy Auditor

Median Income \$50K    High School Diploma or GED    Certification

### Cybersecurity Analyst

Median Income \$145K    Bachelor's Degree    Certification

### Communications Specialist

Median Income \$65K    Bachelor's Degree

### Electrical Instrumentation Technologist

Median Income \$70K    High School Diploma or GED

### Recycling Coordinator

Median Income \$50K    High School Diploma or GED

### Environmental Field Technician

Median Income \$50K    High School Diploma or GED

### Geographic Information Systems (GIS) Specialist

Median Income \$70K    Bachelor's Degree

### Wind Turbine Service Technician

Median Income \$60K    Associate's Degree

### Sustainability Engineer

Median Income \$80K    Bachelor's Degree

### Landscape Architect

Median Income \$100K    Bachelor's Degree    Certification

\*In a 2018 report, Brookings Institute identified **212** water and wastewater occupations



## Career Ready **Skills!**

Water and energy workers ensure reliable water and power, supporting and sustaining public health, families, businesses, infrastructure, critical environmental systems, and the economy.



### **Technical Skills**

*Depends on job type. Understanding of cycles, ecological impacts, regulatory compliance, specialized tools, & more.*



### **Analytical & Problem-Solving Skills**

*Critical & systems thinking, data interpretation, risk assessment, technical troubleshooting, & more.*



### **Essential ('soft') Skills**

*Collaboration, communication, teamwork, adaptability, project & time management, & more.*



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According to Gallup, employees who have been through early career exploration programs are **35% more likely to feel connected to their work** and the mission of the company,



# Join Us!

for our next...

Water Energy Education Alliance

# Leadership Roundtable (#20)

**Presenter: Don Jones**

Cuyamaca College Center for Water Studies  
FEB 11, 2025 • 9:00 AM TO 12:00 PM

Register at [mwdoc.com/WEEAmeeting](https://mwdoc.com/WEEAmeeting)

**2024/25 WEEA Sponsors:**



California Environmental Education Foundation | California Community Colleges

# Casey Novell - The Energy Coalition



Casey Novell oversees a team of staff who develop public agency energy projects across multiple regional energy networks. She previously designed and implemented educational outreach campaigns for the Cal Poly Humboldt Office of Sustainability and supported the development of the Bear River Band of Rohnerville Rancheria Tribal Nation's Renewable Energy Sovereignty Master Plan. She has a B.S. in Environmental Science with a concentration in Energy and Climate and a minor in Environmental Ethics from Cal Poly Humboldt.

# Introducing The Energy Coalition (TEC)

## Our “Why?”

TEC’s mission is to empower communities to leap into the future of clean energy.

We envision a future in which communities are energy-producing networks and clean energy is affordable and accessible for everyone.



## What We Do

TEC is creating the building blocks for a new energy economy in which communities become energy-producing networks and clean energy becomes affordable and accessible for everyone.



## How We Do It

A customizable suite of services:



# Vanessa Shin - Peninsula Clean Energy



Vanessa aspires to connect community members with the benefits of clean energy and build relationships with trusted messengers in the community.

She partners with nonprofits, schools, and educational organizations to engage students in local climate solutions.

# Developing Successful Partnerships



- Identify potential partners
- Articulate common goals
- County Office of Education can serve as a bridge





**CALCCA**  
 ADVANCING LOCAL ENERGY CHOICE [cal-cca.org](http://cal-cca.org)

- Serving Customers
- Implementation Plan Filed
- Considering CCA

# Potential partners: community choice energy

- 200+ communities in California
- [Cal-cca.org/cca-map](http://Cal-cca.org/cca-map)

# Jan Quilantang - Oxnard High School District



Jan teaches CTE Pathway courses in the Energy, Environment, Utilities Industry Sector. She also is one of the grant writers and the coordinator for a CA Partnership Academy (Green Technologies Academy or GTech) aligned with this sector. The Academy model includes curriculum focused on a career theme coordinated with academic classes, a team of teachers that work together to plan and implement the program, motivation and work-based learning opportunities, and an advisory board that includes business and post-secondary partners.

Jan has also helped write the Green Ribbon Schools Application for the past 3 years and has introduced her students to the State Seal of Civic Engagement as a way of recognizing their commitment to improving the local environment.



# Green Technologies

## Classroom Preparation

- Energy and Environmental Design
- Sustainable Residential Commercial Construction
- Advanced Energy and Environmental Design
- Technical Cabinetmaking Carpentry

## Real Exposure

- Job Shadow Opportunities
- Professional Internships
- Career Fairs/Science Events
- Visits to Local Engineering/Technology
- College Campus Tours and Energy Companies

## Valuable Training for Exciting Careers

- Energy Technicians
- Water and Wastewater Treatment Plant and System Operators
- Millwrights
- Environmental Science & Protection Technicians
- Wind Turbine Operator
- Geothermal
- Social Service Technicians
- Environmental Restoration Planners
- Construction & Building Inspectors



# Gilbert Blue Feather Rosas - Modesto City Schools



Director of Sustainability & Adaptation since March of 2022. Gilbert is co-chair of World Resource Institute's Electric School Bus Advisory Council, CAELI's District Innovation Hub, as well as Generation180's Sustainable Leaders in Clean Energy Network.

Gilbert has gained national attention with 2 of the fastest Electric School Bus (ESB) deployments in California's history.

His passions are seeking environmental justice for disadvantaged communities through electric school bus transition and by empowering students through Sustainability Initiatives and teaching Green Career choices.



**MODESTO CITY SCHOOLS**  
EVERY STUDENT MATTERS. EVERY MOMENT COUNTS



### Teacher Coordinators

In March 2023, the Board approved funding for "Sustainability Teacher Champions" at all school sites to establish and lead environmental initiatives.

**34**



### Electric School Buses

MCS converted half of its bus fleet to Blue Bird electric school buses and received the final bus of the purchase order in October 2023.

**30**



### Onsite Air Monitors

MCS received 35 Purple Air Monitors in partnership with UC Merced for all campuses and the Transportation Yard. Student engagement projects are underway.

**35**



### Solar Structures

MCS built a solar carport at the Transportation Yard and is constructing solar carports at all 7 high schools. MCS also built 6 Solar Outdoor Learning Classrooms (SOLEs) at 2 elementary, 1 junior high, and 2 high schools.

**14**

## Our collective Why



**2024 California Green Ribbon  
Schools District Awardee!**



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# Kirk Anne Taylor — Climate Action Pathways for Schools (CAPS)



Kirk Anne has led CAPS as Executive Director since 2022, bringing over 25 years of experience in nonprofit management, education, and sustainability. She previously directed community engagement at Ten Strands, supporting the California Environmental Literacy Initiative and overseeing advocacy, communications, and strategic planning. Kirk Anne also led ChangeScale, a cross-sector partnership of 60+ organizations focused on expanding equitable environmental learning in the San Francisco and Monterey Bay Area, and served nearly a decade as the urban conservation manager for The Field Museum in Chicago.

# CAPS IMPACT

CAPS works to:



TRAIN  
+ FUTURE  
SUSTAINABILITY  
PROFESSIONALS

REDUCE  
GREENHOUSE GAS  
EMISSIONS

SAVE \$\$\$  
FOR MONEY  
SCHOOLS

*“Before the internship, I was set on becoming an aerospace engineer and working on rocket design. However, the internship led me to **understand the urgency of green careers**. I decided to go **into the energy industry** and **major in engineering** because of its potential to provide **clean and sustainable power**.”*

~ Victor, Porterville



**AMPLIFY  
YOUTH  
POWER**



**CHAMPION  
CLIMATE  
ACTIONS**



# Shay Hart-Rising Sun Center for Opportunity



Shay works as the Workforce Initiatives Manager for Rising Sun Center for Opportunity, a leading workforce development nonprofit based in Oakland. Shay is part of the Climate Careers Bay Area team where they directly employ youth ages 15-24 from low-income households to provide free in-home energy efficiency services before moving on to a paid climate-related externship. The Externship program began in 2021 and offers direct, paid work experience, paid career exploration and paid professional development. The Climate Careers program operates in the nine Bay Area counties and San Joaquin County, employing 80 youth annually and serving 3,500 households each year.





# Rising Sun Provides Green Career Pathways for Youth

## Summer Green House Call Program- “Earn & Learn”

- Directly employs **youth ages 15-24** from low-income households to provide free in-home energy efficiency services
- **Runs from June 13-August 1st**
- **Paid** work experience, career exploration and professional development
- Employs **80 youth** per year
- Operates in **all nine Bay Area counties and San Joaquin County**
  - **2025 Counties: Alameda, San Mateo, Solano, Marin**

## Externship Program

- Provides Rising Sun **youth and Alumni** with 120 hours of paid work experience with a **host organization** in the **green economy**
- **Runs from August 11th-November 21st**
- Externs are **paid by Rising Sun** at a rate of **\$19.50-\$21.50/hour**
- Externships may be offered in an **in-person, hybrid, or virtual format**



# Externship Program Clean Economy Pathways

## ***Managers & Community Facilitators***

People on this pathway work with government agencies, nonprofits, or community-based organizations to create positive environmental or social impacts. They specialize in connecting with communities and managing projects that drive meaningful change.

## ***Makers & Innovators***

People on this pathway design and produce environmentally friendly products, reduce energy use, or lower greenhouse gas emissions. It also includes entrepreneurs and startups developing innovative solutions to combat climate change and its challenges.

## ***Builders & Movers***

People on this pathway shape and maintain the infrastructure we rely on daily. They construct, repair, and upgrade buildings and transport systems, as well as handle materials and packaging essential to modern life. These individuals play a critical role in reducing emissions and driving the transition to a cleaner economy.

## ***Thinkers & Researchers***

People on this pathway aim to deepen our understanding of climate change and its effects. They observe ecosystems and the species within them (humans included!) to measure impacts and develop innovative solutions for mitigation and adaptation.

# Are you interested in being an Externship Host?

Email Shay at [hart@risingsunopp.org](mailto:hart@risingsunopp.org) to discuss further!



Organization Website:  
<https://risingsunopp.org/>

# Q&A with Panel



# Panelists



Jessica Clabaugh  
Government Finance Officer  
Borrego Water District



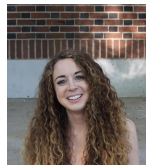
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# Resources and Getting Involved



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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](https://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](#)
- [Architecture Construction & Engineering Students ACES](#)
- [LACI Fellowship Program](#)
- [San Mateo County Office of Education - Middle School Green Career Awareness Modules](#)



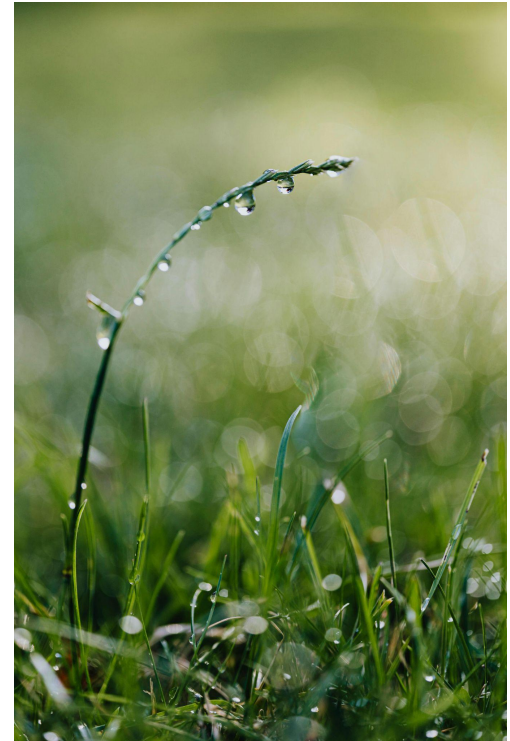
# Links to resources

- [WorkforWater.org](https://www.workforwater.org)
- [GetintoEnergy.org](https://www.getintoenergy.org)
- [Rising Sun Center for Opportunity](https://www.rising-sun-center.org)
- [mwdoc.com/weea](https://www.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](#)



# 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](#)



# Thank you to our community partners who supported this event:

