



CONTRA COSTA COUNTY

AGENDA

Governing Board of the Green Empowerment Zone

Supervisor John Gioia, Chair
Chuck Leonard, Vice Chair
Assemblywoman Lori D. Wilson, Vice Chair

Friday, May 15, 2026 **9:30 AM** **1025 Escobar St. Room 110 Martinez**
1 Harbor Center, Ste. 270 Suisun City
4900 E Montgomery Ave., Richmond
715 P Street, Sacramento
2618 Manchester Ave., San Pablo
4931 Brighton Ave., San Diego

ZOOM LINK

<https://cccounty-us.zoom.us/j/86965123297>

Dial In: 888 758 1310 Webinar ID: 869 6512 3297

Agenda Items: Items may be taken out of order based on the business of the day and preference of the Committee

1. Roll Call and Introductions
2. Public comment on any item under the jurisdiction of the Committee and not on this agenda (speakers may be limited to two minutes).
3. REVIEW and APPROVE the Meeting Record from the March 20, 2026 Meeting [26-2068](#)
Attachments: [3.20.26 Draft GEZ Minutes](#)
4. APPROVE a Letter of Support for Sustainable Aviation Fuel Coalition (SAF) Incentive Package from the Green Empowerment Zone [26-2069](#)
Attachments: [2026.04.03 - Thank You to Gov - SAF Coalition State Budget Ask](#)
5. RECEIVE Presentation from Governor's Office of Business and Economic Development (GO-Biz) on Opportunity Zones 2.0 [26-2070](#)
6. RECEIVE Update from UC Labor Center on Workforce and Community Benefits Research and Policy Discussion [26-2071](#)
Attachments: [GEZ_UCB_CEM_workforce_analysis_5-15-26_share2.pptx](#)

9. The next meeting is currently scheduled for July 17, 2026
10. Adjourn

The Committee will provide reasonable accommodations for persons with disabilities planning to attend the Committee meetings. Contact the staff person listed below at least 72 hours before the meeting. Any disclosable public records related to an open session item on a regular meeting agenda and distributed by the County to a majority of members of the Committee less than 96 hours prior to that meeting are available for public inspection at 1025 Escobar, Martinez, during normal business hours. Staff reports related to items on the agenda are also accessible online at www.contracosta.ca.gov. If the Zoom connection malfunctions for any reason, the meeting may be paused while a fix is attempted. If the connection is not reestablished, the committee will continue the meeting in person without remote access. Public comment may be submitted via electronic mail on agenda items at least one full work day prior to the published meeting time.

For Additional Information Contact:

Alyson (Greenlee) Escarzaga, Economic Development Manager, Alyson.Greenlee@dcd.cccounty.us, 925-655-2783



CONTRA COSTA COUNTY

1025 ESCOBAR STREET
MARTINEZ, CA 94553

Staff Report

File #: 26-2068

Agenda Date: 5/15/2026

Agenda #: 3.

Advisory Board: Governing Board of the Green Empowerment Zone

Subject: Review and Approval of Meeting Record

Presenter: County Staff

Contact: Alyson Greenlee Escarzaga, 925-655-2783

Information:

See the meeting record attached.

Referral History and Update:

This is a standing item of this committee.

Recommendation(s)/Next Step(s):

REVIEW and APPROVE the Meeting Record from March 20, 2026.

Meeting Minutes – Draft
Governing Board of the Green Empowerment Zone (GEZ)

Supervisor John Gioia, Chair
Assemblymember Lori Wilson, Vice Chair
Chuck Leonard, Vice Chair

Friday, March 20, 2026

9:30 AM

**1025 Escobar
Room 110A/B/C
Martinez, CA 94553**

ZOOM:

<https://cccouny-us.zoom.us/j/88323737930>

(888) 278-0254

Conference Code: 841892

1. The public may attend this meeting in person at the above location. The public may also attend this meeting remotely via Zoom or call-in.
2. Agenda Items: Items may be taken out of order based on the business of the day and preference of the Governing Board.

1. Call to Order and Roll Call.

Chair John Gioia called the meeting to order.

2. Public comment on items not on agenda
3. Review and Approve the Meeting Records of the February 13, 2026, Meeting.

There is a quorum to review and approve the Meeting Record from February 13, 2026.

A motion was made to approve February 13, 2026, minutes. All were in favor.

4. Review and Approve the Recommendation to Appoint Shoshanna Wechsler to a Vacant Environmental Justice/Environment Seat on the Green Empowerment Zone Governing Board

A motion was made to approve Shoshanna Wechsler to the Vacant Environmental seat on the GEZ. A second was made. All were in favor.

The previously recommended applicant could not accept the role due to work requirements. Shoshanna gave their thanks to the Board.

5. Review and Approve Recommendations for Green Empowerment Zone Executive Committee Appointments

At the previous GEZ Governing Board meeting it was recommended that Governing Board members state their interest in being on the Executive Committee. The committee would be made up of:

- 3 Local Elected Officials*
- 1 Business Representative*
- 1 Labor Representative*
- 1 Environmental Justice/Community Representative*
- 1 Industry Representative*

Board members were asked to express their interest by February 27, 2026.

A discussion occurred focused on the goal of the executive committee and how it will not supersede the Governing Board concerning decision making going forward.

After considering the goal of broad stakeholder and geographic representation, the officers recommend the following individuals to be appointed to the Executive Committee:

- Elected Officials – Martinez Mayor Brianne Zorn; Richmond Vice-Mayor Doria Robinson; Benicia City Councilmember Kari Birdseye (The officers are recommending that the cities with refineries – Richmond, Benicia and Martinez – be prioritized for representation on the Executive Committee since they are facing the greatest challenges)***
- Business Representative – Mark Orcutt, President/CEO of East Bay Leadership Council*
- Labor Representative – Josh Anijar, Executive Director of Contra Costa Central Labor Council*
- Industry Representative - Tiffany Roberts – Phillips 66, Rodeo*
- Environmental Justice/Community Representative – William Goodwin, Pittsburg*

A motion was made to approve the recommended officers of the Executive Committee. A roll call was completed with Gary Link abstaining. The remaining Governing Board members were in agreement and moved forward with approving the nominations.

6. Receive Update from UC Labor Center on Facility, Site, and Infrastructure Research and Policy Discussions

UC Labor Center presented, Facility, Site, and Infrastructure: Research Update and Policy Discussions

Levers to Develop clean Energy Manufacturing

- *Electric Power*
- *Infrastructure*
- *Facility/Site Development*
- *Access to Capital*
- *Industrial Ecosystem*
- *Workforce*
- *Social Support*
- *Land Use*

Overview of Key Infrastructure Types

- *Power and Energy: Levels of power needed (amperage and watts) as well as amount of energy usage (electric and gas)*
- *Water: Amount and intensity of water use per unit produced. Needs for wastewater and sewage treatment*
- *Transportation: Needs around access to transportation infrastructure (road, rail, port, and air). Truck size needs (Class 7, 8, etc.).*
- *Land and Building: Dimensions of the building itself including height. Size of the overall site needed for laydown, parking, offsets, etc.*

There is a relative lack of high-powered sites currently available in the GEZ. USS Posco Steel and the Valero Refinery are examples of significant redevelopment opportunities. Data centers are continuing to be a huge force in the industrial market. These centers are bringing unprecedented power demands and capital for heavy power sites. New deals and policy approaches to data centers are surfacing rapidly.

Financing and Capital Access

Financing can present itself as grants, loans, tax credits, etc. This will incentivize companies to locate in the GEZ, fund necessary infrastructure, and provide capital to companies in growth stages.

Types of Approaches:

1. Funding to Incentivize locating in the GEZ: Changes or enhancements to current funding programs could benefit GEZ

- *Local Program: GEZ Loan Guarantee Program: Locally sourced funds to provide loan guarantee to stack on top of state provided loan guarantee for projects in the GEZ*

- *“Energy Opportunity” Communities: Define areas that are experiencing or at risk of experiencing impacts from energy transitions and could succeed in clean energy. Use that definition for set asides or prioritization of current state funding programs (ex. CAETFPA)*

2. Financial Hub/Entity/Intermediary: Build financial intermediary or network to distribute, leverage, and attract funds to advance strategies unique to the GEZ/clean energy manufacturing strategy

- *Potential Models: Steel Valley Authority – Appalachian Sustainable Finance Hub; Economic Development Corporations (EDCs); Philadelphia Authority for Industrial Development*
- *Potential Financial Mechanisms/Strategies: Pre-Development Fund, Brownfield Redevelopment, Revolving Loan Fund, Financing Districts, Opportunity Zone Funds, Network with Clean Energy Financing Intermediaries*
- *Potential Fund Sources: Public grants/loans (state, federal), bonds, institutional investors (banks, pension, CRA Funds), impact and philanthropic capital (patient, first loss, recoverable grants), local revenue sources*

Manufacturing Ecosystem

Programs and policies to support clusters of firms in similar industries that can share resources, talent, and infrastructure. This includes firms that supply products and services to manufacturers.

Types of Approaches

1. Consider and include supplier firms in GEZ strategies: Rather than a specific policy, this should be considered across approaches

- *Benefits of Robust Local Supply Chains:*
 - *Increase employment opportunities and economic activity*
 - *Attracts manufacturers to the GEZ*
 - *Boosts manufacture productivity*
 - *Creates a workforce base that multiple firms can draw from*

2. Incubators, innovation campuses: Sector specific programs and sites can be key anchor institutions for clustered economies

Electric Power Rates and Infrastructure

This policy area focuses on the availability (infrastructure) and cost of electric power (rates) – a key input to advanced manufacturing processes

Types of Approaches

1. Ensure local level policies do not slow down power infrastructure build outs: Local level regulations on power infrastructure can increase “Time to power”

- *PG&E alerted us to two types of problematic regulations. Restrictions against pad mounted transformers and undergrounding. Also, excessive requirements*

when upgrading, placing, or replacing poles

2. Power focused Industrial Development” Partnerships between power providers, economic development entities, and developers can lower “time to power” by focusing resources to sites on the grid that are best fit for large loads

- *The GEZ and/or another economic development entity should partner with power providers and the real estate development community to identify places on the grid best suited for heavy power sites.*
- *New large loads on the grid can help bring down rates*

Ports

High quality infrastructure is key to economic development especially for industrial users. In this area, we looked at policy-related infrastructure outside of electric power.

Types of Approaches

1. Investing in and leveraging ports as an asset unique to the GEZ: How can new investments in ports be an important component of industrial development efforts in the region? The GEZ should engage in ongoing, region-wide efforts around shipbuilding and offshore wind.

Procurement

Purchasing of goods and services by public entities using public funds.

Types of Approaches

*1. **Align procurement to incentivize production of key products:** This could either mean prioritizing procurement of products already being produced in the GEZ or provide a market signal for new production.*

*2. **Embed standards to incentivize quality employment in the GEZ:***

Procurement rules can be written such that firms are incentivized to create jobs in the GEZ meeting specific quality standards.

Chair Gioia requested that the UC Labor Center create a document that explains what type of local regulations could create a burden for business and infrastructure expansion.

Interim Report and Recommendations are scheduled to be presented on September 18, 2026.

7. The next meeting is currently scheduled for Friday, May 15 at 9:30 a.m. at 1025 Escobar St, Martinez

8. Adjourn

The date for the next meeting of the Governing Board of the Green Empowerment Zone will be Friday, May 15, 2026.

Chair Gioia adjourned the meeting.



CONTRA COSTA COUNTY

1025 ESCOBAR STREET
MARTINEZ, CA 94553

Staff Report

File #: 26-2069

Agenda Date: 5/15/2026

Agenda #: 4.

Advisory Board: Governing Board of the Green Empowerment Zone

Subject: Support Letter for Sustainable Aviation Fuel

Presenter: County Staff

Contact: Alyson Greenlee Escarzaga, 925-655-2783

Information:

See Attachment.

Referral History and Update:

In the January budget, Governor Gavin Newsom included Sustainable Aviation Fuel Coalition (SAF) incentive package. The attached letter from Contra Costa County was submitted thanking the Governor for including the SAF incentive package in his January budget. The letter aligns with the County's adopted legislative platform, including several platform elements related to just transition, efforts to transition away from leaded aviation fuels, and climate goals.

Recommendation(s)/Next Step(s):

APPROVE a Letter of Support for Sustainable Aviation Fuel Coalition (SAF) Incentive Package from the Green Empowerment Zone.

The Board of Supervisors

County Administration Building
1025 Escobar St., 4th floor
Martinez, California 94553

John Gioia, 1st District
Candace Andersen, 2nd District
Diane Burgis, 3rd District
Ken Carlson, 4th District
Shanelle Scales-Preston, 5th District

Contra Costa County



Monica Nino
Clerk of the Board
and
County Administrator
(925) 655-2075

April 3, 2026

The Honorable Gavin Newsom
Governor of the State of California
State Capitol
Sacramento, CA 95814

RE: Thank You for Including Sustainable Aviation Fuel Incentives in the State Budget

Dear Governor Newsom:

On behalf of the Contra Costa County Board of Supervisors, we extend our sincere appreciation for your leadership in including the Sustainable Aviation Fuel (SAF) incentive package in the proposed State of California budget.

For Contra Costa County, this proposal holds particular significance due to the county's longstanding role as a center of energy production, refining, logistics, and fuel innovation. Our county is home to critical industrial facilities, transportation corridors, and skilled labor that uniquely position Contra Costa to support near-term deployment and scaling of SAF production and distribution. Leveraging these existing assets allows California to accelerate decarbonization while maintaining energy reliability and operational efficiency.

The SAF incentive package recognizes the importance of utilizing existing infrastructure—including advanced refining capabilities, rail and marine terminals, and connections to major aviation markets—to support the transition to lower-carbon fuels. These incentives provide a practical pathway to repurpose and modernize facilities in a manner that is both environmentally responsible and economically sound.

Importantly, SAF represents one of the most viable strategies for reducing emissions from the aviation sector, where alternatives are limited. The inclusion of this incentive in the state budget sends a strong signal that California is committed to scalable, technology-driven solutions that deliver measurable emissions reductions while protecting the integrity of the state's energy system.

As the budget advances through the legislative process, the Contra Costa County Board of Supervisors strongly hopes that this SAF incentive package will continue to receive consideration and ultimately be enacted. We stand ready to work collaboratively with your administration and legislative partners to support implementation efforts that advance California's climate objectives and maximize benefits for local communities.

Thank you for your continued leadership and commitment to innovation, sustainability, and responsible energy policy.

Sincerely,



DIANE BURGIS

Chair, Board of Supervisors

cc: Honorable Members, Contra Costa County Board of Supervisors
Monica Nino, County Administrator
Michelle Rubalcava & Geoff Neill, Nielsen Merksamer



CONTRA COSTA COUNTY

1025 ESCOBAR STREET
MARTINEZ, CA 94553

Staff Report

File #: 26-2070

Agenda Date: 5/15/2026

Agenda #: 5.

Advisory Board: Governing Board of the Green Empowerment Zone

Subject: Opportunity Zones 2.0

Presenter: Brian Coleman, Governor's Office of Business and Economic Development (GO-Biz)

Contact: (916) 716-4127

Information:

This is a verbal presentation.

Referral History and Update:

The Governing Board of the Green Empowerment Zone was notified at its last meeting on March 20, 2026, that the State of California would be releasing more information in the coming weeks/months on the process for being selected as an Opportunity Zone region.

On April 6, 2026, the U.S. Department of the Treasury and Internal Revenue Service provided guidance to States for nominating census tracts as qualified opportunity zones under the One, Big, Beautiful Bill:

<https://www.irs.gov/newsroom/treasury-irs-provide-guidance-to-states-for-nominating-census-tracts-as-qualified-opportunity-zones-under-the-one-big-beautiful-bill>

At its last meeting on March 20, 2026, the Governing Board of the Green Empowerment Zone received an update from the UC Labor Center that included this map from the U.S. Department of Treasury of eligible Opportunity Zone Areas:

<https://www.policymap.com/embed/widget/12163/DNAOEK4MOFUIAGJCCEX7MVRX9IRWBIKG>.

Recommendation(s)/Next Step(s):

RECEIVE Presentation from Governor's Office of Business and Economic Development (GO-Biz) on Opportunity Zones 2.0.



CONTRA COSTA COUNTY

1025 ESCOBAR STREET
MARTINEZ, CA 94553

Staff Report

File #: 26-2071

Agenda Date: 5/15/2026

Agenda #: 6.

Advisory Board: Governing Board of the Green Empowerment Zone
Subject: Update on Workforce and Community Benefits Research and Policy Discussion
Presenter: Jessie HF Hammerling, UC Labor Center
Contact: jesshf@berkeley.edu <<mailto:jesshf@berkeley.edu>>

Information:

The presentation is attached.

Referral History and Update:

On September 12, 2023, the Board of Supervisors of Contra Costa County authorized an agreement with the Governor's Office of Business and Economic Development (GO-Biz) in an amount not to exceed \$5,000,000 to be used to provide administrative and other support services for the Green Empowerment Zone consistent with State legislation AB 179, the Budget Act of 2022. The term of this Agreement is July 1, 2023 - June 30, 2026. The Governing Board of the Green Empowerment Zone had its first meeting on December 7, 2023.

On December 7, 2023, the Green Empowerment Zone Governing Board received an informational presentation from the UC Berkeley Labor Research Center on a proposal of research to inform planning for the Green Empowerment Zone. Pursuant to the Green Empowerment Zone legislation, AB844 (Grayson), the duties of the Green Empowerment Zone include to partner with the University of California, the California State University, community colleges, and the state's other research and educational institutions, as well as private foundations, to provide guidance, advice, and encouragement in support of studies of particular interest and importance to the energy industry in the Northern Waterfront area of the County of Contra Costa. The UC Berkeley Labor Center refined its proposed concept to focus on developing a high road strategy for the clean energy sector. This refined concept represented an example of research to inform planning for the Green Empowerment Zone that the GEZ Board might wish to consider before strategic planning can be completed.

On February 16, 2024, the Board provided direction to staff to provide an invitation to develop a detailed proposal and to bring a full proposal back to the GEZ Board for consideration. Staff has met with the UC Labor Center five times, working in detail to flesh out the scope of work that resulted in a full draft proposal with the following three strategies:

1. Foundational research to shape clean energy manufacturing priorities and high road growth strategies.
2. Stakeholder engagement and technical assistance to identify opportunities to support high road clean energy manufacturing growth and identify barriers to growth.
3. Policy recommendations to support additional high road clean energy manufacturing growth in the GEZ.

At its April 19, 2024, meeting, the Governing Board of the GEZ received a presentation on the full and detailed proposal from the UC Berkeley Labor Center to consider recommending the Board of Supervisors enter a \$2 million, 3-Year contract to retain UC Berkeley Labor Center to conduct foundational research, to support

stakeholder engagement and technical assistance, and to make policy recommendations to support the Green Empowerment Zone. The GEZ Governing Board directed County staff to negotiate a contract with the University for this scope of service and seek approval from the Board of Supervisors to execute the contract. The Board of Supervisors approved and authorized the Department of Conservation & Development to execute a contract with the UC Berkeley Labor Center on August 8, 2024. The implementation of this contract requires the collaboration of various entities to be successful, including an economic development working group. It also requires biannual (or as needed) reporting to the GEZ Governing Board.

At its January 17, 2025, meeting, the Governing Board of the GEZ received an update on the economic development research and stakeholder engagement to support a high-road clean energy manufacturing strategy for the GEZ. At its March 31, 2025, meeting, the Governing Board of the GEZ received an update on the Just Transition Economic Development Framework and the Green Empowerment Zone Priority Technology Research. At its September 19, 2025, meeting, the Governing Board of the GEZ received an update on Technology Research and Stakeholder Engagement. At its February 13, 2026 meeting, the Governing Board of the GEZ received an update on the 2026 Research Workplan for the Green Empowerment Zone. At its March 20, 2026 meeting the Governing Board of the GEZ received an update on Facility, Site, and Infrastructure Research and Policy Discussions.

Recommendation(s)/Next Step(s):

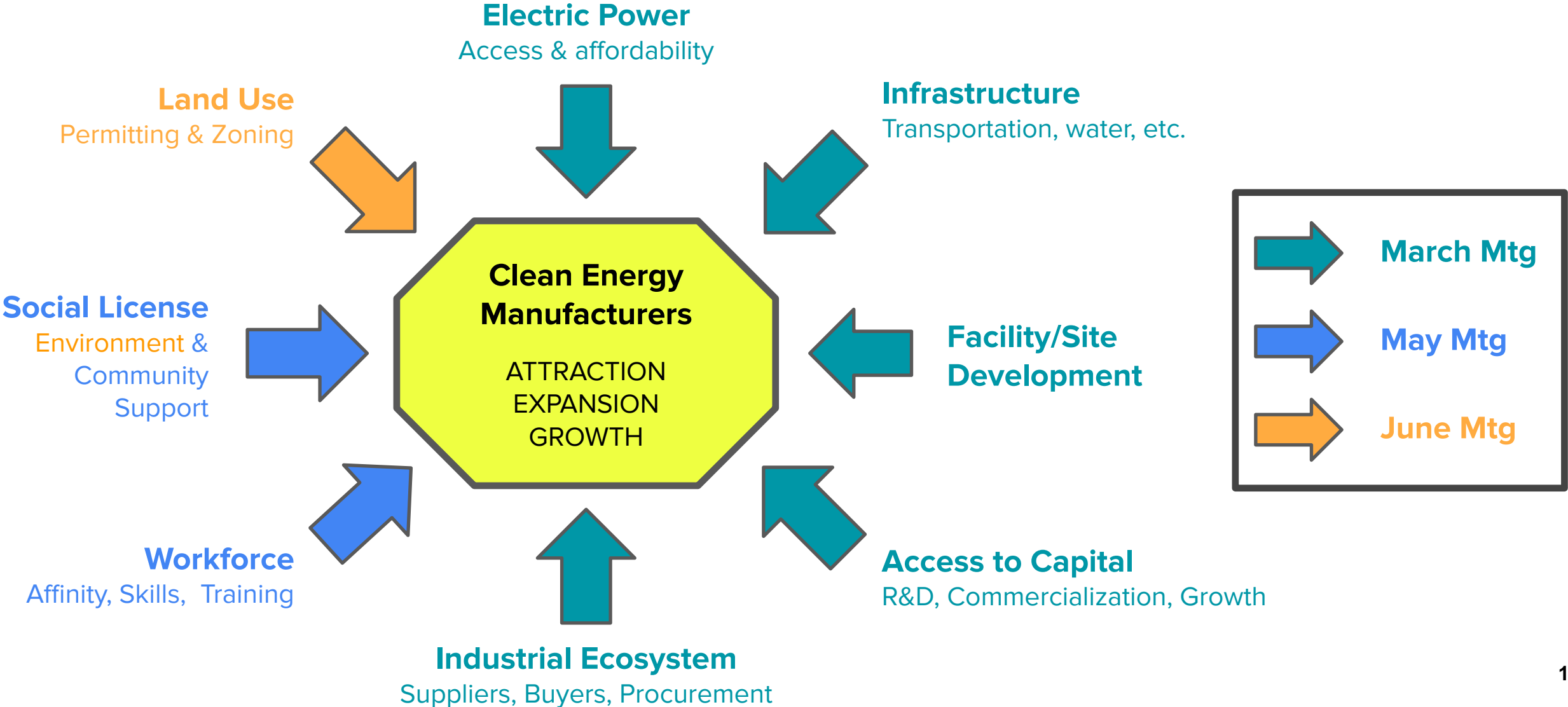
RECEIVE Update from UC Labor Center on Workforce and Community Benefits and Policy Discussion.

Workforce and Community Benefits: Research Update and Policy Discussion

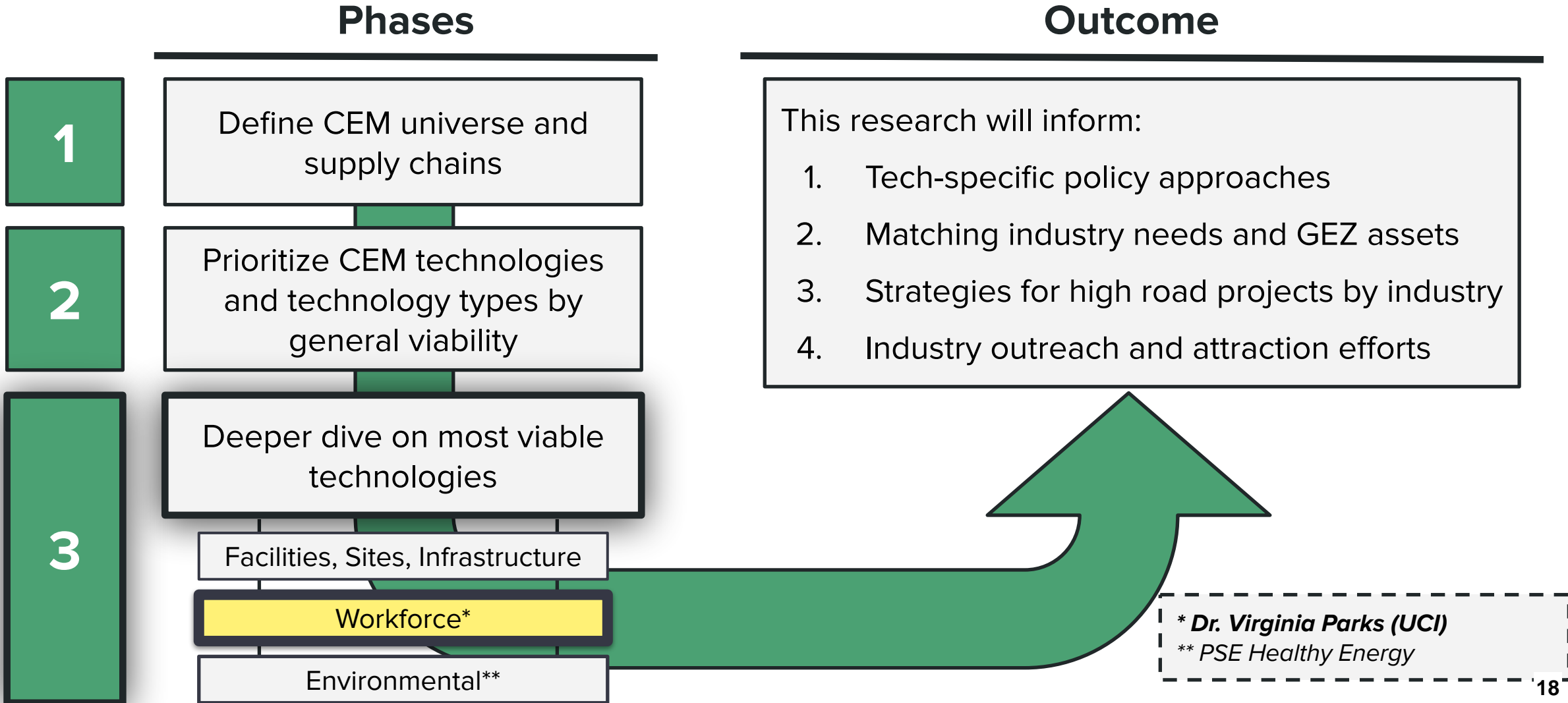
GEZ Board Meeting - 5/15/26

UC Berkeley Labor Center (UCB LC) and UC Irvine (UCI)

Levers to develop clean energy manufacturing in GEZ



Refresh: Technology research process and outcomes



Plan for today

1

**Technology
Research**

**CEM Workforce Analysis:
Challenges and Opportunities**

2

**Policy
Discussion**

- 1. Workforce Strategies**
- 2. Community Benefits**

Context: Bay Area Manufacturing Labor Market

Bay Area Manufacturing Overview

- Manufacturing employs over 300,000 workers in the Bay Area
- Manufacturing is the 6th largest industry in terms of employment in the Bay Area.
- It is a diverse sector in terms of types of production, ranging from food and beverage to pharmaceuticals to electronics and vehicles.
 - Many of these production processes are very well-aligned with clean energy manufacturing.
- The workforce is diverse: half foreign-born, 3 out of 10 are women.
- Just under half of the jobs that don't typically require a 4-year degree for entry.
- There is room for improvement and innovation – improve job quality and increase productivity

Manufacturing wages vary by subsector

| Manufacturing subsector | Blue-collar production jobs: median hourly wage | Blue-collar production jobs: 75th percentile wage |
|--------------------------------------|--|--|
| Textile Mills & Product Mills | \$18.70 | \$24.00 |
| Wood Product | \$21.40 | \$30.60 |
| Electrical Equipment, Appliance, etc | \$22.90 | \$32.40 |
| Printing and related support | \$23.20 | \$32.70 |
| Machinery | \$23.80 | \$34.60 |
| Beverage and Tobacco | \$24.50 | \$33.90 |
| Primary & Fabricated Metal | \$25.40 | \$34.20 |
| Nonmetallic Mineral | \$25.50 | \$38.60 |
| Transportation Equipment | \$26.00 | \$38.10 |
| Computer and Electronic Product | \$26.50 | \$37.80 |
| Chemical | \$30.30 | \$48.90 |
| Petroleum and Coal | \$48.60 | \$62.40 |

**Bay Area
wages*

Union Density (Coverage and Membership), Manufacturing, California, 1983-2024

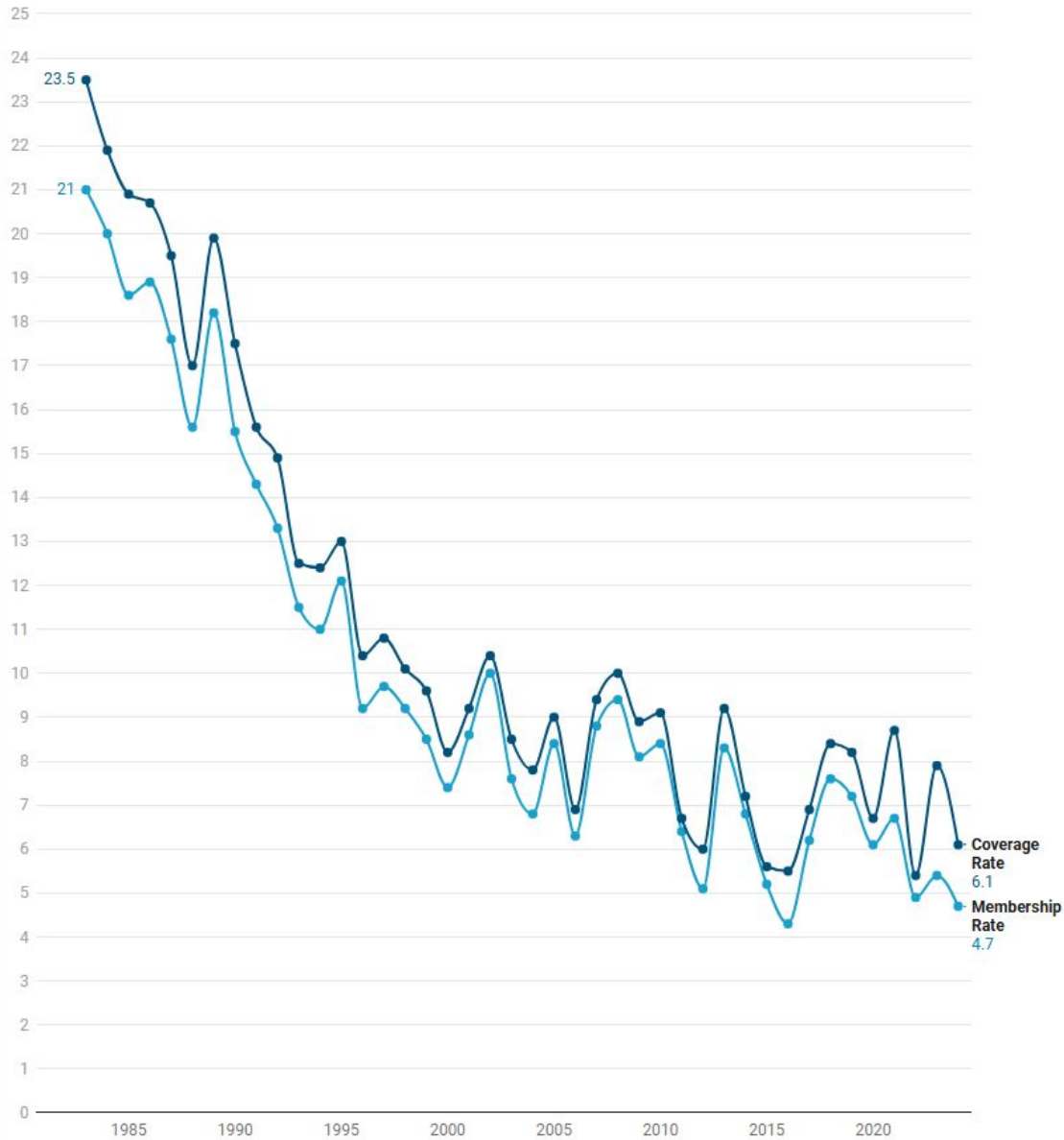


Chart: UC Berkeley Labor Center • Source: Hirsch, Macpherson, and Even (2026) • Get the data • Created with Datawrapper

Union density in California manufacturing has declined significantly in recent decades — over 20% in the 1980s to around 5% now.

CEM Technology Workforce Analysis

Prepared by Dr. Virginia Parks

UC Irvine, Department of Urban Planning & Public Policy

CEM Technology Workforce Analysis

Aims

- Document what kinds of jobs exist in CEM
- Describe occupations and skills
- Gather information about job quality, including wages and benefits
- Explore connections to workforce development system

Study Design

- 30 interviews with CEM firms
- Weighted toward firms with operations in CA; includes non-CA firms
- 6 interviews with local workforce development practitioners
- BLS data, O*NET, academic literature

Firm Types

1. **Start-ups:** Developing prototype product; strong R&D focus
2. **Transitional firms:** Taking prototype to market; continuing R&D
3. **Manufacturing-to-scale firms:** Full production and delivery to downstream vendors (e.g., OEMs)

Key takeaway:

Bay Area has all three firm types. There is an additional draw for start-ups and transitional firms to locate, stay, and expand manufacturing operations in the Bay Area.

CEM Firm Interviews: Occupations & Skills

Workforce composition varies across firm types:

Start-ups:

- PhD Engineers and Technicians comprise largest share of workforce
- Descriptions of technicians: engineering technicians, electrical/electronic technicians, mechanical technicians, maintenance technicians, production technicians, “skilled technicians”

Transitional firms:

- “Operators” and “Production Techs” make up an increasingly larger share of workforce
- More specialized technician positions remain important

Manufacturing-to-scale firms:

- Production assembly jobs comprise largest share of workforce

Key takeaway:

Among manufacturing jobs that don't require a college degree, assembly production jobs predominate along with a smaller, but significant, number of technician jobs. Technician jobs are especially important for start-ups and transitional firms, and often cited as a reason for firms to remain in the Bay Area.

CEM Firm Interviews: Technician Skills

GENERAL SKILLS

Mechanical skills/aptitude
Machine awareness (CNC, robotics, lathes)
Facility with hand tools
Safety protocol
Reading blueprints, schematics, manuals
Hands-on detailed work
Hands-on problem solving
Ability to communicate about
mechanical/production process
Soft skills: shift work, team work, work ethic

Past production experience: strong proxy for
needed skills
Multi-skills preferred

SPECIALIZED SKILLS (CERTAIN TECH)

Precision machinery
PLC systems
Safety, i.e., flammables, heat, pressure
Wiring
Measuring: micrometer, calipers, other tools
Testing: tensile strength, metering equipment
Clean room
Chemicals: follow instructions exactly,
containment
Handling powders
High voltage
Confined spaces, hoisting, climbing

CEM Firm Interviews: Assembly Skills

GENERAL SKILLS

Mechanical awareness

Hands-on detailed work

Attention to detail

Follows directions

Safety protocol

Some firms desire more mechanical skills for assembly workers

Soft skills: understands culture of shift schedules, team work, work ethic

Past production experience: proxy for skills and “trainability”

CEM Firm Interviews: Wages & Benefits

Wages

- Firms reported wages of production floor workers in “mid \$20’s” with starting wages of \$20 - \$24/hour
- Some firms reported specialized technician positions with wages in the \$30 - \$40 range

Benefits

- All firms offered health insurance plus vision and dental
- Nearly all reported comprehensive benefits packages including retirement, paid sick leave, paid vacation
- Start-up firms stressed employee stock-option plans

CEM Firm Interviews: Wages & Benefits (2)

Key takeaways:

- Production wages are modest, and lowest for assembly positions. Based on interviews, entry-level technician wages are not much higher.
- Labor market data on median wages for technicians in the Bay Area manufacturing sector suggests possible pathways for advancement. Start-ups and R&D-focused firms may be willing to pay more to retain highly skilled technicians.
- Identified CEM jobs fall well below wage, benefit, and quality standards of unionized refinery production jobs.

CEM Firm Interviews: Recruitment

- Firms reported minimal difficulty filling positions
- Local industrial base supplies workers that match firms' skills needs
 - Bay Area firms had hires from refineries, Tesla
 - Firms outside of Bay Area credited former presence of aerospace
- A few firms outside of CA recruit from community colleges
- Startups in CA largely unfamiliar with community colleges, apprenticeships, or other training providers

Key takeaways:

- Firms located in regions with a strong manufacturing base reported few problems recruiting workers indicating a strong industrial skills alignment between CEM firms and other manufacturing activity, such as refineries.
- CEM firms, especially start-ups, lack knowledge of local workforce development system and how to utilize it for recruitment purposes.

CEM Firm Interviews: Training

- All firms do some form of in-house training, primarily OTJ; a few cases of more intentional programs or “apprenticeships”
- Firms stress importance of “trainability”
- Start-ups and transitional CEM firms in CA largely unfamiliar with community colleges, apprenticeships, or other training providers
- These firms open to partnerships but don’t know where to start and have limited time/resources to “explore”

Key takeaways:

- Firms rely upon prior experience and training of workers in local labor market; in-house training depends upon it.
- Firms expressed anxiety about continued access to skilled workers and resource-intensiveness of adequate in-house training. They are open to partnerships that address these concerns.

Local Workforce Development System

Robust and multifaceted but also fragmented and opaque

- Community college system is big: 28 schools, many programs
- Existence of established labor training programs and labor-management partnerships
- Several workforce boards
- Can be difficult for firms, especially new ones, to find and navigate

Workforce system challenges:

- Rigid funding mechanisms discourage or disallow innovative programs
- Tension between “responsiveness” of workforce system and “fickleness” of firms

CEM Technology Workforce Analysis: Conclusions

- CEM industry is located in Bay Area and growing.
- Workforce is a major attraction for all firm types—firms want to stay here, expand here, and move here to access workforce.

BUT...

- Intervention is needed to retain skilled workers, especially displaced workers.
- Intervention is needed to skill new workers and build pathways into jobs, especially for disadvantaged and young workers.
- Intervention is needed to improve quality of blue collar production jobs by raising wages, building a pathway to unionization, and protecting worker safety and health.

CEM Technology Workforce Analysis: Conclusions (2)

- Opportunity to leverage and refine the region's robust workforce development system
 - Raise visibility and increase outreach to start-ups and relocating firms
 - Consolidate program information across skills sets—give firms and workers a clear map and help them navigate
 - Develop labor-management partnerships at the firm and sector levels as a bridge between workers, firms, and training programs
- Opportunity to leverage and expand existing funding for displaced workers (WIOA, DOGWF) and refine programming based on research and local experience (e.g. Marathon worker survey)
 - Certify skills; income supports; targeted re-skilling, not extensive training

Policy Research:

Building a High Road Advantage

Workforce Transition Policy

Strategic Foundation: Just transition programs succeed by **combining worker supports** (income, benefits, training) with **place-based investments** to create credible alternative employment.

Planning & Governance

Outcomes depend on **advance planning** and **local governance capacity**.

It is not merely about whether training dollars exist, but if replacement jobs **match wages and identity**.

Income & Training Synergy

Wage Replacement is a critical complement to training.

Training works best when workers can afford to complete it and income support **prevents forced early exit**.

The "Destination Lens"

Connect payments to evidence of **job placement and wage outcomes** rather than simple enrollment.

Ensure training leads to a specific **economic destination** for the community.

A Strategic Framework for High-Road Excellence

**Job Quality,
Job Access, &
Community
Benefits**

1. Condition Incentives on Job Quality Standards
2. Reduce Barriers to Job Access
3. Adopt a Community Benefits Ordinance

**GEZ High
Road
Competitive
Advantage**

1. Fund Training for Sectors, not Individual Firms
2. Tripartite Workforce Planning
3. Improve GEZ Firm Productivity

GEZ Must Overcome a Deep Structural Problem to Realize High Road Advantage

The Structural Problem

The U.S. labor market is overly optimized for **short-term flexibility** — a model that drives R&D and sustains innovation but systematically **undermines manufacturing productivity**.

The High Road Strategic Mandate

GEZ must design structural incentives to promote stable, high-wage careers through **collective bargaining agreements, skill mastery**, and work organization of firms to **capture productivity benefits**.



Capturing and sustaining a High Road Advantage will be essential for success in globally-competitive markets

Workforce Training vs. Work Organization

Workforce Training

Systematic development of workers' job-specific skills and knowledge through structured instruction or apprenticeship.

Work Organization

How tasks and responsibilities are structured: who does what, team configurations, and production process design.

Empirical BLS Research (2025): Productivity is driven by how skills are **deployed and organized** at the establishment level. This is especially pronounced in **high-tech manufacturing** sectors: the strongest productivity advantages accrue to the firms deploying workers in more comprehensive, less routinized roles.

GEZ Takeaway: Training Alone is Insufficient

Policy that only delivers training without addressing firm organization will **systematically underperform**.
GEZ should both provide support for **Skill Mastery** and Technical Assistance for **High Road Business Models**

What Does Task Bundling Look Like in Manufacturing?

Low Bundling

(Narrow, Taylorist)

A line worker who only performs routine manual tasks – feeding a machine, moving parts, repetitive assembly. One task category, narrow role.

Higher Bundling

Routine manual + nonroutine manual + analytical

A production worker who operates equipment *and* troubleshoots malfunctions *and* monitors quality *and* communicates problems to engineers.

Even Higher Bundling

Adds nonroutine interpersonal skills

A skilled trades worker or lead technician who diagnoses problems, trains workers, and interfaces with management on workflow.

Key Impact on Productivity

Even Higher Bundling of Tasks into Occupations leads to **higher productivity**, especially in high-tech manufacturing. This is **what unions help with**— work organization and training – and why they are so valuable for firms seeking to scale production. Unions also structure the **sharing with workers the benefits** of higher productivity.

Advanced Manufacturing: Battery Cell Manufacturing

A partial success and a warning

- While it's possible to improve productivity with training and workplace culture, sustained productivity requires baking high road practices – including labor agreements – into the underlying business model.
- Improved productivity is fragile, unless the benefits are shared with workers in the form of higher wages and solidified through collective bargaining agreements.



United Steelworkers Improve Productivity and Growth at Eos

“These are the jobs of the future,” said Hall. “And they are good, union jobs.” – USW District 10 Director [Bernie Hall](#)

Eos CEO Joe Mastrangelo **credited the facility’s union** workforce with improving the work environment at the facility. “The Steelworkers have been a great partner to us, **helping us grow** and become more professional.”

“Being part of this whole thing basically intrigued me and interested me and made me want to continue on. Everything was new. **Everybody was learning something,**” she said of her early days at Eos, recalling the **input she and other front-line workers** had into company processes.



Manufacturing Union Training Programs



United Auto Workers



United Steelworkers



International Brotherhood of Electrical Workers



Sheet Metal, Air, Rail and Transportation



Partnership for Advanced Manufacturing Apprenticeship
AFL-CIO



Machinists Institute

U.S. Manufacturing: The Race to the Bottom

The Labor Gap

Manufacturers often cite a shortage of workers as a primary challenge.

The actual diagnosis:

The inability to find workers at the **wages and work conditions** currently being offered.

The Productivity Pivot

With thin margins, simply raising wages is often not viable for business survival.

The necessary shift:

Firms must **transform business models** and aggressively improve productivity to remain competitive.

Equitable Distribution

Increased profitability doesn't automatically reach the workforce.

The critical mechanism:

Collective bargaining agreements are the essential key to sustaining productivity and ensuring benefits are shared with workers.

Step 1. Set a Floor for Labor and Community Standards

Job Quality

Incentives should be tied to fair labor practices:

- Prevailing wage (construction) or high wages (75th-90th percentile for manufacturing) + benefits
- Investments in apprenticeship or training;
- Health and safety
- Labor agreements, labor peace, or neutrality/card check commitment.

Access to Opportunity

Opportunities afforded for local and disadvantaged residents and small businesses to access jobs and contracting opportunities:

- Pre-apprenticeship partnerships
- Targeted recruitment
- Training with supportive services
- Supplier diversity goals

Community Benefits

Adopt a Community Benefits Ordinance so that GEZ projects address concerns and priorities, eg:

- Affordable housing contributions
- Environmental mitigation (air quality, emissions, etc.)
- Infrastructure or community facility funding
- Labor standards/training

Step 2. Build a High Road Advantage

Sector Strategies

Focus **training sectorally**, leading to **transferable, industry-recognized credentials** that support regional competitiveness and success.

Tripartite Collaboration

Coordinated tripartite **industry-labor-government collaboration** is valuable for mapping **employer needs** to training pathways and occupations that support **worker advancement**.

Ex. DOE Battery Workforce Initiative

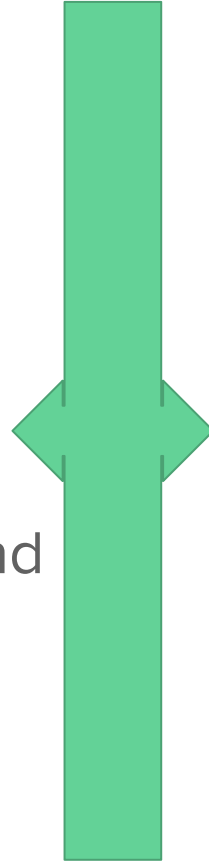
Innovation Support

Support for individual firms may be needed to **reduce risks of innovation** and **enhance productivity** — for example, high-road training pilots, worker-augmenting technology, or new apprenticeships; not basic training.

Use Carrots... and More Carrots for High Road Outcomes

Incentives with Conditions

- Conditional entitlements (zoning, permits, approvals)
- Development agreements and infrastructure financing
- Streamlined review processes for projects
- Explicit integration into planning and permitting frameworks
- Training Funds



Support for Success

- Independent oversight or joint governance body for accountability
- Transparent performance tracking
- Technical assistance for high road firms around work organization
- Tripartite work organization and training planning
- Technical assistance for Community Benefits Agreements

Set the standards, provide robust incentives, align institutional resources to make it work

Workforce Models: Initiatives for Manufacturing

- 1 Community Colleges** South Carolina / Georgia (LPTC) vs NY
- 2 Industry Consortium** Michigan / Ohio
- 3 Intermediary & Financial Mandate** Australia / UK / Wisconsin
- 4 Conditioned Tax Incentive or Other Public Funding** Inflation Reduction Act/CHIPS/Infrastructure Investment & Jobs Act
- 5 Labor-Management Training Partnerships; Apprenticeship; OJT** Japan / South Korea / Germany US Labor-Management Training Partnerships / CA High Road Training Partnerships
- 6 Tripartite Sector Strategies** France / US Battery Workforce Initiative
- 7 High Road Alignment** GEZ!

Implementation Strategy

Results

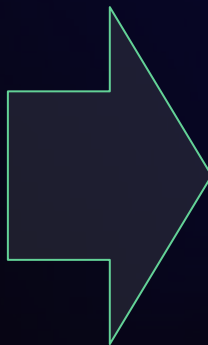
1 CEM Targeted Attraction Strategy

2 Dislocated Worker Supports

3 Broad Incentives with Labor & Community Conditions

4 Train for Higher Productivity

5 Workforce System Alignment



Local Job Retention & Creation

Higher Wage Jobs & Career Pathways

Manufacturing Innovation Cycle

Higher Productivity & Profitability

Continuous Process Improvements

Shared Prosperity & Economic Resilience

Can the GEZ Compete in Globally-Competitive Clean Energy Manufacturing?

Yes! If you are deliberate and strategic.

GEZ and surrounding area has research institutions, innovative firms, and the workforce potential to compete.

High-Road manufacturing model isn't just appealing, it's productivity-enhancing... the secret to success

GEZ needs coherence, alignment, and commitment between incentives, permitting, coordination, workforce training, as well as with broader policy.

GEZ must set the stage for high-road manufacturing by developing and incentivizing training for skill mastery and high road work organization models.



EPA Community Benefits Calculator

Evaluating Green Empowerment Zone (GEZ) Projects for Public Investment

Financial Impact

Estimates the net financial cost or gain of a project relative to the investment of public money.

Risk Assessment

Provides a high-level assessment of financial risk associated with the project development.

Strategic Alignment

Evaluates how well a proposed project aligns with specific community-defined goals and priorities.

Target Audience: Designed for local policy makers deciding on public funding and incentives for community-beneficial investment.

Community Benefits Ordinance Hub

What is a Community Benefits Ordinance?

- A law passed by a city council. It applies to all qualifying projects going forward
- Creates a binding, enforceable floor for corporate accountability
- Applies to future projects, not just the one that triggered it
- Can mandate revenue sharing, community advisory boards, hiring preferences, and environmental standards
- Much harder for corporations to walk away from once it is law
- Sets a precedent that protects communities even when political leadership changes

Target Audience: Designed for advocates but useful for policy makers



Includes:
Example ordinance language, community education guide, advisory board setup, and more

Questions and Discussion