UC Berkeley
Decarbonization Study Supplement
Executive Summary

Living Lab

Equity

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Net Zero Planning

Prepared by JLL + inclusive

For UC Berkeley's Office of Sustainability
and the Facilities Services Department

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Executive Summary

The University of California, Berkeley has conducted a State-funded decarbonization study to identify what it will take to eliminate 90% of the emissions from the combustion of fossil fuels on campus. As part of the funding for the study, UC Berkeley has been asked to identify living lab opportunities and climate justice and equity considerations related to the transition of campus energy systems to fossil fuel free and propose solutions or next steps to identify solutions.

JLL and Inclusiv's scope of work for the UC Berkeley Decarbonization Study Support is comprised of four key areas: living lab, equity indicators, just transition, and net zero planning. We began with a document review of relevant efforts, policies and reports and then worked closely with UC Berkeley's leaders and faculty, staff, and student stakeholders to develop considerations for each area. We did this through interviews, focus sessions, workshops, and analysis of existing frameworks and best practices.

Living Lab

Living labs provide opportunities for students, faculty, staff and partners to work together in finding practical applications to real-world problems and to develop solutions that can be tested, refined, and implemented in real-life settings.

UC Fossil Free Living Labs

The UC system is assessing the opportunities presented by decarbonization planning to develop **"fossil free living labs"** to capitalize on the mutually beneficial partnership between campus operations, research and learning.

UC Berkeley has already begun to conduct living lab projects, such as the use of the campus as a test bed to drill boreholes and investigate its geothermal potential.

Findings

The following were identified as key opportunities for living lab projects related to the Berkeley Clean Energy Campus (BCEC):

1. Data and Real-Time Data Accessibility: Data can provide a wealth of opportunities for student projects and research and can be imperfect. Real-time accessibility is important as is benchmarking data before and after project implementation. It should be noted that data also needs to align across sources (e.g., energy and emissions data needs to be consistent across campus).
2. Transparent Communications: A central theme to feedback, there is a strong desire for a central information hub to provide clear and consistent communication around the BCEC to support catalyzing living lab opportunities. This would need dedicated resources and not something just tacked on to existing programs.
3. Community Benefits: Participants are interested in understanding how the BCEC can benefit the broader community.
4. Interdisciplinary Opportunities: There is a great deal of opportunity for cross-department collaboration on research and learning opportunities.

Key Recommendations

Living Lab

1 Designate Leadership and Governance

- Identify responsible individuals for future living lab program development and establish a governance structure to identify opportunities and integrate equity indicators into planning.

2 Collaboratively Strategize Data Collection

- Work with faculty, researchers, the design team, operations, and industry partners to integrate a data collection strategy in the development of the Berkeley Clean Energy Campus (BCEC).

3 Engage Students in BCEC Design

- Identify opportunities within the design process to allow students to contribute to the design of the BCEC through coursework, research and student projects.

4 Prioritize Operational Collaboration and Resourcing

- Collaborate with operations and administration to identify how living lab projects could supplement operations. Connect with UC Berkeley Communications team to develop a central BCEC online information hub. Identify potential funding to support the development of Living Lab opportunities.

Equity & Equity Indicators

Equity indicators are measures used to assess and track the fairness, inclusivity, and justice of a process or outcome. They provide a way to evaluate whether resources, benefits, and burdens are being allocated justly among different individuals or groups. These indicators reflect areas where inequities have been identified and inform decision-making to address those inequities. As part of this supplemental work, an initial set of equity indicators for UC Berkeley's decarbonization and climate action efforts were developed. Strategies for further vetting and development of these indicators were done and mapped to phases of implementation (see Figure 1).

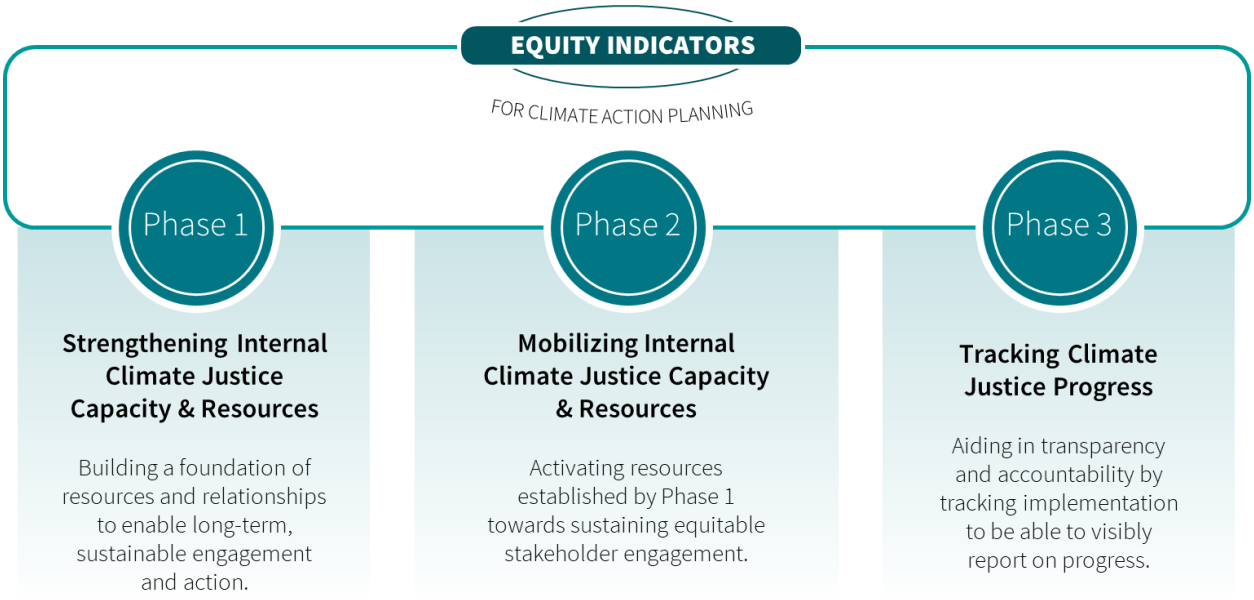

Figure 1: Phases of implementation for equity indicators.

A significant aspect of equitable climate action is ensuring that local Indigenous people, underrepresented groups, and frontline communities (predominantly low-income communities of color) are prioritized and involved in decision-making processes. Climate action must go hand in hand with addressing historical and current injustices, as the same communities who are most impacted by climate change and who have experienced the most social inequities have also contributed the least to creating the climate crisis. Climate action should aim to reduce disparities, promote social and economic equity, and improve quality of life. Doing so will require increasing engagement with underserved communities, fostering reciprocal relationships with local tribal nations and incorporating environmental and climate justice principles into all aspects of climate action, from policy development to project implementation.

Findings

UC Berkeley is located in a region facing important climate justice issues, including housing affordability and air quality. UC Berkeley, historically built on unceded Ohlone land, is making efforts to mend past actions and build partnerships with Native communities and tribal nations. The newly created role of Tribal Liaison and Director of Tribal Relations in the Chancellor's Office of Government and Community Relations is an example of this commitment. UC Berkeley is also working towards better reflecting the state's demographic diversity and implementing comprehensive DEIJ-centered frameworks into its climate action planning.

Indicators were developed by analyzing existing frameworks and best practices, incorporating feedback and insights from stakeholders, and refining the indicators based on their input. Through the process of engaging with UC Berkeley's DEI leaders, faculty, staff and student stakeholders, it became clear that much work on climate justice is already happening but would benefit from greater collaboration and visibility. Providing structures and resources to facilitate collaboration between existing efforts would strengthen a foundation for equity in climate action. This work is needed first, so that equity indicators can be meaningfully evolved and tracked.

Key Recommendations

Equity Indicators

1 Build Capacity

- Increase collaboration and coordination internally among UC Berkeley's offices working in sustainability and equity, including the Offices of Sustainability; Equity, Diversity, and Inclusion; and Government and Community Relations.
- Develop an inventory of climate justice activities already active on campus such as research, courses, co-curricular programs, staff and student groups, events and other initiatives.
- Formulate a committee or working group that can connect to existing or new climate action governance to identify climate equity goals and priorities, related indicators and a baseline of performance as well as evaluate climate actions moving forward. Develop evolving equity indicators based on stakeholder priorities.

2 Center Equity in Climate Action Planning

- Utilize the *UC Framework for DEIJ-Centered Climate Resilience Planning* and the developed equity indicators as a basis for climate justice initiatives. Ensure perspectives reflect the existing diversity of the campus and region in the process.
- Develop governance structures to guide climate action decision making with a focus on equity, articulating how decisions will be made and who will be accountable.

3 Track Progress

- Develop systems to monitor and report on progress towards equity goals and provide transparent incorporation of feedback from equity-based stakeholder communities.

Just Transition

A just transition refers to the process of transitioning to a sustainable and low-carbon economy in a way that considers and addresses the social and economic impacts on existing and future workers. It aims to ensure that the transition is equitable, fair, and inclusive, leaving no one behind and opening new opportunities for underrepresented communities. This includes hearing the needs and priorities of workers who may be impacted by decarbonization to tailor support such as retraining. It also means ensuring access to high-quality, well-paying jobs in the new green economy by supporting workforce development and supplier diversity programs, particularly for underrepresented groups and frontline communities.

Findings

The Berkeley Clean Energy Campus (BCEC) plan will impact labor in numerous ways both on and off campus through design, construction and operation. It also has the potential to stimulate job growth in utility infrastructure and equipment manufacturing. Existing workers most affected by the transition include steamfitters, stationary engineers, controls group and cogeneration plant workers. Training will be needed to help these workers shift to all-electric equipment and infrastructure.

In addition, the BCEC plan will generate millions of dollars in design and construction contract opportunities and will catalyze workforce development for decarbonization as well as provide an opportunity to expand access to quality, 'high road'[1] jobs on and off campus. Using this 'power of the purse' to advance equitable workforce development in green jobs will create a lasting legacy for this project and benefit the entire region.

[1] High road jobs pay "family supporting wages, benefits, safe working conditions, fair scheduling practices, and career advancement opportunities that are transparent." See Gridworks, "What is a High Road Labor Standard?" April 9, 2021. https://gridworks.org/2021/04/what-is-a-high-road-labor-standard/

Key Recommendations

Just Transition

1 Prioritize Early and Clear Communication

- Engage staff and the campus community early regarding the project's goals, timeline, and anticipated impacts. Tailor presentations to the audience's needs and workplace culture. Consider all staff in communications, not only those directly impacted by equipment changes. Provide communication in multiple languages.

2 Value Worker Involvement in Decision-Making

- Include directly affected staff, especially skilled trade shift workers, in team meetings to gather their perspectives before making impactful decisions. Use effective communication tailored to their needs to ensure full engagement.

3 Actively Engage with Unions

- Collaborate with unions at the earliest opportunity, developing training and recruitment initiatives that promote diversity.

4 Comprehensive Worker Training

- Go beyond technical training on new equipment. Include elements of team building, comprehensive system understanding, and opportunities for hands-on experience.

5 Support Workforce Development

- Leverage the decarbonization planning and construction pipeline to support employment in green jobs. Engage with local partners to develop a comprehensive training program centered on decarbonization.

6 Drive Supplier Diversity

- Strive for a 25% supplier diversity goal on all related projects. Mitigate challenges faced by smaller firms and extend community outreach programs. Survey small businesses to understand bidding potential and provide resources to support them.

Net Zero Planning

UC Berkeley is required by the UC Sustainable Practices Policy to develop a new climate action plan (CAP) prior to 2026 that provides a pathway to reduce emissions 90% by 2045 while also addressing climate justice and resilience.

UC Sustainable Practices Policy

The UC Sustainable Practices Policy requires each UC location to prepare an updated climate action plan (CAP) to be submitted and adopted by campus leadership by **2026**

Findings

The Berkeley Clean Energy Campus plan and supporting documents cover the majority of scope 1 and 2 emissions. Areas needing further development include scope 3, climate resilience and equity.

Key Areas for CAP Development

- Scope 3
- Climate Resilience
- Equity

Key Recommendations

Net Zero Planning

1 Establish Governance

- Set up a diverse governance structure to guide the development of the Climate Action Plan, including a charter and guiding principles for equity in climate action planning using the *UC Framework for DEIJ-Centered Climate Resilience Planning* and equity indicators as a guide.

2 Revise Projections and Expand Strategies

- Revise emissions projections and interim targets for scope 1, 2, and 3 to include pathways from the technical study as well as previously uncounted emissions, such as those from waste.
- Further advance and incorporate the resilience plan into the new CAP and draw out linkages between decarbonization efforts, equity, and increased resilience (e.g., expanding cooling through building upgrades related to decarbonization).
- Consider conducting a Scope 3 materiality assessment to identify additional categories of significance for potential tracking and reduction such as supply chain.

3 Engage a Diverse Range of Stakeholders

- Design an actionable strategy for broad audience engagement, identifying key audiences, timing, mechanisms, and transparent communication methods. Define clear DEI-centered engagement goals.
- Create easily understandable material about the project for informing stakeholders. Engage university and community members in workshops, public events, and online surveys to gather broader feedback. Draft a comprehensive report highlighting recommended actions and their impact, including how stakeholder input shaped outcomes.