MEMO

Introba

Memo: **Net Zero and Climate Resilience Gap Analysis Workshop Summary**
Date: **2023-11-29**
Project: **UCSB Clean Energy Master Plan**

Event Details

Event: Net Zero and Climate Resilience Gap Analysis – Ambition and Existing Practices Workshop
Location: Interactive Learning Pavilion Room 4211
Date: November 16, 2023, 9:00-10:30am

Workshop Overview

This workshop convened key interest holders on campus to share what UCSB is already doing to be a net zero and climate resilient campus. Through structured activities and discussion, participants identified key initiatives on campus and the gaps that existing initiatives do not address. Participants shared their thoughts on what a net zero and climate resilient UCSB should look like, and collaboratively brainstormed barriers, challenges, strengths, and partnerships related to achieving their visions. The outcomes of this workshop will inform the Net Zero and Climate Resilient Gap Analysis (scopes 4 & 5) of the Clean Energy Master Plan.

Workshop Agenda

9:00am	Opening Remarks & Introductions
9:10am	Overview of the Clean Energy Master Planning Project and the Net Zero & Climate Resilience Scope
9:20am	Activity #1: What UCSB is Already Doing
9:40am	Activity #2: Envisioning a Net Zero and Climate Resilient Campus
10:00am	Activity #3: How UCSB Can Get There
10:20am	Next Steps & Closing Remarks

Summary of Outcomes

Activity #1: What UCSB is Already Doing
In this first activity, participants identified examples of what UCSB is already doing well with regards to net zero and climate resilience planning. Major topics are summarized below:

Current net zero efforts**:**

- Renewable energy purchases and clean electricity on main campus
- Installing PV panels on parking lots and flat buildings
- New construction is mostly all-electric (e.g., ILP and new residence halls)
- Green building certifications, including LEED platinum buildings
- Good bike transport network
- Campus museum leading on climate action among arts/museums

Current resilience efforts:

- Flood water management in the form of bioswales and improved gutters and drainage
- Grounds use 90% or more reclaimed water
- Controlled burns to reduce risk of wildfire, in partnership with local tribe
- Environmental Impact Reports for campus building projects (e.g., 2006 campus housing)

Activity #2: Envisioning a Net Zero and Climate Resilient Campus

In this activity, participants brainstormed what more UCSB could be doing to advance net zero and climate resilience priorities on campus. Major topics are summarized in the table below:

Net Zero		
Action Category	**Strategy**	**Description/Examples**
Buildings	Increase mandates for new buildings to be all-electric	New housing projects should not install natural gas appliances
		Dining commons, cafes, and central kitchen should move toward electric
		Eliminate the use of natural gas in construction and ongoing projects
	Improve energy efficiency to reduce electrical loads	Install efficient windows and shades in residences and offices
		Install awnings on buildings to reduce solar gains
		Take advantage of rebates and incentives for energy efficiency improvements
		Public energy dashboard to promote awareness and behavior change
Electrification and renewable energy	Maximize onsite renewable energy generation	Large installations of solar PV panels on parking lots and buildings
	Complete cost-benefit analysis of early retirement of natural gas appliances	For replacement with heat pumps and electrical induction stoves
		Consider the rising cost of natural gas
	Extend heating and cooling loops on campus	To prepare buildings for decarbonization of energy systems
	Install batteries for backup power	Replacing diesel fuel generators
Transportation	Develop comprehensive transportation plan	To guide efforts and help secure funding
	Electrify cars and transit	Transition fleet to EVs
		Electrify buses used for commuting to campus
		Expand EV charging infrastructure
	Increase commuter transit options	Metrolink and Wave connection to CA train
		Partner with county and Santa Barbara Dept. of Public Transportation to expand routes and access

		Expand shuttle routes across campus and to transportation hubs
		Year-round bus passes for students
	Promote active and alternative modes of transportation	Increase parking rates
		Provide showers to incentivize biking
Waste reduction and diversion	Reduce wasted food and divert organic waste	Remove dining trays to limit excess food waste
		Improve education and access to compost
Food systems	Increase sustainable food options on campus	Offer more vegetarian options in dining
		Reduce purchase/consumption of beef/meat
		Improve food shopping options on campus
Other scope 3 emissions	Address air travel emissions	Limit unnecessary business air travel
		Explore sustainable aviation fuel (SAF)
		Encourage virtual meetings when possible
Resilience		
Action Category	**Strategy**	**Description/Examples**
Flooding	Improve stormwater infrastructure	Including bioswales
	Increase permeable surfaces on campus	Remove parking lots, promote permeable surfaces
	Address transportation and communication systems that are vulnerable to failure from flooding	Conduct study to assess these vulnerabilities and identify actions to mitigate the risks
Warming temperatures and extreme heat	Design buildings/systems to future temperatures	Cooling systems need to be scalable to accommodate warming climate
		Install AC or fans in residence halls
	Promote passive cooling strategies	Includes energy efficiency benefits
	Reduce heat island effects	Including through planting native shade trees, also promoting flood resilience
Drought	Use reclaimed water in buildings	Incorporate into new building standards
Wildfire/wildfire smoke	Safeguard indoor air quality for building occupants	Improve air filtration
		Identify refuge spaces on campus
Sea level rise, coastal flooding, and erosion	Better planning for coastal erosion	Move main sewer system away from bluffs
Multi-hazard planning	Install backup power for critical buildings and systems	Including cooling systems (e.g., chilled water loop)
		Including laboratories
	Disaster mitigation and contingency planning	Including through multi-hazard approach

	Strengthen emergency preparedness on campus	Share information about climate resilience and emergency preparedness
		Install emergency speakers (e.g., by beach and low areas for tsunami alerts)
		Explore opportunities for resilience hubs
	Address aging and vulnerable building stock	Install warning systems for older buildings

Participants also brainstormed innovative actions or initiatives they are aware of from other institutions, including:

- Plugging EVs into grid during power outages
- Hydrogen fuel cells for use in transportation and buildings
- Limits for air travel miles per person
- Funding student decarbonization projects
- Course requirements related to climate and sustainability
- UC Davis and UCLA have great alternative commute programs
- CSU LA solar and transportation integration program
- UCI + SD CP can isolate power and feed campus grid in case of outage
- UC San Diego light rail to campus

Activity #3: How UCSB Can Get There

In this final activity, participants had a chance to review the strategies and ideas generated through the previous discussions and identify their top priorities for a net zero and climate resilience campus. These priorities are listed below.

Top priorities for a net zero and climate resilience campus:

- *Increase onsite renewable energy generation*
- *More stringent mandates for all-electric buildings*
- *Leverage rebates/incentives for improved energy efficiency in buildings*
- *Increase transparency and awareness of energy use through public dashboard*
- *Provide funding for student decarbonization projects on campus (i.e., campus as a living lab)*
- *Improve public transit options and access*
- *Electrify transit options for commuters*
- *Change parking structures and fees to incentivize alternative transportation options and EVs*
- *Promote vegetarian and low impact food choices in dining services*
- *Improve stormwater infrastructure to mitigate flood risk*
- *Address air quality impacts of wildfire smoke by improving air filtration and refuge spaces*
- *Reduce water use and promote water conservation*
- *Add backup power for critical systems and buildings*
- *Include sustainability as a course requirement for all students*
- *Increase education and awareness of climate and sustainability issues and opportunities*

Next Steps

The Introba team will use the outcomes of this workshop to complete the Net Zero and Climate Resilient Gap Analysis by:

1. Revising the draft gap analysis framework to integrate visioning priorities into key categories of actions and best practices
2. Collecting any additional plans, policies, or initiatives identified during the workshop
3. Completing a detailed review of all relevant documents to identify additional examples of actions UCSB is taking that address net zero and climate resilience priorities
4. Evaluating how well UCSB is doing against net zero and climate resilience best practices
5. Identifying recommendations for additional measures and next steps to incorporate into the Clean Energy Master Plan