

Berkeley

Clean Energy Campus



Our strategy: Become the first 100% clean energy public research university in California

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<http://cleanenergycampus.berkeley.edu>

Clean Energy Campus. Why Now?

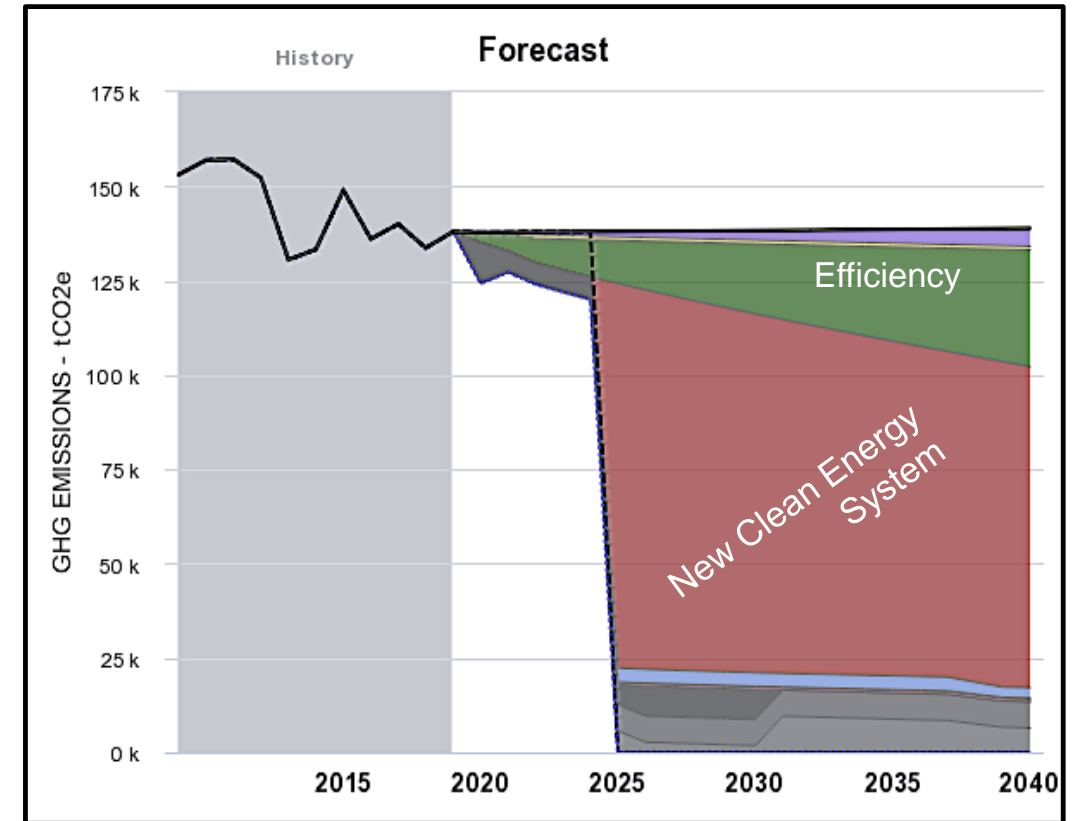
Berkeley is on the way to a clean electrified campus energy system by 2028

- 15+ years of campus climate action
- New system can be a replicable & scalable
- Leverages Berkeley's brain-trust & provides a living lab
- Aligns with State and Federal energy and carbon goals

Existing energy system reaching end of useful life

- Natural gas cogeneration plant produces 90% of the campus energy
- End of life for existing system is in 5 to 10 years, and significant investment is required
- Uneven backup capabilities in different research buildings and lack of advanced controls

Berkeley Carbon Reduction Target:



Clean Energy Campus

Energy, Carbon & Resiliency Goals and Objectives

Develop an efficient, electrified campus heating and cooling system and an 80% reduction in carbon emissions by 2028.

Achieve zero carbon building energy use and manage the campus as a renewable energy microgrid by 2035 or sooner.

Leadership in microgrids

Model a large-scale public-sector clean energy microgrid in an urban setting capable of integrating advanced efficiency controls and on-site renewable energy and storage.

Resiliency, independence & grid benefit

- Provide the campus with clean electricity suitable to support growth, peak energy demand, emergency shutdowns and outages.
- Supply back-up power to the larger electrical grid.

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People, Learning & Research Opportunities

A catalytic project for people:

Retain full-time jobs, generate hundreds of regional construction jobs and stimulate tens of millions of dollars into the California economy.

Improve public health by removing a gas powered plant and a source of local air pollution.

Enhance campus as a community emergency resiliency center.

Engagement – Involve many stakeholders to ensure transparency and accountability throughout project development and on-going operations.

Learning – Teach with concrete examples and train future climate solution engineers, social science, business and policy leaders.

Research – Activate and integrate UC Berkeley's brain-trust in living labs and deploy lessons learned to the public.

Clean Energy Campus Resiliency with novel technologies

Moving from a natural gas & potable water microgrid system to a renewable energy & reclaimed water microgrid is key to **operational resiliency**

On-site clean energy & storage for resiliency:

- Solar photovoltaics + Battery storage
- Geothermal potential for efficiency
- Advanced Utility + Building Controls
- Fuel cells, Green Hydrogen and More

On-site reclaimed water-use for resiliency:

New non-potable water source for heating, cooling, landscape irrigation and toilet flushing in new buildings.



March 30, 2022: [UC Berkeley researcher drills 400-foot borehole to explore geothermal heating and the viability of using a geothermal heat pump system to help heat and cool campus buildings more efficiently.](#)

The State of California will invest \$249 million

- This lead investment will be a catalyst to secure the remaining funds needed. It provides for the design and construction of the primary thermal plant and readying some microgrid features.
- Funds will be allocated and approved annually over three years.
- UC Berkeley is pursuing public-private partnerships, donors, and other funding sources for the additional \$451 million.

