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June 21, 2022

To: California Air Resources Board
From: University of California, Office of the President
Subject: Comments re: Draft 2022 Scoping Plan Update

Dear ARB:
Thank you for the detailed blueprint of "how the fifth largest economy in the world can get to carbon neutrality by 2045 or earlier" in the Draft 2022 Scoping Plan Update (the Scoping Plan).[1] Since 2013, the University of California (UC or The University) UC has charted a path to achieve net carbon neutrality by 2025 and has utilized electrification, energy efficiency, off-site mitigation, and wholesale renewable electricity and biomethane procurement to meet this target—all while striving to center equity and environmental justice during this transformation.

With academics who have pioneered the science demonstrating the direness of the climate crises, and as one of the largest employers in the state, the University is writing to share its ten years of practical experience with aggressively pursuing carbon neutrality. UC has grappled with many of the same questions and tradeoffs raised in the Scoping Plan: How to address legacy fossil fuel infrastructure; how to prioritize the longest-lasting, most-durable solutions; how to achieve carbon neutrality in a cost-effective way; and how to ensure reliability and resiliency while decarbonizing. It is the University's desire that its decade of decarbonization experience can provide actionable insights as California scales its efforts to achieve "a cleaner, more sustainable environment and thriving economy for our children."[2]

The University of California's Carbon Neutrality Initiative

UC generates nearly $82 billion in economic activity in California annually, employs 229,000 faculty and staff, operates the largest academic health system in the country, and maintains approximately 6,000 buildings enclosing 137 million gross square feet.[3] Through these activities—even after many years of emissions reductions through energy efficiency measures and increasing renewable energy production and procurement—the University still emits approximately 1 million metric tons of Scope 1 and Scope 2 emissions (CO_2e) each year across its 10 campuses and 5 medical centers.[4] Due to the years of successful energy efficiency and renewable energy implementation, over 78% of these remaining emissions come from combusting fossil natural gas at combined heat and power plants located on UC campuses. When they were installed between 1980-2012, these plants were the lowest-emission, most cost-effective options available. The plants currently provide cost-effective and reliable power, hot water, and steam, and are an important resilience tool to protect patient lives and billions of dollars in research in the face of increasingly frequent power outages caused by wildfires and grid stress.

To achieve net zero emissions by 2025 and develop scalable solutions for a low carbon future, UC launched its Carbon Neutrality Initiative in 2013.[5] Since then, UC has made over a billion dollars in investments in durable, lasting solutions to

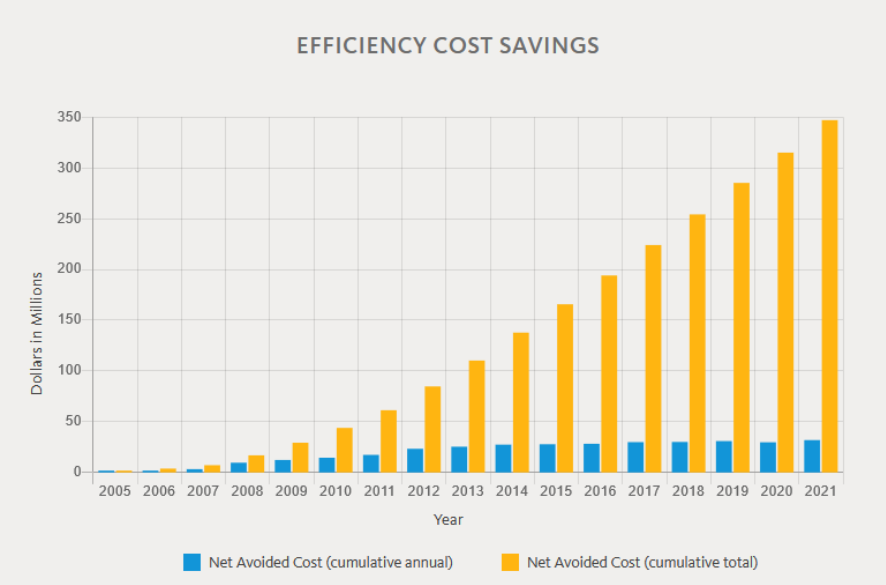
[1] https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf
[2] Ibid
[3] https://universityofcalifornia.edu/sites/default/files/economic-impact-report-2021-fact-sheet.pdf and https://accountability.universityofcalifornia.edu/2017/chapters/chapter-13.html
[4] https://cnidashboard.ucop.edu/
[5] https://ucop.edu/carbon-neutrality-initiative/index.html

decarbonize, including those detailed below.

Direct Electrification:
Every campus is actively studying how to electrify vast portions of their infrastructure and several campuses have already launched ambitious direct electrification efforts. Since decommissioning its cogeneration plant in 2005, UC Davis has engaged in multi-year infrastructure upgrades to electrify the heat source for the hot water used to heat buildings across campus, with plans to complete the final phases in 2030;[6] UC Berkeley is drilling test geothermal wells and planning a resilient, all-electric microgrid to power campus;[7] and the UC Irvine Medical Center is planning to build an all-electric, world-class hospital.[8] For each campus, extensive techno-feasibility studies have found that direct electrification requires a multi-decade timeframe and hundreds of millions of dollars in project costs. As such, UC is pursuing additional measures (detailed next) to mitigate emissions and ensure reliable operations while pursuing longer-term electrification plans.

Energy Efficiency:
The University has executed over 1,100 energy efficiency projects across the campuses and medical centers, reducing UC's energy use by 12% since 2009 on a per square foot basis. As Table 1 shows, these projects are designed to both reduce the reliance on fossil fuel energy and result in cost savings.[9]

Table 1



Renewable Electricity:
UC has more than 100 renewable energy supplies on-line, including both onsite and offsite installations—detailed in Table 2 below. In its role as an Electric Service Provider, UC has delivered 100% carbon-free electricity to participating electric accounts since 2019.[10] According to the EPA, UC uses more green power than any other college of university in the country and ranks seventh in onsite green power generation compared to all corporations and governments, trailing only entities like Apple and Walmart.[11]

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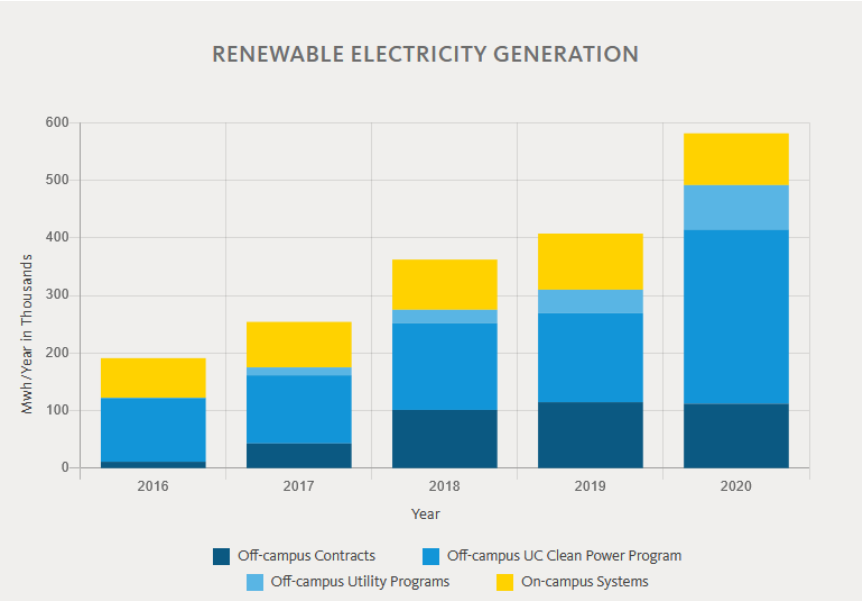
[6] https://bigshift.ucdavis.edu/
[7] https://cleanenergycampus.berkeley.edu/about
[8] https://news.uci.edu/2021/01/21/uci-to-build-world-class-hospital-on-irvine-campus/
[9] https://sustainabilityreport.ucop.edu/2021/policy-progress/#energy
[10] Verified through The Climate Registry https://www.theclimateregistry.org/tools-resources/reporting-protocols/electric-power-sector-protocol/
[11] https://www.epa.gov/greenpower/green-power-partnership-top-30-college-university

Table 2



Biomethane:
The 2021 IPCC Working Group I report on the physical science driving climate change, which included authors from the University of California, recommended that the first priority for policy makers to limit near-term warming effects and improve air quality should be "strong, rapid, and sustained reductions in CH_4 emissions."[12] UC is procuring biomethane from landfills and food waste sources that was previously vented into the atmosphere or flared—a decarbonization tool consistent with this recommendation. As ARB's data shows, 21% of the state's methane emissions are from landfills—one of the principal sources from which UC is procuring biomethane.[13] Consistent with UC's Zero Waste policy goals, the University is also pursuing biomethane that is generated from food waste that is diverted from landfills.[14] By investing in these projects, UC is able to prevent these emissions at the source and use the captured biomethane to displace the fossil natural gas currently burned at its central cogeneration plants. UC set its volumetric target at 40% of historical natural gas consumption to incentivize electrification and energy efficiency. When this volume is reached, UC estimates that this solution will mitigate approximately one-third of its overall emissions. Given the elevated global warming potential of methane, this strategy complements existing state goals—including SB 1383 and SB 1440—to utilize waste streams to reduce emissions, improve air quality, and minimize wildfire risk.

Offsets:
For those emissions that cannot be addressed by 2025 with electrification, energy efficiency, renewable electricity, and biomethane procurement, the University is securing high-quality offsets that are both third-party verified through existing registry protocols and meet UC's own quality criteria above and beyond those protocols. This approach is consistent the Scoping Plan's suggestion to utilize offsets only after "all potential on-site and local off-site GHG mitigation measures have been incorporated to the extent feasible," and only then pursuing high-quality, verified ones.

Environmental and Climate Justice:
UC has endeavored to center equity as it has invested in these comprehensive, rigorous strategies to decarbonize. The University launched the UC Center for Climate Justice, one of the first university-based institutions dedicated to equitable climate action in the country, and the UC Center for Climate, Health and Equity, which will advance equitable and just climate solutions that promote human health. These hubs will accelerate critical research at the intersection of climate change, social justice and health inequities. Additionally, the University's internal policies ensure that all campus climate

[12] https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf, pg 27
[13] https://www.epa.gov/ghgemissions/overview-greenhouse-gases#methane
[14] https://www.ucop.edu/sustainability/policy-areas/waste-reduction-and-recycling/index.html

action plans are updated regularly to integrate environmental justice.[15] And finally, to leverage its substantial purchasing power, UC's procurement guidelines require that all competitive solicitations allocate 15% of the points utilized to sustainability criteria, including for socially and economically responsible items.[16] UC has also set a goal to have 25% of its products or services supplied by a business holding at least one UC-recognized classifications or certifications, including Women-Owned, BIPOC (Black, Indigenous, and People of Color), Service Disabled Veteran-Owned, or LGBT-Owned Business.[17]

Conclusion

Though UC has more work to do to decarbonize, the University is proud of this progress toward achieving its ambitious sustainability, climate action and climate justice goals. UC appreciates ARB's efforts on the thoughtful, comprehensive first draft of the Scoping Plan and looks forward to continuing to engage on these critical topics.

Sincerely,

David Phillips

David Phillips
AVP, Energy & Sustainability

[15] https://policy.ucop.edu/doc/3100155/SustainablePractices
[16] https://policy.ucop.edu/doc/3100155/SustainablePractices
[17] https://www.ucop.edu/procurement-services/for-ucstaff/sustainable-procurement/sustainableprocurementguidelines.pdf