



# Climate Change Commission

CITY AND COUNTY OF HONOLULU

650 South King Street, 11<sup>th</sup> Floor • Honolulu, Hawai'i 96813

## COMMISSIONERS

Charles Fletcher, Ph.D., Chair  
Rosanna Alegado, Ph.D., Vice Chair  
Makena Coffman, Ph.D.  
Melanie Islam, AIA, NCARB, LEED AP BD+C, LFA  
Victoria Keener, Ph.D.

**Climate Change Commission**  
**Thursday, September 16, 2021 9:00 AM**  
**Zoom Virtual Meeting**  
**Meeting Minutes**

**Members Present:** Chair Charles Fletcher, Vice Chair Rosie Alegado, Makena Coffman, Melanie Islam

**Members Absent:** Victoria Keener

**Public:** Matthew Gonser, Nicola Hedge, Ben Sullivan, Hayley Cook (CCSR); Courtney Sue-Ako (Corporation Counsel); Walter Billingsley, Terry Chan (DDC); Scott Glenn, Mark Want, Jonathan Chin (Hawai'i State Energy Office); David Rodriguez (Hawai'i State Department of Transportation); Nancy McPherson (Department of Hawaiian Homelands); Maya Walton (Hawai'i Sea Grant); Pane Meatoga III (HOEISF); Henry Curtis (Life of the Land); Katy Mokuau (Sustainable Moloka'i); Ashi Behl; Christina Jedra; Christopher Delaunay; Colin Lee; Dave Martin; Dylan Senkiw; Gernot Presting; Ikaika Hussey; Kalin Isham; Katie Rooney; Landon Keller; Madeline Haunroth; Matt Geyer; Melodie Aduja; Michael Yadao; Paul Bernstein; Ryan Ringuette; Sienna Streamfellow; Susan Gorman-Chang; Tawn Keeney; Ted Bohlen; Zena Grecni.

- 1. Call to Order:** Chair Fletcher called the meeting to order at 9:01 AM.
- 2. Welcome and Introduction of Commissioner Melanie Islam:** Chair Fletcher introduced Melanie Islam as a new member of the Commission, shared her background and experience, and welcomed her to her first meeting by playing the song Dancing Queen by ABBA (she's a disco fan).
- 3. Roll Call:** Four out of five Commissioners were present. Quorum was established.
- 4. Approval of the Meeting Minutes of August 31, 2021:** The meeting minutes of August 31, 2021 were unavailable and will be voted on at the Commission's next meeting.
- 5. Communications and Correspondence from the Public:**
  - Dr. Tawn Keeney presented testimony in response to Commissioner Coffman's presentation on greenhouse gas (GHG) emissions from visitor air transportation at the August 31, 2021 meeting. He shared his reflections of Commissioner Coffman's calculations, which included:
    - The State GHG emissions inventory should not be used because it only includes flights from Hawai'i to first arrival destination and does not include connecting flights.
    - Calculations should use a global warming potential factor of three as was endorsed by the Intergovernmental Panel on Climate Change in their Sixth Assessment Report (whereas a factor of two was used by Commissioner Coffman consistent with Dr. Keeney's calculations in prior testimonies).
  - Dr. Keeney commented that the GHG emissions of visitor arrivals should instead be calculated based on the Hawai'i Tourism Authority's yearly documentation of number of visitor arrivals from each region of origin by selecting a representative airport from each region and using the International Civil Aviation Organization's carbon (CO<sub>2</sub>) emissions calculator multiplied by the number of passenger arrivals from each region and a potential warming factor of three. By his

calculations, there were 24 million tons of CO<sub>2</sub> emissions from visitor arrivals in 2019, contrasted with electricity generation at 7.8 million tons and ground transportation at 4 million tons.

- Chair Fletcher responded that the Commission would take Dr. Keeney's comments under consideration along with his submitted written materials.
- Henry Curtis commented that Dr. Keeney's calculations show that aviation emissions may account for more than half of the state's emissions, which is a critical number to consider in reducing all emissions to net zero.

#### **6. Report on the Activities of the Office of Climate Change, Sustainability and Resiliency (CCSR):**

Executive Director Matthew Gonser presented the following report:

- CCSR welcomed a new staff member, Miya Devoogd, as the Communications & Outreach Program Manager, who joins the team after four years at the Department of Environmental Services as a recycling specialist with experience in stakeholder engagement and education campaigns.
- In partnership with the University of Hawai'i coastal geology group, the City continues to update shoreline change rates around O'ahu with data for both ongoing planning purposes and for incorporation into a forthcoming proposal to amend O'ahu's shoreline management practices in the Revised Ordinances of Honolulu, Chapters 23 and 25. This work was identified in the O'ahu Resilience Strategy as Resilience Action 29. CCSR anticipates a proposed bill to be introduced at the Planning Commission in the coming months.
- At the City Council Transportation, Sustainability and Health Committee meeting on Tuesday, September 21, 2021 at 9:00 a.m., CCSR Deputy Director Nicola Hedge will provide a presentation on background for a better buildings benchmarking policy and program, which is Resilience Action 21 and Action 5.3 from the City's Climate Action Plan. This is in follow-up to Deputy Director Hedge's previous presentation to the committee about what the City is doing to be transparent about energy usage at its own facilities and in response to Council's interest in a community-wide benchmarking program.

#### **Questions and comments that followed:**

1. Chair Fletcher asked Director Gonser's thoughts on a Commission meeting focused on the shoreline management updates. Director Gonser responded that it's a good topic to have top of mind and to connect with the Department of Planning and Permitting if available.

**Comments and public testimony that followed:** None.

#### **7. Update on Progress Towards the State's Zero Emissions Clean Economy Target from Scott Glenn, Chief Energy Officer, Hawai'i State Energy Office**

- Scott Glenn reviewed the language of the State's clean economy target, which, as stated in the Hawai'i Revised Statutes §225P-5, is a net-negative goal that requires sequestering more carbon than is emitted. Glenn commented that Hawai'i's net-negative target is the most directionally correct, as it requires us to reduce carbon emissions as much as possible as quickly as practicable, which is in line with what the science tells us is required.
- Glenn shared that the State's GHG emissions inventory from 2017 helps guide the State Energy Office's (HSEO) policymaking. He shared that only about 15 percent of emissions come from agricultural activity, land use change, and waste, and the rest comes from energy, including transportation, which is the largest source of emissions.
- Glenn share HSEO's mission, which is to promote energy efficiency, renewable energy and clean transportation to help achieve a resilient, clean energy, i.e., decarbonized, economy.
- Glenn shared the Sankey Diagram, which demonstrates how energy moves through the state from energy source (solar, wind, petroleum, etc.) to sector (electricity generation, transportation, etc.).
- Glenn discussed how Hawai'i's 100 percent renewable portfolio standard is only for electricity and not for other energy sectors as depicted in the Sankey Diagram.
- Glenn noted the importance of the State Legislature's ban on the use of coal by the end of December 2022 and shared how the State is working to replace coal energy mainly with solar

and solar plus battery projects that are currently underway but will not be built in time before the coal plant is turned off. He noted that before all of the solar projects come online, electricity will be produced by burning fuel oil to replace the coal power.

- Glenn shared that the State and City have policies in place to address transportation emissions, including requirements for light-duty passenger vehicle fleets to switch to electric vehicles. He also noted that companies are starting to prepare airport infrastructure to accommodate electric inter-island flights. He shared that trends show longer distance flights and shipping will use sustainable biofuel or hydrogen fuel cells.

**Questions and comments that followed:**

1. Vice Chair Alegado asked Glenn to clarify that new solar projects coming online will go towards electricity generation. Glenn confirmed that they will.
2. Vice Chair Alegado asked for clarification on the Sankey Diagram's show of private versus public use of solar energy. Glenn responded that the residential, commercial, and industrial sectors as shown on the diagram do not distinguish private versus public, but rather focuses broadly on what is being generated and what sector it is being used in.
3. Commissioner Coffman asked Glenn to expand upon his discussion of the State's role in planning for a transition away from on-island fuel refining towards importation. Glenn responded that until last year, the State's Refinery Task Force's expectation was that the State's electricity goals and eventual switch to electric vehicles would mean there would not be enough demand for oil to justify refining on-island. He also discussed how the decrease in tourism due to the COVID-19 pandemic decreased the need for and use of jet fuel, leading the refinery to increase the price of its fuel oil sold to Hawaiian Electric Company (HECO) in order to stay operating, leading to an increase in residential electricity bills as the costs were passed on to customers, creating a direct relationship and cross subsidy for electricity, gasoline, and jet fuel use. He commented on how residents are paying for the energy transition because the state's renewable energy goals are focused on electricity, whereas tourists are directly paying for fossil fuel infrastructure as they primary drivers of jet fuel leaving the state. Glenn discussed how the State is developing a common operating picture to have a comprehensive sense of what is needed should it be necessary to switch to an import terminal.
4. Commissioner Islam asked about the state's market readiness for adopting alternate energy sources like hydrogen in terms of adapting current infrastructure and workforce opportunities. Glenn responded that hydrogen has not quite hit the inflection point like solar and batteries have. Glenn recommended reaching out to Riley Saito in Hawai'i County who has been working to put in place hydrogen infrastructure on the Big Island, particularly for its bus fleet. He also noted a law recently passed at the state level to exempt hydrogen fuel sales from weights and measures requirements to help promote more hydrogen fueling stations.
5. Chair Fletcher asked why the State is not focusing more on creating a refinery that uses atmospheric CO<sub>2</sub> as the feedstock. Glenn responded that the State is trying to figure out how it can promote direct air capture use while the technology is still in the proving stage.
6. Chair Fletcher asked about the status of the rental fleet conversion. Glenn responded that he is not sure of the current status but will get back to the Commission. He noted that the State Legislature passed a law last year that requires State employees to rent an EV when available when traveling, which sends a steady demand signal to rental car companies. Chair Fletcher commented that converting fleets presents a significant cost to rental car companies so the State Legislature could consider additional incentives.
7. Chair Fletcher asked Glenn's thoughts on offshore wind. Glenn responded that there have been several proposals for offshore wind around O'ahu that have not moved forward because of national security concerns by the federal government. He shared that the State is in a holding pattern until it receives direction from the federal government hopefully in the next few months. He commented that President Biden has made it clear that offshore wind is an important part of the national strategy for climate action.

**Comments and public testimony that followed:**

1. Susan Gorman-Chang asked about the projections for how much solar the energy demand response program will bring online. Glenn responded that HECO's 100 percent renewable energy program includes integrated grid planning that accounts for 100 percent of residential roofs and one third of commercial buildings on O'ahu to be net zero. He commented that HSEO

is planning for every building to have a solar panel on it one way or another and the more the building code can align to support that the better. He noted that rooftop solar and batteries are expected to account for 40 percent of O'ahu's electricity demand.

2. Katie Rooney asked what is being done to reduce vehicle miles travelled (VMT) from ground transportation. Glenn responded that the State is currently hiring for someone to focus on VMT reductions (<https://www.governmentjobs.com/careers/hawaii/jobs/3226785/vehicle-miles-travelled-active-transportation-specialist>). Glenn commented that the coal plant being turned off is a near-term priority but the State is not losing sight of strategies to reduce the need to drive like complete streets and walkable communities.
3. Zena Grecni asked whether electricity for charging vehicles is accounted for in the transportation sector. Glenn responded that most of the electricity is being tracked through building electricity bills. He noted that the flow of electricity to transportation is negligible on the Sankey Diagram but will become larger as it is captured via interisland air and shipping.
4. Ted Bohlen asked if hydrogen produced from natural gas increases GHG emissions. Glenn responded that it depends; because hydrogen is an energy carrier, it may not increase GHG emissions if converted from natural gas that's already being used; however, it could increase emissions if displacing other forms of renewable energy.
5. Matt Geyer asked how a green fee or a price on carbon that is returned back to residents fit into the State's zero emissions clean economy target. Glenn responded that related bills were deferred at the State Legislature last session and we will have to see how they play out next session.
6. Matt Geyer asked if the electrification of interisland flights will be accomplished by retrofitting existing aircraft or if a whole new fleet of aircraft will need to be built. Glenn responded that the State is still learning about considerations of charging capacity at airports on different islands and how companies can keep their interisland flight turnaround schedules while accommodating charging.
7. Henry Curtis commented that 90 percent of hydrogen in Hawai'i is made from fossil fuels. Glenn responded that there's value to the fossil fuel to hydrogen pipeline right now and making the switch to hydrogen and then also simultaneously making the move toward renewable hydrogen can keep us moving forward. Chair Fletcher commented that non-renewable or "blue" hydrogen is a bridge fuel, which is something often avoided as to not become embedded in it. It's a bridge fuel and most of the time we try to avoid that because you get embedded in it. Paul Bernstein shared an article on the carbon footprint of "blue" hydrogen (<https://www.smithsonianmag.com/smart-news/blue-hydrogen-20-worse-burning-coal-study-states-180978451/>).

#### **8. Update on City and County of Honolulu Climate Mitigation Strategies from Ben Sullivan, Energy Program Manager, Office of Climate Change, Sustainability and Resiliency**

- Ben Sullivan shared how the City's Climate Action Plan (CAP) provides clear direction in the areas of transportation, energy, and waste. He focused his presentation on a discussion on vehicle electrification and energy use in buildings.
- Sullivan shared the City's fleet includes about 1,800 vehicles managed by the Department of Facility Maintenance, 600 bus and 200 para-transit fleet managed by the Department of Transportation Services, and 600 Honolulu Police Department and 200 Honolulu Fire Department vehicles. He noted the fleet transition will require planning for electric vehicle (EV) charging infrastructure.
- Sullivan discussed the City's EV-ready ordinance as an important effort for supporting EV adoption in the private sector island-wide. He shared that putting in charging infrastructure at the point of new construction can save a lot of money and better prepare buildings to more rapidly accommodate an electrified fleet in the future.
- Sullivan discussed the City's effort to make existing building stock more efficient through the development of a building benchmarking program. He shared the City is undergoing efforts to benchmark its own facilities over 10,000 square feet. He shared that a community-wide benchmarking program would require all buildings over a certain size to report their utility performance data to the City on an annual basis, which allows for performance comparison across the system and more investment in efficiency.
- Sullivan shared the expected outcomes of the first phase of the City-wide Energy Savings Performance Contract currently underway, which will deliver \$2.1 million in utility bill savings annually.

- Sullivan discussed the role of energy codes in helping various building systems become more efficient through standards. He shared that the State Building Code Council adopted the 2018 International Energy Conservation Code (IECC) in December of 2020 and the City has until December of 2022 to adopt the 2018 IECC with any local amendments. He shared the City is currently evaluating both the 2018 and 2021 IECC and hopes to continue to adopt stringent codes as they are the biggest opportunity to drive efficiency into the building stock for new buildings.

**Questions and comments that followed:**

1. Chair Fletcher asked if the City has considered providing developers with subsidies to develop net zero energy or One Water projects. Sullivan responded that there is a balance between pushing individual projects over the line versus valuing things correctly across the entire system and allowing market winners to emerge. Sullivan commented that the first step is to get the most progressive codes in place as we possibly can.
2. Commissioner Islam asked if the City has looked at different compliance pathways for certain markets like affordable housing to meet our energy targets and provide an equity lens. Sullivan responded that the City is working on the benchmarking policy in a way that ensures clear transparency about how housing facilities are performing, which will open policy discussions about how best to support them. He commented the City is thinking about how utilizing engagement with building owners through benchmarking can also allow them to connect with the people who occupy the buildings and potentially deliver services to them.
3. Chair Fletcher asked what is being done from an equity perspective for the many roofs for whom homeowners still cannot afford to adopt solar. Sullivan discussed a CAP action called Solarize that connects individuals with community-based organizations that can help provide the upfront capital. Commissioner Coffman commented that liquidity is not the only barrier to entry and autonomy over the rooftop, i.e., the owner-renter gap, is a huge barrier.

**Comments and public testimony that followed:**

1. Ikaika Hussey asked if there is interest in buildings constructed using mass timber or cross-laminated timber. Sullivan responded that engineering standards that are evolving to allow larger buildings to be constructed out of timber and that it may be important from a lifecycle cost analysis perspective, which is not currently integrated through the building code or other mitigation strategies thus far.
2. Katy Mokuau asked if the City is looking at other, progressive cities working on green codes and municipal buildings. Sullivan responded that the City is connecting with national code stakeholders to learn about the leading edge for energy codes, such as grid integrated efficient buildings, which looks at how we can prepare our buildings and vehicle infrastructure to plug into the grid in a more sophisticated way going forward.

**9. Public Input for Matters Not on the Agenda:** None.

**10. Tentative Next Meeting Date:** The next meeting date is scheduled for October 28, 2021 at 9:00 AM via Zoom.

**11. Announcements:** None.

**12. Adjournment:** The meeting was adjourned at 10:46 AM.