

Air Pollution and the Pandemic

How Will COVID-19 Shape Hawai‘i’s Response to Global Climate Change?

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Across the globe, commentators have conceptualized COVID-19 and climate change as “dual crises.” Two insights have come to the fore. First, that the way communities have mobilized against COVID-19 reflects the urgency and necessity of how they should mobilize against climate change. Second, that the progression of the COVID-19 epidemic shows the consequences of being ill-prepared and ignoring sound science. To the contrary, much global momentum for demanding climate action has been lost (Le Poidevin), and this year’s international climate change negotiations cancelled. With this in mind, in my make-shift home office, I’ve been considering the pandemic’s impact on how Hawai‘i and the world should address climate change and greenhouse gas (GHG) emissions. This grand experiment in staying put, all around the globe, will undoubtedly shape our systems as we emerge from this crisis. But lessons learned from working on climate change during the 2007–2009 Great Recession make me worry that large-scale climate action will also be harder to implement.

COVID-19 and GHG emissions

Many news articles have noted a dramatic decline in air pollution over major cities during stay-at-home orders. Many focused on the impressive NASA data documenting rapid declines in airborne nitrogen dioxide over China during the height of their lockdown. Since March, local news outlets have contacted me for a similar story for Hawai‘i. But our tradewinds and other geographical features mean that human-made air pollution has never really been our problem. “So what about GHG emissions?” a journalist asked. “Can we say whether this will reduce the impacts of climate change?” I wanted to give her a positive response—everyone needs hopeful news these days—but I had to say, “Not really, this is a drop in the bucket.”

The Intergovernmental Panel on Climate Change special report (2018) on limiting global warming to 1.5°C above preindustrial levels estimates that future emissions should not exceed 420 gigatonnes of carbon dioxide. To avoid catastrophic outcomes for our Pacific Island neighbors, Hawai‘i’s population-based

share of the global carbon budget will need to be reached sometime near 2024—along with global-scale action. Almost 90 percent of Hawai'i's GHG emissions result from fossil fuel burning for energy. Energy industries, mainly electricity, comprise 40 percent, ground transportation 24 percent, air transportation 19 percent, and marine transportation 4 percent (ICF and UHERO).

With no real-time data on GHG emissions, researchers are doing their best to predict what will happen in 2020. A recent study estimated that daily global CO₂ emissions decreased by 17 percent by early April 2020 in comparison to 2019 levels. Depending on assumptions about the duration of restrictions, the decline in 2020 annual emissions is estimated to range from -2 percent to -13 percent (Le Quere et al.). For Hawai'i, the largest sector decline in GHG emissions will come from air travel, since visitor arrivals plummeted by 99 percent in May (O'Connor). I coarsely calculate that this will result in a 60 percent reduction in annual GHG emissions from air travel, about 2 MMTCO₂ Eq. This is an unprecedented annual drop. Yet it only pushes back meeting Hawai'i's share of global GHG contributions by under two months. Urgent before COVID-19, decarbonization is no less so now.

Lessons from the 2007–2009 Great Recession

In 2007 Hawai'i passed its first attempt at state GHG policy in Act 234, which required achieving 1990 levels of GHG emissions by this year. Not exactly bold, but a solid start. Total emissions in 1990 were 21.3 MMTCO₂ Eq., and even before COVID-19, we were on track to meet the target. When the legislation passed in 2007, emissions were at 25.4 MMTCO₂ Eq. They fell to 20.2 MMTCO₂ Eq. in 2010—largely due to the Great Recession. Even though the economy had recovered by 2013 (Tian), the Renewable Portfolio Standard of 2009 can be credited for further lowering GHG emissions from electricity. This is my first lesson. To keep emissions from rising with economic recovery, we must still adopt intervening climate policy. Furthermore, reducing GHG emissions through economic disaster is hardly something to celebrate. There are much more effective and humane ways of achieving emissions reductions.

Lesson two is that economic crisis can stall climate policy efforts, over concern the economy can't deal with another burden. In 2008, in response to Act 234, I wrote that Hawai'i was facing several choices: “whether to adopt a cap-and-trade system or carbon tax, whether to join a regional partnership . . . and how potential national legislation might affect the status of any state or regional partnership” (UHERO). I could write the same thing today! I am currently working on a state-sponsored study to assess the economic and GHG impacts of a Hawai'i carbon tax. People are still ruminating about whether Hawai'i should join California in the Western Climate Initiative, a regional GHG trading program. And the federal government achieved little in the way of meaningful climate legislation, and is instead backpedalling fast right now.

The year 2009 was a precipice for many policymakers teetering on the edge of taking more ambitious state, regional, and national approaches to GHG mitigation. For instance, the Western Climate Initiative had five founding member states, with many others in observer status. But during the economic crisis, things fell apart. Eleven years later, California is the only state with an economy-wide approach to GHG emissions reduction. But now GHG emissions have only accumulated further. The people of Hawai'i, and the other 7.8 billion people around the globe, don't have another decade to find a more convenient time for climate action. It is now.

So How Can the Dual Crises Be Addressed?

With unemployment at levels rivaling the Great Depression, and an economic crisis without a known bottom, massive federal spending to address the COVID-19 and climate change crises would be welcome. Because Hawai'i already has an aggressive Renewable Portfolio Standard and a pipeline of renewable energy projects, it is well-poised to move on this kind of "Green New Deal." To expedite projects, though, also requires scaling up land use and community-engaged planning. California's Desert Renewable Energy Conservation Plan, which identifies least-conflict locations within the Mojave and Sonoran Deserts for solar energy, offers a good model for analysis on species and habitats, and inclusive consultation. Such an approach to economic recovery is highly unlikely under the current US administration, but January 2021 is near. Regardless, consistent with the goal of achieving 100 percent renewable sources of electricity by 2045, ramping up planning and implementing renewable energy projects is a no-regrets strategy for Hawai'i.

Among the many uncertainties created by COVID-19 is its impact on transportation systems. Will shared transportation continue to have reduced ridership? This would be a giant step backwards in both expanding mobility options and their potential for GHG emissions reduction. Could there be a positive long-term outcome from learning-by-doing in remote work? I am also excited by seeing more people walking and biking around their neighborhoods. Cities across the world have increased car-free streets, creating more room for these activities. Honolulu did this through summertime Sundays on Kalākaua Avenue, which my two sons declared was the most fun they'd had "in the time of coronavirus." Redesigning public and active places could have lasting impacts on GHG emissions reductions, and create an improved sense of place. Now is a great time for Hawai'i to focus on bike and pedestrian infrastructure, mixed-use zoning to shorten trip distances, affordable housing near job centers, and continued telecommuting for public and private sectors.

We must still lean into climate action. Hawai'i should continue to push for renewable energy and low carbon transportation, leveraging opportunities created by COVID-19. We cannot however get sidetracked, or naively believe that actions like improved telecommuting policy, though important, can meet the scale of the challenge. Carbon-intensive markets must be addressed. Study after study shows that carbon pricing, ideally at the federal level, is the most efficient way to reduce GHG emissions. Returning generated revenues to households can support low income populations through this transition. These hard conversations need to be had, and without federal leadership, the states will have to pave the way. But we cannot lose another decade. The planet can't take it.

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