



June 24, 2022

Ms. Rajinder Sahota, Deputy Executive Officer
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Generate Capital's Comments on Draft 2022 Climate Change Scoping Plan

About Generate

Generate Capital, PBC (Generate)¹ is a leading sustainable infrastructure company driving the infrastructure revolution. Generate builds, owns, operates and finances solutions for clean energy, water, waste and transportation. Founded in 2014, Generate partners with over 40 technology and project developers and owns and operates more than 2,000 assets globally.

Generate is the one-stop shop offering pioneers of the infrastructure revolution tailored funding and support needed to get projects built. Our Infrastructure-as-a-Service model delivers affordable, reliable and sustainable resources to over 2,000 customers, companies, communities, school districts and universities. Together, we are rebuilding the world.²

We Applaud California for Providing a Clear Long-run Vision Toward Carbon Neutrality, and for Valuing Input from the Clean Investment Community

We are proud to be a California-headquartered company and we continue to appreciate the visionary thinking from California's leadership with respect to environmental issues. This vision makes it such an exciting jurisdiction to do business in. The Draft Scoping Plan (DSP) is an excellent reminder of why California is at the forefront of in tackling the increasingly stark challenges presented by the climate crisis. We support the fact that the DSP targets full carbon neutrality and lays out a clear path to reach this ambitious goal by no later than 2045.

We own and operate many sustainable infrastructure projects, both in California and across the country, which will be influenced by the DSP. They include renewable energy generation, energy storage, electric bus fleets, energy efficiency and electrification of buildings, hydrogen fuel cells, and organic waste composting and anaerobic digestion (AD) facilities that produce renewable natural gas (RNG).

Our experience financing, building and operating these assets/projects, gives us valuable perspective on what will help accelerate/enable the transformation of California's infrastructure to address the climate crisis. We feel that in this iteration, and future iterations, of the Scoping Plan should continue to find a way to highlight a role for the clean technology investor's voice, which has not received formal attention from CARB since the Economic and Technology Advancement Advisory Committee (ETAAC) work was concluded during the first iteration of the Scoping Plan.³

¹ As a Public Benefit Corporation, we have a fiduciary duty to the public benefit, in addition to the classic fiduciary duty to serve our shareholders from a financial standpoint.

² For more information, please visit www.generatecapital.com.

³ <https://ww2.arb.ca.gov/news/economic-and-technology-advisory-committee-releases-final-report-greenhouse-gas-reduction>

Firms such as Generate are actively trying to turn the vision of a decarbonized California into reality, but there remain real world challenges that deserve attention from CARB, and other senior California leaders, and we appreciate the chance to provide input on both what's working and what could be improved. Included herein are our suggestions to strengthen the DSP so that California can continue to lead the nation in not only the energy and climate transition but also the transformation to an equitable, robust and truly circular economy.

The Proposed Scenario is the Most Feasible Scenario Examined

We support the Proposed Scenario (Alternative 3) for achieving carbon neutrality which, as the DSP states, "...is more feasible than Alternative 1 and Alternative 2 due to the longer time frame for clean technology and fuel deployment...The additional 10 years for achieving carbon neutrality also allow for technologies to scale and be deployed at lower costs. The Proposed Scenario provides significant health benefits in 2045...and has the least slowing effect on employment and economic growth."⁴

Understanding realistic timelines for technology deployment, and the time it takes to drive technology cost declines globally, once deployment does begin to occur, is a critical part of the Scoping Plan exercise. All stakeholders who understand the seriousness of the threat of climate change wish we could move more quickly to deploy the key clean technologies to reach carbon neutrality. Generate's dedicated staff work constantly to try to accelerate capital deployment and speed up real world investment timelines for sustainable infrastructure. However, we cannot rely on unrealistic assumptions in planning processes or ignore existing delays in real world implementation. For example, we believe that many of the assumptions that underly Alternative 1 would be unlikely to occur and that, therefore, this scenario does not deserve equal weight compared to others in the plan.

We Support Continued Reliance on Tradeable Performance Standards

We are pleased with the expressed commitment in the DSP to the Low Carbon Fuel Standard (LCFS), the Advanced Clean Vehicle Rules, and the Renewable Portfolio Standards for Both Gas and Power. In general, the clean investment community understands and knows how to build business models around both carbon pricing or Tradeable Performance Standards (TPS). The California programs mentioned above are world-leading TPS strategies that don't often receive enough credit for their role in unlocking investments in climate solutions.

A TPS sets a standard of technology performance but leaves technology choice to the program participants (e.g., clean technology companies and compliance entities). It increases the relative costs of technologies with undesirable GHG performance characteristics and lowers the costs of technologies with desirable GHG characteristics. We request that California continue to strengthen critical existing TPS programs and add additional TPS policies in other areas such as Natural and Working Lands (NWL), targeted industrial decarbonization (as considered in the DSP for the cement sector),⁵ or feebates to promote cleaner vehicles and appliances.

⁴ DSP at 52.

⁵ The DSP describes how Senate Bill 596 (Becker, 2021) requires CARB to develop a comprehensive strategy for cement use in California to achieve a GHG intensity 40 percent below 2019 levels by 2035, and net-zero emissions by 2045.

CARB Should Swiftly Increase the LCFS Stringency in Line with Achieving Full Carbon Neutrality

One of the most powerful existing California TPS policies is the LCFS. Generate is a finance provider, owner, and operator of a range of climate solutions in the transportation sector (including electric vehicles, hydrogen fuels cells, and waste derived renewable natural gas) and we strongly support the LCFS. The LCFS program has been critical to giving our investment committee at Generate the confidence to green light our investments in renewable transportation fuels and vehicles for the California market. These investments have also given us valuable knowledge and experience that has allowed us to advocate for similar policies in other jurisdictions.⁶

Leadership requires nimble policymaking. Therefore, we strongly support the DSP's clear language stating that CARB intends to evaluate and propose accelerated carbon intensity targets pre-2030 and post-2030 for the LCFS. We urge CARB to begin, in earnest, a stakeholder process around this rulemaking as soon as possible to ensure that the price signal created by the LCFS remains robust enough to enable success in achieving CARB's near-term and long-run goals for transportation fuels.

Carbon Removals, including through Natural and Working Lands Are Critical – The Final Plan Should Better Explain How Policy Will Enable New Business Models Around Such Activities

The DSP spends significant effort examining the potential for carbon removals, including through both engineered and natural removals in Natural and Working Lands (NWL). It is unlikely that the necessary changes with respect to carbon removals can be accomplished through public dollars alone. We therefore recommend greater emphasis in the Final Plan on how new policies will be enacted to motivate private capital to undertake the desired outcomes. As described above, new TPSs could be created to drive these activities or, alternatively, a greater focus within the carbon pricing system and/or use of auction revenues is necessary, if California is serious about creating a business case for such activities. To give just one example, these strategies would help us accelerate the build out of a novel wastewater recycling technology that can capture and recycle nutrients in the form of fertilizer, sequester PFAS, and dramatically reduce the energy intensity of wastewater treatment and biosolid disposal.

In our experience such programs are most successful in motivating private investment when they are:

- **Visible:** We recommend that any such policies involve significant stakeholder input and clear support from the CARB Board or other agencies. Visible processes are generally easier for the clean investment community to follow, provide input into, and have confidence in when compared to the alternative of many smaller balkanized programs.
- **Durable:** We support broad programs that, once established, continue and can be improved over time to maximize the correct investment incentives. This durability of well-functioning policies—such as the LCFS and the Cap-and-Trade program—have recently been called into question from members of the CARB Board, including questioning the well-established and well-reasoned incentives for activities such as anaerobic digestion at dairy farms, which Generate has made significant investments in (due to prior positive signals from California leadership).
- **Economically Efficient:** We support carbon pricing and tradeable performances standards such that the marginal cost of abatement (MAC) incentivized in the program matches the social cost of carbon, because such programs are more likely to be economically efficient delivering the maximum GHG reduction per dollar spent.

⁶ For example, Generate is a strong stakeholder voice in support of a Clean Fuel Standard for New York. See a list of partners in that effort here: <https://www.cleanfuelsny.org/>

- **High Value:** If California assesses the social cost of carbon (SCC) in the Final Plan at a relatively high value compared to prior estimates, any policy that provides an incentive to abate up to this SCC level will, by definition, be high value. Historically carbon pricing systems for NWL actions in the US have failed to meet this criterion.

Methane from the Waste Sector Deserves Continued Attention in the Final Plan

Generate Upcycle (a subsidiary of Generate Capital) invests, owns, and operates sustainable infrastructure assets in the waste-to-value and circular economy sectors. We invest in waste-to-value solutions including organic waste processing through the use of composting and Anaerobic Digestion (AD), recycling, and wastewater treatment including biosolids processing.

We own and operate a portfolio of North American AD and composting facilities as well as other food waste recovery assets with additional initiatives across biosolids, wastewater treatment, sustainable fuels, and sustainable fertilizer production. Across more than 20 facilities in the U.S. and Canada, Generate Upcycle currently processes approximately a half a million tons of food waste annually and composts an additional 365,000 tons of organic waste per year.

The DSP explains the importance of reducing GHG emissions, and especially methane, from the waste-sector but it does not recommend significant additional policy changes to adapt to new information developed about the industry since the last version of the Plan in 2017. The Proposed Scenario in the DSP calls for achievement of 75% organic waste diverted from landfill by 2025, in line with statutory requirements, but the reality is that the buildout of necessary infrastructure to hit this target is lagging statewide.

The flyover studies conducted by NASA's Jet Propulsion Laboratory for the California Methane Survey have demonstrated that California's landfill emissions are higher than previously understood and that both composting and AD must also be highly mindful of methane performance.⁷ Consequently, CARB's landfill emission inventories and associated avoided methane benefits when organic material is diverted from landfills should be revisited.

More proper recognition of the facility-specific benefits for landfill diversion, to both composting and AD facilities, that directly leads to expedited funding for facility development is crucial. Properly valuing the methane generated by organic waste and the environmental/climate benefits of capturing and destroying that powerful GHG will be critical in helping to ensure that organic waste recyclers are able to invest in best practices in maintenance/operations and in the highest quality monitoring technologies.

The Plan Should Call for Accelerated Permitting Processes for Sustainable Infrastructure Projects

Developing concrete recommendations to accelerate permitting for all sustainable infrastructure projects should be a greater focus in the Final Plan. In our experience, delays due to permitting are especially common for the organic waste diversion projects we've attempted to develop in California. Environmental permitting delays are now threatening the achievement of environmental goals, a perverse outcome that is, in some ways, unique to California's permitting process.

⁷ Cusworth, D.H., Duren, R.M., Thorpe, A.K., *et al.* 2020. Using remote sensing to detect, validate, and quantify methane emissions from California solid waste operations. *Environmental Research Letters*, 15(5) [[doi:10.1088/1748-9326/ab7b99](https://doi.org/10.1088/1748-9326/ab7b99)]

We have been actively developing projects in the state and found conflicting priorities as it relates to the regional water quality boards, air quality management districts, local and regional zoning/land use planning, CEQA, and approvals of relevant waste related permits. These conflicting priorities lead to years of development work with little assurance that you can go to construction and operation with the organic waste processing facilities. We have also found that sourcing appropriate land for this infrastructure is incredibly difficult as we must outcompete warehouses, battery storage facilities, cannabis operations, etc. for the land only to subsequently have to go through the many years of permits/approvals to allow the facility to proceed. This challenging dynamic is most prevalent for waste transformation projects that require the broadest range of, and often most stringent, permits, yet are some of the most impactful environmental (climate and human health) projects available.

Energy Efficiency, Widespread Electrification and Renewable Fuels Will All Be Needed Across All Sectors of the Economy

The DSP does a strong job of dispelling the myth that any one low carbon technology will be the proverbial “silver bullet” that will singly-handedly solve the climate crisis. The Plan also credibly highlights new emerging strategies, in the form of carbon removals, that deserve additional support. We encourage all Californian stakeholders to reduce the animosity⁸ between groups fiercely advocating for solely their favorite strategies to reduce gridlock and return the focus to a balanced technology portfolio that minimizes social costs and ensures proper recognition of public health and other non-GHG benefits.

Leaders at the highest levels of both climate science and the clean tech investment community agree that a balanced portfolio of technologies is the proper path forward. For example, the Intergovernmental Panel on Climate Change (IPCC), in its most recent approved draft report on GHG mitigation, entitled *Climate Change 2022, Working Group III contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*,⁹ states that:

“Reducing GHG emissions across the full energy sector requires major transitions, including a substantial reduction in overall fossil fuel use, the deployment of low-emission energy sources, switching to alternative energy carriers, and energy efficiency and conservation.”

Similarly, McKinsey Sustainability’s report¹⁰ exploring the net-zero transition finds that:

“Effective actions to accelerate decarbonization include shifting the energy mix away from fossil fuels and toward zero-emissions electricity and other low-emissions energy sources such as hydrogen; adapting industrial and agricultural processes; increasing energy efficiency and managing demand for energy; utilizing the circular economy; consuming fewer emissions-intensive goods; deploying carbon capture, utilization, and storage technology; and enhancing sinks of both long-lived and short-lived greenhouse gases.”

California has long been the jurisdiction in the United States that has most fully embodied a multi-sector, multi-technology approach to decarbonization and the DSP builds on this tradition in commendable pursuit of the ultimate goal—carbon neutrality. Continued leadership is needed to resist

⁸ For example, it’s possible to support both widespread electrification of buildings and targeted use of renewable gas for building loads that proves difficult to electrify.

⁹ https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_FullReport.pdf

¹⁰ <https://www.mckinsey.com/business-functions/sustainability/our-insights/the-net-zero-transition-what-it-would-cost-what-it-could-bring>



calls from those who would ignore important tools that can be helpful in addressing this critical challenge, and thus halt or delay the trajectory of impressive progress California has historically achieved.

Conclusion

Generate shares the DSP’s commitment to finding the most feasible and cost-effective portfolio of clean technologies to facilitate the transition to a carbon neutral California. We will continue to deploy billions of dollars of capital toward a broad set of solutions, and our commitment to continuously optimize toward the best answers is deep. We will keep our focus on the long-term outcomes of sustainability—as we say at Generate: our time horizon is forever.

Such long-term investment is easier when policy in leading jurisdictions, such as California, remains supportive. Thank you for the opportunity to provide our input on the DSP. We commend the Newsom administration, the legislature, and the dedicated staff at CARB and all relevant agencies for your tireless work throughout this Scoping Plan process and look forward to continued investment to help the state achieve its environmental, economic, and social justice goals.

Signature,

A handwritten signature in black ink, appearing to read 'Suzanne Hunt'.

Suzanne Hunt
Director, Policy