

November 2022

CARB Boardmember
California Air Resources Board
1001 I Street
Sacramento CA 95814

Re: Comments on CARB's Final 2022 Scoping Plan

Having attended almost all of the scoping plan workshops, as well as several EJ Advisory Committee meetings, I am well aware of the amazing amount of effort and thought devoted to this Plan. As a retired Air Resources Engineer, I see that the depth of staff commitment to good science and adherence to legislated policy has continued. Nonetheless, I am writing to you directly because my perspective is an outlier; I am convinced that **the scoping plan should include strategies that will strongly support those who wish to transition their lives to the totally biological foundation that is best.** Sadly, such measures do not seem to be included.

I am concerned that, as with most plans to address climate change, **the basic assumption is that we can successfully graft our fossil fuel lifestyles onto PVs, windmills, and batteries.** It's my engineering opinion that this will lead to increasing disappointment due to supply constraints and limitations. While California might be able to do this, **it just does not scale up** nationally let alone globally. There are limits to physical growth.

I am convinced that **wisdom bids us to instead plan to re-place our society onto a biological foundation,** over the long term. While nonrenewable PVs, windmills and batteries for harvesting and storing renewable energy can certainly play an interim role, fossil fuels are needed for mining and refining the metal and mineral resources required to manufacture and maintain more than a modest number of these harvesters and storage units. And all open-pit mining reduces ecological carrying capacity, as does all pavement.

A long term biological plan entails substantial changes in our fossil fuel lifestyles, including to the current loyalty to the monetary indicators of GDP and economic growth as reliable measures of economic health. Such indicators are applicable only to existing fossil-fuel financial systems. **Fossil fuel energy is much cheaper than human energy;** it takes a healthy adult about 100 hours of work (such as on a bicycle generator) to generate the amount of energy available from a gallon of gasoline. Thus, adherence to **our current financial system and pricing structures traps us in a "carbon cage" that hides our human energy reality behind highly misleading price signals.**

Carbon pricing at the retail level would strongly support consumers in recalibrating to a biological energy system. Specifically, **labeling every retail product and service with 'triple-pricing' in terms of embedded kwhr and GHG emissions as well as dollars** can be expected to create widespread awareness of how to minimize fossil fuel use while maximizing real welfare. These are the kinds of price signals that can really move the market.

GDP continues to suffer from several substantial inaccuracies. It has never included certain key contributions to economic welfare such as traditional and unpaid women's work in childcare (notably breastfeeding), homemaking, and kitchen gardening. In addition, I recently learned that in about 1970, the financial sector, which produces no tangible goods and services, was inducted into the GDP accounting. As well, since that time GDP and economic growth are correlated with increasing economic inequality.

Since fossil fuel energy is precisely physical energy, I have long based my analysis on our physical needs: clean air and water, healthy food, cooking, comfy shelter, and plenty of sleep and exercise. Since fossil fuel energy is physical energy, this approach is most direct in helping us plan our actions. This analysis supports plans that sidestep intermediate and temporary technologies such as motor vehicles.

People are in the habit of thinking they need jobs, cars, and money to meet these basic needs, when in reality **we all depend ultimately and absolutely on a healthy planetary ecology and on local supplies of food, water and other basic necessities.** The portions of traditional ecological knowledge which have survived genocidal efforts since 1492 are thus an extremely valuable resource.

The scoping plan refers to the need for co-operation among interagency partners. In particular, it appears that the California Energy Commission's **Title 24 regulations fail to support passive solar building design and construction, leaving substantial energy savings unrealized.**

Attention to natural and working lands as sources and especially sinks for carbon is very important going forward. Traditional and biological farming methods should replace conventional chemical methods as fast as possible; secure access to land for biological farming is a key factor which is currently rare. A few years ago, I took California's two basic real estate college classes. One of the instructors informed us that **the 'highest and best use' of any piece of land is defined as whatever makes the most money. This is a big problem.**

Recently, ruminant grazing was described by two directly knowledgeable practitioners as one of the very most effective ways to sequester carbon by increasing organic matter in the soil. Obviously, this cannot happen in CAFOs. Anaerobic metabolic processes yield methane, while aerobic metabolic processes yield carbon dioxide. **No more CAFOs and no new manure digestion facilities should be permitted or built, and existing CAFOs should be transitioned to ecological methods as soon as possible.**

My previous comments on March 3, after the Public Health workshop, generally summarize these points as well as offering access to more details supporting my conclusions:

<https://www.arb.ca.gov/lists/com-attach/8-sp22-publichealth-ws-WyhTNI8WXoHaFQ6.pdf>

<https://tinyurl.com/4sbbtmsw>

In particular, I have summarized my analysis in these two papers:

Sustainable Investment Means Energy Independence From Fossil Fuels

[https://www.researchgate.net/publication/](https://www.researchgate.net/publication/256048802_Sustainable_Investment_Means_Energy_Independence_From_Fossil_Fuels)

[256048802_Sustainable_Investment_Means_Energy_Independence_From_Fossil_Fuels](https://www.researchgate.net/publication/256048802_Sustainable_Investment_Means_Energy_Independence_From_Fossil_Fuels)

<https://tinyurl.com/ybgnmpb3>

and

Is it true that 'Small Is Beautiful'?

https://www.researchgate.net/publication/333581837_Is_it_true_that_'Small_Is_Beautiful'

<https://tinyurl.com/yy43rxhl>

Lastly, I strongly recommend to your attention “**Climate - A New Story,**” by **Charles Eisenstein**. Deeply researched and heartfelt, he makes a very convincing case that climate chaos is but one of the many ecological disasters that are caused by what we have used fossil fuels to do. He ends the book with a list of 18 societal actions that would collectively restore the healthy Earth we all need.

<https://charleseisenstein.org/books/climate-a-new-story/>

1. Promote land regeneration as a major new category of philanthropy: fund demonstration projects, connect young farmers to land, and help farms transition to regenerative practices. Provide public funding and government support for this transition as well by shifting agricultural subsidies away from conventional crops.
2. Institute a global moratorium on logging, mining, drilling, and development of all remaining primary forests, wetlands, and other ecosystems.
3. Expand the land protected in wildlife refuges and other reserves. When possible, enlist local and indigenous people in protection efforts to align their livelihood with ecological health.
4. Establish new ocean marine reserves and expand existing ones, with the goal of placing a third to half of all oceans, estuaries, and coastline into no-take/no-drill/no-develop sanctuaries.
5. In the rest of the oceans, establish strict bans on driftnets and bottom trawling
6. Ban disposable plastic bags for retail purchases. Phase out plastic beverage containers in favor of a refillable bottle infrastructure.
7. Reconstitute the World Bank to serve ecological healing rather than development. Start by declaring the amazon and Congo rainforests global treasures, purchasing the external debt of countries where the rainforests grow, and canceling the debt at a rate equivalent to the potential income from now-banned logging, mining, and drilling in those areas.
8. Promote afforestation and reforestation projects globally with an emphasis on ecologically appropriate native species.

9. Establish an “eco-corps” to address youth unemployment and restore ecological health by planting trees building water retention features on public land, deconstructing dams, etc.

10. Change building codes, sanitation codes, and zoning regulations to allow high density development tiny homes composting toilets, aquaculture wastewater treatment, etc. Nullify all land use covenants that prohibit vegetable gardens

11. Reintroduce and protect keystone species such as beavers, wolves, and cougars.

12. Carry out water restoration projects worldwide through water retention landscapes (swales, ponds, check dams, etc.), regenerative grazing and horticulture, and the strategic removal of dams, canals, and levees.

13. Relocalize the food system and promote economic localization generally, first by nullifying free trade treaties and replacing them with “fair trade treaties” that protect local economic sovereignty.

14. Institute a negative-interest financial system through international agreement to impose liquidity fees on bank reserves, along with complementary measures such as Georgist land taxes and other anti-speculative taxes.

15. Apply pollution taxes to make companies internalize the social and ecological costs of toxic waste, radioactive waste, air pollution, and water pollution.

16. Impose a deposit system for most manufactured goods so that manufacturers have an incentive to create durable, repairable products with easily recoverable materials.

17. Turn away from pesticides.

18. Demilitarize society.

Thank you for the opportunity to share my admittedly radical perspective that reflects years of earnest study and reflection on how we can live in harmony with Mother Earth.

Yours truly,

Muriel Strand, P.E.