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Advancing Climate Justice Priorities Over Profit-Led Research

Through intentional investments and informed divestments, investors, philanthropists, and foundations can support environmentally conscious, community-centered, and reparative approaches to economic and technological change.

By **Theodora Dryer** | Aug. 25, 2022



(Illustration by Vreni Stollberger)

Technology-focused climate crisis research and development (R&D) programs are in a time of rapid expansion and reformulation across **government**, **academic research**, the **private sector**, and **partnerships that span all three**. This R&D feeds into climate transition policies—future-facing plans made by an entity, organization, or government in response to current climate science recommendations. Not all climate

transitions are created equal, and it matters a great deal who is leading the research and funding, and what is prioritized in those plans. To contribute to a more just climate transition, funders must support justice-centered approaches to technology and economy that repair historical harms.

I specialize in historically informed research on how technological development and deployment can perpetuate the climate crisis and the political functions of digital data systems in water and natural resource management. A key takeaway from this research is that there is always a story at work in climate and natural resource transition agendas. These stories make political assertions—implicitly or explicitly—about the past, present, and future. Profit-led transition agendas often assert a singular vision of the future that benefits only a few, erases the histories of local communities, and perpetuates harm to

people and the environment. For this reason, it is necessary to take a **public interest**, rather than profit interest, approach to climate crisis research.



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For sustainable tech to be possible, funders, including investors, philanthropists, and foundations, must develop a two-pronged approach of intentional *investments* in those leading justice-centered approaches to technological and economic transitions and informed *divestments* from extractive and fossil-fuel-dependent systems and enterprises. This work involves navigating an R&D landscape that is shaped by conflicting and confusing stories about the climate crisis that can obfuscate the work and research of those leading the just climate transition.

In the late 20th century, US environmental policies were influenced by a mix of inflamed climate anxiety (surrounding, for example, the 1990s acid rain policies and ozone debates) and powerful, **Big Oil-funded climate change denialism** that hindered necessary action. Today, we're experiencing a similar but not-quite-the-same version of climate crisis avoidance. The same entities (including oil companies like ExxonMobil) who funded climate change denialism for decades, and continue to produce deadly amounts of greenhouse gas emissions, are now funding **climate crisis research**.

Many private-tech interests are also advancing a dangerous paradigm of anxiety-driven R&D that puts forth profit-led solutions (technological fantasies like Elon Musk's campaign to colonize mars) and environmentally catastrophic market systems, including the electric vehicle (EV) markets incentivized in the Inflation Reduction Act (IRA) President Biden signed into law earlier this month. These mark a growing tendency toward **technological solutionism** over environmental repair and social accountability grounded in communities.

In what follows, I discuss major climate crisis R&D areas—net-zero and cap-and-trade systems, environmental data governance, and lithium-dependent EV technologies. For each, I clarify the stories being told about these climate crisis tech solutions to help weed out the promissory distractions and reveal pathways for supporting justice-centered and public interest research.

The Cloud of Net-Zero

Carbon stories are a major feature of climate transition agendas. The current climate crisis R&D landscape features a broad suite of carbon-focused technologies, including carbon capture and carbon control, with net-zero and carbon neutrality as a prominent objective. Net-zero is the basic idea that the amount of emissions added to the environment or climate should be no more than the amount taken away. Countries, including Brazil, have written umbrella policies toward **achieving carbon neutrality by 2050**, and specific companies, including Microsoft, promise to be carbon negative by 2030.

A takeaway point here is that net-zero **is a goal or projected benchmark**—it is not a theory of change. This means that the *how* or the real-world processes undergirding these net-zero ambitions remain subject to the interests enacting and benefiting from them. This is the clutch. Without intentional climate justice and public interest approaches to these benchmarks, net-zero campaigns are unlikely to confront the root issues of the climate crisis: a fossil-fuel-dependent geopolitical system driven by centuries of colonial-led extractive mining systems and resource control. Net-zero campaigns also spur well-intentioned, yet harmful, investments in **greenwashed technologies**, such as carbon capture tech, which are fossil-fuel and energy intensive and **emit more carbon than they take away**, undermining the central premise of net-zero.

Yet for-profit carbon capture tech is growing. This includes AI, machine learning, and computer vision applications (some directly **funded by ExxonMobil**) that, for example, promise to capture greenhouse gasses in porous rock formations. Other corporations like Microsoft are producing net-zero technology (**KarbonVision**) and **other environmentally destructive military technology** at the same time. For-profit innovations on carbon emissions that don't **confront the systems that produce those emissions** distract from climate justice work and the urgent need **for repair and reparations**.

The War on Want and London Mining group and **Indigenous Environmental Network** are nonprofits and coalitions leading research on extractive mining and fossil fuel divestment. Their approach to climate justice includes understanding relevant historical and community contexts behind technological systems and addressing **the root causes of the climate crisis**. Justice-centered research like this contends with the **entire political economy of a tech system**, including supply chains and natural resource usage, local markets, policies, and labor structures, and environmental and ecological factors. These research agendas differ in kind from profit-driven research that often neglects accountability for the stratified social and environmental contexts surrounding innovations like carbon capture technology.

Cap-and-Trade

Under the umbrella term of net-zero, there are different economic and market stories at play for achieving these benchmarks. A common and rapidly growing approach is carbon trading or cap-and-trade systems, which propose taking a market approach to emissions reduction (derivative from Robert Coase's 1960s economic philosophy) where entities that emit carbon can freely trade their carbon dioxide caps under the purported goal of reducing overall emissions over time.

The cap-and-trade paradigm first emerged in 1991 when the George H.W. Bush administration coaxed the Tennessee Valley Authority (TVA), a federal utilities agency, to make its first emissions allowance purchase. Carbon trading markets have been growing steadily since. China is currently leading the world after **nationalizing its markets**, and the US state of California has the world's fourth-largest market. Carbon trading is projected to grow **50 times its current size by 2050**.

These markets emerged as for-profit companies designed new ways to hedge government regulatory initiatives that are instated to "cap" emissions allowances. For example, California's cap-and-trade program that began in 2013 has the objective of reducing emissions by 40 percent below 1990 levels by 2030. Within this broader regulatory context companies are required to meet certain emissions standards, which they skirt by buying and trading their emissions allowances.

Groups working on climate justice research like **the NAACP**, the Climate Justice Alliance, **Durban Group for Climate Justice**, California Environmental Rights Alliance, Carbon Trade Watch, and Communities for a Better Environment have tracked the impacts and misconceptions of carbon trading and are working to mitigate these outcomes. There are two recurring points in this research that should become common knowledge. First, carbon trading—by design—bolsters industry profits and generates pollution at the expense of frontline communities. These programs allow companies to hedge regulatory caps without altering business-as-usual, even while business-as-usual contributes to pollution and environmental and social degradation.

"Dig, burn, and dump," is a common description of the extractive economic systems and companies that benefit from cap-and-trade programs. For example, as Kristoffer Tigue reports, **the Chevron oil refinery in Richmond, California**, which is technically in compliance with California's regulatory apparatus is poisoning a town in which 60 percent of the population are people of color, and 15 percent are below the poverty line. Those who already control the resources and markets are set up to profit from the inequality inherent in these systems.

In other words, cap-and-trade is a market system that fails to address the base conditions of environmental racism. Due to a long history of racist and inequitable zoning and legal codes, low-income, migrant, Indigenous, and Black and Brown communities **have been forced to live next to toxic**

waste and pollution-producing sites. Cap-and-trade programs in no way seek to contend with this living history and instead perpetuate it by **allowing companies to buy-and-trade pollution** instead of intervening in how those companies generate pollution in the first place.

The second point to emphasize from the research on cap-and-trade programs is that they undermine their own stated objectives to **create an efficient market system** that reduces carbon emissions over time. Studies have shown that California's markets have not **yielded improvements in environmental equity**. And in the same markets, ProPublica confirmed that the rate of **oil and gas emissions is up**. The promise of an efficient market system has yet to be achieved.

Following the recent *EPA v. West Virginia* Supreme Court decision that limits the agency's regulatory powers, there's an even greater need for funders to invest in agencies, organizations, and coalitions that are investigating justice-centered, interdisciplinary, and **multiscalar** (addressing the relational dynamics between multiple levels of governance) approaches to carbon regulation. Funders should also actively divest from carbon trading and carbon tax programs that allow corporations to exacerbate pollution and environmental racism, despite promises that they will reduce carbon emissions.

Understanding the Terms: Data, Standards, and Evidence

Climate crisis stories are often told and archived through data, scientific evidence, and quantitative measures and standards. For this reason, environmental and climate data governance that affects who has representation, ownership, and sovereignty in climate transitions should be a central focus of climate crisis R&D.

In the early 2000s, the open data movement (international efforts to make big data open, with free licenses for all) prompted **Indigenous Data Sovereignty** (IDS) networks to examine how "open data" is actually **processed, shared, and governed**. What they found was that open data is not actually open for everyone. The ways state agencies collect, store, analyze, and disseminate information can reinforce colonial harms against Indigenous and local community interests. **Data sovereignty** is crucial for Indigenous rights over natural resources, preservation of knowledge systems, and in leading the **climate transition**. Other examples of Indigenous-led environmental and climate data research include the **GEO Indigenous Alliance** advancement of research on earth observations, data, and technology and the **Tribal Climate Leaders Program**, which focuses on the natural, cultural, and political impacts of climate change.

In the US context, regulatory agencies including the Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Administration (NOAA) are subject to shifting political agendas,

making environmental and climate data reporting and storage precarious. This summer's *West Virginia v. EPA* decision further complicates the reporting of **greenhouse (GHG) data** by pollution-producing entities in West Virginia and across the country. Some may remember January 2016 when climate scientists spent Inauguration Day **uploading precious climate information** to DataRefuge.org. Their response foreshadowed the Trump administration's subsequent backlash against the National Environmental Protection Act (NEPA)'s 1969 regulatory policies.

A crucial data-assessment directive following NEPA that was **recently reinstated** is the use of **environmental impact statements (EIS)** to measure adverse environmental effects. However, since the 1970s, **EIS reports have been relatively ineffective**, in part, because oil and tech companies often supply their own data and analysis. Therefore, it is imperative that the data initiatives feeding environmental and climate impact assessments abide by a clearly defined justice framework that prioritizes the communities most impacted by development.

As outlined throughout this **in-depth series**, a **core approach of public interest technology** is to support these kinds of community-centered initiatives. There are many groups leading this work. For example, in November 2016 the **Environmental Data & Governance Initiative (EDGI)** was formed to assess the inner workings of federal environmental policy as it relates to data, and their deeply meaningful work continues today. Funders can help undergird a just climate transition by prioritizing climate crisis research that advances a clearly defined data justice and data sovereignty agenda.

EVs and Lithium

Electric vehicles (EVs) carry misconceptions and their own set of environmental problems. EVs are generally thought of as a renewable technology that's needed to mitigate the climate crisis. In reality, EV markets (**projected to triple in size by 2028**) are fostering deleterious partnerships between governments and the private sector, undergirded by the rapid expansion of mining and rare earth acquisition. EV production relies on lithium mining and **lithium fields** that are destroying Indigenous and public lands, driving the development of water- and energy-intensive factory systems, and advancing a vision of climate transition that is preoccupied with a for-profit demand economy at the expense of environmental and community interests.

Electric cars, situated as the primary tech alternative to fossil-fuel use cars, are not a new technology—they were **first imagined and designed in the 1830s**. In the early 20th century, Henry Ford designed an **electric Model-T** but pulled the plug on production after Edison battery materials proved too costly and unstable. A significant resource shift occurred after the 1990s with increased expenditure in lithium-use batteries.

Demand for EV production has followed shifts in energy and gas markets with piqued interest during the 1970s oil crisis and after the 1990s wave of state and federal emissions regulations. Private sector innovations have also driven the growth of EV markets. For the past 30 years, Tesla has been seeding a large-scale and for-profit EV enterprise, and situating itself as a leading power to “**accelerate the world’s transition to sustainable energy.**”

Checking this vision of accelerated transition, the **Center for Interdisciplinary Environmental Justice (CIEJ)**’s “**The Secret Life of an Electric Car**” shows that even a single EV is bad for the environment. And there is a significant difference between one electric car and expanding EV markets at scale. Around the world, lithium mining has caused catastrophic water loss, ground destabilization, biodiversity loss, contaminated soil, and toxic waste sites.

As scholar Amrah Salomón writes, **identical to the 19th-century gold rush**, developers are now rushing after lithium and hydrogen to feed EV development. Lithium mining initiatives are aided by long-standing extractive energy laws. The 1872 General Mining Law still governs the US southwest, allowing any US citizen to prospect and misuse public land, and in June of 2022, President Biden emboldened the Department of Energy’s license-to-drill under the 1950 Defense Production Act (DPA). These rapid-extraction energy policies are used **in the name of clean energy** without addressing the known costs to the environment and communities. Meanwhile, they contribute to an inequitable geopolitical system as seen with **illegal mining in Brazil** and the destruction of **Native American lands**. Some governments are responding. Serbia recently **canceled plans** for a lithium mine following public outcry, and similar movements are occurring in Chile, Kenya, and Zimbabwe.

There are alternatives to expanding a lithium-dependent demand economy. Public interest and environmental justice approaches to **transportation technologies** focus on big-picture questions of housing and zoning, mobility, access, and divesting from energy-intensive infrastructures. **Centering racial analysis, local data, and community-based engagement**, transportation analysts are developing research agendas that address historical harms such as **hazardous highway infrastructure**. These research agendas reduce fossil-fuel emissions through the advancement of reparative justice.

Funders are in a powerful position to further divest from partnerships between **mining companies and governments** that seek to profit from unnecessary lithium, hydrogen, and rare earth mining. Instead, they can support water protectors and frontline communities who are **leading strategies for fossil fuel divestment and creating pathways for renewable infrastructure**.

A justice-centered and public interest approach to climate crisis research requires multiscalar, interdisciplinary, and cross-domain research agendas. These approaches recognize that the development

and deployment of any technological system—whether or not promised in the name of sustainable development—necessarily involves a complex web of legal, social, and economic considerations that are rooted in local environmental contexts. Through intentional investments and informed divestments, funders are in a beneficial position to learn from and **support communities and coalitions**, whose stories about the past, present, and future already contain the wisdom and information needed to take necessary action toward a just climate transition.

*Read more stories by **Theodora Dryer**.*



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DOI: 10.48558/byvv-b890

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