

HOODWINKED IN THE HOTHOUSE

# False Solutions to climate change

second edition



Rising Tide North America  
and Carbon Trade Watch

The 2nd edition of *Hoodwinked in the Hothouse* was produced by:

**Rising Tide North America**, an all-volunteer grassroots network, promoting local, community-based solutions to the climate crisis and direct action to confront the root causes of climate change. If you like what we have to say here, you should join our network! To learn more about Rising Tide, to find or start a local group, get in touch—we'd love to hear from you!

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**Carbon Trade Watch** aims to provide a durable body of research which ensures that a holistic and justice-based analysis of climate change and environmental policies is not forgotten or compromised. Additionally, CTW supports movements and communities in their local initiatives and struggles for environmental and social justice.

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# Hoodwinked in the Hothouse

Desperate to avoid climate regulation that may affect profits, polluting corporations are working hand-in-hand with governments, presenting a dizzying array of false solutions that deepen inequalities in our societies. There is a clear agenda: Manage the climate crisis without compromising profits, the power structures or the economic system that got us here, even if that means exacerbating the problem. Wall Street financiers, the synthetic biology industry, “green” venture capitalists and a host of others are jumping on the “we care about the climate, too!” bandwagon.

These actors have reduced one of the clearest consequences of an unsustainable system into a mere technical problem that can be “efficiently” dealt with through market-based solutions. This market fundamentalism diverts attention away from the root causes of the problem, encouraging us to imagine a world with price tags on rivers, forests, biodiversity and communities’ territories, all in the name of “dealing with the climate crisis.” At the heart of all false solutions is an avoidance of the big picture: the root causes.

False solutions are constructed around the invisible scaffolding that maintains the dominant economic, cultural and political systems—the idea that economic growth is both desirable and inevitable; that progress means industrial development; that Western science and technology can solve any problem; that profits will motivate and the markets will innovate. Most of us in the Global North\*, whether sensitized to it or not, are participants and, at times, even take comfort in this world view. Sadly, many find it easier to imagine the end of the world than the end of a globalized economy built upon the unsteady legs of expanding empire, ecological erosion and exploitation of workers and communities.

We can take steps, large and small, to stop the climate crisis. What we cannot afford to do is go down the wrong road. *Hoodwinked in the Hothouse* is an easy and essential guide to navigating the landscape of false solutions—the cul-de-sacs on the route to a just and livable climate future.

Gopal Dayaneni, Movement Generation: Justice and Ecology Project

\* Throughout this booklet, wealthy countries, aka the developed world or the First World, are referred to as the “Global North.” Cash-poor countries, aka the developing world or the Third World, are referred to as the “Global South.”

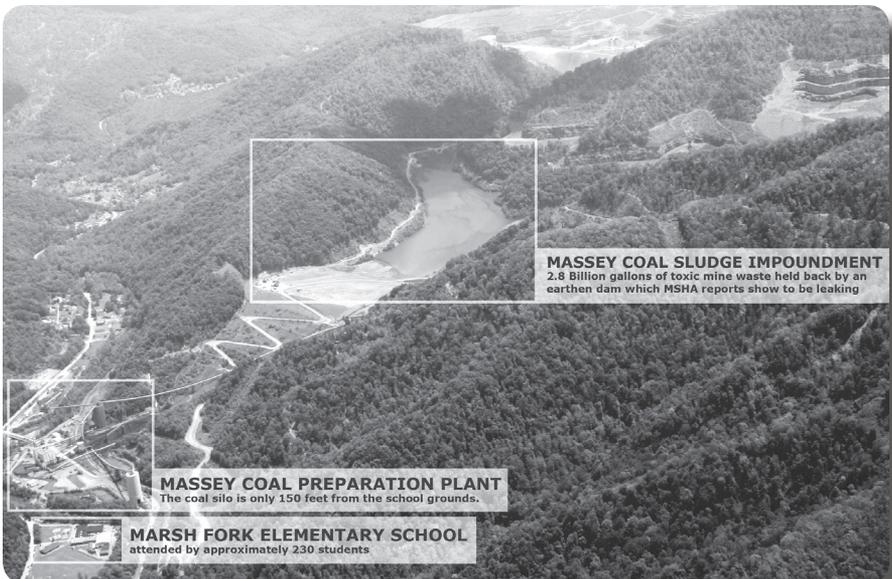
# Clean Coal and Carbon Capture and Storage

“Clean Coal” is a marketing term that refers to various techniques intended to reduce pollutants from coal burning. Lately, the clean coal hype has become focused on Carbon Capture and Storage (CCS)—capturing pollution from coal burning and burying it underground. This “carbon sequestration” is primarily being considered for coal power plants, though it has also been proposed for other power facilities.

Even proponents admit that CCS is unlikely to be widely usable until at least 2030, far too late to be effective in preventing climate change tipping points. It is still uncertain whether carbon dioxide (CO<sub>2</sub>) can be stored indefinitely, and an accidental release could lead to CO<sub>2</sub> asphyxiating nearby communities. CCS technologies have only been used on a small scale, primarily in conjunction with “enhanced oil recovery” schemes, in which CO<sub>2</sub> gas is used to force oil and natural gas out of the earth (these fossil fuels are then burned, releasing more CO<sub>2</sub>.)

Massive infrastructure—including 11,000 to 23,000 miles of CO<sub>2</sub> pipeline and hundreds of untested underground storage sites—would be needed to implement

Coal country, West Virginia. Photo: Appalachian Voices



CCS in the US. This risky and unproven technology has even been used as the justification for a rush of new Integrated Gasification Combined Cycle (IGCC) coal plants, because conventional coal plants are not CCS-ready. Fortunately, most of the proposals for IGCC plants have been canceled due to high costs and grassroots opposition.

Coal residues known as fly ash—captured from another coal “cleaning” technique—are stored behind more than 600 earthen-sludge dams throughout the US. Residents living near these sites are exposed to heavy metals because the unlined reservoirs often leak into drinking water. Dams can rupture from age or poor construction, as was tragically demonstrated by the 2008 Christmas Eve coal ash spill in Tennessee, which buried homes and rivers with more than a billion gallons of toxic sludge. Despite the “cleaning,” coal power plants are still responsible for over 24,000 premature deaths in the US each year due to the fine particulate matter they release into the air. The term “clean coal” is a calculated deception to legitimize the expansion of a toxic industry.

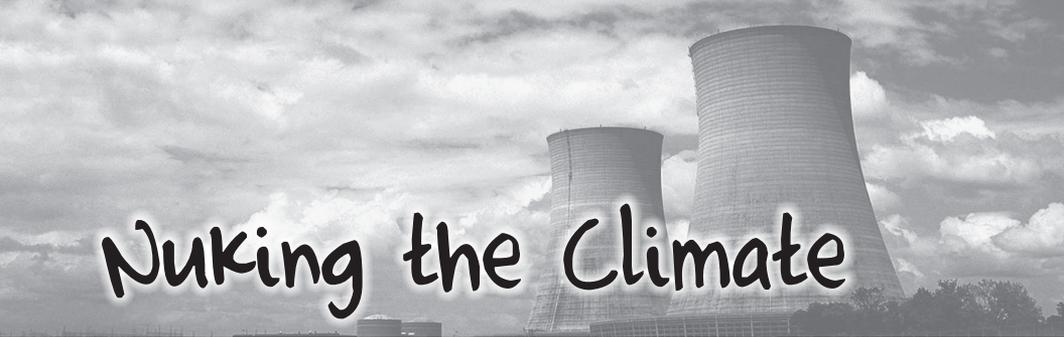
Even if coal could be burned safely, there is no way to “clean” the damage from extraction. Coal mining has devastated communities and ecosystems from Bangladesh to Black Mesa, Arizona. Mountain top removal—the worst form of coal mining—can level 10 square miles of forested mountains in a single operation. West Virginia alone has seen more than 500 square miles of mountain and 1,500 miles of river destroyed by mountain top removal.

Some environmentalists in wealthy countries agree that clean coal is still too dirty for the Global North, but advocate its use for the energy needs of the Global South, failing to acknowledge the need for global environmental justice and international solidarity.

[www.blackmesawatercoalition.org](http://www.blackmesawatercoalition.org) • [www.ohvec.org](http://www.ohvec.org) • [www.coal-is-dirty.com](http://www.coal-is-dirty.com)  
[www.mountainjustice.org](http://www.mountainjustice.org) • [www.energyjustice.net/coal](http://www.energyjustice.net/coal)



photo: Rainforest Action Network

A black and white photograph of two large, cylindrical cooling towers of a nuclear power plant, set against a cloudy sky. The towers are the central focus of the top image.

# Nuking the Climate

The nuclear industry has latched onto the climate crisis in a last ditch attempt to survive in the face of long-term public opposition.

Nuclear power is presented as clean energy because carbon dioxide is not emitted during nuclear fission. However, huge amounts of fossil fuels are used in every other stage of the process, including mining, milling, conversion, the enrichment and fabrication of uranium, the construction and decommissioning of power plants, long-term storage and disposal of nuclear waste, and transportation between these stages. Overall, life cycle greenhouse gas emissions of nuclear power are comparable to those of natural gas.

Uranium is mainly mined either in vast open-cast pits or by in-situ chemical leaching, where sulfuric acid, nitrous acid and ammonia are injected into the uranium seam and pumped up again years later. Producing each ton of fuel requires 1,000 tons of rock to be ground up and extensively processed. The rock remains as radioactive waste, exposing whole ecosystems to radiation danger for millions of years. In the end, nuclear power lays waste to more land than coal mining per unit of energy. Some of the uranium will end up in military applications, poisoning soldiers and military targets alike with radioactive pollution from armor-piercing “depleted uranium” weapons.

Radioactive air and water pollution is released through the routine operation of all nuclear reactors. Even without accidents, communities living near nuclear reactors are exposed to hundreds of radioactive chemicals, contributing to a wide range of health problems, including breast cancer, leukemia and infant deaths.

Nuclear power is the most expensive form of energy and takes longer to develop than any other energy source. Reactor constructions commonly run years behind schedule and billions over budget. No nuclear reactor has been built anywhere in the world without massive public financing. Without numerous subsidies, including limits on liability in the event of an accident, the nuclear industry could not exist. Despite all the hype, known uranium reserves will not allow nuclear fuel production to last for more than 70 years, even at the present rate of consumption.

*continued on next page...*



# Natural Gas

Promoted by corporate backers as the “least dirty” of the fossil fuels, natural gas (methane) is touted as a “bridge fuel” by its corporate backers, who argue it can be a clean alternative to coal. North American gas production has been unable to keep up with demand and the industry has been exploring new methods that are more energy-intensive and dangerous.

Liquefied Natural Gas (LNG) is super-cooled methane that can be shipped overseas in giant tankers. Existing and proposed LNG import terminals along US coastlines allow gas importation from other continents, expanding our dependence on imported fossil fuels. Overseas transport of natural gas adds 25% to its CO<sub>2</sub> emissions.

Unconventional forms of gas extraction are also expanding. Coal-bed methane involves drilling in coal-beds to extract gas from coal seams. The industry is using an extraction technique known as hydraulic fracturing, or “fracking,” to access shale gas. In communities from New York to the Colorado Rockies, toxic cocktails of water, sand and chemicals are pumped into geological formations to push out the gas, often near peoples’ homes. These operations have caused chemical spills in creeks and subterranean leaks which have contaminated underground aquifers.

Pipelines tie together gas wells, LNG terminals, and air-polluting, water-hungry, gas-fired power plants. Thousands of miles of existing and proposed pipelines cut through communities, farmlands, lakes, rivers and forests, harming ecosystems. Gas pipelines are poorly maintained, and leaks have led to explosions. This extensive leakage makes the life-cycle greenhouse pollution from natural gas rival, or surpass, that of coal.

[www.shaleshock.org](http://www.shaleshock.org) • [www.lngpollutes.org](http://www.lngpollutes.org) • [www.earthworksaction.org](http://www.earthworksaction.org)

Finally, the nuclear power industry has a long history of racist practices, with uranium mining found largely on native and aboriginal lands, and waste disposal almost exclusively targeting native lands, as well as black and Hispanic communities.

[www.nirs.org](http://www.nirs.org) • [www.energyjustice.net/nuclear](http://www.energyjustice.net/nuclear) • [www.beyondnuclear.org](http://www.beyondnuclear.org)



# Carbon Trading

## Part 1: Cap and Trade

The practice of carbon trading was implemented by the Kyoto Protocol as a strategy for tackling climate change, while allowing business-as-usual in industries that profit most from the use of fossil fuels. Essentially, governments made carbon pollution a market commodity by issuing tradable pollution permits. As the theory goes, the amount of permits issued would decrease year by year and carbon emissions would be reduced correspondingly.

The world's largest cap and trade system is in Europe and it has been an unmitigated failure, beset by fraud and market manipulation. The market includes large industrial power stations, plants and factories, which comprise just under half of Europe's total CO<sub>2</sub> emissions. Over 90% of permits are issued free of charge, yet some power companies have raised prices to "compensate" for the costs of the scheme, resulting in windfall profits expected to reach \$80 billion by 2012. At the same time, a majority of companies have received more permits than their actual emissions, leading to bargain-basement prices for the remaining permits and little incentive to limit emissions. To make matters worse, emissions monitoring is woefully inadequate: Nearly half the emission sites that purchase carbon credits in Europe are not satisfactorily monitored.

Proponents say these problems can be fixed, but there are more fundamental issues. With short-term reductions in carbon emissions relatively inexpensive in carbon trading markets, there is little incentive toward crucial long term changes and investments that will be needed to create a post-carbon economy. Furthermore, because cap and trade systems leave everything to the market, they can exacerbate pollution inequities. For example, the US sulfur dioxide trading market has led to increases in pollution in some low-income communities and communities of color as industries decide to concentrate pollution in areas with less rigorous environmental enforcement and lower "political costs."

Most troubling, cap and trade creates an experimental new system of private property rights. Corporate balance sheets and legal statutes record carbon permits as property in the same way government-issued patents or land grants are accounted for. When the most powerful actors in society are given additional



Demonstration during the 2007 UN climate meetings against the inclusion of forest offset credits in a post-Kyoto agreement. Photo: Ben Powless

property rights, their ability to shape our future is further entrenched. The vast majority of carbon trades are made by either energy producers seeking protection from fossil fuel and currency price fluctuations, or by specialist traders seeking speculative profit, rather than by companies concerned with meeting their “caps.” Cap levels and trading rules are the product of endless lobbying by companies and countries trying to retain their high allowances.

Market analysts widely expect the carbon market will become the largest commodity market in history. At a time when poorly understood, experimental markets dominated by powerful interests have thrust millions of households into foreclosure, with the world in the worst global recession in decades, do we really want another opaque commodity trading market?

Europe intends to fill some of the holes in the system—for instance, by auctioning off some permits rather than just giving them away. The fact remains that carbon trading does not address rising pollution levels, it simply hands over a crisis to be played out in the marketplace.

## Part II: Carbon Offsets

Carbon offsets are a trick designed to make it cheap and easy for polluting companies and countries to meet their emissions reductions requirements, or for individuals to assuage their guilt about their lifestyles. Instead of actually reducing pollution, they can pay for a carbon “reduction” project elsewhere. Offsets compound all of the problems of the cap and trade system—literally a license to pollute beyond the allotted “cap.”

Nearly all of the technologies described elsewhere in this booklet have received funding as offsets, their associated abuses enabled by—and enabling—coal, oil and gas companies who wish to carry on polluting. Carbon trading is the architecture supporting all other false solutions.

The Kyoto Protocol's "Clean Development Mechanism" (CDM) is the largest offset market in the world. As part of the Kyoto Protocol, it was established to allow wealthy polluting countries to "buy" cheaper carbon reductions in developing countries instead of making emission cuts at home. CDM is an attractive subsidy for big business, with reduction credits frequently being sold to support projects that would have happened anyway. The CDM is a billion-dollar market and continues to expand into new methodologies and schemes. This practice is anything but "clean"—it results in a net increase in pollution and displaces responsibility away from polluters.

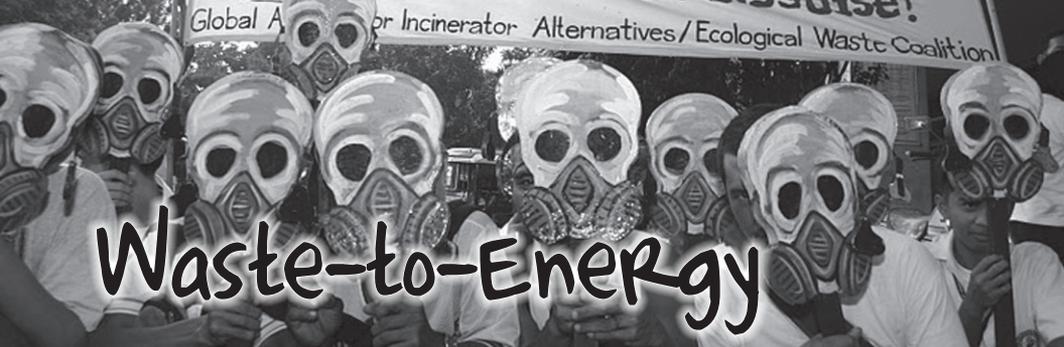
Countries and companies selling offsets have an incentive to over-report emissions reductions in order to obtain more credits to sell. This type of manipulation will be further encouraged by new speculative markets in carbon offsets, which have been pioneered by Goldman Sachs and other investment banks that have recently begun marketing carbon-backed securities and subprime (junk) carbon bonds.

Offsetting encourages us to think we can buy our way out of climate catastrophe, but the reality is that offsets are a way for large polluters to continue dangerous levels of pollution within a new legal framework. Not only are the vast majority of offset projects socially and environmentally unjust, they distract us from the larger structural and social changes that need to happen to create a sustainable society.

[www.carbontradewatch.org](http://www.carbontradewatch.org) • [www.durbanclimatejustice.org](http://www.durbanclimatejustice.org) • [www.ejmakers.org](http://www.ejmakers.org)  
[www.climatesos.org](http://www.climatesos.org) • [www.storyofstuff.com/capandtrade](http://www.storyofstuff.com/capandtrade) • [www.seen.org](http://www.seen.org)  
[www.foe.org/subprimecarbon](http://www.foe.org/subprimecarbon) • [www.energyjustice.net/climate](http://www.energyjustice.net/climate)



Outside the offices of the Carbon Neutral Company in London, as it was being occupied by activists with London Rising Tide in February 2007. Photo: Mike Wells



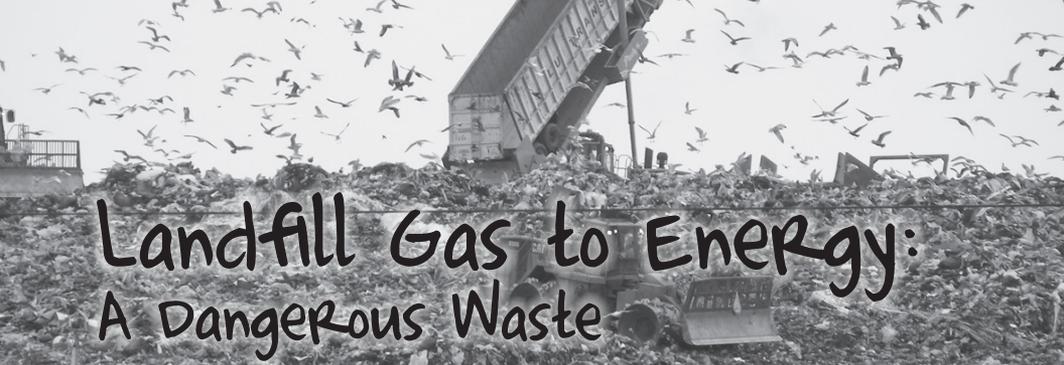
“Waste-to-Energy” is a public relations term for generating power by burning garbage. Trash incinerators burn discards like paper, plastics, metals and food scraps, converting them into toxic ash and toxic air pollution, and making landfills more noxious. In recent years this industry has been promoting itself as a green, renewable energy provider.

In reality, energy produced by incinerators is very carbon intensive, emitting 33% more CO<sub>2</sub> per unit of energy than coal power plants. In contrast, if all discarded materials in the US were recycled and composted, it would be comparable to taking half the cars in the US off the road. Incinerators are basically a massive “waste-of-energy,” yielding less than one-third the energy that could be saved by recycling and composting.

Incinerators release a wide range of toxic pollutants and are a leading source of mercury, dioxins and furans. Many of these toxins make their way into our food supply. Incinerator pollution disproportionately impacts working class communities and communities of color in whose backyards they are typically built, such as the world’s largest trash incinerator in Detroit, MI. Incinerators are expensive to build and operate, costing billions of dollars—sometimes bankrupting the communities they “serve.”

In the Global South, incinerators impoverish millions of waste workers whose livelihoods depend on recycling discards. In the US, recycling—which is forced to compete with incineration for materials—creates more than 10 times as many jobs per tonnage of waste than incinerators or landfills. By sidetracking discarded materials and keeping community investment away from recycling, incinerators burn much needed jobs.

Facing widespread public opposition, the trash burning industry has rebranded itself, pushing new types of incinerators with fancy names like plasma arc, pyrolysis and gasification. These unproven systems are more expensive, and often create more greenhouse gases and toxic by-products than traditional incinerators.



# Landfill Gas to Energy: A Dangerous Waste

Landfills are the third largest human-made source of methane in the world. Landfill gas is about half methane and half  $\text{CO}_2$ , laced with hundreds of toxic contaminants, including methyl mercury and many chlorinated chemicals that can form dioxins when burned. Methane is a greenhouse gas 72 times more potent than  $\text{CO}_2$  over a 20-year period. It's produced when organic discards (food scraps, paper and wood products, yard waste, sewage sludge) decompose in an oxygen-starved environment.

Larger landfills are required to capture landfill gas. Only 20% of all gas is captured at these giant landfills; most escapes as fugitive emissions, causing cancers and other health problems in neighboring communities.

Most landfills burn gas in a flare, while others burn it to make heat or electricity, called Landfill Gas-To-Energy (LFGTE). When burned for electricity, LFGTE releases 25 times more methane than a coal-fired power plant and up to 50% more  $\text{CO}_2$  for the same amount of energy. This is largely because the LFGTE process allows more methane to escape than flaring.

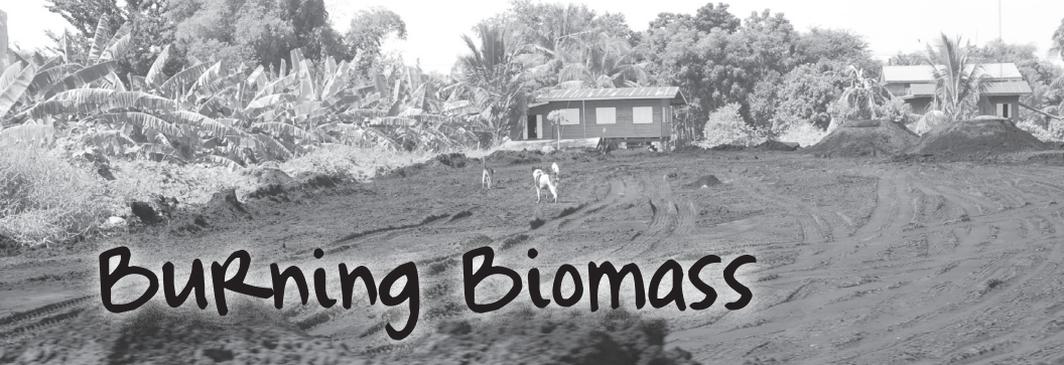
LFGTE projects receive many state and federal subsidies. Climate and energy policy-makers are currently being lobbied by the waste industry to subsidize landfills and incinerators instead of supporting composting and recycling. As a result, some communities even cancel composting programs to dump more organics in landfills to maximize LFGTE opportunities. Nearly 90% of materials discarded in landfills and incinerators can be recycled or composted.

Diverting organics for composting helps prevent methane emissions far more effectively than burning landfill gas for energy.



[www.energyjustice.net/lfg](http://www.energyjustice.net/lfg)  
[www.competitivewaste.org](http://www.competitivewaste.org)

Durban's Bisaser Road Landfill, a toxic \$15 million methane-electricity conversion entered the CDM which prevented the closure of this apartheid-era dump (Africa's largest) that sickens neighboring residents. Photo: Patrick Bond



# BURNING BIOMASS

Biomass has been broadly defined as burning a wide range of “biogenic” fuels and wastes. This includes trash, agricultural and animal wastes, crops, trees, gas from sewage sludge and manure, landfill gas, and sometimes even construction and demolition wood, and tires.

Biomass incineration competes with more appropriate and effective solutions such as sustainable agriculture, forestry and waste management (reduce, reuse, recycle, compost).

Biomass burns less efficiently than coal, releasing about twice as much CO<sub>2</sub> per unit of energy produced. Biomass proponents claim that replanted trees and crops will reabsorb the CO<sub>2</sub>, making the burning “carbon neutral.” However, only a fraction of the CO<sub>2</sub> released today will be absorbed by plants over the next 30 years; the rest will take thousands of years to remove from the atmosphere. Reducing CO<sub>2</sub> emissions in the short term is crucial if we are to avert catastrophic climate tipping points; it takes too long for newly planted trees to do it.

Burning biomass produces toxic ash and toxic air emissions, affecting air and water quality, and ultimately harming human health. Every type of biomass has its own set of toxic contaminants, including lead, chromium and arsenic in treated wood and poultry waste. Burning trees can release radioactive isotopes, mercury and other pollutants that the trees have absorbed from industrial pollution.

Biomass incineration poses an unacceptable threat to forests and agricultural lands around the world. Removing residues and “wastes” from forests and farmlands results in declining soil fertility and biodiversity loss. At a time when the carbon sequestration capacities of the world’s forests and soils are becoming rapidly saturated, solutions that build, not burn, biomass are essential to maintain a stable climate.

[www.nobiomassburning.org](http://www.nobiomassburning.org) • [www.energyjustice.net/biomass](http://www.energyjustice.net/biomass)

Header photo: “A.T. Biopower sells CDM credits for burning rice husks then dumps the sooty wastes on the doorsteps of the community across the road.”  
Phichit, Thailand, 11 November 2008. Photo credit: Tamra Gilbertson

# Agrofuels

Five years ago, agrofuels were hailed as the new climate savior. Today they are recognized as the quintessential false solution. Activists warned early on that massive new demand for agricultural products—corn, soy, sugar cane, palm and rapeseed oils—would be disastrous, forcing the expansion of destructive industrial agriculture practices and diverting food to fuel. Despite the warnings, many countries adopted mandates for agrofuel use, and continue to subsidize and support the industry.

Initial claims that agrofuels are “cleaner and greener” than fossil fuels have been proven wrong on many counts. In one glaring example, a study in Southeast Asia of agrofuel life cycle emissions found that 450 to 900 years of agrofuel crop plantings would be required to “offset” CO<sub>2</sub> released from the peatlands cleared to grow the crops.

Besides failing to address climate change, agrofuels have caused human rights abuses. Working conditions in the Brazilian sugar cane ethanol industry are likened to slavery. There, as well as in Indonesia, Colombia and elsewhere, violent conflicts over access to land for palm oil plantations have left a trail of blood.

In 2005, the US converted 14% of the country’s corn crop to ethanol production, providing just 1.7% of gasoline consumption. In 2009, an estimated 30% of US corn was used for ethanol. The amount of corn required to produce enough ethanol to fill an SUV’s tank once could feed an adult for a year.



Despite mounting evidence demonstrating the harmful impact of agrofuels—and associated fertilizers and pesticides—on water, soil, biodiversity, human rights and

“Truck loaded with “sawit” or palm seeds on the way to Murini Sam Sam, a crushing facility that sells CDM credits.” Sumatra, Indonesia - December 2007. Photo Credit: Tamra Gilbertson

greenhouse gas emissions, politicians continue to pander to the industry, using “energy security” to justify financial support.

Agrofuels are part of the larger false solution of a “bioeconomy.” Governments in the Global North and industry partners are seeking plant substitutes for transportation fuels, heat and electricity, as well as chemicals, plastics and a host of other products and processes now derived from petroleum. The bioeconomy—far from encouraging life, as its savvy marketers would have us believe—has encouraged cutting, harvesting, and burning of vast areas of the earth. A recent modeling study found that on current trajectories we would replace virtually all remaining native forests, grasslands and savannahs with energy crop monocultures by 2065.

Agrofuel enthusiasts attempt to sidestep these criticisms by claiming that current technologies are just a stepping stone towards “cellulosic” fuels. These fuels would be made from cellulose, a primary component of woody materials. Proponents claim its use would not compete with food because cellulose is abundant in nature and inedible. However, technologies for producing cellulosic fuels have not been realized, and vast quantities of plant material would be needed to fuel current levels of unsustainable transportation. We must invest in restructuring our transportation systems rather than in advancing destructive agrofuels.

[www.foodfirst.org](http://www.foodfirst.org) • [www.globalforestcoalition.org](http://www.globalforestcoalition.org) • [www.biofuelwatch.org.uk](http://www.biofuelwatch.org.uk)  
[www.energyjustice.net](http://www.energyjustice.net) • [www.wrm.org.uy](http://www.wrm.org.uy)

Indonesia's massive Sawit (palm fruit) agrofuel plantations in Sumatra, Indonesia.  
Photos: Tamra Gilbertson





# Seeing REDD

BY INDIGENOUS ENVIRONMENTAL NETWORK AND RISING TIDE NORTH AMERICA

Within the United Nations' climate negotiations, a controversial agenda item for climate mitigation called "Reducing Emissions from Deforestation and Degradation" (REDD) has emerged. REDD is a mechanism for wealthy countries and polluting industries to pay cash-poor countries in the Global South to conserve their forests instead of cutting them down or allowing them to be logged illegally. The forests targeted by REDD include areas heavily populated by Indigenous Peoples and forest-dependent communities whose rights, interests, and livelihoods are at stake.

The World Bank—whose long history of human rights and environmental missteps is the subject of many other publications—runs a similar project known as the Forest Carbon Partnership Facility (FCPF). As the World Bank puts it, this program "provides value," by monetizing standing forests. Proponents believe it will create an economic incentive to conserve these forests, discouraging clear cutting for timber or to create plantations, including for agrofuels and genetically modified trees.

REDD is still evolving; its final form is uncertain and being negotiated within the UN climate talks. It is likely that carbon credits from REDD will be sold on the market as carbon offsets so that developed industrialized countries, as well as polluting industries, will be able to purchase REDD credits instead of fulfilling emissions reduction requirements as part of national or international climate agreements.

Trees would thus become part of a property rights system, despite very few countries having legislation that recognizes the rights of Indigenous Peoples and local forest-dependent communities to forested areas. These rights have long been a major source of conflict. Safeguards currently proposed for REDD at the UN and for the World Bank's FCPF do not guarantee REDD projects would avoid human rights abuses. National governments and carbon trading companies stand to make billions of dollars on the sale of forest carbon, while local communities—at best—would receive small cash payments (\$25/month/family would be common). At worst, Indigenous and local communities would be given nothing and could be forced off their land, or end up

The Declaration created at the World People's Conference on Climate Change and the Rights of Mother Earth clearly condemned REDD, stating that it violates "the sovereignty of our Peoples." Photo: Hector Mondaca



forced to pay rent on it. This would leave communities without traditional livelihoods, without jobs, and without real access to their ancestral land.

Companies want rights to the carbon in forests to use as greenwash licenses. For big polluters, it will be cheaper to buy permits to pollute through a REDD carbon offset mechanism than to reduce emissions. This will allow them to continue burning and mining fossil fuels from the Alberta tar sands in Canada to the Ecuadorian Amazon, and from the Niger Delta to the Appalachian mountaintops in the US.

With REDD negating existing efforts to mitigate climate change and exacerbating conflicts over the lands of Indigenous and forest peoples, it is clearly not a solution for climate change.

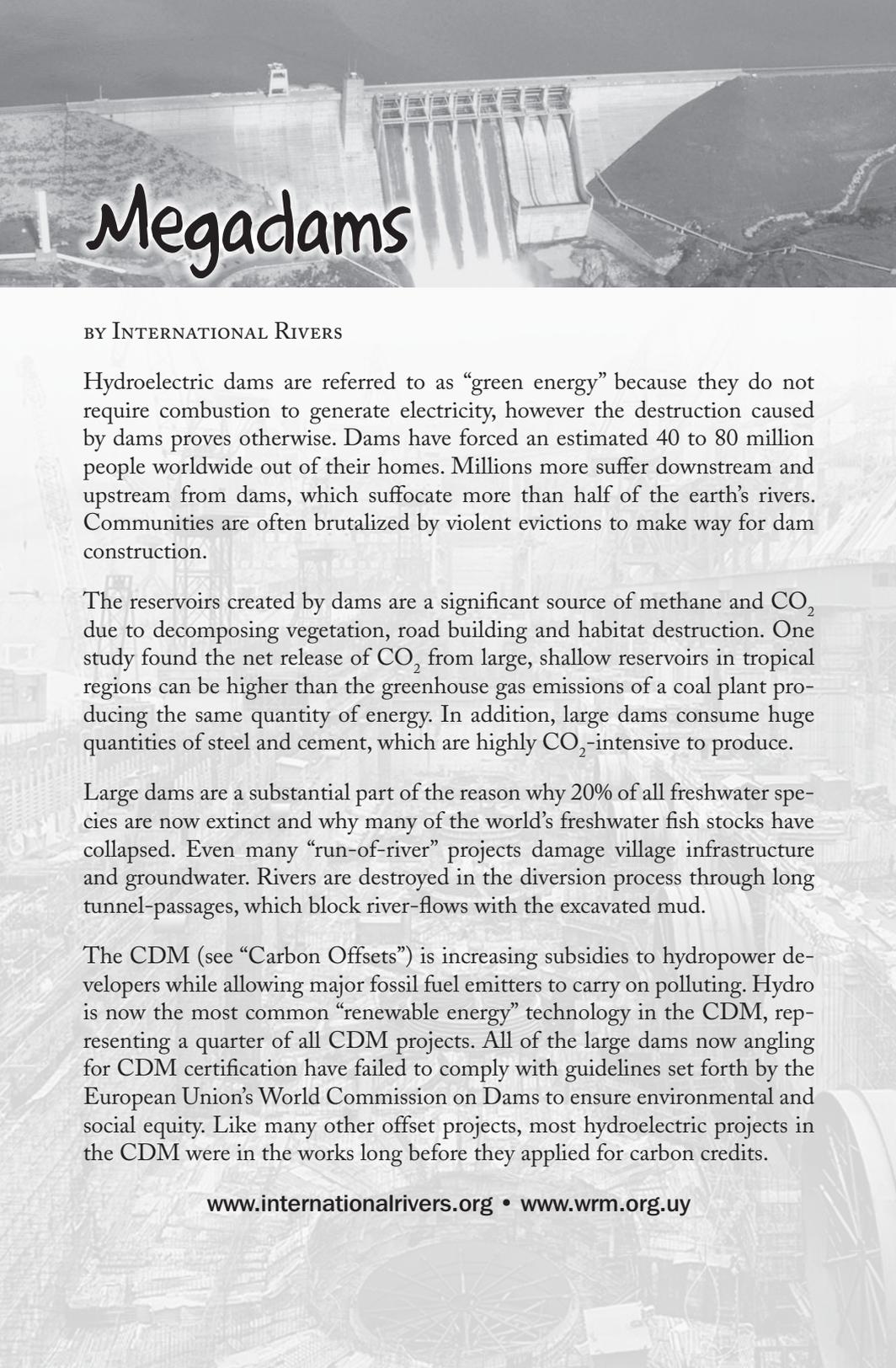
[www.redd-monitor.org](http://www.redd-monitor.org) • [www.ienearth.org](http://www.ienearth.org) • [www.wrm.org.uy](http://www.wrm.org.uy) • [www.carbonradewatch.org](http://www.carbonradewatch.org)

## Will the UN Help Us?

"In December 2009, the UNFCCC in Copenhagen saw people of the world coming together to question the false solutions being negotiated by world governments. After participating in UN climate negotiations for many years, I have never witnessed the intensity of deception going on behind closed doors by industrialized countries of the North, elites of some Southern countries and of large non-governmental organizations. Even though using forests from developing countries for carbon offsets was rejected in UN climate meetings over ten years back, there has been a well-planned effort by Northern countries in the EU and the US to form an agreement for developing a global forest offset program called REDD and REDD+. The carbon market solutions are not about mitigating climate, but are greenwashing policies that allow fossil fuel development to expand.

As an alternative to the Copenhagen Accords, we are supporting the Cochabamba People's Accord and the proposed Universal Declaration on the Rights of Mother Earth developed by members of social movements and Indigenous Peoples that came together in Cochabamba, Bolivia, in April 2010."

— TOM GOLDTOOTH, INDIGENOUS ENVIRONMENT NETWORK



# Megadams

BY INTERNATIONAL RIVERS

Hydroelectric dams are referred to as “green energy” because they do not require combustion to generate electricity, however the destruction caused by dams proves otherwise. Dams have forced an estimated 40 to 80 million people worldwide out of their homes. Millions more suffer downstream and upstream from dams, which suffocate more than half of the earth’s rivers. Communities are often brutalized by violent evictions to make way for dam construction.

The reservoirs created by dams are a significant source of methane and CO<sub>2</sub> due to decomposing vegetation, road building and habitat destruction. One study found the net release of CO<sub>2</sub> from large, shallow reservoirs in tropical regions can be higher than the greenhouse gas emissions of a coal plant producing the same quantity of energy. In addition, large dams consume huge quantities of steel and cement, which are highly CO<sub>2</sub>-intensive to produce.

Large dams are a substantial part of the reason why 20% of all freshwater species are now extinct and why many of the world’s freshwater fish stocks have collapsed. Even many “run-of-river” projects damage village infrastructure and groundwater. Rivers are destroyed in the diversion process through long tunnel-passages, which block river-flows with the excavated mud.

The CDM (see “Carbon Offsets”) is increasing subsidies to hydropower developers while allowing major fossil fuel emitters to carry on polluting. Hydro is now the most common “renewable energy” technology in the CDM, representing a quarter of all CDM projects. All of the large dams now angling for CDM certification have failed to comply with guidelines set forth by the European Union’s World Commission on Dams to ensure environmental and social equity. Like many other offset projects, most hydroelectric projects in the CDM were in the works long before they applied for carbon credits.

[www.internationalrivers.org](http://www.internationalrivers.org) • [www.wrm.org.uy](http://www.wrm.org.uy)



# Geoengineering

Geoengineering is the large-scale manipulation of planetary systems to “fix” climate change.

Proponents argue that our careless alteration of the planet on a global scale can be deliberately (and scientifically) counterbalanced. This logic—which presumes the ability to understand and manipulate unfathomably complex climatic systems—downplays the necessity of reconsidering the trajectory of consumption, production, and emission production.

The scenario of a small group of wealthy geoengineers “hacking” the planetary thermostat seems likely to exacerbate global climate injustice—not to mention shock many systems into turmoil. Alarming, credible scientific bodies such as the US National Academy of Sciences and the UK Royal Society are vocally supporting real-world trials of some of these planet-altering technologies. Unsurprisingly, so too are neoconservative leaders such as the American Enterprise Institute and Bjørn Lomborg, who also advocate against emission-reductions.

## Suck, Reflect or Manipulate?

There are three approaches to geoengineering. The first is to deploy large-scale technologies that will suck carbon dioxide out of the atmosphere. The second approach attempts to reflect sunlight back into space, thereby reducing the heat trapped in the atmosphere. The third approach is to directly intervene with weather systems. All three strategies are massive gambles with our planet.

## Polluting the Stratosphere

When volcanoes erupt, they release sulfate particles that block sunlight and have a cooling effect on global temperatures. Some scientists are proposing an artificial mimicry of volcanic eruptions by injecting sulfate plumes or metallic nanoparticles into the atmosphere. While this might temporarily cool the

planet, it is likely to hasten ozone destruction and drastically reduce rainfall in the tropics, resulting in famine and crop failure. In 2008, Russian climatologist Yuri Izrael began real-world tests to spray sulfates from the back of helicopters and airplanes. In 2009, former Microsoft executives (including Bill Gates) applied for a patent on a variation of this technique. Boeing is reportedly also researching this approach.

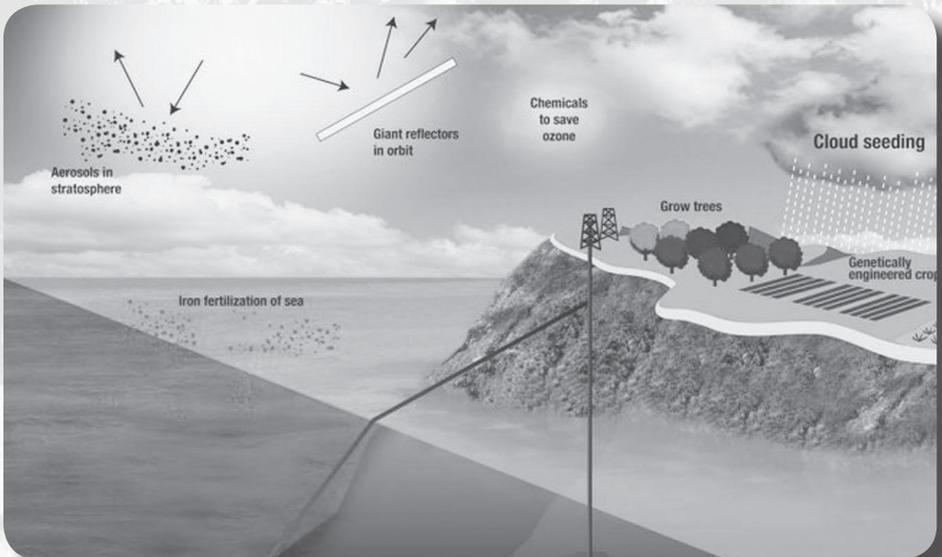
## Cloud-Whitening

Another scheme is to increase the whiteness of clouds (called “albedo”) to reflect more sunlight. The project at present involves the construction of an entire fleet of ships capable of spraying seawater droplets into the cloud layer. A team of geoengineers called “The Silver Lining Project” is now developing hardware for a 10,000 square kilometer cloud-whitening field trial off the west coast of the Americas.

## Plastic Coated Deserts

In this plan, 67,000 square miles of desert would be covered in shiny plastic annually in order to reflect sunlight. The plastic sheeting would have to be maintained, and periodically replaced, for a century or two.

[www.handsoffmotherearth.org](http://www.handsoffmotherearth.org) • [www.etcgroup.org](http://www.etcgroup.org)



# Burning Trees to Cool the Planet

Another proposal is the use of charcoal—now marketed as “biochar”—to save the planet. The biochar industry has pro-



posed planting over half a billion hectares of tree plantations and then making charcoal by burning the trees using a pyrolysis (low oxygen) process. This design proposes the charcoal then be tilled into the ground, its carbon sequestered in soil, where it will ostensibly stay away from the atmosphere.

In reality the charcoal—typically dumped simply onto the soil surface—rises into the air as carbon dust and thus acts as so-called “black carbon”, which has a much stronger greenhouse impact than  $\text{CO}_2$ . On the other hand, if the charcoal is worked deep into the soil, the root systems of plants are disturbed and existing soil carbon is released. There are studies which indicate that in many circumstances adding charcoal to soil displaces existing  $\text{CO}_2$ .

Commercial biochar companies have consolidated under the International Biochar Initiative and are lobbying the UN for carbon credits and enhanced government investment in this approach. The question remains, where will the billions of hectares of forests needed to produce the biochar come from? Large scale, commercial biochar production is a recipe for human rights abuses and destruction of forest ecosystems.

[www.biofuelwatch.org.uk](http://www.biofuelwatch.org.uk)

*“Ladies and gentlemen, I have the answer! Incredible as it might seem, I have stumbled across the single technology which will save us from runaway climate change! From the goodness of my heart I offer it to you for free. No patents, no small print, no hidden clauses. Already this technology, a radical new kind of carbon capture and storage, is causing a stir among scientists. It is cheap, it is efficient and it can be deployed straight away. It is called . . . leaving fossil fuels in the ground.”*

– George Monbiot, Columnist with the *Guardian UK*



# Emerging Technologies

BY ETC GROUP

Highly experimental, untested technologies are being promoted by corporations as a panacea for our climate woes. Here are some examples of the new and dangerous technologies being branded as our climate saviors—all of them lack significant international regulation.

## Nanotechnology

This is the engineering of matter at the nanoscale through the manipulation of atoms and molecules. Nano-size particles (a few thousand atoms in size) exhibit unusual properties, including changes in color, strength, electrical attributes and reactivity. Their size enables them to pass through the environment and the human body with ease, even bypassing the human immune system.

Nanoparticles are being developed for myriad applications, including solar panels, hydrogen fuel cells, fuel additives, ultra-light materials, and even “piezoelectric fabrics” that are capable of generating electricity through movement. They are generally intended to enhance efficiency, but nanomaterials designed to retain CO<sub>2</sub> and other geoengineering applications are also being developed.

The potential environmental and health impacts of these nanomaterials remain entirely unknown. Although they are increasingly used in industry, there are no legal regulations to assess, regulate or restrict their use.

## “Climate Ready” Crops

The producers of genetically modified (GM) organisms initially claimed their altered crops would feed a hungry world, but years later, hunger and malnutrition remain commonplace. The same companies that produce herbicide-resistant and insect-tolerant crops now claim that GM crops are the only way agriculture will be able to provide food in a warming world.

At the same time, companies such as Monsanto and BASF have been covertly patenting hundreds of naturally occurring genes that they claim will allow so-called “climate ready” plants to endure droughts, salty soils, flooding and other

stresses that climate change will bring. The genetic engineering giants are positioning themselves to profit handsomely from climate change.

A closer analysis reveals that industry's claims are highly speculative. Most of their so-called "miracle crops" are nowhere near commercial cultivation. It's a myth that there are vast swathes of idle land waiting to be planted with GM crops: these lands are already being used by small farmers,

pastoralists, Indigenous Peoples and others who stand to lose their homes, livelihoods and cultures to this false solution.

The high tech GM approach ignores the fact that small farmers have always adapted their varieties to changing climatic conditions and that seed diversity—not engineered monocultures—is the surest way to ride out the disruptions.

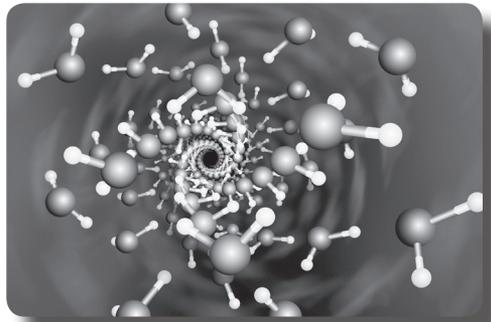
### Trees, Algae and Extreme Genetic Engineering

The GM industry also claims to hold the key to generating unlimited quantities of "renewable" carbon-neutral plant energy by genetic engineering of trees and algae. Companies like ArborGen, for example, are developing trees that could be used for agrofuel production. Trees spread pollen and seeds over hundreds of miles, and GM trees will contaminate ecologically critical natural forests.

ExxonMobil, BP, Shell and Chevron are partnering with "synthetic biology" companies to produce new bacteria that could turn sugar and biomass into "next generation" agrofuels. One company, Amyris Biotechnology, has already secured government approval for its "No Compromise" sugar-cane based fuel. Meanwhile, Synthetic Genomics Inc., is working on developing synthetic life-forms, having secured a \$600 million deal with ExxonMobil to develop algae strains that are intended to transform CO<sub>2</sub> directly into agrofuel.

These new synthetic biology industries are little-known and high-risk with the organisms posing an unprecedented danger to biodiversity should they ever escape. They also risk driving forestry and agribusiness interests to harvest ever larger quantities of plant matter for fuel, rather than food.

[www.etcgroup.org](http://www.etcgroup.org) • [www.globaljusticeecology.org](http://www.globaljusticeecology.org) • [www.safenano.org](http://www.safenano.org)  
[truefoodnow.org](http://truefoodnow.org) • [www.organicconsumers.org](http://www.organicconsumers.org)  
[www.handsoffmotherearth.org](http://www.handsoffmotherearth.org)





# Genuine Solutions for Climate Mitigation

## Solutions must:

- Work towards a new economic paradigm based on the limits of ecological sustainability and peoples' needs.
- Ensure the rights of local communities to democratically determine the sustainable use of their food, water and energy use based on sufficiency and equity.
- Recognize inherent and customary rights of Indigenous Peoples to free, prior and informed consent regarding all resources on their traditional lands.
- Support “Just Transition” strategies for all workers towards safe, meaningful work free from exploitation.

## Here are examples of solutions many find promising:

**Reducing consumption, production and waste** fundamentally reduces our global climate footprint, which the Global North has a particular obligation to start immediately. **Reusing, recycling and composting** discarded materials is quick, affordable and effective, creates jobs and boosts local economies. **Zero Waste** takes a “whole system” approach to the vast flow of resources and waste by redesigning products, materials, and resource use upstream (eliminating volume and toxicity) and by conserving and recovering discarded resources downstream (instead of burying or burning them). Some communities are exploring barter and local currencies, **alternative economies** that encourage “closed-loop systems.”

[www.resourcecenterchicago.org](http://www.resourcecenterchicago.org) • [www.blackmesawatercoalition.org](http://www.blackmesawatercoalition.org)  
[www.neweconomicsinstitute.org](http://www.neweconomicsinstitute.org) • [www.grn.org](http://www.grn.org)  
[www.stoptashingtheclimate.org](http://www.stoptashingtheclimate.org) • [www.zwia.org](http://www.zwia.org)

**Re-imagining local, no-burn energy systems** and promoting solar/wind/water/geothermal technologies can meet much of our remaining energy needs. Rather than allow continued corporate-dominated renewable energy production—clear-cutting forests to erect sprawling wind-farms, covering wide swaths of desert with centralized photo-voltaic arrays—**appropriate technol-**

**ogies** must be linked to smaller, locally-controlled power grids. Community controlled initiatives to implement holistic solutions are the first step to creating positive change.

[www.ncat.org](http://www.ncat.org) • [www.transitionnetwork.org](http://www.transitionnetwork.org) • [www.transitriders.org](http://www.transitriders.org)  
[www.ace-ej.org](http://www.ace-ej.org) • [www.ssbx.org](http://www.ssbx.org) • [www.jtalliance.org](http://www.jtalliance.org)

**Reclaiming food sovereignty** supports traditional and organic farmers efforts to strengthen the earth's largest carbon sink by replenishing topsoil through composting and **organic agriculture**. Native crop cultivation provides better nutrition and food security, while reducing the pollution from chemical fertilizers, pesticides, and biotech foods. Natural farming techniques such as crop rotation, small-scale agro-forestry, mixed livestock-crop-fish systems, contour planting and ecological pest management can yield more food and maintain biodiversity. **Locally grown food**, especially in urban environments, uses significantly less transportation fuel—the average meal consumed in the US has traveled over 4,000 miles.

[www.oaec.org](http://www.oaec.org) • [www.rodaleinstitute.org](http://www.rodaleinstitute.org) • [www.growingpower.org](http://www.growingpower.org)  
[www.viacampesina.org](http://www.viacampesina.org) • [www.nuestras-raices.org](http://www.nuestras-raices.org)

**Protecting and restoring natural ecosystems** preserves the carbon storage and regulating capacity of forests, grasslands, wetlands, rivers and oceans. Ecosystems are directly threatened by industrial processes such as mineral and fossil fuel extraction, large-scale industrial farming, fisheries and “agroforestry.” With water shortages in over 80 countries, **aquifer protection** is also vital. Water cycles are disrupted by excessive extraction for industrial agriculture, mining, forestry and manufacturing, resulting in desertification and loss of access to clean water. Conserving water means defending against corporate privatization, installing rainwater collection and greywater systems, and bioremediating wetlands. Stewardship of natural ecosystems must include indigenous land use and can include sustainable economic opportunities for local communities.

[www.aldoleopold.org](http://www.aldoleopold.org) • [www.crmw.net](http://www.crmw.net) • [www.blackmesawatercoalition.org](http://www.blackmesawatercoalition.org)

**Resistance and international solidarity** directly protects our climate. Communities fighting for land and resource rights—from fisher folks to small farmers to Indigenous Peoples—are helping slow climate change. These movements are doing a great deal of the “solutions” work and need solidarity and support.

Finally, no list of “real” solutions would be complete without mentioning **an end to war**. The military-industrial complex is uniquely wasteful, requiring an extraordinary amount of dirty energy and accounting for a large proportion of oil spills, pipeline leaks and global warming emissions.



BY MOVEMENT GENERATION, CARBON TRADE WATCH, AND RISING TIDE

Climate Justice is a struggle over land, forest, water, culture, food sovereignty, collective and social rights; it is a struggle that considers “justice” at the basis of any solution; a struggle that supports climate solutions found in the practices and knowledge of those already fighting to protect and defend their livelihoods and the environment; a struggle that insists on a genuine systematic transformation in order to tackle the real causes of climate change.

It is critical that we avoid falling into the empty discourses of mainstream science, technology and policy-driven false solutions aimed at continuing business-as-usual. We must visualize and fight for a socio-ecological transition with global equity, justice and genuine democracy in mind.

As social movements, organizers, activists and workers, we are often asked, “What is the alternative?” No single alternative will be enough by itself. If we look for blueprints, they should be the many sustainable practices around the world that are all part of existing solutions!

**Climate Justice addresses four key themes: root causes, rights, reparations and participatory democracy.**

## Root Causes

CJ critiques and exposes the world economic systems that cause climate disruption. It sees historic responsibility, resource-intensive industrial production (converting labor and nature into stuff) and the constant striving for more accumulation as central to the destabilization of earth’s life support systems. All of these components depend on inequity and injustice to continue.

## Rights

CJ recognizes and honors individual and collective rights including, but not limited to: the rights of Indigenous Peoples, the rights to collective representation for labor, the rights of nature, the rights of women to control of their

bodies, and the rights of communities to self-determination and to live free of political, cultural, economic and environmental domination.

## Reparations

CJ demands reparations to communities harmed by corporate and government activities. From restoring the “atmospheric space” occupied by industrialized countries, to reparations for the millions of people that are forced to migrate due to climate change, it is critical to reconstruct global relations that are subordinated by the forces of the market.

## Participatory democracy

CJ demands that peoples have direct democratic control over decisions affecting their lives and livelihoods, not only because justice demands it, but also because those whose territories, livelihoods and cultures are threatened often hold critical holistic knowledge of place—the experiences and cultures that we all depend on for survival.

With these principles we can open the space for emergence of real solutions.

A good start would be to eliminate or drastically reduce emissions at the source at industrial polluting facilities and extraction efforts. These industries fuel local injustices, such as health problems, poverty, pollution, land grabs and human rights violations, and are the root cause of climate chaos. We must also stop offsets and market mechanisms that shroud the tangible sources of our problems.

Confronting existing channels of power opens new space to build strong climate justice movements. Grassroots organizing and mass direct action can help amplify demands for real solutions. Right now, we could win limits on new fossil fuel exploration, an end to incineration, a ban on offshore oil drilling or even a framework for international climate debt. Crucially, by stopping false solutions, we create space in the realm of the realistic for true and just solutions.

[www.climate-justice-now.org](http://www.climate-justice-now.org) • [www.durbanclimatejustice.org](http://www.durbanclimatejustice.org)  
[www.climate-justice-action.org](http://www.climate-justice-action.org)

The Mobilization for Climate Justice, at the march on the Chevron Refinery in Richmond, California, 2009. image by Brooke Anderson





Climate justice action at the Indonesian Civil Society Forum during the UNFCCC - Bali, Indonesia, 2007. Photo Credit: Tamra Gilbertson

*From the second edition of Hoodwinked...*

*“Climate Justice is a struggle that supports climate solutions found in the practices and knowledge of those already fighting to protect and defend their livelihoods and the environment; a struggle that insists on a genuine systematic transformation in order to tackle the real causes of climate change.*

*We are often asked, ‘What is the alternative?’ No single alternative will be enough by itself. If we look for blueprints, they should be the many sustainable practices around the world that are all part of existing solutions!*

*Carbon market solutions are not about mitigating climate, but are green-washing policies that allow fossil fuel development to expand.”*

–TOM GOLDTOOTH, INDIGENOUS ENVIRONMENTAL NETWORK

*Many find it easier to imagine the end of the world than the end of a globalized economy built upon the unsteady legs of expanding empire, ecological erosion and exploitation of workers and communities.*

– GOPAL DAYANENI, MOVEMENT GENERATION:  
JUSTICE AND ECOLOGY PROJECT