

# Assuring Real Progress on Climate

23 December 2014

James Hansen

In the “Lima Accord”, adopted a week ago in reasonably congenial negotiations in Peru, nearly 200 nations agreed to reduce their fossil fuel emissions from burning of coal, oil and gas. Nations are to define their specific plans prior to a final agreement in Paris in December 2015. No country will be legally bound to a specific reduction, but the hope is that peer pressure will result in both ambitious targets for the general good as well as good faith efforts at compliance.

So, are we on the verge of real progress in the fight to stabilize climate and help assure a good future for young people, future generations, and other life on the planet?

Nothing in the Accord assures that. If Paris produces only another attempt to “cap” emissions nation by nation, as suggested above, that will be a huge loss of valuable time.

We should not despair though. Key players in the discussions know that a rising carbon fee or tax is essential, if global fossil fuel emissions are to decline rapidly. What is unclear is how much leadership and courage exist, so two vastly different outcomes are possible for the Paris Protocol:

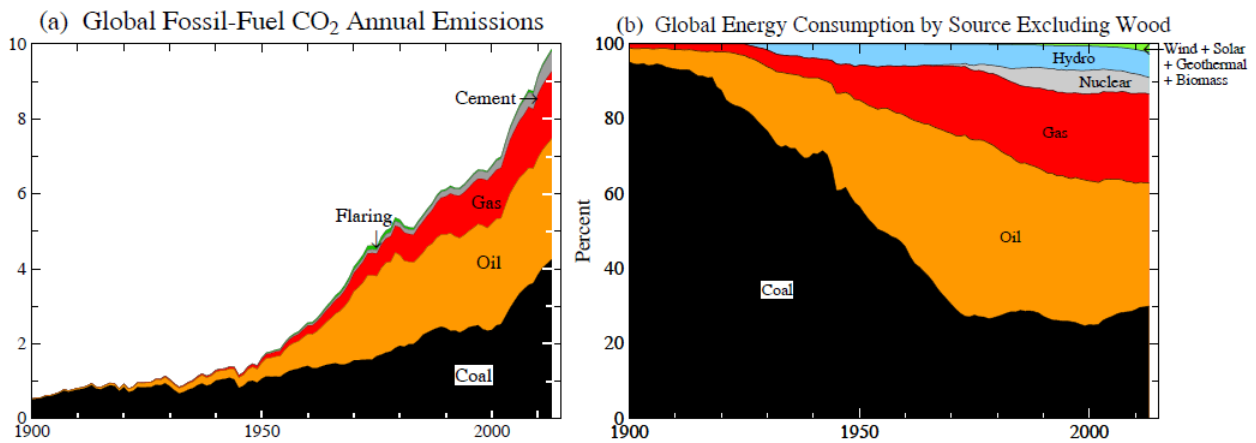
**Alternative 1: Caps and goals again.** In this scenario, nations provide plans to limit emissions. Nations suffering most from climate change are satisfied to focus on monetary assistance. At best, this approach slows emissions growth a bit. Fossil fuel business-as-usual continues. Unconventional fossil fuel use expands as does mining into extreme environments.

Vested interests, created by the deals involved in the ineffectual Kyoto cap-and-trade and offsets, infect the climate discussions, providing some inertia favoring business-as-usual. It is easy to imagine acceptance of another ineffectual agreement. Such an outcome would miss the great opportunity created by the present abundance of fossil fuels that has lowered energy prices.

**Alternative 2: Courageous leadership emerges.** In this scenario, actions proposed in Lima are adopted, but also plans for a rising carbon fee to come into force once approved back home by a quorum of nations. Quorum is defined so that Protocol initiation practically requires acceptance by either the United States or the European Union and either China or a combination of nations such as India and Brazil. The gradually rising carbon fee would be accompanied by border duties on products from non-participating nations, collected by the importing country, unless the exporting country shows that no fossil fuel carbon was emitted in production of the product.

In Alternative 2 no single nation can blackmail humanity. Once a quorum is achieved, there is a huge incentive for other nations to join, to avoid economic disadvantage and enjoy the economic stimulation. A carbon fee, which would be collected at domestic mines and ports of entry, spurs an economy if the funds are fully distributed to the public. However, the fee becomes a tax and a drag on the economy if a government keeps the funds to expand its programs. Governments are prohibited from returning the funds to the fossil fuel industry as subsidies. Otherwise specific use of the fee is a national prerogative. However, it is noted that equal division of funds among residents tends to address income disparities, providing opportunities for low income people, while spurring essential efforts in conservation, energy efficiency and clean no-carbon energies. Alternative 2 is a challenge, but one that we must fight for with all our strength and intelligence.

Why fight for Alternative 2? Can't we muddle through with Alternative 1? Solar panels and other renewable energies are so cheap now, we can just demand more support of these, right?



**Fig. 1.** (a) Global fossil fuel CO<sub>2</sub> emissions, and (b) global energy consumption by source.

Quantitative data aid assessment. Figure 1 updates graphs of our paper ([Assessing “Dangerous Climate Change”](#)). Global fossil fuel emissions have increased ~3% per year this century.

Non-hydro renewable energies have grown in the past few decades, spurred by “renewable portfolio standards” and direct subsidies, and now provide 3% of our energy. Some nations and states, e.g., Germany and California, are willing to pay the added energy costs. However, global fossil fuel use is not stemmed by such actions. The modest reduction of fossil fuel demand helps keep fossil fuel costs down, allowing others to burn them. Carbon-free energy will begin to supplant fossil fuels globally and cause the CO<sub>2</sub> annual emissions curve to turn downward only when the price of fossil fuels begins to reflect their costs to society. Moreover, economic efficiency improves if energy prices honestly reflect their costs to society.

The present downturn of fossil fuel costs is a golden opportunity to introduce a gradually rising across-the-board carbon fee. In that case, as the fossil fuel price rises the funds go into the pockets of citizens who pay attention to their carbon footprint, instead of enriching fossil fuel producers. And the phasedown of our fossil fuel addiction is set in motion.

Whoa! “Courageous leadership?” You think a common sense approach can actually happen?

Not easily. But what seems implausible today will be obvious tomorrow.

Making it happen soon enough requires increasing pressure on governments from several directions. Otherwise they will tend to take the easy path described in Lima. This pressure must continue on the long run even if a miracle of courageous leadership emerges at Paris, with tentative agreement for a rising carbon fee. Ratification will be difficult, requiring conservative and liberal cooperation, and thus continuing specific knowledgeable pressure from the public.

So that brings me to my recommendations for support in this season of giving:

**Citizens Climate Lobby**: this group is working most directly on the ultimate solution, a rising carbon fee. Their focused determined leadership understands that it must persuade conservatives and liberals alike. They assiduously maintain respect for politicians regardless of how they are received, returning again, writing letters-to-the-editor, and growing in number. They need to keep growing in number. Your most valuable contribution may be to join the organization.

Citizens Climate Lobby spawned the [PathwaytoParis.org](#) project, under the capable leadership of Joe Robertson, an effort to inform the climate negotiations leading up to Paris about the merits of

a simple carbon fee and dividend approach. A [communication of Joe's from Lima](#) illustrates the multifarious views of 200 nations and uncounted interested organizations. This cacophonous environment is more conducive to Paris 2015 yielding a patchwork of goals and good intentions rather than a pathway to rapid phasedown of carbon emissions.

Yet courageous leadership must eventually emerge, whether it is in Paris or in a later agreement among the major powers. Thus it is important that Citizens Climate Lobby continue to grow, including its ongoing international expansion.

**The Legal Approach**<sup>1</sup>: The judiciary is less affected by lobbying and is sometimes able to take a longer view than the legislative and executive branches of government. However, the judiciary can only help if help is requested. The legal approach requires persistence, but the chances of success will grow with time, so it is important not to give up.

**Our Children's Trust** is the most active in filing cases on behalf of young people, appropriately putting the faces of young people before the courts. Our attempt to get the Supreme Court to review a decision of the DC District Court that "trust" obligations apply only to state governments ([Earning Our Children's Trust](#)) was unsuccessful. That result was no surprise, as less than one percent of appeals for such hearings are granted.

However, several cases brought by Our Children's Trust against state governments are making progress. These cases provide another route to the Supreme Court by exposing the absurdity of the ruling that trust duties apply only to states. We can show readily that states alone cannot solve the climate problem, because they have no authority to negotiate international agreements.

Our Children's Trust is operated with passion and brilliance by Julia Olson, on a shoestring and often pro bono assistance of numerous colleagues, but financial support is urgently needed to keep these cases moving forward. See [Julia's current appeal](#). Other organizations are using the courts to try to make progress in the fight to stabilize climate, but Our Children's Trust is the most forthright in demanding that the government address the full scope of the challenge using science-based requirements for reduction of greenhouse gas emissions.

**350.org**. I will be forever grateful to Bill McKibben, not only for his compassionate concern for nature and his literary brilliance, but for his patience in 2007 while I worked on a paper to specify a maximum long-term upper limit for atmospheric CO<sub>2</sub>. Enshrining a number larger than 350 ppm in the name of his organization would have made it even more difficult to persuade the world of the actual task that we face in preserving our heritage for future generations.

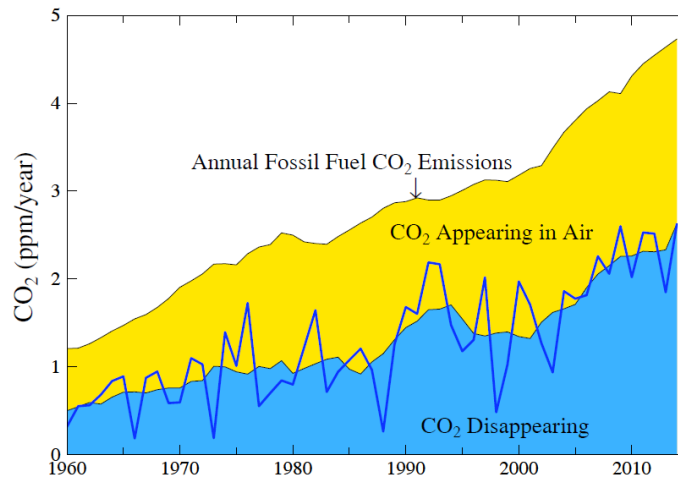
350.org is the most effective organization increasing public consciousness of climate change and actions needed to preserve our planet, with much work to do. Donations can be made at [350.org](#)

---

<sup>1</sup> The legal approach is spreading. Dutch legal scholar and author Roger Cox makes a persuasive case of why it is needed in his book *Revolution Justified*. He is energetically bringing a case against the Netherlands government (as I noted in [Galileo and the Fireflies](#)); closing arguments are to be made in the Hague on 14 April 2015 with a judgment expected by perhaps summer 2015.

In Belgium a nonprofit organization Climate Case Belgium is preparing legal proceedings against the Belgian federal government and also against the governments of Flanders, Wallonia and Brussels. Concerned citizens are being encouraged to sign up as co-plaintiffs and more than 12,000 already have joined the suit.

Norway's Constitution, with guidance from legal scholar Pal W Lorentzen, was been revised to safeguard the right of citizens to a healthy environment. This may lead to cases against the Norwegian government, which some Norwegians describe as a world leader in hypocrisy (cf. 30 July 2010 posts, especially [Experience in Norway](#)).



**Fig. 2.** Global fossil fuel CO<sub>2</sub> emissions (top curve). Measured CO<sub>2</sub> increase in air is yellow area. The 7-year mean of CO<sub>2</sub> going into the ocean, soil and biosphere is blue (5-, 3- and 1-year means at the end; dark blue line is annual).

**Science.** Climate change science is unsettling – and important. It is difficult to get support for climate research, perhaps due to a belief that the science is “settled”. It is settled in the sense that we know that humans are now the dominant drive for global climate change, with the potential to leave young people with a changing climate system out of their control. However, the exact nature of the threat and how we can deal with it most effectively are far from settled.

One proof: the widely accepted view that “science” established 2°C above preindustrial temperature as a safe upper limit for global warming. That is unadulterated hogwash. The paper we published 12 months ago, [Assessing “Dangerous Climate Change”](#), with recognized international experts in relevant fields, shows that 2°C global warming is a target for disaster. This year we have avoided media for the sake of finishing another paper that we think is much more graphic and persuasive.

I must not discuss specific results of a paper soon to be submitted, to avoid publication problems. However, I will note one key aspect of another shibboleth: the falsehood that it is implausible to keep global warming far below the misanthropic 2°C “guardrail”.

No doubt you have heard that the sinks for human-made CO<sub>2</sub> are filling up: the ocean (in part due to warming), the soil (in part bad agricultural practices), forests (deforestation, pine bark beetles, drought, etc.). Methane (which soon becomes CO<sub>2</sub>) is increasing. Pretty hopeless situation, right?

Eh, not so much. Fig. 2 dispels the myth created in part by exuberant environmental reporting. Fossil fuel annual emissions (top curve in Fig. 2) are known accurately, as is the CO<sub>2</sub> increase in air (yellow area), and thus so is their difference, the CO<sub>2</sub> disappearing into its sinks (blue area).

We must get the top curve (emissions) to fall until it crosses into the blue area (which will shrink as emissions decline), so that airborne CO<sub>2</sub> declines. It is difficult but possible. The critical need is emissions phasedown (thus a rising carbon fee), so the job remaining for CO<sub>2</sub> sinks is feasible.

We can also fix agricultural and forestry practices in ways with multiple benefits. Good examples include reforestation and improved tillage/residue management, with potential for large, rapid carbon drawdown and co-benefits in water and soil retention, biodiversity habitat, and reduced N<sub>2</sub>O and CH<sub>4</sub> emissions.

[Biochar](#) is often discussed, but seems likely to be a minor player in accelerating CO<sub>2</sub> uptake. I mention it because it has potential to improve soils in certain areas, and this past summer my oldest grandchild and I initiated an experiment, working one ton of biochar into the soil around trees that I recently planted on our farm, choosing the trees doing the poorest to receive the biochar treatment, to test the future impact.

Bottom line: climate science still has a lot to do! For us to continue to support programs such as those above and make our independent contributions we need public financial support. Our [Climate Science, Awareness and Solutions](#) website includes a link for charitable tax-deductible contributions.