Cowards in Our Democracies: Part 1

27 January 2012

The threat of human-made climate change and the urgency of reducing fossil fuel emissions have become increasingly clear to the scientific community during the past few years. Yet, at the same time, the public seems to have become less certain about the situation. Indeed, many people have begun to wonder whether the climate threat has been concocted or exaggerated.

Public doubt about the science is not an accident. People profiting from business-as-usual fossil fuel use are waging a campaign to discredit the science. Their campaign is effective because the profiteers have learned how to manipulate democracies for their advantage.

The scientific method requires objective analysis of all data, stating evidence pro and con, before reaching conclusions. This works well, indeed is necessary, for achieving success in science. But science is now pitted in public debate against the talk-show method, which consists of selective citation of anecdotal bits that support a predetermined position.

Why is the public presented results of the scientific method and the talk-show method as if they deserved equal respect? A few decades ago that did not happen. In 1981, when I wrote a then-controversial paper (http://pubs.giss.nasa.gov/abs/ha04600x.html) about the impact of CO_2 on climate, the science writer Walter Sullivan contacted several of the top relevant scientific experts in the world for comments. He did not mislead the public by dredging up and highlighting contrarian opinion for the sake of a forced and unnatural "balance".

Today most media, even publicly-supported media, are pressured to balance every climate story with opinions of contrarians, climate change deniers, as if they had equal scientific credibility. Media are dependent on advertising revenue of the fossil fuel industry, and in some cases are owned by people with an interest in continuing business as usual. Fossil fuel profiteers can readily find a few percent of the scientific community to serve as mouthpieces -- all scientists practice skepticism, and it is not hard to find some who are out of their area of expertise, who may enjoy being in the public eye, and who are limited in scientific insight and analytic ability.

Distinguished scientific bodies such as national science academies, using the scientific method, can readily separate charlatans and false interpretations from well-reasoned science. Yet it seems that our governments and the public are not making much use of their authoritative scientific bodies. Why is that?

I believe that the answer, and the difficulty in communicating science to the public, is related to the corrosive influence of money in politics and to increased corporate influence on the media.

It is a tragic and frustrating situation, because when all the dots in the climate-energy story are connected it becomes clear that a common-sense pathway exists that would solve energy needs, stimulate the economy, and protect the future of young people.[1] As I discussed in "Storms of My Grandchildren", a gradually rising carbon fee should be collected from fossil fuel companies, with the money distributed uniformly to legal residents. This would stimulate the economy, making it more efficient by putting an honest price on fuels, incorporating their costs to society.

[1] The simple across-the-board fee on all fossil fuels would be collected at domestic mines or port-of-entry, with 100% of the money distributed to the public, via equal monthly electronic deposits to the bank account or debit card of all legal adult residents. More than 60% of the public would get more in their monthly dividend than they pay in increased energy prices. Knowledge that the carbon price will rise would affect decisions made by consumers, businesses and innovators. Economic models show that in 10 years fossil fuel emissions in the U.S. would decline 30%, which is equivalent to the oil carried by 13 Keystone XL pipelines – thus obviating the need to develop destructive energy sources such as tar sands, tar shale, and mountaintop removal.

"Captains of industry" told me they would prefer such a course with knowledge of a steadily rising carbon price, which would stimulate innovations in efficiency and clean energies.

Despite the obstacles presented by the role of money in politics and by the huge advertising campaigns of the fossil fuel industry, the urgency of addressing the climate-energy issue demands that we do the best that we can to inform the public. One of the things we can do is try to expose how the public and our democracies are being manipulated for the benefit of those profiting from the public's fossil fuel addiction.

For that purpose I provided the witness statement below in support of an effort to reveal the name of the seed funder of the Global Warming Policy Foundation (GWPF) in the UK. GWPF is "successful" in casting doubt on the reality and significance of human-made climate change.

The newsletters of Benny Peiser, Director of GWPF, can be quite entertaining and sometimes include useful references. He pings the impracticality and costliness of an energy approach that relies excessively on renewable energies. But ultimately his purpose seems to be to persuade the public that climate science is flawed. I don't know if GWPF is supported by the fossil fuel industry, but it seems to me that the public has the right to know. Ultimately, I hope and believe, the public will be able to appreciate how our democracies are being twisted by people with money for their own purposes. But that requires freedom of information.

Jim Hansen

Some clarification of what this is about, the secret efforts of Lords, the wealthy, the privileged, to dupe the public in our democracies into supporting their continued and growing privileges, is provided by this news article and press release:

http://www.brisbanetimes.com.au/environment/bid-to-out-the-money-behind-the-voice-against-climate-change-20120126-1qjfp.html

http://requestinitiative.org/2012/01/lord-lawson-should-name-funder-of-climate-sceptic-think-tank-judge-told/

I, James Hansen of Kintnersville, Pennsylvania, USA, say as follows

1. I am Director of the NASA Goddard Institute for Space Studies in New York City and Adjunct Professor of Earth Sciences at Columbia University's Earth Institute. I write here in my personal capacity, not representing these institutions. I was trained in physics and astronomy in the space science program of Dr. James Van Allen at the University of Iowa, receiving my Ph.D. in 1967. Since the mid-1970s my research has focused on Earth's climate and understanding the human impact on global climate. I am a member of the United States National Academy of Sciences, have testified about climate change to our Congress many times, and have met with officials of numerous nations concerning actions needed to stabilize climate and assure a bright future for young people.

2. I make this witness statement in support of Brendan Montague's appeal. The facts and matters set out in this statement are within my own knowledge unless otherwise stated, and I believe them to be true. Where I refer to information supplied by others, the source of the information is identified; facts and matters derived from other sources are true to the best of my knowledge and belief. References in this statement are to documents in the bundles of documents prepared for the Tribunal hearing.

The current situation regarding global climate change is described in a paper, *The Case for Young People and Nature: A Path to a Healthy Prosperous Future*, which I am preparing with the help of 17 international colleagues for submission to the Proceedings of the National Academy of Sciences, USA. The paper includes more than 100 scientific references supporting the discussion in my statement below. The abstract summarizing our paper is as follows:

Global warming due to human-made gases, mainly CO_2, is already 0.8°C and deleterious climate impacts are growing worldwide. More warming is "in the pipeline" because Earth is out of energy balance, with absorbed solar energy exceeding planetary heat radiation. Maintaining a climate that resembles the Holocene, the world of stable shorelines in which civilization developed, requires rapidly reducing fossil fuel CO_2 emissions. Such a scenario is economically sensible and has multiple benefits for humanity and other species. Yet fossil fuel extraction is expanding, including highly carbon-intensive sources that can push the climate system beyond tipping points such that amplifying feedbacks drive further climate change that is practically out of humanity's control. This situation raises profound moral issues as young people, future generations, and nature, with no possibility of protecting their future well-being, will bear the principal consequences of actions and inactions of today's adults.

Science, as described in numerous authoritative reports, has revealed that humanity is now the dominant force driving changes of Earth's atmospheric composition and thus future climate. The principal climate forcing is carbon dioxide (CO_2) from fossil fuel emissions, much of which will remain in the atmosphere for millennia. The climate system's inertia, which is mainly due to the ocean and the ice sheets on Greenland and Antarctica, causes climate to respond slowly, at least initially, but in a very long-lasting way to this human-made forcing.

Governments have recognized the need to limit emissions to avoid dangerous human-made climate change, as formalized in the Framework Convention on Climate Change. Despite this, the Kyoto Protocol, established in 1997 to reduce developed country emissions and slow emissions growth in developing countries, has been so ineffective that the rate of global emissions has since accelerated to almost 3%/year, compared to 1.5%/year in the preceding two decades.

There is a huge gap between rhetoric about reducing emissions and reality. Governments and businesses offer assurances that they are working to reduce emissions, but only a few nations have made substantial progress. Reality exposes massive efforts to expand fossil fuel extraction, including oil drilling to increasing ocean depths, into the Arctic, and onto environmentally fragile public lands; squeezing of oil from tar sands and tar shale; hydro-fracking to expand extraction of natural gas; and increased mining of coal via mechanized longwall mining and mountain-top removal.

Governments not only allow this activity, but use public funds to subsidize fossil fuels at a rate of about 500 billion US$ per year. Nor are fossil fuels required to pay their costs to society. Air and water pollution due to extraction and burning of fossil fuels kills more than 1,000,000 people per year and affects the health of billions of people. But the greatest costs to society are likely to be the impacts of climate change, which are already apparent and are expected to grow considerably.

Climate change is a moral issue of unprecedented scope, a matter of intergenerational injustice, as today's adults obtain benefits of fossil fuel use, while consequences are felt mainly by young people and future generations. In addition, developed countries are most responsible for

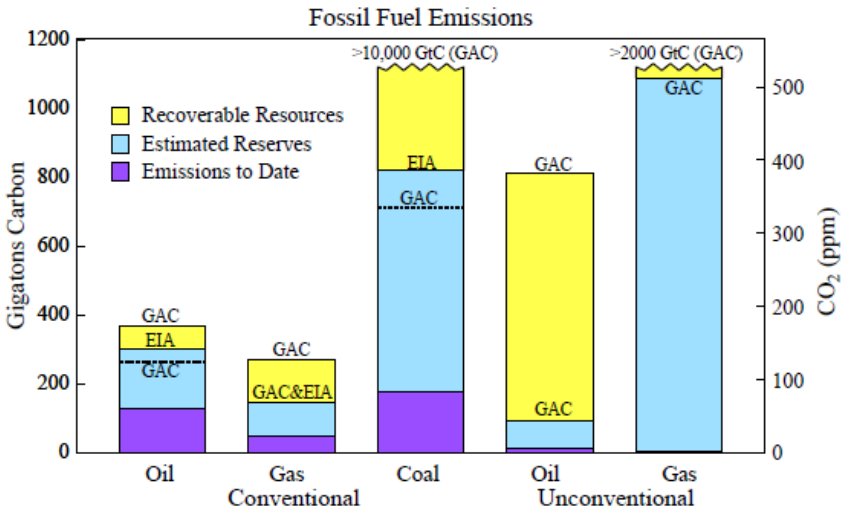

Figure 1. CO_2 emissions by fossil fuels (1 ppm CO_2 ~ 2.12 GtC, where ppm is parts per million of CO_2 in air and GtC is gigatons of carbon). Alternative estimates of reserves and potentially recoverable resources are from EIA (2011) and GAC (2011).

emissions, but people in less developed countries and indigenous people across the world are likely to be burdened the most while being least able to adapt to a changing climate.

The tragedy of human-made climate change, should the rush to exploit all fossil fuels continue, is that transition to clean energies and energy efficiency is not only feasible but economically sensible. Assertions that phase-out of fossil fuels would be unacceptably costly can be traced to biased assumptions that do not account for the costs of fossil fuels to society or include the benefits of technology innovations that would emerge in response to an appropriate price on carbon emissions.

Fossil fuel emissions so far are a small fraction of known reserves and potentially recoverable resources, as shown in Figure 1. There are uncertainties in estimated reserves and resources, some of which may not be economically recoverable with current technologies and energy prices. But there is already more than enough fossil fuel reserve to transform the planet, and fossil fuel subsidies and technological advances will make more and more of the resources available.

Burning all fossil fuels would create a different planet than the one that humanity knows. The paleoclimate record and ongoing climate change make it clear that the climate system would be pushed beyond tipping points, setting in motion irreversible changes, including ice sheet

disintegration with a continually adjusting shoreline, extermination of a substantial fraction of species on the planet, and increasingly devastating regional climate extremes.

Phase out of fossil fuel emissions is urgent. CO_2 from fossil fuel use stays in the surface climate system for millennia. Failure to phase out emissions rapidly will leave young people and future generations with an enormous clean-up job. The task of extracting CO_2 from the air is so great that success is uncertain at best, raising the likelihood of a spiral into climate catastrophes and efforts to "geo-engineer" restoration of planetary energy balance.

Most proposed schemes to artificially restore Earth's energy balance aim to reduce solar heating, e.g., by maintaining a haze of stratospheric particles that reflect sunlight to space. Such attempts to mask one pollutant with another pollutant almost inevitably would have unintended consequences. Moreover, schemes that do not remove CO_2 would not avert ocean acidification. The pragmatic path is for the world to move expeditiously to carbon-free energies and increased energy efficiency, leaving most remaining fossil fuels in the ground.

Transition to a post-fossil fuel world of clean energies will not occur as long as fossil fuels remain the cheapest energy in a system that does not incorporate the full cost of fossil fuels. Fossil fuels are cheap only because they are subsidized directly and indirectly, and because they do not pay their costs to society. Costs of air and water pollution caused by fossil fuel extraction and use, via impacts on human health, food production, and natural ecosystems, are borne by the public. Similarly, costs of climate change and ocean acidification will be borne by the public, especially by young people and future generations.

Thus the essential underlying policy, albeit not sufficient, is a price on carbon emissions that allows these costs to be internalized within the economics of energy use. The price should rise over decades such that people and businesses can efficiently adjust their lifestyles and investments to minimize costs. The right price for carbon and the best mechanism for carbon pricing are more matters of practicality than of economic theory.

Economic analyses indicate that a carbon price fully incorporating environmental and climate damage, although uncertain, would be high. However, it is not necessary or desirable to suddenly increase fossil fuel prices. Instead the price should be ramped up gradually, with the

money that is collected from the fossil fuel companies (at the first sale, at the domestic mine or port of entry) distributed on a uniform per capita basis to legal residents. More than 60 percent of the public would receive more in their monthly dividend, distributed electronically to their bank account or debit card, than they would pay in increased costs due to higher fossil fuel energy prices.

An economic analysis indicates that a tax beginning at a level of $\$15/tCO_2$ and rising $\$10/tCO_2$ each succeeding year would reduce emissions in the United States by 30% within 10 years. Such a reduction of carbon emissions is more than 10 times greater than the carbon content of tar sands oil that would be carried by the proposed Keystone XL pipeline (830,000 barrels/day).

Relative merits of a carbon tax versus cap-and-trade continue to be discussed. Cap-and-trade has had some, albeit limited, success in Europe, but failed in the arena of U.S. policy, as opponents won the rhetorical battle by describing it as a devious new tax. The merits of an alternative, a gradually rising fee on carbon emissions collected from fossil fuel companies with proceeds distributed to the public, have been summarized by DiPeso, Policy Director of Republicans for Environmental Protection, as: "Transparent. Market-based. Does not enlarge government. Leaves energy decisions to individual choices… Sounds like a conservative climate plan."

A rising carbon price is the *sine qua non* for fossil fuel phase out, but it is not sufficient. Other needs include investment in energy R&D, testing of new technologies such as low-loss smart electric grids, electrical vehicles interacting effectively with the power grid, energy storage for intermittent renewable energy, new nuclear power plant designs, and carbon capture and storage. Governments must support energy planning for housing and transportation, energy and carbon efficiency requirements for buildings, vehicles and other manufactured products, global monitoring systems, and climate mitigation and adaptation in undeveloped countries.

Rhetoric of political leaders, including phrases such as "a planet in peril", leaves the impression that they fully grasp the planetary crisis caused by rising atmospheric CO_2. However, closer examination reveals that much of the rhetoric is aptly termed "greenwash" (J. Hansen, *Storms of My Grandchildren*, Bloomsbury, 2009, 304 pp.) as even nations considered to be among the "greenest" support expanded fossil fuel extraction including the most carbon-intensive fuels such as tar sands. The reality is that most governments, rather than taking actions to rapidly phase out

fossil fuels, are allowing and using public funds to partially subsidize continued fossil fuel extraction, including expansion of oil drilling to increasing ocean depths, into the Arctic, and onto environmentally fragile public lands; squeezing of oil from tar sands and tar shale; hydro-fracking to expand extraction of natural gas; and increased mining of coal via mechanized longwall mining and mountain-top removal.

How is it possible that a specter of large human-driven climate change has unfolded virtually unimpeded, despite scientific understanding of likely consequences? Would not governments – presumably instituted for the protection of all citizens – have stepped in to safeguard the future of young people? A strong case can be made that the absence of effective leadership in most nations is related to the undue sway of special financial interests on government policies and effective public relations efforts by people who profit from the public's fossil fuel addiction and wish to perpetuate that dependence.

Such a situation, with the science clear enough to demand action but with public understanding of the situation, and thus political response, hampered by the enormous financial power of special interests, suggests the possibility of an important role for the judiciary system. Indeed, in some nations the judicial branch of government may be able to require the executive branch to present realistic plans to protect the rights of the young. Such a legal case for young people should demand plans for emission reductions that are consistent with what the science shows is required to stabilize climate.

Judicial recognition of the exigency and the rights of young people will help draw attention to the need for a rapid change of direction. However, fundamental change is unlikely without public support. Obtaining public support requires widespread recognition that a prompt orderly transition to the post fossil fuel world, via a gradually rising price on carbon emissions, makes overall sense and is economically beneficial.

The most basic matter, however, is not one of economics. It is a matter of morality – a matter of intergenerational justice. As with the earlier great moral issue of slavery, an injustice of one race of humans to another, so the injustice of one generation to another must stir the public's conscience to the point of action. Until there is a sustained and growing public involvement, it is unlikely that the needed fundamental change of direction can be achieved.

A broad public outcry may seem implausible given the enormous resources of the fossil fuel industry, which allows indoctrination of the public with the industry's perspective. The merits of coal, of oil from tar sands and the deep ocean, of gas from hydrofracking are repeatedly extolled, all of these supposedly to be acquired with utmost care of the environment. Potential climate concerns are addressed by discrediting climate science and scientists, including use of character assassination and every negative campaign trick that they have learned.

The fossil fuel kingpins who profit from the public's fossil fuel addiction, some of them multi-billionaires, are loosely knit, but with a well-understood common objective of maintaining the public's addiction. These kingpins have the resources to be well aware of the scientific knowledge concerning the consequences of continued exploitation of fossil fuels. However, they choose not only to ignore those facts, but to support activities intended to keep the public ill-informed. These kingpins are guilty of high crimes against humanity and nature. It is little consolation that the world will eventually convict them in the court of public opinion or even, unlikely as it is, that they may be forced to stand trial in the future before an international court of justice.

The fossil fuel kingpins are separated from the foot soldiers who serve as their public mouthpieces, separated by multiple layers of people, and even by corporations, which some courts have granted rights and protections of people. The public has the right to know who is supporting the foot soldiers for business-as-usual and to learn about the web of support for the propaganda machine that serves to keep the public addicted to fossil fuels and destroys the future of their children.

This court cannot single-handedly cure the cancer that is afflicting democracies worldwide, the inappropriate power granted to money, to special financial interests. But by standing for the rights of the people, by exposing one link in the web of the oppressing fossil fuel propaganda machine, it just may start a process that allows the public to begin to realize what is at stake and where the public interest lies. Perhaps, if this process begins soon, there is still time to preserve a good future for young people and future generations.

I believe that the facts stated in this witness statement are true.