

A Fork in the Road

We stand at a fork in the road. Conventional oil and gas supplies are limited. We can move down the path of dirtier more carbon-intensive unconventional fossil-fuels, digging up the dirtiest tar sands and tar shales, hydrofracking for gas, continued mountain-top removal and mechanized destructive long-wall coal mining. Or we can choose the alternative path of clean energies and energy efficiency.

The climate science is crystal clear. We cannot go down the path of the dirty fuels without guaranteeing that the climate system passes tipping points, leaving our children and grandchildren a situation out of their control, a situation of our making. Unstable ice sheets will lead to continually rising seas and devastation of coastal cities worldwide. A large fraction of Earth's species will be driven to extinction by the combination of shifting climate zones and other stresses. Summer heat waves, scorching droughts, and intense wildfires will become more frequent and extreme. At other times and places, the warmer water bodies and increased evaporation will power stronger storms, heavier rains, greater floods.

The economics is crystal clear. We are all better off if fossil fuels are made to pay their honest costs to society. We must collect a gradually rising fee from fossil fuel companies at the source, the domestic mine or port of entry, distributing the funds to the public on a per capita basis. This approach will provide the business community and entrepreneurs the incentives to develop clean energy and energy-efficient products, and the public will have the resources to make changes.

This approach is transparent, built on conservative principles. Not one dime to the government.

The alternative is to slake fossil fuel addiction, forcing the public to continue to subsidize fossil fuels. And hammer the public with more pollution. The public must pay the medical costs for all pollution effects. The public will pay costs caused by climate change. Fossil fuel moguls get richer, we get poorer. Our children are screwed. Our well-oiled coal-fired government pretends to not understand.

Joe Nocera was polite, but he does not understand basic economics. If a rising price is placed on carbon, the tar sands will be left in the ground where they belong. And the remarkable life and landscape of the original North American people will be preserved.

Joe Nocera quoted a private comment from a note explaining that I could not promise I would be back in New York to meet him. But he did not mention the contents of the e-mail that I sent him with information about the subject we were to discuss. The entire e-mail is copied below.

Jim Hansen

Joe,

Here are some relevant words from the draft of a paper that I am working on:

Transition to a post-fossil fuel world of clean energies will not occur as long as fossil fuels are the cheapest energy. Fossil fuels are cheap only because they are subsidized and do not pay their costs to society. Air and water pollution from fossil fuel extraction and use have high costs in human health, food production, and natural ecosystems, with costs borne by the public. Costs of climate change and ocean acidification also are borne by the public, especially young people and future generations.

Thus the essential underlying policy, albeit not sufficient, is for emissions of CO₂ to come with a price that allows these costs to be internalized within the economics of energy use. Because so much energy is used through expensive capital stock, the price should rise in a predictable way to enable people and businesses to efficiently adjust lifestyles and investments to minimize costs.

An economic analysis indicates that a tax beginning at \$15/tCO₂ and rising \$10/tCO₂ each year would reduce emissions in the U.S. by 30% within 10 years. Such a reduction is more than 10 times as great as the carbon content of tar sands oil carried by the proposed Keystone XL pipeline (830,000 barrels/day). Reduced oil demand would be nearly six times the pipeline capacity, thus rendering it superfluous

A rising carbon price is the *sine qua non* for fossil fuel phase out, but it is not sufficient. Investment is needed in energy RD&D (research, development and demonstration) in new technologies such as low-loss smart electric grids, electrical vehicles interacting effectively with the power grid, and energy storage for intermittent renewable energy. Nuclear power has made major contributions to climate change mitigation and mortality prevention, and advanced nuclear reactor designs can address safety, nuclear waste, and weapons proliferation issues that have limited prior use of nuclear power, but governments need to provide a regulatory environment that supports timely construction of approved designs to limit costs. etc.

Jim Hansen