

Global Warming: The Complete Answer

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16th September, 2008

Introduction: In 2007 I published a book *Global Warming: The Answer*, that achieved record breaking low sales. It was addressed to the relatively simple question: How to wean the United States (or indeed any large developed country) from the use of fossil fuels?

My good friend Dr. Michael Schluter, who read the book out of pure friendship, observed: That is all very well, but the U.S. accounts for only 16% of fossil carbon emissions: What about the other 84% of emissions? Together we have developed *the complete answer*, to which this paper is addressed.

While it is probably safe to assume that the reader is already aware of Global Warming/Climate Change and that it is caused by excessive use of fossil fuels (coal, natural gas and oil), the complete answer (correct policy response) for an individual large country seems to be less widely known. Accordingly, this essay provides a brief review of the correct policy response for an individual nation.

Turning to the issue of *Global Warming*, it turns out that a properly formulated national policy gives other nations an incentive to be equally aggressive in reducing their fossil carbon emissions. A modest change in WTO (World Trade Organization) rules will be needed, but beyond that no reliance on international organizations or treaties such as Kyoto, Bali or Copenhagen is needed. Indeed it can be argued that such treaties are likely to do more harm than good.

National Policy: To reduce and then eliminate fossil carbon dioxide emissions, it is sufficient to raise the price of fossil fuels, until they cease to be competitive with other sources of power.

Key considerations in raising the price of fossil fuels are:

- Control the production of fossil fuels at the mine, well-head or port of entry. (This administratively simpler than trying to measure and control widely dispersed emissions.)
- Control the production of fossil fuels by selling production permits. (This can also be described as "putting a tax on fossil fuels".)
- The price of production permits should be high (say \$250 per ton of carbon, to approximately double the price of coal based electricity), and progressively increased until demand for fossil fuels is eliminated.
- To return the revenue from selling production permits to consumers on a per capita basis (unrelated to consumption of fossil fuels.) (Revenue should not be diverted to worthy causes such as subsidizing fossil-free energy production, since the higher price for fossil fuels will provide a huge incentive to the private sector to produce fossil-free fuels. Government has an appalling record of subsidizing "loser" technologies, hydrogen, FutureGen, corn ethanol to mention only three: Governments are not good at "picking winners".)

Refinements and clarifications of this policy prescription are:

- Nuclear should be treated as a fossil-free fuel. (The rationale being that nuclear does less damage, even including the costs of decommissioning, than fossil fuels. Once fossil fuels have been phased out, we can turn to phasing out nuclear.)
- To prevent emigration of energy intensive industries such as steel, aluminum and fertilizer, there should be an equivalent tariff on imports of such energy intensive products.
- All energy subsidies should be removed. The higher price (approximately doubled) for fossil based electricity would provide an ample incentive for wind, solar and as yet undreamt of new technologies to undercut the higher prices of fossil based energy.

I will not dwell on merits of these policy proposals, since in this article I am focused on the 84% of fossil carbon dioxide emission NOT produced in the United States. For this purpose it is sufficient to illustrate that there are policies available to drastically reduce domestic

emissions: Policy proposals that are gaining increasingly widespread support¹.

An International Blind Alley: The conventional wisdom is that since global warming is a global problem, it will need an internationally agreed (quite possibly multi-lateral) solution. Global warming *is* a global problem, *because fossil carbon dioxide emitted anywhere affects climate (however slightly) everywhere.*

The conventional wisdom is right that global warming is a global problem, but naïve to imagine that an international treaty or multi-lateral programs can be expected to provide a solution.

The problem with international negotiations is that such negotiations are conducted by diplomats, each country's diplomats having the objective of achieving a treaty that will have minimum cost or maximum benefit to their own country. In such an atmosphere it should cause no surprise if actually achieving a solution to the global problem gets lost, as individual countries struggle to achieve local and short-term advantages.

Another widely held view amongst diplomats is that because the U.S. and other developed countries have been responsible for most of the fossil carbon dioxide added to the atmosphere over the last 200 years, China and other developing countries should be held to much lower (if any) emission limits, than developed countries. This is a weird view, as if developing countries should be forced to use the same growth path as followed by developed countries. Why shouldn't the developing world (China, etc.) be encouraged to skip the doomed fossil fuel intensive technologies? Surely they would be better to go directly to low/zero fossil fuel technologies?

We do China no favor by encouraging her to make massive investments in obsolescent carbon intensive technologies.

¹ Al Gore has said "we have to put a price on carbon" and "we need a revenue neutral carbon tax" (Reference). James Hansen, head of the NASA Goddard Institute for Space Studies, has said "we need a carbon tax returned to consumers as an equal *per capita* monthly deposit" (Reference). See also web-sites such as www.sorryaboutthat.net, www.carbontax.org, www.federalcarbontax.org, and www.taxanddeposit.org, www.onesky.org, etc.

The major cost of eliminating the use of fossil fuel will be paid by the developing world, as we write-off our investments in coal-fired power stations, gasoline engines, airplanes, oil and natural gas extraction, storage and distribution systems, etc..

The weakness of internationally negotiated agreements is all too obvious. A decade after Kyoto the rate of increase in atmospheric carbon dioxide is increasing even faster than when Kyoto was negotiated. At best Kyoto only committed countries to targets in 2012, 2025, and 2050. While there were nominal penalties for missed target, the enforceability of these penalties remains to be seen: Certainly the first test of enforceability will not occur until 2012, 15 years after the adoption of the Kyoto protocol. Moreover, Kyoto accepted the concept of carbon credits, by which the emission of fossil carbon dioxide could exceed agreed targets in exchange for temporary removal of carbon from the carbon cycle, such as planting tree.

A National Solution to the International Problem: We have already seen that the proposed domestic policy of raising the price of fossil fuels requires a tariff on imported energy and energy intensive products, if there is not to be a migration of energy intensive industry to low-cost energy economies.

Now suppose that we:

- Have a tariff on energy imports equivalent to the domestic tax,
- Have a tariff on all manufactured imports based on the domestic tax that would have been paid if the product had been produced domestically using a fossil fuel intensive technology,
- Exempt imports from the manufactured goods tariff, if the exporting country has an equivalent domestic carbon tax.

What would the impact be? Initially the price of imported goods in the importing country would be the same whether not the exporting country imposed a carbon tax.

However, that is not the end of the story, since if the exporting country imposed a carbon tax, then the revenue from the tax could be returned on a *per capita* basis to the

citizens of the exporting country. If the exporting country declined to impose a carbon tax, then the tariff would be imposed, but the revenue from the tariff would go, on an equal *per capita* basis, to the citizens of the importing country. This is a big difference, and gives the exporting country a big incentive to introduce the carbon tax.

Now some details. While the tariff on manufactured goods would be exempted if the exporting country had a carbon tax, this exemption would *not* apply to pure energy imports. This is because if we exempted fossil fuel imports for which a tax had been collected, the consumers in the importing country would pay the higher (taxed) price but the revenue from the tax would go to the citizens of the exporting country. The tax would thus result in a (massive) income transfer from the importing to the exporting country: Quite likely with adverse macro-economic effects for the importing country.

As exporters weaned themselves off fossil fuels onto fossil free fuels, (that were cheaper than the taxed price of fossil fuels) they would obtain a price advantage, as compared to not having a carbon tax, and thus having to pay the importing country's tariff.

It is also important that the exporting country's tax regime include the key features of (a) collection at the point of production or port of entry, (b) be at least as large as that of the importing country, (c) be paid back as an equal *per capita* rebate to the citizens (i.e. In no way captured by government for other good works), and (d) impose an equivalent tariff on imports from countries without a satisfactory carbon tax.

As additional countries impose the tax (and associated tariff on untaxed imports) the incentive on the remaining countries to impose the tax will be increased.

Given monotonic tax increases, the end product will see all countries to have imposed the (high) fossil fuel tax, to the point that all economies have ceased to use fossil fuel, and hence no tax is collected. There will be no remaining "distorting" effect of the tax and tariff, beyond the cessation of the use of fossil fuels.

It is counter-intuitive that one country acting alone could set in motion policies that would lead to the elimination of the use of fossil fuels. Yet this would seem to be the impact of the proposed tax-tariff policy. There is considerable evidence that the general population is way ahead of leading politicians, in their recognition that global warming is real and really dangerous. The key difficulty to be overcome is thus likely to be that the proposed tariff runs counter to trading rules as laid down by the World Trade Organization (WTO).

WTO: The World Trade Organization is multi-national organization dedicated to promoting trade, and ensuring that trade takes place on a "level playing-field". Over time the WTO has developed a case-law as to which practices are acceptable, and appropriate penalties for unacceptable practices. No principle is more firmly established, than that "if you cannot tell the difference then they are the same product". The key idea is to prevent trade restrictions being imposed simply to protect domestic producers. Absent this rule it might be possible to prohibit importation of irrigated vegetables, or air-transported fruits, to the advantage of domestic un-irrigated vegetable or fruit producers. (It has also been used to prevent tariffs being used to demand "fair labor practices" in the producing country.)

Since it is clearly impossible to tell from looking at a pair of sneakers or pants as to whether the electricity used to run the sewing machine was fossil based, it maybe that the WTO would object to a blanket tariff that treated all products "as if" they were produced using fossil fuels. Worse, we are proposing that countries that have "most favored nation" status under the WTO be subject to a tariff, not imposed on other nations with this same status.

Given the gravity of the problem, and that we are proposing applying an equivalent domestic tax, it seems that the WTO should recognize the global warming exception. The sooner this can be taken up with the WTO the better.

Short Argument: The above discussion reflects the way key ideas were developed. However the argument can be presented much more concisely. Always given that global warming is real, caused by humans, and requires us to stop using fossil fuels, then one can say:

- Since 84% of fossil carbon dioxide emissions come from the rest of the world (i.e. outside the United States). It is essential that we persuade other countries to limit their use of fossil fuels.
- We (U.S., E.U. or other large trading group) can do this by imposing a tariff on low or zero carbon tax countries.
- But the WTO will only allow us to do this if we have a (high) carbon tax ourselves.
- Hence we need a high carbon tax, of the sort described earlier.