Benefit/Cost Analysis In the Climate Alarmism Paradigm

16th International Conference on Climate and Energy

Europäisches Institut für Klima und Energie

CFACT

Heartland Institute

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Vienna, Austria

June 14-15, 2024

Topics to Be Addressed

- Obama Administration "Efficiency" Regulation for Medium and Heavy Trucks.
- The Term "Carbon" Is Political Propaganda.
- MAGICC 7.0: Year 2100 Temperature Effects of GHG Policies.
- Summary Observations on the Costs of GHG Policies.
- The Social Cost of "Carbon"/GHG As a Subterfuge.
- Central Problems Inherent in the SCC/SC-GHG.
- Most Important: Artificially-Low Discount Rates.
- What Is the Interest of Future Generations?
- "Carbon" Taxes in Europe.
- EU ETS Prices.
- Fuel Savings As a "Benefit" of GHG Policies.
- Conclusions.

Obama Administration "Efficiency" Regulation for Medium and Heavy Trucks

- Asserted reduction in CO_2e concentrations: 1.1-1.2 ppm by 2100.
- Asserted temperature reduction: 0.0026-0.0065°C by 2100.
- Asserted total reduction in sea level rise: 0.023-0.057 centimeters by 2100.
- These were the effects asserted by EPA using the MAGICC climate model/simulator.
  - Model for the Assessment of Greenhouse Gas Induced Climate Change.
  - EPA funded the development of this model, at the National Center for Atmospheric Research.
- EPA then asserted net economic benefits of over $100 billion.
- How is that possible?
- Answer: Multiply asserted GHG emissions reduction by the asserted social cost of "carbon." <u>Actual climate impacts are irrelevant.</u>

The Term “Carbon” Is Political Propaganda

- Carbon dioxide is not “carbon,” and it is not a “pollutant.”
- A certain minimum atmospheric concentration of CO_2 (~ 150 ppm) is necessary for life itself.
- Water vapor is by far the most important GHG in terms of the radiative properties of the troposphere.
- Why is water vapor not a “pollutant?”
- Because ocean evaporation is a natural process?
- So are volcanic eruptions, which emit vast quantities of real pollutants and sometimes water vapor.
  - Eruption of Hunga Tonga January 2022: 10 percent increase in stratospheric water vapor in one day.
- Far more rigorous to use the term GHG.

MAGICC 7.0:
Year 2100 Temperature Effects of GHG Policies

GHG Emissions Reductions, 2050	Equilibrium Climate Sensitivity	
	2.0°C	4.5°C
Biden U.S. net zero.	0.104°C	0.173°C
Paris agreement NDCs summed (~ 8% global).	0.066°C	0.109°C
–The NDCs are deeply unserious.		
China 50 percent.	0.111°C	0.184°C
OECD 60 percent.	0.145°C	0.242°C
European Union (27) net zero:	0.052°C	0.087°C
Global 25 percent.	0.206°C	0.343°C.

Note: The standard deviation of the land/ocean temperature record is 0.11°C.

Summary Observations on the Costs of GHG Policies

- Are any of these emissions policies plausible?
- Global GDP fell 3.5 percent in 2020 due to the Covid economic downturn.
- GHG emissions fell by 6.4 percent.
- My highly-conservative estimate of the cost of only part of the electricity portion of the U.S. net-zero policy is $500 billion per year.
  - $4000 per year per U.S. household.
- European Union reported "climate" spending 2014-2020: €216 billion, or €31 billion per year.
  - This is almost certainly an underestimate of the economic cost of EU policies.
- EU GHG emissions reduction 2014-2021: 207.6 million metric tons (6.4 percent).
- This works out to €1040.5 per metric ton.
- Is there a plausible benefit/cost test that would justify these policies?

The Social Cost of "Carbon"/GHG As a Subterfuge

- **By multiplying the asserted GHG reductions by the asserted SCC/SC-GHG, advocates of U.S. climate policies claim huge "benefits" even though the climate effects in MAGICC are trivial or zero by 2100.**
- **MAGICC is not far from the average of the CMIP5 and CMIP6 models.**

Central Problems Inherent in the SCC/SC-GHG (1)

- Climate damage functions driven by RCP8.5 and ECS of 4.5°C.
- Incorporated into models that overstate the tropospheric temperature record by a factor of about 2.5.
- Includes asserted effects for the entire globe rather than the U.S. only.
  - The rest of the globe does not have to adhere to U.S. policies, which would have near-zero effects in any event.
  - This introduces a large bias toward a U.S. assumption of global GHG policy costs.
- Includes "co-benefits" of asserted reduced emissions of other pollutants already regulated under different provisions of the Clean Air Act.

Central Problems Inherent in the SCC/SC-GHG (2)

- **Ignores uninternalized benefits of increasing GHG concentrations.**
  - **– Planetary greening, reduced net mortality from cold and heat, increased agricultural output, increased water efficiency by plants, etc. etc.**
- **Mischaracterization of future GDP effects.**
  - **– DICE IAM (William Nordhaus): Maximum 3 percent GDP loss by 2100. Not statistically significant.**
  - **– Nordhaus won the Nobel Prize in Economics in 2018. Because the benefit/cost analysis in DICE does not support policies driven by climate alarmism, he has been attacked vociferously by the environmental left.**
  - **–IPCC "1.5°C Special Report": 2.6 percent GDP loss by 2100.**
  - **–In my view the IPCC "1.5°C Special Report" is the worst work from IPCC in many years.**

Most Important: Artificially-Low Discount Rates (1)

- **Biden administration:**
  - **2030 SCC-CO_2 = $140, $230, and $380 per metric ton at discount rates of 2.5%, 2.0%, and 1.5%.**
  - **2080 SCC-CO_2 = $280, $410, and $600.**
- **These discount rate are preposterously low.**
- **Justified on the grounds that climate policy is merely a shift in consumption across time periods.**
- **That is not correct.**
- **Climate policy is a current resource "investment" --- reduced consumption --- during the current time period.**
- **Intended to change the aggregate capital stock.**
  - **Wind farms replacing natural gas generating stations, EVs replacing ICE vehicles, etc.**

Most Important: Artificially-Low Discount Rates (2)

- Climate policy supporters: We will have an increase in consumption (better weather, etc.) during future time periods.
- No: Climate policies will have climate effects trivial or zero.
- The present value of all the consumption shifts is positive.
- No: Costs are vastly greater than benefits.
- The appropriate discount rate is about 7 percent.
  - That is the approximate "opportunity cost" of resource use in the U.S. economy.
- SCC-CO_2 would be about $10/metric ton, and even that ignores the benefits of increased GHG concentrations.
  - That is why the SC-CO_2 in Richard Tol's FUND IAM is effectively zero and even negative under some assumptions.

Most Important: Artificially-Low Discount Rates (3)

- Another argument from the Biden administration: The appropriate discount rate for climate policy analysis is the interest rate on U.S. government debt.
- This is fundamentally wrong.
- The interest rate on government debt reflects the risk perceived by lenders to the government that the debt will not be repaid as promised in real (inflation-adjusted) terms.
  - The government might create an unexpected inflation.
- The appropriate discount rate for government policies should reflect the risk to the economy that the resources used for the policies might not prove as productive as resources used in the rest of the economy.
  - Again: That opportunity cost is approximately 7 percent.

What Is the Interest of Future Generations? (1)

- Usual implicit assumption: Future generations prefer climate phenomena unaffected by anthropogenic influences.
- More generally: Future generations prefer environmental quality unaffected by mankind.
- That general premise is false.
- Future generations prefer a bequest of the most valuable possible stock of capital, defined broadly.
  - Of which environmental quality is one important dimension among many.
  - There are tradeoffs among all of them.

What Is the Interest of Future Generations? (2)

- **Consider a *homo sapiens* baby born in a cave 50,000 years ago, with a life expectancy at birth of approximately 10 years.**
- **That child would want a bequest of improved environmental quality and also better food, water, housing, medical care, etc.**
- **In other words: That child would give up some environmental quality if by doing so there would be an increase in the availability of other important goods.**
  - **All of us make that same calculation.**
- **Achievement of that bequest --- the most valuable possible capital stock defined broadly --- requires efficient resource allocation by the current generation.**

“Carbon” Taxes In Europe

- As of March 31, 2023.
- Average for 21 European nations: €44.49.
- Low: €0.75 (Ukraine).
- High: €120.16 (Liechtenstein, Switzerland).
- Austria: €32.50.
- France: €44.55.
- Germany: €30.00.
- UK: €20.46.

EU ETS Prices

- As of March 31, 2023.
- EU Emissions Trading System: €88.46.
- Abstracting from the cost effects of other policies, these numbers are lower than the Biden administration SCC-CO_2 for 2030.
  - $140, $230, and $380 per metric ton at discount rates of 2.5%, 2.0%, and 1.5%.
- So Europe --- green, super-green, ultra-green, greener than green, greener than thou --- is getting matters less wrong in this narrow context than the Biden administration!

Fuel Savings As a "Benefit" of GHG Policies

- U.S. EPA: Fuel savings are a large benefit of policies to reduce GHG emissions.
- Why do people and markets opt for vehicles that consume fuel?
  - Fuel is not inexpensive.
  - Are people and markets merely stupid?
- Transportation services provided by vehicles that consume fuel must yield commensurate benefits in the form of the quality of transportation services.
  - Speed, volume, weather resilience, safety, etc. etc.
- In the Biden administration benefit/cost methodology, GHG policies yield enormous fuel savings without any reduction in the quality of transportation services.
- I am not joking: Under the Biden administration methodology, if everyone were forced back into stage coaches and horse-drawn carts, net benefits would be enormous.

Conclusions

- Because the Biden administration GHG policies cannot be shown to have any non-trivial climate impacts, it has ignored those parameters in favor of asserting the product of GHG reductions and the SCC/SC-GHG as the climate "benefits."
- The costs are so large that the policies cannot satisfy any plausible benefit/cost test.
- The problems inherent in the SCC/SC-GHG methodology are severe.
- In particular: Artificially-low discount rates the justifications for which are not correct analytically.
- The common argument about the interests of future generations also is incorrect.
- "Carbon" taxes and ETS prices in Europe actually are lower than the Biden administration SC-GHG calculations.
- The Biden administration fuel savings "benefit" assertions are one example of the fundamental dishonesty of the Biden administration climate benefit/cost analyses.

THANK YOU!

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