

The True Costs of the Climate Stewardship Act

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Introduction

Senators McCain and Lieberman plan to once again introduce legislation—the Climate Stewardship Act—to mandate reductions of greenhouse gas (GHG) emissions. Since the principle GHG, carbon dioxide, comes from energy use, their legislation will force a reduction in the use of fossil fuels, primarily coal and oil, and create a rationing scheme called “Cap and Trade” for allocating allowable energy use.

High Costs are a Certainty

This legislation would be the most expensive emission control measure ever enacted in the United States. Charles River Associates' (CRA) analysis of the legislation found that in 2010 the Climate Stewardship Act would lower the average household's spending power by \$350 to \$820 (in constant 1999 dollars). By 2020, the average household's losses would rise to \$530 to \$1300 (also in constant 1999 dollars). This means that living standards would be depressed about 1%.

These negative effects are caused primarily by higher energy prices. By 2010, the Climate Stewardship Act would increase the prices of natural gas and of petroleum products by roughly 12% to 30%. Electricity rates would rise between 7% and 17%. By 2020, gas and petroleum price increase would be ranging between 16% and 44%. And electricity rates would be 10% to 23% higher.

These estimates apply to the bill as amended to attract support in the Senate. In the eyes of many proponents, the amended legislation is merely the initial stage of a far more expensive journey. It is a case of the camel's nose under the tent.

Supporters of the Climate Stewardship Act use four lines of argument to dispute estimates of the Act's expected costs and impacts. These arguments, however, do not stand up under close scrutiny.

Credibility of the CRA Cost Estimate

Advocates of the Climate Stewardship Act claim that the CRA analysis, and the model on which it is based, overstate the cost. They support this claim by citing a lower cost estimate generated by MIT researchers using a different model. Hence, the relevant question becomes which model's cost estimate is more credible.

The CRA and MIT models produce somewhat similar estimates of the energy price increases, but the MIT model estimates substantially less net harm to the economy than CRA. Puzzled by this, the principal CRA and MIT investigators carefully assessed the models to gain an understanding of the differences.

They concluded that the model results differ primarily because CRA captures economic effects omitted from the MIT model. The CRA model produces a higher cost estimate because it “... captures a fuller set of real-world market and behavioral interactions that are considered important by mainstream economists.” MIT's analysis stops in 2020, before the most severe impacts, and the MIT model also ignores the likelihood that businesses would incur some early costs in order to mitigate future impacts. The CRA and MIT investigators agree that these differences

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are the reasons for CRA's higher cost estimates. The correct inference to draw from this is that the MIT analysis understates costs rather than CRA overstating them.

The Clean Air Act Experience is not Relevant

The supporters of the Climate Stewardship Act also assert that the experience of Title IV of the Clean Air Act, which created a cap-and-trade system for sulfur dioxide, proves that the a GHG cap-and-trade system will produce abatement costs that are a fraction of those estimated by economic models.

On its face, this claim is implausible. Title IV cap-and-trade was, doubtless, more efficient than the convoluted regulations embodied in the rest of the Clean Air Act. Nevertheless many factors, other than the form of controls, affect costs. And with respect to these other factors, greenhouse gas emission controls pose challenges that are harder and more expensive than those for sulfur dioxide emissions. The volume of greenhouse gas emissions is vastly greater. Control technologies are rudimentary, at best, and very expensive. And, greenhouse gas controls would affect a far higher share of the entire economy.

Even in the case of Title IV, independent factors worked to limit costs. For example, Title IV was enacted just as railroad mergers and the continuing effects of deregulation drastically lowered the transportation costs for Powder River Basin and other western low-sulfur coal. And, the long secular decline in natural gas prices greatly facilitated efforts to reduce emissions at reasonable costs. Chance played a non-trivial role in Title IV's performance.

There is no reason to assume that the Climate Stewardship Act would be followed by similar good fortune. The secular decline in natural gas prices is over. Indeed, The Climate Stewardship Act would exacerbate the tight supply, high price natural gas situation that exists today. And, there is no such thing as low carbon coal. So the Climate Stewardship Act

would not benefit from the sort of windfall that helped Title IV get off to such a good start.

Before-the-Fact Estimates of Control Costs are not Always Too High?

Proponents of the Climate Stewardship Act argue that *ex ante* cost estimates always overstate actual control costs. They cite claims that actual control costs under Title IV were a mere fraction of the estimates made before the legislation was passed. They assert this is but one example of a wider pattern. Neither assertion is factually correct.

Notwithstanding claims to the contrary, Title IV did not result in lower than predicted costs. The *ex ante* average cost projections were in the range of \$150 to \$300 dollars per ton. Actual costs, as measured in the late 1990s, were between \$187 and \$210 per ton, numbers within the lower range of the earlier estimates.

More generally studies comparing *ex ante* regulatory costs with those of actual costs find *no* systematic cost overstatement in the analyses of per unit costs. The *ex ante* studies do typically overestimate the scale of the problem being regulated. As a result, they tend to overstate both the costs and the benefits of regulation. The climate change problem could, of course, be smaller and more distant than the advocates of the Climate Stewardship Act would have us believe. However, that is not what they contend in claiming that *ex ante* costs are overestimated.

Regulatory Induced Innovation and the Cost of the Climate Stewardship Act

Advocates also assert that this legislation will unleash a torrent of new technological discovery. Emission control policies can create incentives that encourage technologic innovation, which economists refer to as "induced innovation." Supporters of the Climate Stewardship Act use this concept as dogma to claim that induced innovations will drastically reduce abatement costs. Title IV again is cited as an

example and supported by more general claims about the historical record. The facts tell a different story.

The success of the Title IV program is not the result of policy induced technological innovation. The time lags inherent in developing and applying new technologies should have produced high initial program costs, which then declined as new technology was put in place. Instead, emission reductions were so rapid that industry significantly overshot its mandated Phase I abatement targets. The real explanation was the fortuitous development of Powder River Basin Coal.

More generally economists have cautioned against sanguine predictions of policy-induced technological miracles. William Nordhaus has found that emission control impacts on technologic innovation, although not trivial, have been less important than anticipated. Indeed, the substitution of investment among existing energy technologies had more impact in reducing emissions than induced innovation. His policy conclusion was that "... we should not look to regulatory stringency or high emissions taxes as a way of forcing inventors to solve our global environmental problems. Necessity may indeed be the mother of invention, but there is limited payoff in inducing the delivery through regulations or high taxes."

The extremely difficult nature of the technological challenges posed by climate change makes induced innovation especially problematic. Extensive studies of the technological options relevant to the climate issue make clear that no breakthroughs are on the horizon. Expert assessments indicate that the challenge of finding plentiful and low-cost non-greenhouse gas emitting energy sources is daunting and represents the technological challenge of the century. There are no technological "magic bullets." Firms would have to spend huge amounts of time and money before even knowing if a particular new low- or no-carbon energy source would be suitable for commercialization.

Profit-making firms are rightly cautious about investing large sums in such high-cost, high-risk R&D. Early basic research is primarily pursued by government-sponsored research. The Federal Government through its climate technology initiative is already at work on climate technology challenges.

Conclusion

Interestingly, the Climate Stewardship Act's advocates do not argue that its benefits exceed its expected Costs. The risks posed by climate change are too speculative for such a strategy. Instead, they dispute the evidence showing the legislation actual costs.

On closer examination, their arguments collapse. The most credible cost estimate concludes that the Climate Stewardship Act is very expensive. The experience of Title IV tells us nothing about the costs of the entirely different task of controlling greenhouse gas emissions. The record of *ex ante* regulatory cost estimates warns that control costs are overstated primarily because future emission growth is typically exaggerated. The illusion that draconian emission controls will scare business into a technological revolution rests on the misunderstanding of both commercial R&D and the nature of the technological challenge.

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