

## Assessing the Supreme Court's CO<sub>2</sub> Ruling

William O'Keefe  
CEO, The Marshall Institute

April 1, the day that the Supreme Court ruled that the Environmental Protection Agency (EPA) had authority to regulate carbon dioxide (CO<sub>2</sub>) emissions from automobiles, was a day of bitter triumph. A triumph of judicial activism over factual and dispassionate analysis, a triumph of ideology over objective analysis and legal precedent, a triumph of political science—the blend of science, hypothesis and orthodoxy—over science and facts, and a triumph of image over reality.

From our founding days until today, our history has shown that while justices may be among our nation's best legal minds, legal intellect does not ensure wisdom. This decision ranks amongst the Court's worst and could have far reaching ramifications unless something is done to correct its errors. While there are many examples of Court decisions following public opinion, this most recent ruling is an example of what the late historian Daniel Boorstein had in mind when he observed:

"More and more accustomed to testing reality by image, we will find it hard to restrain ourselves so we may once again test the image by reality. It becomes ever harder to moderate our expectations, to shape expectations after experience, and not vice versa. For too long already we have had the specious power to shape 'reality.' How can we rediscover the world of the uncontrived?"

The Court's ruling rests on two legal issues: (1) does the Clean Air Act grant EPA the authority to regulate CO<sub>2</sub> and (2) did Massachusetts, et al. have standing to bring suit that human induced climate change was causing real and irreparable harm by causing sea level rise. While these appear to be primarily matters of law and lawyers will now debate the legal technicalities of the ruling, the underlying issue is driven by science and our state of knowledge of the climate system.

In finding for the plaintiffs, the majority ignored legislative history that clearly demonstrated that Congress did not grant authority to EPA to regulate CO<sub>2</sub>. The Court's own review of the legislative history of the Clean Air Act reveals this point. The majority acknowledges that the original Act did not consider carbon dioxide, noting that "when Congress enacted these provisions, the study of climate change was in its infancy." The majority then recounts the development of the government's climate science and research programs, developed to *study* the linkage between greenhouse gas emissions and climate change. The Court then confounds these study and research programs with the Clean Air Act stating, "And unlike EPA, we have no difficulty reconciling Congress' various efforts to promote interagency collaboration and research to better understand climate change with the agency's pre-existing mandate to regulate 'any air pollutant' that may endanger public welfare." In doing so, the majority explicitly sets aside the fact that when given the opportunity to task the EPA with the authority and mandate to *regulate* rather than *study* CO<sub>2</sub> when the Clean Air Act was reauthorized in 1990, the Congress declined to do so. At that time, the conference committee reconciling the different House and Senate versions removed a House provision that would have granted EPA such authority.

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Furthermore, the conference committee report did not say that EPA already had such authority, and its bill was passed by Congress and signed by the President. In view of Congress' explicit action to deny EPA the authority to regulate CO<sub>2</sub>, the majority's finding to the contrary appears to be a contrivance to make reality conform to desire and ideology.

But, more important and far reaching was the Court's finding that Massachusetts had standing. To reach this conclusion, the Court stood logic on its head. It stated: "Given EPA's failure to dispute the existence of a causal connection between man-made greenhouse gas emissions and global warming, its refusal to regulate such emissions, at a minimum, 'contributes' to Massachusetts' injuries." Since this would require EPA to regulate independent of the causal effect or economic impact, the majority implicitly had to accept the position that CO<sub>2</sub> emissions from human activities are the primary cause of warming and climate change over the past several decades. The basis for this view had to come from the media and environmental advocacy because it certainly was not based on science and fact.

Unfortunately in recent years, the prevailing view in the public policy arena is that the climate debate has moved beyond the science. The Bush Administration implicitly accepted this view as it failed to contest these points in its brief and arguments before the Court, which was a fact on which the majority commented. For some time, a number of us engaged in the climate policy debate worried that the Administration's strategy, which made the true state of knowledge secondary or irrelevant, was a dangerous one. The Court's decision validated that concern. When science is not used to shape the limits of debate and policy, policy becomes nothing more than a negotiation constrained by the political limits of acceptable costs and who bears them.

Over the past century, the Intergovernmental Panel on Climate Change (IPCC) estimates sea levels to have risen about 7 inches

on average. The IPCC's most recent report estimates over the course of this century it could rise 23 inches (under its most extreme scenario), which is a reduction from its previous report. There is a compelling reason why the rise in sea level this century is more likely to be closer to that of the past century. That reason is the likelihood that temperature increases, which are a major driver in sea level rise, are most likely closer to the lower end of the projected range than the upper end. The sea level rise along the east coast over the past century has not caused great loss, except for barrier islands which historically are more vulnerable to damage from all weather events. Massachusetts did not show why the more likely rise over the course of this century would cause greater damage than it experienced over the past century. Assumptions that imply rapid and large rises in sea level are unrealistic. What occurs gradually over the course of a century can be addressed in a way that limits both damages and abatement costs. Actions taken today to address climate risks and future actions taken as our state of knowledge improves make it very unlikely that the IPCC's scenarios of catastrophe will become reality.

In addition to the rise in sea level, Massachusetts and the other states also based their claims about harm on extreme weather events. Claims that extreme weather events will increase are challenged by William Gray of Colorado State University, who ranks among the nation's leading hurricane experts. He developed the best predictive model for hurricane formation in the North Atlantic and rejects the assertion that warming will lead to an increase in the number of hurricanes and their intensity. He compared hurricanes for two fifty year periods—1900-1949 and 1956-2005 — and found that even with higher global average temperatures during the most recent period, there were fewer named storms and hurricanes. Other research has found no increase in hurricane intensity in other ocean basins.

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Assertions of harm, increased risk and future catastrophes are not the result of science and new knowledge. They are the result of computer simulations.

A computer simulation is nothing more than a model made up of mathematical formulations that make it possible to replicate something that is known or believed. A mathematical model can be constructed to show anything, real or imagined. For a model to be useful, validation through tests using independent data is required and to date, no climate model has been validated scientifically. The IPCC uses a range of models for its work, but again none have been validated. In its Third Assessment Report, the IPCC stated:

“By 2100, the range in the surface temperature response across the group of climate models run with a given scenario is comparable to the range obtained from a single model run with the different... scenarios.”

This conclusion about uncertainty clearly demonstrates that we do not adequately understand climate processes and the various models reflect very different hypotheses about climate dynamics.

Models are useful tools for learning, but given current limitations should not be policy drivers or the basis for major decisions like the Supreme Court's.

Even the best models are limited by questionable input data and an incomplete temperature record. When used to predict future climate, these models over-predict temperature increases, a key driver of climate impacts. As MIT Professor Richard Lindzen has observed, “... if predictions based on these models are correct....then man's greenhouse emissions have accounted for about 6 times the observed warming over the past century with some unknown processes canceling the difference.” Further, University of Alabama-Huntsville professor and State Climatologist of Alabama John Christy's exhaustive analysis of his state's

temperature history found that, after making necessary adjustments, there was no real increase. It is well known that recorded temperatures require corrections for a host of factors including instrument location, construction and development that produce “heat islands,” and changes in measuring devices. As a result, even the capability of the best models is limited by questionable input data and an incomplete temperature record.

Projections of significant future climate impacts are the product of these models and the scenarios about the future they rely upon. These scenarios are unrealistic and make assumptions about things that are unknowable. The basic IPCC scenario assumption is that there will be no overt actions taken to deal with the climate risk. That is obviously wrong. In addition, these scenarios include assumptions about unknowables like population levels fifty or more years hence, economic growth rates, the mix of energy use, and technology development and deployment. It is also an established fact that the uncertainty of model results increases as the area of coverage decreases. When the U.S. conducted a climate assessment around 2000 using two of the world's best climate models, they produced extremely conflicting results for some regions.

It is virtually impossible for a few states, therefore, to reliably claim and demonstrate significant damage decades into the future. Their claims are nothing more than guesses which in fact conflict with U.S. specific analyses. Robert Mendelsohn, a Yale Professor of forestry and environment, is a leading expert on climate impacts on the U.S. His research, supported by that of others, leads to the conclusion that the likely impacts on the U.S. will not be as harmful as predicted even under the worst case assumptions accepted by the Court's majority. Indeed, the U.S. is more likely to benefit from modest warming with the greatest benefits being derived by states in the coldest regions of the country, like Massachusetts and other northeastern states.

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In 2001, the National Research Council, our most prestigious scientific body, issued a report that addressed the state of our knowledge and related climate issues. It concluded:

“Because there is considerable uncertainty in current understanding of how the climate system varies naturally and reacts to emissions of greenhouse gases and aerosols, current estimates of the magnitude of future warming should be regarded as tentative....”

“The range of natural variability is known to be quite large (in excess of several degrees Celsius) on local and regional scales over periods as short as a decade.”

“The wide range of uncertainty in these estimates (climate change simulations) reflect both the different assumptions about future concentrations of greenhouse gases and aerosols in the various scenarios considered by the IPCC and the differing climate sensitivities of the various climate models used in the simulations.”

“Much of the difference in predictions of global warming by various climate models is attributable to the fact that each model represents these processes in its own particular way. The uncertainties will remain until a more fundamental understanding of the processes that control atmosphere relative humidity and clouds is achieved.”

“Because of the large and still uncertain level of natural variability inherent in the climate record and the uncertainties in the time histories of the various forcing agents... a causal linkage between the build up of greenhouse gases in the atmosphere and the observed climate changes during the 20th century cannot be unequivocally established. The fact that the magnitude of the observed warming is large in

comparison to natural variability as simulated in climate models is suggestive of such a linkage, but it does not constitute proof... .”

In view of these conclusions, it is hard to explain the scientific basis for the Court’s majority concluding that plaintiff states had sufficiently demonstrated serious and irreparable damage as a result of human activities. The Court was correct that the Administration had not made a strong scientific argument for its decision, but the science for the plaintiff’s argument of harm was far weaker.

In addition to ignoring the true state of scientific knowledge about the climate system and serious uncertainties about the extent of human influence and analytical limitations, the Court majority also ignored two of its own precedents. In *Chevron v. Natural Resources Defense Council*, the Court gave broad discretion to an agency in executing its responsibilities. When the Clean Air Act was first reauthorized in the 1970s, a predominate concern was global cooling, so it is inconceivable that the Congress would explicitly ignore the potential warming effects of CO<sub>2</sub>, unless it did not consider CO<sub>2</sub> within the scope of the Act. When the Act was reauthorized again in 1990, global warming was receiving national attention as a result of two back-to-back hot summers and Al Gore’s advocacy as a senator. Nonetheless, the Congress explicitly did not grant authority to EPA to regulate CO<sub>2</sub> emissions.

The Court majority also ignored its own standards of scientific evidence from the *Daubert v. Merrell Dow Pharmaceuticals* case. In that decision, the Court went to great lengths to discuss the meaning of science and the importance of the scientific method. It concluded that:

“Ordinarily, a key question to be answered in determining whether a theory or technique is scientific knowledge that will assist the trier of fact will be whether it can be (and has been)

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tested. ‘Scientific methodology today is based on generating hypotheses and testing them to see if they can be falsified; indeed, this methodology is what distinguishes science from other fields of human inquiry.’”

If the majority had applied these standards to the petition, it should have rejected the basis for Massachusetts’ claims. Our state of knowledge about the climate system is not at a stage where the hypotheses suggesting significant human influence can be falsified and neither can the alternative hypotheses. However, the fact that observed warming has been less than predicted and that our understanding of climate feedbacks and cloud formation—two critical processes—is very limited should have led to reasonable doubt about the weight of the evidence presented. And there is no evidence that the majority seriously considered alternative explanations for observed warming and climate changes in recent decades that have less to do with human activity than natural variability.

There is a saying in the legal profession that hard cases make bad law. That was validated in this case. If left to stand, the EPA, and other regulatory agencies, will have to begin a process of controlling all sources of greenhouse gas emissions. This means controlling the use of fossil energy, since their use is the primary source of man-made greenhouse gases. This would require the government to exercise an unprecedented level of control over the functioning of our economy. No government can effectively and efficiently control a dynamic economy. Attempts to do so cause serious economic harm and loss of personal freedoms.

The Court majority was highly critical of the

Bush Administration’s legal reasoning and it did suggest that a case could be made for rejecting Massachusetts’ petition and refusing to regulate CO<sub>2</sub> emissions. Because of the enormous implications associated with the Court’s ruling, the Bush Administration should promptly complete another review of the Massachusetts petition and reject it on the grounds that the science does not support the plaintiffs’ case and does not justify the type of controls that they are seeking. This is the only way to rectify a bad decision and avoid the economic damage it will lead to. Congress could clarify the meaning of air pollutant in the Clean Air Act, but in the current political environment that is not likely to happen.

Scientific uncertainty about the extent of human influence on the climate system is not an excuse for inaction. And indeed, the United States government and private companies have not refused to take action. There is a legitimate debate about the adequacy of action and the implications of doing more. But claims that nothing is being done and that nothing short of forcing reductions in fossil energy use are justified are simply wrong. There is clearly evidence that the U.S. is doing more to address the climate risk than other nations and Energy Information Agency data on carbon intensity here and the European Union clearly shows that we are making at least as good progress as most of them. These facts lead to an obvious conclusion that those who make these claims most vigorously and attack those who raise questions about them have agendas that go well beyond avoiding environmental harm decades in the future. It is unfortunate that the Supreme Court did not recognize that and may have been too influenced by political correctness and climate orthodoxy.