

Office of the U. S. Global Change Research Program

September 26, 2002

Lee R. Raymond
Chairman and Chief Executive
ExxonMobil Corp.
5959 Las Colinas Blvd.
Irving, TX 75039

RE: With regard to the ExxonMobil facsimile on February 6, 2001 from Dr. A. G. Randol to Mr. John Howard of the Council on Environmental Quality

Dear Mr. Raymond:

As former director of the National Assessment Coordination Office of the US Global Change Research Program, I am writing to you in order to provide a response to the critical comments from ExxonMobil about the *US National Assessment of the Potential Consequences of Climate Variability and Change*. In that the National Assessment report provided the basis for the US National Communication released in June, I feel it important to clarify the issues and specifically address a number of the criticisms.

On August 10, 2000, ExxonMobil ran an advertisement in the Washington Post entitled "Political cart before a scientific horse" that was severely critical of the *draft* synthesis report¹. In partial fulfillment of a Congressional call for periodic assessments in the Global Change Research Act of 1990, the preparation of this report had, at this point, been in progress for several years under the leadership of a federal advisory committee.

Without having participated in the Federal Register review process that had led up to the draft report being made available for public comment (after two rounds of technical review), nor having participated in the public meetings discussing the draft report and its contents until the very end, the ExxonMobil proceeded to make a number of charges in the advertisement, generally based on rather poor understanding of what was being done and why the National Assessment was being undertaken.

¹ This was actually not the first involvement of ExxonMobil regarding the National Assessment; a few years ago an executive in Exxon's Gulf Coast region reportedly tried actively to halt the participation of the EPA's Gulf Coast laboratory in the EPA's support for the Gulf Coast assessment led by Southern University on behalf of four Historically Black Colleges and Universities. EPA headquarters ensured the effort proceeded.

Office of the U. S. Global Change Research Program
400 Virginia Avenue, SW, Suite 750
Washington, D.C. 20024
Tel: 202-314-2233; Fax: 202-488-8681
Web: <http://www.usgcrp.gov>
email: maccrac@usgcrp.gov

With respect to general tone of the advertisement, ExxonMobil charged that the report was a “political document” and “not objective.” Actual examination of the report would have shown that this report was prepared by a panel of experts having no political connections and that the report had been very carefully reviewed by technical experts to ensure objectivity. The federal advisory committee, officially named the National Assessment Synthesis Team (NAST), was composed of widely recognized scientific and economic experts from universities, industry, NGO, and government centers and institutions. The NAST was in turn overseen by a review panel under the auspices of the President’s National Science and Technology Council, and included two Nobel prize winners, among other leading figures.

In that the report neither recommended any policies nor specifically concerned the Kyoto Protocol that was being discussed by the Presidential candidates, it is not at all obvious how the document was a case of “the administration [seeking] to gain support for its own policies, which could damage the economy and employment ...” As a reading of the report would have made evident, the whole intent of the report was to provide information to facilitate adaptation to the emerging and projected changes so as to reduce potential damages and limit damage to the economy. [I should add that, as for others, it will be important for ExxonMobil to be taking account of the changing climate to ensure early preparation and effective adaptation to avoid the most severe consequences.]

As a general conclusion, the ExxonMobil advertisement advocated more research while saying it would be too expensive to deal with the problem. The National Assessment did indeed recommend more research, but at the same time indicated that there is sufficient knowledge to justify consideration of steps to adapt to the changes in climate now underway and that are inevitable as a result of the world’s present commitment to use of fossil fuels for energy. In my earlier experience, arguing for study of adaptation had been a position of industry², but now when this was attempted, ExxonMobil argued this was premature. Roughly, this is equivalent to turning your back on the future and putting your head in the sand—with this position, it is no wonder ExxonMobil is the target of environmental and shareholder critics.

In addition to offering general criticisms, the ExxonMobil advertisement made several specific comments about the state of the science. The criticisms are quoted below, accompanied by a response:

² Indeed, Dr. Brian Flannery of ExxonMobil asked for a study to “augment and contribute to the IPCC” (just as the US National Assessment was designed to do) in his June 20, 2001 letter to Dr. Ralph Cicerone concerning the June 2001 National Academy of Sciences (NAS) study. The National Assessment was just such a study, which was why its findings were endorsed in the NAS report, which is clearly evident if, as the Flannery letter urged, “interested people will read the full report.”

1. Advertisement: Climate models “are not yet capable of predicting Earth’s global climate.”

Response: A reading of both the national assessment report and the reports of the Intergovernmental Panel on Climate Change (IPCC³) makes clear that scientists are not claiming to make *predictions*—it is widely agreed that models cannot predict ahead exactly what will happen over the coming century. Instead, the scientific community is using models to construct *projections*; that is, plausible what-if estimations of what the future might look like. Based on their ability to represent the major features of the climate’s behavior, these models are quite capable of doing this. I rather imagine that each of you constructs what-if scenarios all the time—what if the price of oil goes over \$30 per barrel; what if there is a war in the Middle East, etc.? As the National Assessment report made clear: “Scenarios are plausible alternative futures—each an example of what might happen under particular assumptions. Scenarios are not specific predictions or forecasts. Rather scenarios provide a starting point for examining questions about an uncertain future and can help us visualize alternative futures in concrete and human terms. The military and industry frequently use these powerful tools for future planning in high-stakes situations. Using scenarios helps to identify vulnerabilities and plan for contingencies” (page 4).

2. Advertisement: “Today’s global models simply don’t work at the regional level. For example, one of the report models says the Great Lakes’ water level will be five feet *lower*; the other says it will be one foot *higher* (italics in original).”

Response: Studies reported in the IPCC report indicate that climate models generally give quite similar results when evaluated at the subcontinental level. Indeed, there are shortcomings in the capabilities of climate models for representing the details of prospective changes at the regional level (where a region is roughly the size of one to a few states), but the types of shortcomings mainly concern whether the change is likely to be a bit larger or smaller than the mean change for that continent or that area of the subcontinent—not at all whether there will be no change or a significant change. Thus, while the models may not give reliable indications of whether the temperature rise in Detroit will be larger or smaller than in Atlanta, both will be warming substantially. With respect to the specific example for the Great Lakes that is mentioned in the advertisement, a bit of reading would have shown that this study actually used the results from 9 models (the use of 2 was the minimum encouraged for all the activities in the National Assessment) and 8 of the 9 gave a substantial decrease in Great Lakes’ levels. That we included results from models with differing results in our analysis is exactly what one is supposed to do in a scenario

³ IPCC brings together the scientific expertise of about 150 countries, producing consensus assessments on a periodic basis. A copy of the most recent IPCC Synthesis Report is included for your information.

analysis—consider the range of possible outcomes so as to not too narrowly constrain the consideration of vulnerabilities. Does ExxonMobil only consider scenarios that foresee a single future possibility, and only when it knows exactly what the future will bring? When ExxonMobil prepares to develop an oil field, do your experts know exactly how much each well will produce, or do they convey a sense of things to you and consider various possibilities?

3. Advertisement: “The overview report was released even though most of the underlying reports and analyses are not yet available for scientific peer review or public comment.”

Response: In that assessment and analysis is really an ongoing process and not something that will or should ever end, the report of the NAST was a snapshot of what was known at the time, taken after many of the underlying assessment activities had prepared their findings and, although only some had been published, many had also been reported in journal publications and in other traditional ways. In addition, the Foundation report of 600 pages prepared by the NAST provided all the detailed backup information to substantiate the summary provided in the Overview report of 150 pages. The chapters of the Foundation report, which were not even mentioned in the advertisement, are full, peer-reviewed articles with extensive references for all the findings. These full scientific papers were prepared in close association with the various regional and sectoral assessment teams (you can go to our Web site <http://www.usgcrp.gov> and under Assessments gain access to all the materials). This Foundation report had simultaneously been released for public comment, and so everything in the Overview report was fully documented and reviewed both technically and as part of the public review process. Quite clearly, in contradiction to the ExxonMobil charge, all the information that would have been needed for review of the Overview document was readily available (and, in any case, ExxonMobil never even asked for such materials or participated in the review).

I could go on, but I hope this suffices to make clear that more thorough consideration and investigation should have been given by ExxonMobil to the content and process of the National Assessment.

The National Assessment report was delivered to Congress in November 2000 at the conclusion of NAST’s term, which had been extended from earlier in the year in order to provide time to fulfill the many review requirements that were called for and completed. The report was later published by Cambridge University Press. So that you can personally consider the appropriateness of the National Assessment’s findings, I am including a copy of the final report and a copy of the advertisement for your consideration.

The next step in the attack on the National Assessment came in February 2001, when Dr. A. G. Randol of ExxonMobil sent a facsimile to the new Administration urging the termination of the involvement of four individuals involved in climate change activities (see <http://www.nrdc.org/media/docs/020403.pdf> as it was the NRDC that made this communication available). ExxonMobil has already been criticized publicly for urging that Dr. Robert Watson, who had become chief scientist at the World Bank after a career in NASA and the White House Office of Science and Technology Policy (OSTP), not be supported by the US in the IPCC elections. For those interested in keeping the IPCC focus on science and uncertainties about climate change, it did seem strange that an economist was ultimately supported by the US and elected in the spring of 2002. Of the other three named in Randol's communication, Dr. Rosina Bierbaum's appointment at OSTP was, not surprisingly, not renewed (she is now dean of the Department of Natural Resources at the University of Michigan); and Mr. Jeffrey Miotke, who was a career foreign service officer simply representing our country's official position, was essentially harassed out of that position (rather a harsh penalty for a very capable public servant carrying out his instructions). And I am the fourth, named presumably as a representative of all those who participated in the US National Assessment.

Although the Administration had originally distanced itself somewhat from the National Assessment, discussions held as part of my on-going participation in the preparation of the Impacts and Adaptation chapter of the recent *US Climate Action Report 2002*, led the Administration to come to accept the National Assessment findings as the basis of that chapter in the report (the report can be viewed at <http://www.epa.gov/globalwarming/publications/car/index.html>). While release of the report by the Administration in late May was accompanied by a bit of a media stir, the results of the National Assessment that were presented had been carefully reviewed and approved by all the agencies and by the key personnel in the Executive Office. I would particularly urge you to also read Chapter 6 in order to see how carefully the National Assessment and the *Climate Action Report* present the state of knowledge and uncertainties and then offer a range of insights about the types of changes and impacts that those of us in the US are likely to experience. ExxonMobil can choose to ignore such information (e.g., how conditions in Alaska are rather rapidly changing and the implications this will have), but it will be doing so at its economic peril for it is very clear that the climate in coming decades will be different, perhaps substantially different than in the past.

As an example of how various groups are responding to the findings of the National Assessment, the US Department of Transportation (DOT) is convening a workshop on October 1-2 to consider the vulnerability to climate variations and change of the US transportation infrastructure and operations. As just a few examples of the types of issues that are expected to be considered, DOT has recognized that many airports, rail lines, roads, and port facilities are located in low-lying coastal areas exposed to rising sea level and increasing storm surge heights, that an increased incidence of heavy rains (a trend already evident during the 20th century) may increase

the scour below bridges, that the lower levels of the Great Lakes and some river systems are likely to cause problems for barge and ship traffic, and so forth. The objective of the workshop is to identify potential threats and then figure out what more information and what types of approaches could help to alleviate potential damages and ensure effective investment of transportation resources. Having the details of exactly when and how the changes will occur is not necessary for consideration of potential vulnerabilities and possible approaches to amelioration, and those participating are coming not to argue about uncertainties, but to figure out how even uncertain knowledge can be considered in their planning.

With the conclusion of the overall assessment activities, my assignment with the USGCRP will be ending at the end of September; at that point, the last of the “ExxonMobil Four” will be out of the Administration. For your information, my undergraduate degree is in engineering from Princeton, my Ph.D. is in Applied Science from the University of California, and I have been employed by the University of California’s Lawrence Livermore National Laboratory for 34 years, leading work in my research areas of air quality and climate modeling for 25 years prior to coming to Washington to assist the US Global Change Research Program starting in 1993. For the National Assessment, which began in 1997, my role as executive director of the National Assessment Coordination Office was as a facilitator, helping to coordinate the work of the synthesis panel referred to above and more than a score of regional and sectoral assessments that were also underway.

While my departure may be satisfying to ExxonMobil, I can assure you that this will not make the scientific challenge of climate change and its impacts go away. That 150 countries unanimously agree about the science of this issue is not because of some “green” conspiracy, but because of the solid scientific underpinning for this issue. Certainly, there are uncertainties, but decisions are made under uncertainty all the time--that is what executives are well paid to do. In this case, ExxonMobil is on the wrong side of the international scientific community, the wrong side of the findings of all the world’s leading academies of science, and the wrong side of virtually all of the world’s countries as expressed, without dissent, in the IPCC reports. As well, ExxonMobil may well find itself having to comply with the Kyoto Protocol in its international operations even if it has discouraged movement on the issue here in the US. To call ExxonMobil’s position out of the mainstream is thus a gross understatement. There can be all kinds of perspectives about what one might or might not do to start to limit the extent of the change⁴, but to be in opposition to the key scientific findings is rather appalling for such an established and scientific organization.

⁴ While a range of positions is possible, it seems particularly strange that ExxonMobil takes the position that it does in that future global warming will be caused most by emissions from use of coal rather than by emissions from use of petroleum or natural gas.

I offer this advice to you in remembrance of my great grandfather, Samuel Calvin Tate Dodd, who a century ago was legal counsel to John D. Rockefeller (notably, he took no stock to ensure his opinions would not be tainted by the economic implications of his advice). What I rather imagine he would say is that you are on the wrong side of history, and you need to find a way to change your position. The Bishops of the Catholic Church have put out a very thoughtful statement that I commend to your attention (copy included) about what the basis for your consideration should be. I would be pleased to help arrange suitable speakers if ExxonMobil changes its mind and looks forward responsibly into the future and the impacts likely to affect not only ExxonMobil and society, but your children and grandchildren.

Sincerely yours,

Michael MacCracken, retiring Senior Scientist
Office of the U. S. Global Change Research Program
(on assignment from the Lawrence Livermore
National Laboratory)

Enclosures:

National Assessment Overview Report

Copy of ExxonMobil Advertisement of August 10, 2000

IPCC Synthesis Report (including Summary for Policymakers and Technical Summary reports of the three IPCC Working Groups

“Global Climate Change: a plea for dialogue, prudence and the common good,” a statement of the U.S. Catholic Bishops

Office of the U. S. Global Change Research Program
400 Virginia Avenue, SW, Suite 750
Washington, D.C. 20024
Tel: 202-314-2233; Fax: 202-488-8681
Web: <http://www.usgcrp.gov>
email: maccrac@usgcrp.gov