

## **Scientists for a Sustainable Energy Future An Open Letter to the American People**

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Enclosed is an open letter to the American public about the nation's energy future. The letter is from Scientists for a Sustainable Energy Future, a group of natural and social scientists who study the connections among energy, the environment, and society, and who are concerned with the direction of the nation's energy policy. The letter has more than 250 signatories, including members of the National Academy of Sciences and many of the nation's foremost experts on these subjects.

Dear Fellow Citizens,

We are natural and social scientists who study the connections among energy, the environment, and society. We write to you out of grave concern with the turn the nation's energy policy has taken. Decisions taken today about the supply and use of energy have far reaching implications for our economic prosperity and for the health of our environment.

Since the first "energy crisis" almost thirty years ago, a large body of research in the nation's universities, national laboratories, think tanks, and private sector has produced large advances in our understanding of energy issues. We would like to share some of this information with you because the current direction of the nation's energy policy is inconsistent with much of this work.

Conventional forms of energy have grabbed the policy spotlight in recent months, but this emphasis is misplaced, and, ultimately, counterproductive. We produce slightly less than half of the oil we consume; by 2020 we will produce just 35 percent. Can a policy to encourage domestic oil extraction reduce dependence on imported oil and maintain the price of gasoline and home heating oil at reasonable levels? The simple answer is no, because the domestic oil resource base is depleted to the extent that large investments in drilling cannot generate a commensurate increase in oil supply. Extraction and proven reserves of oil have dropped considerably since their peaks in 1970 despite a massive drilling campaign in the late 1970s and early 1980s. Because domestic oil sources are more costly than overseas alternatives, incentives to encourage exploration and development will hurt the economy in the same way they did 20 years ago when the oil price shocks produced record rates of drilling. A large diversion of capital investment and profits to the oil industry ensued, but oil extraction continued to decline, as it has to this day. There is every reason to believe that the same scenario will play out if political decisions are made to promote domestic extraction.

Opening the Arctic National Wildlife Refuge to oil exploration will not improve our energy security, nor will it have any impact on the price of gasoline.

The economically recoverable amount of oil in the Refuge is just 152 days of supply for the nation. More importantly, if we started drilling in the Refuge today, the Department of Energy projects that by 2020 it could supply 1.4 million barrels per day. By then world oil production will be in the range of 100 million barrels per day. The Refuge would amount to about 1 percent of global oil supply, and thus have a trivial influence on the ability of oil exporters to influence prices. Nuclear power faces formidable obstacles. Experience of the last several decades has shown that electricity from nuclear power plants is an expensive form of power when all public and private costs are considered. Nuclear power generates high-level radioactive wastes that remain hazardous for thousands of years and increase the likelihood of nuclear weapons proliferation. These are high costs to impose on future generations. Even with improved reactor design, the safety of nuclear plants remains an important concern. Can these technological, economic, environmental, and public safety problems be overcome? This remains an open question. Further public support to help resolve these issues should not come at the expense of an aggressive campaign to develop energy conservation and renewable energy sources.

Conservation must be front and center in our energy future. Unfortunately, energy conservation is painted as a return to the Stone Age, conjuring images of people huddling in the cold of their living rooms in front of lifeless TVs. But in reality, just the opposite is the case. In the last twenty years some of the country's best scientists and engineers have produced great innovations in the efficient use of energy. Cars that get 70 or more miles per gallon, appliances that use half the energy they did ten years ago, lighting fixtures that last for years at a fraction of the energy cost, and new homes that heat and cool with modest amounts of energy are proven winners in energy and economic terms. Just a 3 mile-per-gallon increase in the fuel efficiency of SUVs alone would reduce U.S. oil consumption more than the entire Arctic National Wildlife Refuge could supply. A study by five national laboratories concluded that a government-led efficiency program emphasizing research and incentives to adopt new technologies could reduce the growth in electricity demand by as much 47 percent. This would drastically reduce our need to build new power plants.

Many forms of renewable energy have enjoyed equally impressive advances. The cost of electricity from wind turbines and photovoltaics has plummeted in the last two decades, making power from these systems increasingly cost-competitive with conventional sources in some regions of the country. Compared to oil and coal, renewable energy produces small amounts of the pollutants that presently impair the health of people, degrade our lakes and forests, lower crop yields, and damage buildings, bridges, and other structures. Most notable is their near absence of greenhouse gases, pollutants that contribute to climate change.

On the subject of climate change, a lot of misinformation has obscured the scientific research. We want you to know these important and irrefutable facts. The overwhelming majority of scientists who study climate change have concluded that (1) the Earth is warming much faster than it has in previous centuries for which we can measure temperature change, and (2) human use of energy produces most of the greenhouse gases that contribute to this warming.

In other words, climate change is real and directly related to present patterns of energy consumption. The costs of adjusting to a warmer world could be large and unpredictable, and they would be disproportionately borne by the poorer nations. Energy use in American homes, cars and factories has been a large source of greenhouse gases. We believe that this places a burden on the U.S. to lead the international effort to curb the release of these pollutants. Instead we have done just the opposite, thumbing our nose at the Kyoto Protocol, the international agreement to limit greenhouse gas emissions. As a result, we are now viewed internationally as an environmental pariah.

The U.S. must face its responsibility by engaging the international community on the climate change issue, and by reducing our emission of greenhouse gases. This means more energy from natural gas, renewable hydrogen and geothermal sources, and less coal and oil. Above all it calls for an accelerated development and adoption of energy conservation and renewable technologies.

We also must lead the effort to help less fortunate nations find and fund the path of development that improves their quality of life with minimal destabilization of the Earth's climate.

There has been a lot of talk in Washington about the need for renewables and conservation, but action seriously lags behind the rhetoric. The budget submitted to Congress last month calls for a large cut in funding for these technologies while proposing greater incentives for conventional fuels. This would speed us in the direction opposite from one that would improve our energy security, reduce pollution, help stabilize the Earth's climate, and maximize our economic flexibility. We urge you to join us in the campaign for a sensible and sustainable energy future.

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