

## **The Senate Can Improve on the House Bill**

**By Dr. Burton Richter**

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Will climate change finally wake us from our energy lethargy? Three times in the past 36 years, our nation has suffered from oil shocks and done little to implement lasting policies that could avoid them in the future. We took some small steps in the 1970s and 1990s, but ultimately we failed to close the deal.

Today, we are more dependent than ever on imported oil — two-thirds of our total consumption in 2008 came from other nations compared to one-third in 1973. And today we face the recognized threat of climate change, which will affect the entire world dramatically in the coming decades — unless we and other nations reduce the production of greenhouse gases, primarily carbon dioxide. For our oil dependence, we took half-measures. Will we do better on climate change?

The House version of the climate bill, which passed by a narrow margin, offers some hope, but it misses the mark on several accounts. To satisfy various interests — some legitimate, others selfish — drafters of the legislation compromised away a number of crucial provisions. The big question now: Will the Senate make it better or worse?

The House gives away too many of the emission allowances that are central to cap-and-trade; places too much emphasis on renewables, which are not as ready for the big time as their advocates claim; gives too little emphasis to natural gas and nuclear power, both of which could play a large role in replacing coal; does not fund the necessary long-term research, development and demonstration program that President Barack Obama proposed; and places far too little emphasis on energy efficiency, which is easy to implement and saves money in the long run.

The Senate can do better. It should start by including in the legislation the president's Clean Energy Technology Fund, an investment of \$15 billion per year over 10 years to develop affordable, low-emission energy technologies that could be used by the developing world as well as by rich countries. The provision wasn't included in the House bill, and I am one of 34 Nobel Laureates who recently wrote to the president, urging him to try to get Congress to include the fund in a final climate bill.

A stable funding mechanism for basic and applied research, development and

demonstration is critical to developing the technologies we will need to greatly cut emissions in a cost-effective manner. The Senate should set aside at least 5 percent of all emission allowances for the Clean Energy Technology Fund, and for purposes of stability of funding, provide support for the full lifetime cost of a competitively selected project at the time the award is made.

Current technologies are a good start, but they are not up to doing the entire job. For example, we have no effective way to store energy from intermittent sources to smooth out the variations of wind and solar output that hugely complicate their use on a large scale. Another challenge is the use of hydrogen fuel cells to store energy from intermittent sources and use it for transportation. The present cells use so much platinum as a catalyst that the entire yearly world supply of platinum is not enough to supply the fuel cells needed for U.S. auto production, much less the world's.

Our very expensive corn ethanol program is at best a marginal reducer of emissions, and if the effects of land-use changes are included, is positively harmful. There are more advanced biofuels that might actually do some good, but they, too, need more research and a lot more development and demonstration.

Nuclear power, a safe source available 24/7, is being slowed by concern about the lack of a permanent repository for spent nuclear fuel. There is no intermediate-term problem because spent fuel can be stored safely at reactor sites for many years. In the interim, we can do the research and development that might allow us to reduce the volume of waste in a way that is proliferation-resistant.

Energy efficiency is an easy, low-cost way to reduce emissions. There are many ways to improve efficiency in power generation, transportation and buildings that would benefit from the president's fund. Some things don't even need research and development, like an energy audit before the sale of any building that would tell the buyer how to save with simple upgrades that pay for themselves through reduced utility bills. Unfortunately, the House failed to include a provision for the audits, bowing to the National Association of Realtors, which seems to want buyers to know as little as possible.

Tackling climate change is not mission impossible. Deploying today's technologies and supporting the research and development for tomorrow's will put us on the right path toward achieving energy security and mitigating climate change.

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