be prosperous without wrecking the climate."
The Late Show with David Letterman, 2008

Summers: "We need to identify those investments that stimulate demand in the short run and have a positive impact on productivity. These include renewable energy technologies and the infrastructure to support them, the broader application of biotechnologies and expanding broadband connectivity."
In his *Financial Times* column, 2008

On energy security:

James Jones: "Expanding domestic [oil] production will reduce our dependence on foreign oil and natural gas and significantly reduce the billions of dollars we send abroad each year."
Institute for 21st-Century Energy report, 2008

Tom Vilsack: "Iowa is one of the nation's leading producers of corn-based ethanol, and many people in my state have an economic stake in the expanded use of corn-based ethanol. But the reality is that corn-based ethanol will never be enough to reach our goals. Some have suggested that we import more sugar-based ethanol from Brazil and we should indeed consider all sources of available ethanol ... but if we are going to create energy security we can't simply replace one imported source of energy with another. That alone is not security ... the only way we can produce enough domestically is if we greatly improve the technology used to produce cellulosic ethanol."
Lecture, 2007

2008 OWEN SL/BLACK STAR/NEWSCOM

Chu: "We want to raise grasses; we do not want to use soybeans for diesel oil or corn for ethanol. That is not a good use of land."
Lecture, 2008

On regulation and markets:

Summers: "I tend to support a cap-and-trade system, and I think if we ever make progress against global warming — as I hope we will, as we need to — it will come through some kind of cap-and-trade system ... when I went to college or graduate school ... the assumption was, to address a problem like that you would use command and control regulation."
In *OnEarth* magazine, 2008

Carol Browner: "When the government steps up and it says that there is a requirement that you are going to have to take sulphur out of diesel fuel, you are going to have to get rid of CFCs (chlorofluorocarbons) by a certain date, what the government is doing is creating a market opportunity. And American innovation and American ingenuity have risen to that challenge inevitably more quickly and at less cost than was anticipated."
Lecture, 2008

AP

Chu: "[To reduce climate change] we really do need a combination of incentives to drive correct behaviour, but also fiscal policies and regulations and the most important is, of course, a price on carbon. Whether it is a tax or a cap and trade there has to be a price and ... there can't be any loopholes. And right now the industries who feel that their existence is threatened are working very hard to make sure there are safety valves and loopholes."
Lecture, 2008

Lubchenco: "I do believe that we can do a much better job of managing fisheries, and that in doing so, we can recover much of the bounty that has been lost."
In *The Oregonian*, 2007

Jones: "Our nation's demand for more and more energy compels us to move forward immediately on projects that will take years to finance and complete. Lengthy, excessive, and unnecessary regulatory delays and roadblocks during a project will only increase costs, which are ultimately passed on to consumers, and prolong the current imbalance of supply and demand, and imperil our economic progress."
Institute for 21st-Century Energy website

S. OLSON/GETTY IMAGES

On hope:

Browner: "I am a very optimistic person ... I think we'll ultimately get this right. I don't think we will be the first generation to lead to a world they cannot fix. But time is so of the essence. Scientists are telling us we do not have the luxury of time. We've wasted at least eight years. We've got to get going quickly."
Lecture, 2008

Holdren: "If I weren't optimistic, I would be out fishing today, Dave, and not talking to you."
The Late Show with David Letterman, 2008

Compiled by Emma Marris and Alexandra Witze.

See Editorial, page 235. References available online at: http://tinyurl.com/7gnvp2.

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Ocean study draws ire

A German research ship laden with 20 tonnes of iron sulphate has whipped up a storm of protest as it sails towards the Antarctic, where it intends to dump its cargo into the ocean late this week.

Scientists on the RV *Polarstern*, which set sail from Cape Town in South Africa on 7 January, plan an ocean-fertilization experiment that some argue will violate international agreements. But the scientists say that it will yield the very data necessary to assess the impact of the controversial geo-engineering technique, which aims to trap carbon dioxide from the atmosphere by encouraging the growth of algae.

The team, comprising about 50 scientists from Germany, India, Italy, Spain, Chile, France and Britain, is heading for a small patch of the Scotia Sea between Argentina and the Antarctic Peninsula. The eight-week experiment, called LOHAFEX, will be the sixth ocean-fertilization study conducted in the Southern Ocean since 1993.

In response to widespread environmental concerns, the 191 parties to the United Nations' Convention on Biological Diversity last year agreed to a moratorium on all ocean fertilization activities, with only small-scale scientific studies in coastal waters exempted.

Environmental campaigners say that LOHAFEX should not have received permission under these rules. "We're taken aback by this flagrant disregard of international law," says Mariam Mayet, director of the African Centre for Biosafety in Johannesburg.

But the Alfred Wegener Institute for Polar and Marine Research (AWI) in Bremerhaven, Germany, which operates the RV *Polarstern*, denies that the experiment falls under the UN moratorium.

The study will address, among other things, marine biology, the flow of carbonaceous particles, and biodiversity questions that have barely been analysed in previous experiments, says Karin Lochte, the director of the AWI. ■

Quirin Schiermeier

A longer version of this story appears at http://tinyurl.com/6upcrc.