

October 2011 Table of Contents

- *Why Conservative White Males Are More Likely to Be Climate Skeptics*. Julia Pyper. NYTimes.com. October 5, 2011.
- *Novel Methods Store Sunshine as Fuel*. Umair Irfan. ScientificAmerican.com. October 6, 2011.
- *Has Europe given up on fighting climate change?*. Stephen Tindale. EIUbusiness.com. October 7, 2011.
- *An Escalator That Feeds the Building*. Matthew L. Wald. NYTimes.com. October 7, 2011.
- *San Francisco Bay Area Enacts Sea-Level Rise Policy*. Debra Kahn. ScientificAmerican.com. October 7, 2011.
- *Solar changes help create cold northern winters*. Alexandra Witze. ScienceNews.org. October 10, 2011.
- *Science and religion. A false divide*. John H. Evans. LATimes.com. October 10, 2011.
- *California Adopts Limits on Greenhouse Gases*. Felicity Barringer. NYTimes.com. October 20, 2011.
- *New Research Casts Doubt on Doomsday Water Shortage Predictions*. Lisa Friedman. ScientificAmerican.com. October 24, 2011.
- *Nissan Eyes 1.5 Million Electric Cars by 2016*. Yeshikazu Tsuno. News.Discovery.com. October 24, 2011.
- *Column: Government shouldn't be picking Soyndras*. Bjorn Lomborg. USAToday.com. October 25, 2011.
- *News analysis. Obama takes bipartisan heat on energy policy*. Aamer Madhani. USAToday.com. October 25, 2011.
- *Solar Power Industry Falls Short of Hopes in Job Creation*. Matthew L. Wald. NYTimes.com. October 25, 2011.
- *Future of Solar and Wind Power May Hinge on Federal Aid*. Kate Galbraith. NYTimes.com. October 25, 2011.
- *In Clean Tech, Venture Capital Looks for Problem-Solvers*. Claire Cain Miller. NYTimes.com. October 25, 2011.
- *Durban talks come at bad time: UN climate chief*. Association of Fundraising Professionals. Yahoo! News. October 26, 2011.
- *Climate, which nations, cities most at risk?* Relaxnews. Yahoo! News. October 26, 2011.
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- *Talking Green Industry: Answers From the Top*. Eric Niller. News.Discovery.com. October 26, 2011.

Energy & Environment



Why Conservative White Males Are More Likely to Be Climate Skeptics

By Julia Perle
Published October 5, 2010

When it comes to climate change denial, not all brains beings are created equal. As a recent study shows, conservative white males are less likely to believe in climate change.

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"It's not surprising," said Aaron McGrath, sociology professor at Michigan State University, who is a white male himself. But anecdotal evidence is not scientific, he said. "You really don't know what's going on until you crunch the numbers and find out."

Besides the trend among skeptics, the study also found that conservative white men who self-report a high understanding of global warming -- dubbed "confident" conservative males -- are even more likely to express climate change denial.

McGrath's study, "Cool Dudes: The denial of climate change among conservative white males in the United States," was published online in July and printed in the October 2010 issue of *Global Environmental Change*, which ranks first out of 77 journals on environmental studies.

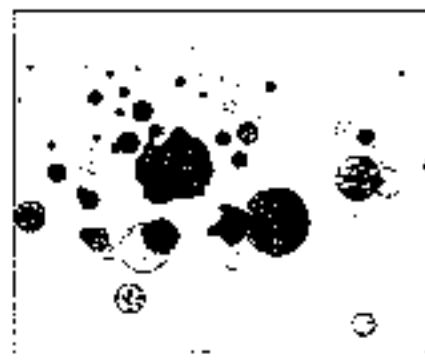
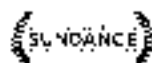
The study has created some heat of a buzz, said Riley Dunlap, co-author and professor of sociology at Oklahoma State University. The paper was well received in academic circles but he admitted he was concerned about a backlash from the conservative movement. While there have not been any major notices, the study appears to have raised a few temperatures in Chicago.

"This paper is a transparent effort to take the focus off the actual scientific debate and instead engage in race baiting, class baiting and other sociological devices to win a science argument," said James Taylor, senior fellow for environment policy at the Chicago-based Heartland Institute.

But from McGrath's perspective it was important to find out to what extent the sharp debate over climate change at the elite level had trickled down into the general public in recent decades. "Within the ranks of elites, climate change deniers are overwhelmingly conservative white males," reads the report, pointing to figures like talk-show host Rush Limbaugh and Marshall Institute CEO, William O'Rourke. "Does a similar pattern exist in the American public?"

'Cool Dudes,' a bloc that stands out in the crowd

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McCrigh and Dunlap's analysis used polling data on climate change denial from 30 Gallup surveys from 2001 to 2010. According to the U.S. Census Bureau, 72.4 percent of the American population reported as white in 2010, and 77.1 percent in the year 2000. This majority made it difficult to draw conclusions about the relationship between other races and climate change, and McCrigh, because the Gallup survey sample size was so small.

To test for the trend amongst conservative white males, the researchers compared the demographics to "all other adults." Results showed, for instance, that 29.6 percent of conservative white males believe the effects of global warming will never happen, versus 7.4 percent of other adults. In holding for "confident" conservative white males, the study showed 48.4 percent believe global warming won't happen, versus 8.6 percent of other adults.

As a point of comparison, McCrigh also tested the beliefs of conservative white females. He found 34.9 percent believe the effects of global warming will never happen to 29.6 percent of their male counterparts. McCrigh said the finding is due more to the women's political stance than their gender or race. The data on conservative white females was not published in the "Cool dudes" study.

To understand why there is a trend amongst conservative white males, the Gallup data was cross-examined with research about the "white male effect" -- the idea that white males were either more accepting of risk or less risk averse than the rest of the public.

The white male effect could stem from the notion that, historically, white males have faced fewer obstacles in life, said McCrigh. But another school of thought sees the adoption of risk tied to personal values. "It has to do with their identity as an in-group," he said. "Something that would challenge the status quo is something [conservative white males] want to shun."

Climate change, a challenge to identity?

According to the literature on "identity protective cognition," people believe messages coming from the people they identify with most and ignore messages that are contrarian. Dunlap said. While all groups have a tendency to do this, he said, in the case the climate change, conservative white males are especially likely to exhibit this self-protecting characteristic.

1 2 **NEXT PAGE >**

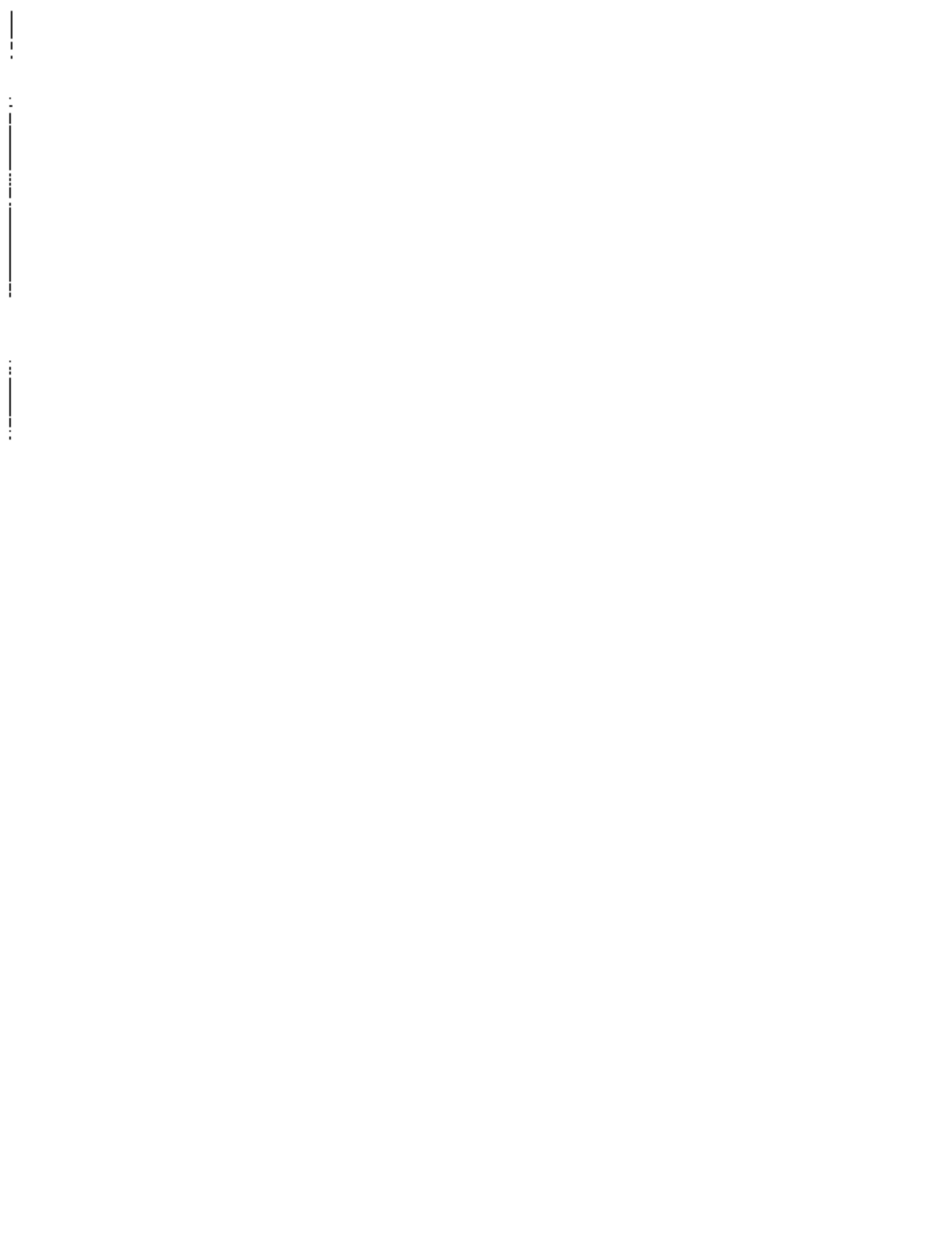
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8

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Novel Methods Store Sunshine as Fuel

The sun is the most abundant power source on Earth, but new designs soon hitting the market could keep its energy flowing even after sunset

 By [Uma Hoffman](#) and [ClimateWire](#) | October 6, 2011 | 3

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The sun is the most abundant power source on Earth, but new designs soon hitting the market could keep its energy flowing even after sunset.

Researchers are exploring various strategies to put sunshine on tap, converting the sun's energy into fuels that can be stored, transported and used as needed. Storing excess power aside can help solar plants produce consistent electricity throughout the day, diminishing one of solar energy's biggest drawbacks. Sun-derived fuels can also be used to power fuel cells that drive cars or provide heat to warm homes.

One storage method is hydrogen from a thin, flat solar leaf ([ClimateWire](#), March 29).

"The way this works if the leaf sample is illuminated. The sample absorbs that light and generates electrons," said Tom Jarvi, chief technology officer at Sun Catalytix, the company bringing the technology to the market. He said the free electrons on the leaf's surface then interact with water, catalyzing its split into oxygen on the leaf's light side and hydrogen on the dark side. The mechanism mimics how plants convert sunlight into energy, hence "leaf."

Jarvi, along with lead researcher Daniel Nocera, a professor of energy and chemistry at the Massachusetts Institute of Technology, co-authored a paper demonstrating this device last week in the journal *Science*.

"This particular result is a combination of several things that have not been pulled together in the past," said Jarvi. In the paper, the leaf was wireless, with no external inputs or electrodes, and was made with low-cost materials like silicon and cobalt. In addition, the device yielded 2.5 percent efficiency in converting light to hydrogen.

The goal now is to reduce costs even further while increasing the system's efficiency.

"Our real, sincere focus at this point is springboarding off this leaf result and working on the nanoscale," said Jarvi. Mike Decelle, president and CEO of Sun Catalytix, said the current strategy is to create nanoparticles that can produce hydrogen from water. "The way to visualize this is that instead of a large-scale solar cell, you have billions of solar cells," said Decelle. "That will deliver the lowest-cost hydrogen we're striving for."

Trapping heat as well as energy

Solar energy can also be used to produce conventional carbon-based fuels, like gasoline. The advantage of this system is that the infrastructure to make and use the fuel is already in place.

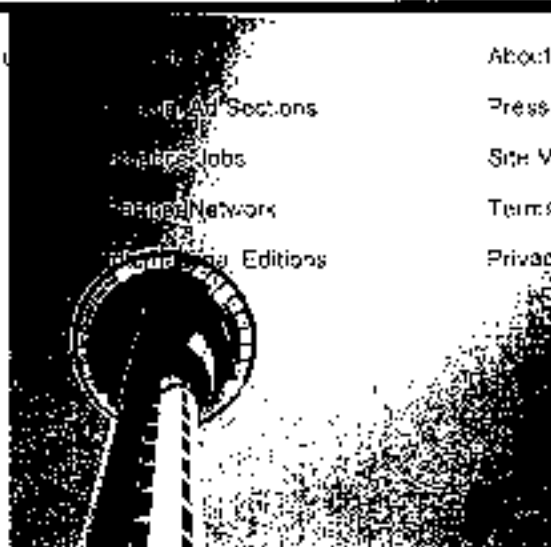


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At the University of Illinois, Urbana-Champaign, researchers have developed a way to efficiently convert carbon dioxide to carbon monoxide, a component of synthetic gas, or "syngas."

"Oil companies have processes to turn this [syngas] into gasoline, diesel fuel and jet fuel," said Rich Masel, CEO of Dioxide Materials and a retired professor, pointing out how companies like BP PLC have operated synthetic fuel facilities for 20 years, albeit using natural gas instead of recycled carbon as a feedstock.

Working with Brian Rosen, a chemical engineering graduate student; Wei Zhu, a recent chemical engineering Ph.D.; Amin Salehi-Khojin, a postdoctoral researcher; and other scientists at Illinois, Masel used ionic liquids to stabilize intermediates in the dioxide-monoxide conversion. The ionic liquids are solutions of charged molecules that bind to the carbon compounds, drastically lowering the energy required for the reaction. Masel envisions this system being driven by solar energy, producing fuel to power cars, planes and power generators to fill gaps in solar electricity production.

"It's a really great project because you can reduce carbon dioxide and you can store solar energy and wind energy in a more efficient form," said Zhu. The team also published its findings in *Science*.

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3 Comments

1. thariss
06:37 PM 10/6/11

All very interesting, but still just a few more out of hundreds of such promising early stage technologies, almost none of which pan out..

But then again, as long as some work in the end, that is still our path forward!

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2. jonbig
06:17 PM 10/6/11

How do these proposals compare efficiency-wise to the simple approach of just pumping water uphill to store the energy and recovering it using hydroelectric generators?

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3. Carlye
in reply to jonbig
08:36 AM 10/7/11

You could pump your water with a bicycle pump & build your hill with Tonka toys & be a serious contender. The science is interesting but the projections unbelievable.

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Has Europe given up on fighting climate change?

The EU has long prided itself on leading international efforts to control climate change. Today, the issue is nowhere near the top of the EU's agenda, having been eclipsed by the economic downturn and the eurozone debt crisis. Unless the Europeans rediscover their commitment to clean energy, global efforts to control climate change are doomed. The EU also risks losing out on business opportunities in renewable energy and other growth sectors. With a climate-sceptic US heading into elections and most Asian countries reluctant to shoulder the costs of reducing greenhouse gas emissions, only Europe can resurrect the climate agenda.

In 2007, EU leaders endorsed the '20 20 20' climate and energy package, which commits EU countries to reduce greenhouse gas emissions by 20 per cent, increase energy efficiency by 20% and expand renewables to 20% of total energy, all by 2020. In addition to these ambitious targets, EU countries have taken practical but unpopular steps, such as phasing out incandescent light bulbs and requiring new and renovated buildings to be more energy efficient. The president of the European Commission, José Manuel Barroso, created a new directorate-general on climate in 2010, and the first climate action commissioner, Connie Hedegaard, has been trying hard to keep the issue on the agenda of European politicians and publics. Yet today, few European leaders, and not even Barroso, talk much about climate change.

Economic woes are the main reason why the issue has slipped down the list of EU priorities. Compared with a possible collapse of the eurozone, many Europeans (incorrectly) think of global warming as a far-away and nebulous threat. They also consider climate action as an unaffordable luxury at a time of slow growth and high unemployment. Measures that cut carbon emissions and develop sources of cleaner energy create jobs and save money in the long run, but they often require high initial investment. Cash-strapped governments and gloomy businesses have little appetite for new expenditure right now. At least climate-change sceptics remain a small minority in Europe, which implies that climate policies will get more attention again once the economy improves.

The same cannot be said of America, where climate concerns have been downgraded even more dramatically than in Europe. Campaigning for the presidency in 2008, Barack Obama promised ambitious action to cut pollution and create green jobs that, he argued, could not be outsourced. The 2009 US economic stimulus package included \$70 billion for energy efficiency work, renewable energy programmes and high-speed rail. But in his September 2011 economic speech Obama did not even mention green jobs. Instead he called for extensive spending on new roads and airports and supported oil exploration in the Arctic and a new pipeline to take oil from Canadian tar sands (the extraction of which is very polluting) to refineries in Texas. The US Environmental Protection Agency, meanwhile, has postponed new rules on ground-level ozone (estimated to cause 12,000 premature deaths in America each year) until after the next presidential election.

Obama's apparent loss of interest has both political and economic origins. In 2008, Obama could campaign on green issues without fear of losing votes to his opponent: his Republican rival, John McCain, had himself tried repeatedly to push a cap-and-trade bill through the Senate. In 2012, Obama will face either an opponent who doubts that climate change is man-made (Rick Perry, Michele Bachmann) or one who avoids saying anything about green issues (Mitt Romney). The Republican party has successfully blocked Obama's climate initiatives. Whatever Obama says or does on climate change will be ruthlessly attacked by the Republicans.

The flagging US economy is an equally important reason for Obama's retreat. The green jobs promised in the 2009 stimulus package have not been as plentiful as hoped. Energy efficiency programmes are labour-intensive and local, but renewable energy development has often involved importing wind turbines from China. The fact that many green jobs ended up being outsourced after all has made many voters angry. Just like most European leaders, Obama is focussing on short-term fixes to growth while investments in a sustainable future are being postponed.

The downgrading of climate policies on both sides of the Atlantic is short-sighted. If the Europeans and their international partners are to stand any chance of limiting the potentially catastrophic impacts of global warming, they have to act now. They must create the legal and political framework to bring about the trillion-euro investments needed to arrest climate change. Postponing such action, even for a few years, will make it impossible to limit global temperature increase to two degrees (the internationally agreed target) in the coming decades. Unchecked climate change is also "the biggest global health threat of the 21st century" (to quote *The Lancet* medical journal). Already in 2007, climate change was causing 160,000 premature deaths a year, according to the UN Intergovernmental Panel on Climate Change.

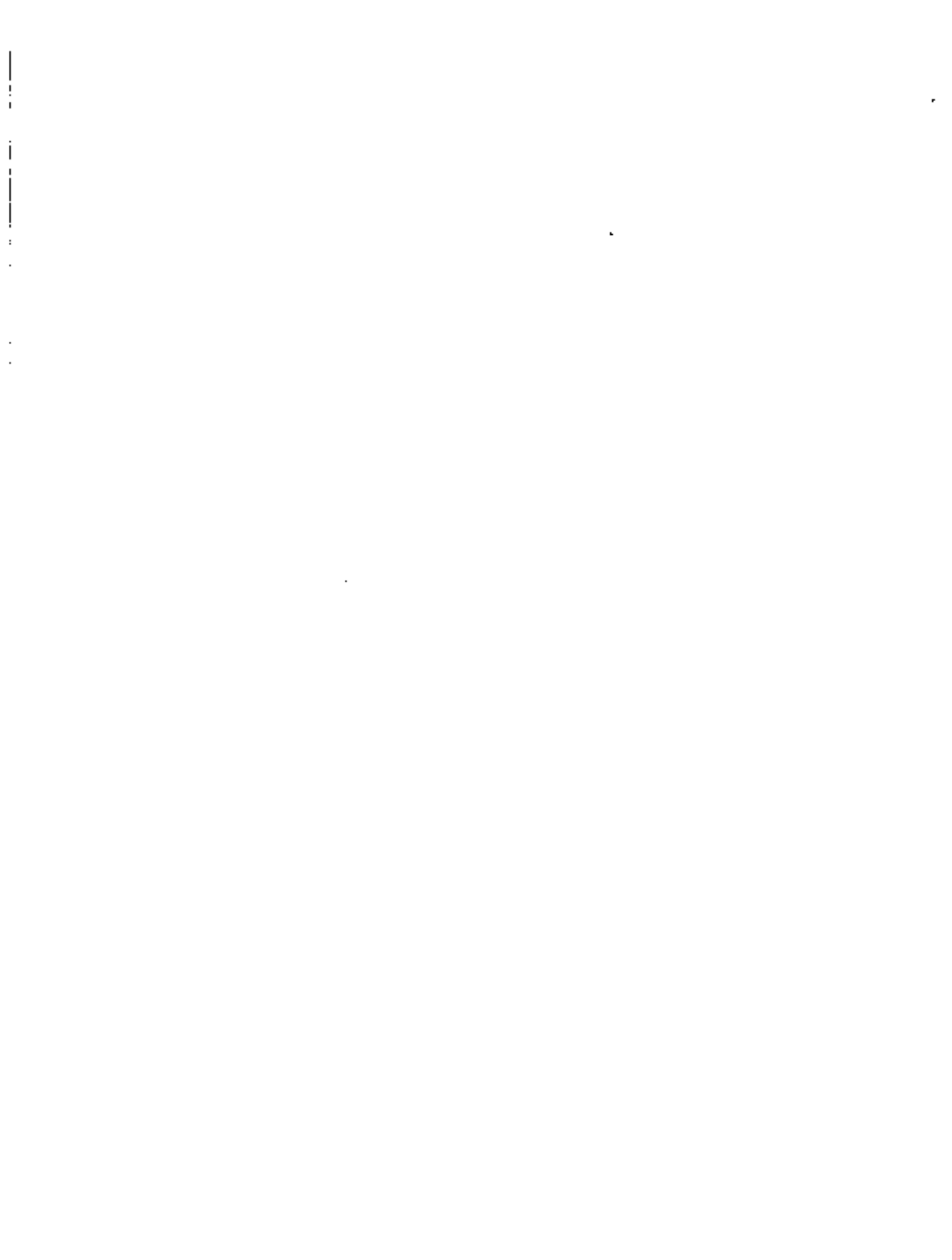
The Europeans and Americans are also damaging their mid to long-term economic prospects. The low carbon economy -- including renewables, carbon capture and storage and nuclear - is today worth \$3.5 trillion and is among the world's fastest growing sectors. China already dominates the global solar energy market, and in 2010 four of the ten largest wind turbine manufacturers were Chinese. Around a million people work in the renewable energy sector in China. South Korea is planning to build the world's largest offshore wind farm (which will be larger than the total installed capacity in the UK).

European leaders need to start investing in climate change policies again, both politically and financially. The EU should make more money available for energy efficiency and renewable energy in its future seven-year budget cycle. National leaders need to stop presenting their voters with a false choice between economic growth and green policies. With the euro in deep crisis, credible and visionary climate policies could help the EU to restore its legitimacy with European publics. Europe's diplomats should keep making the case for a global agreement at the climate summit in South Africa in December. But a global agreement, even if reached, would not automatically deliver emissions reductions. Regulations, market mechanisms and investment will all be required, and the EU -- the world's largest market -- provides an excellent forum for all these.

By Stephen Tindale

This article was first published in the Centre for European Reform bulletin.

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October 7, 2011, 11:17 am

An Escalator That Feeds the Building

By MATTHEW L. WALD



Regenerative braking, which involves taking unwanted mechanical energy and turning it back into electricity instead of letting it dissipate as heat, is well established in cars like the Toyota Prius and has lately made inroads in railway locomotives.



Otis

In both cases, an electric motor, which converts current into mechanical energy, briefly reverses its function to become a generator, converting mechanical energy into current. One problem for cars is that the flow of electricity is so great that batteries have trouble absorbing it.

For the last decade or so, companies have been using regenerative braking in elevators. Elevators normally use counterweights that are equal to the mass of a half-empty elevator car. If the car is going up with only one person in it, or coming down full, there is gravity to fight with and brakes have to be used.

Otis, the largest elevator manufacturer, points out that some elevators already capture this unwanted energy as electricity but then typically dissipate it as heat. The company and others sell models that put the current back into the building's electrical grid, which has a far greater capacity to absorb sudden jolts of energy than car batteries do. Then it can be used to power other building systems.

Now, the idea has spread to escalators.

At a green building conference in Toronto on Wednesday, the company introduced an escalator that combines regenerative braking with a standby feature: the escalator slows down when no one is on it.

The new model also uses LEDs for illumination, further cutting energy use. And Otis says it has a better lubricant system, too.

It is the first use of regenerative braking in an escalator, the company says. A [video](#) from Otis explains the concept.)

While the regenerative escalators are just edging into the market, Otis, a subsidiary of the United Technologies Corporation, said it recently sold 700 of its energy-efficient elevators for a housing project in Jiangsu, China.

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San Francisco Bay Area Enacts Sea-Level Rise Policy

Among the first of its kind, the regulations will force developers to assess flooding risks and to seek state approval on projects.

By Dennis Kelly and Christopher J. Flavel, October 7, 2011 10

The San Francisco Bay Area yesterday became the first region in California to pass regulations governing development in areas prone to sea-level rise.

The San Francisco Bay Conservation and Development Commission (BCDC) voted unanimously to pass a development plan for land within 100 feet of the coastline, giving the agency a tool to deny permits for development in coastal areas susceptible to flooding. Rising seas could put as much as 180,000 acres off-limits by 2050, according to state projections of 16 inches of rise by then.

The regulations will effectively force developers to assess risks associated with sea-level rise and submit an assessment to the state for a given project. Builders will also have to draft their own blueprints for dealing with shifting conditions, whether that means building farther back from the shore, creating tidal marshes or erecting levees to keep out the water (*Chemistry*, Sept. 6).

Both environmental groups and developers saw victory in the regulations, which were changed in three drafts over the past two years to reduce emphasis on "prohibiting" development in areas prone to sea-level rise and increase references to "encouraging" the protection of tidal marshes and other shoreline areas. The rules also were changed to emphasize that the agency would look at plans on a case-by-case basis and would respect local governments' jurisdictions.

Agency officials said the essence of the policy—to use the latest science to protect communities from flooding—remained unchanged.

"When you say it will encourage one thing, you kind of automatically discourage the other," said BCDC Executive Director Will Travis. "Certain words were flash points for some, and some words were a comfort to others."

Builders happy; green groups split

Paul Campos, general counsel for the Building Industry Association of the Bay Area, which represents homebuilders, contractors, architects and consultants, praised the final regulations. He and other builders' groups, as well as local governments in San Francisco, San Jose and other cities, had opposed previous versions, saying they would jeopardize development and economic growth.

"The initial language, perhaps BCDC didn't fully understand, the implications it would have for development. Campos said. "Now, all stakeholders are looking, which produced this better document."

Environmental groups were split. Save the Bay, which has been most active on the plan, maintained the regulations were as strong as ever.

"Anybody who interprets this language as different is not paying attention," said David Lewis, the group's executive director. Industry support reflects the rules' inevitability, rather than substantive changes to them, he said. "In the last couple months, I think they saw the writing on the wall."

Stema Club members said they weren't as happy with the results. "The vote is a step in the right direction," said Megan Norris, a coastal issues organizer for the group's California chapter. "However, these policies could and should be more robust. Future regional planning

efforts need to improve on these BCDC policies in order to ensure that our at-risk low-lying coastal areas are protected from the impacts of sea-level rise and coastal flooding by preventing further development in these areas.”

Travis said the rules might not need to be actively enforced for some time. They should have an immediate effect on the kinds of investing and building decisions that would go before local governments before coming to the state agency, he said. BCDC is also in talks with Ceres, which advocates for climate policies on behalf of large investors, to work on insurers’ policies for buildings in low-lying areas, he said.

“It’s the investors who are making the decisions,” he said.

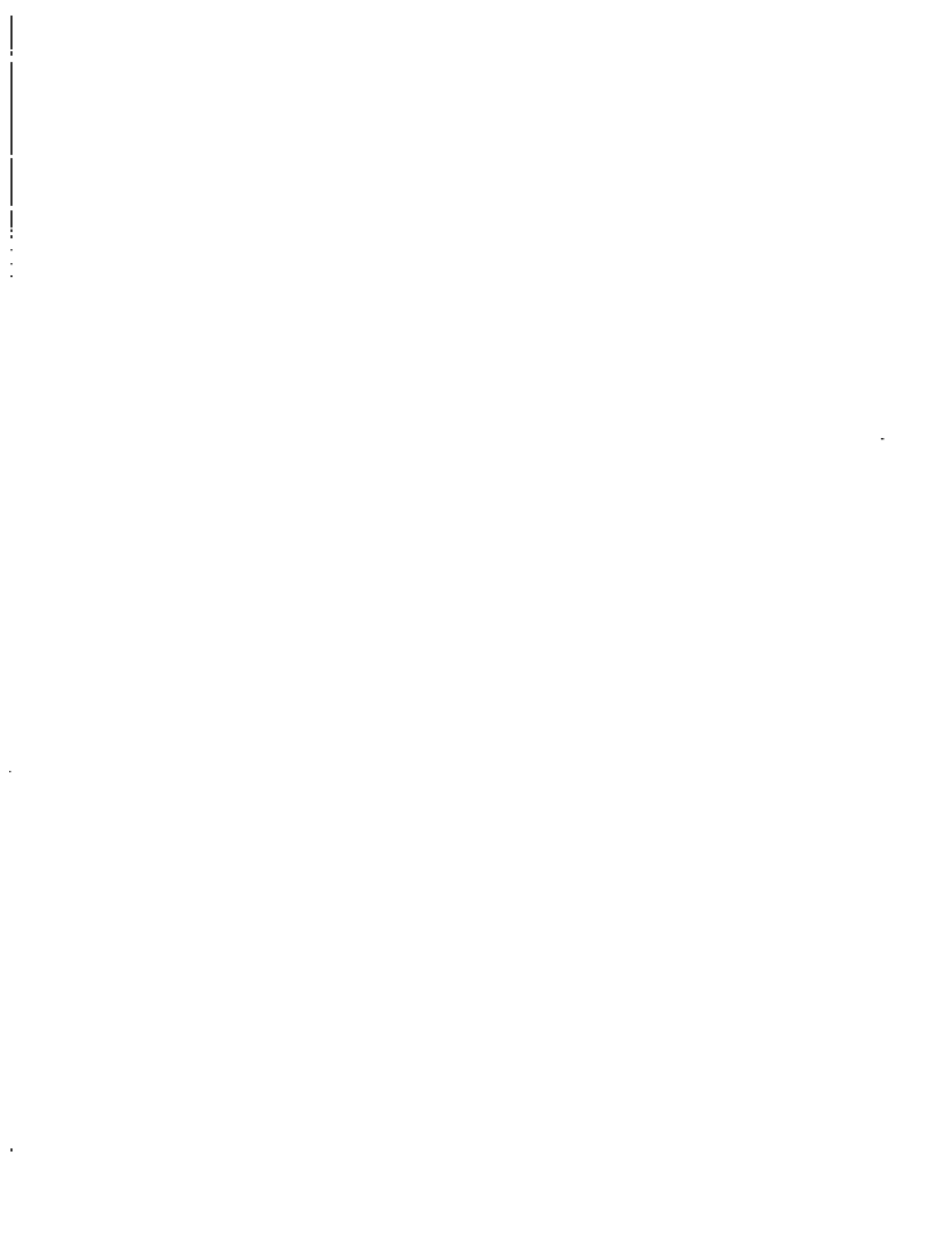
The regulations now go to the state’s Office of Administrative Law, followed by the federal Office of Ocean and Coastal Resource Management under the National Oceanic and Atmospheric Administration.

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Solar changes help create cold northern winters

Fluctuations in ultraviolet light can set up frigid, snowy conditions

by **Alexandra Witze**

Web edition : Monday, October 10th, 2011

Harsh winters in the United States and northern Europe may partly be the result of changes in ultraviolet radiation coming from the sun.

A new climate simulation study shows how fluctuations in ultraviolet light linked to the sun's 11-year activity cycle could change winter weather patterns across the Northern Hemisphere. The work appears online October 9 in *Nature Geoscience*.

"We hope this will open the door to improving ultralong-range predictions," says co-author Adam Scaife, a climate modeler at the Met Office's Hadley Centre in Exeter, England.

Scientists have long noted anecdotal links between low solar activity and cold European winters: Part of the Little Ice Age, which gripped the region between about 1550 and 1850, coincided with a record number of sunspots, which are one measure of solar activity. But until now, Scaife says, no one had found a physical explanation for how subtle changes in radiation hitting the top of Earth's atmosphere could translate to changes in weather patterns at the surface.

The answer came from the Solar Radiation and Climate Experiment satellite. From 2004 to 2007, during the low points of the last solar cycle, the satellite measured a surprising drop-off in the amount

ultraviolet radiation coming from the sun, roughly five times greater than previously thought. "I thought, if that's true, that's going to be something interesting to the climate system," Scaife says.

To test what might happen, the scientists put the big ultraviolet decline into the Met Office's climate model, a massive computer program that can simulate how the ocean and atmosphere respond to such changes. With less ultraviolet radiation, the simulation suggested, parts of the upper atmosphere cooled more than usual and allowed winds to blow more from the east. The anomaly then grew bigger and started to burrow down through the atmosphere to altitudes where weather patterns form. There, the changes affected how storms would normally grow, allowing cold weather to form over northern Europe and the United States.

These changes occurred only in winter, and not during every solar cycle minimum the model analyzed. But over time, the scientists found, more winters saw these cold patterns form during solar minimum than during solar maximum. "It's changing the odds of what kind of winter you're going to get by a significant amount," Scaife says.

At the same time, weather patterns over southern Europe and California were milder than normal, essentially canceling out the chill of northern Europe and the United States. The new work thus can't say much about whether changes in solar radiation affect global temperatures, Scaife says. Other natural factors also affect the severity of winters, including volcanic eruptions and semi-regular weather patterns like El Niño.

Kunihiko Kodera, a sun-climate researcher at Nagoya University in Japan, says the new model seems to capture all the steps in the process in the atmosphere, but small details as to how warm or cold it got over particular landmasses may make it difficult to predict localized weather changes.

If the Met Office computer model can accurately reproduce past forecasts, the researchers hope to start incorporating solar variation into long-term weather predictions. Solar activity is currently increasing toward an expected weak maximum in 2013.

SUGGESTED READING :

R. Cowen. Next solar cycle could be a no-show. *Science News*. Vol. 183, July 16, 2011, p. 12. Available online: [www.sciencenews.org](#)

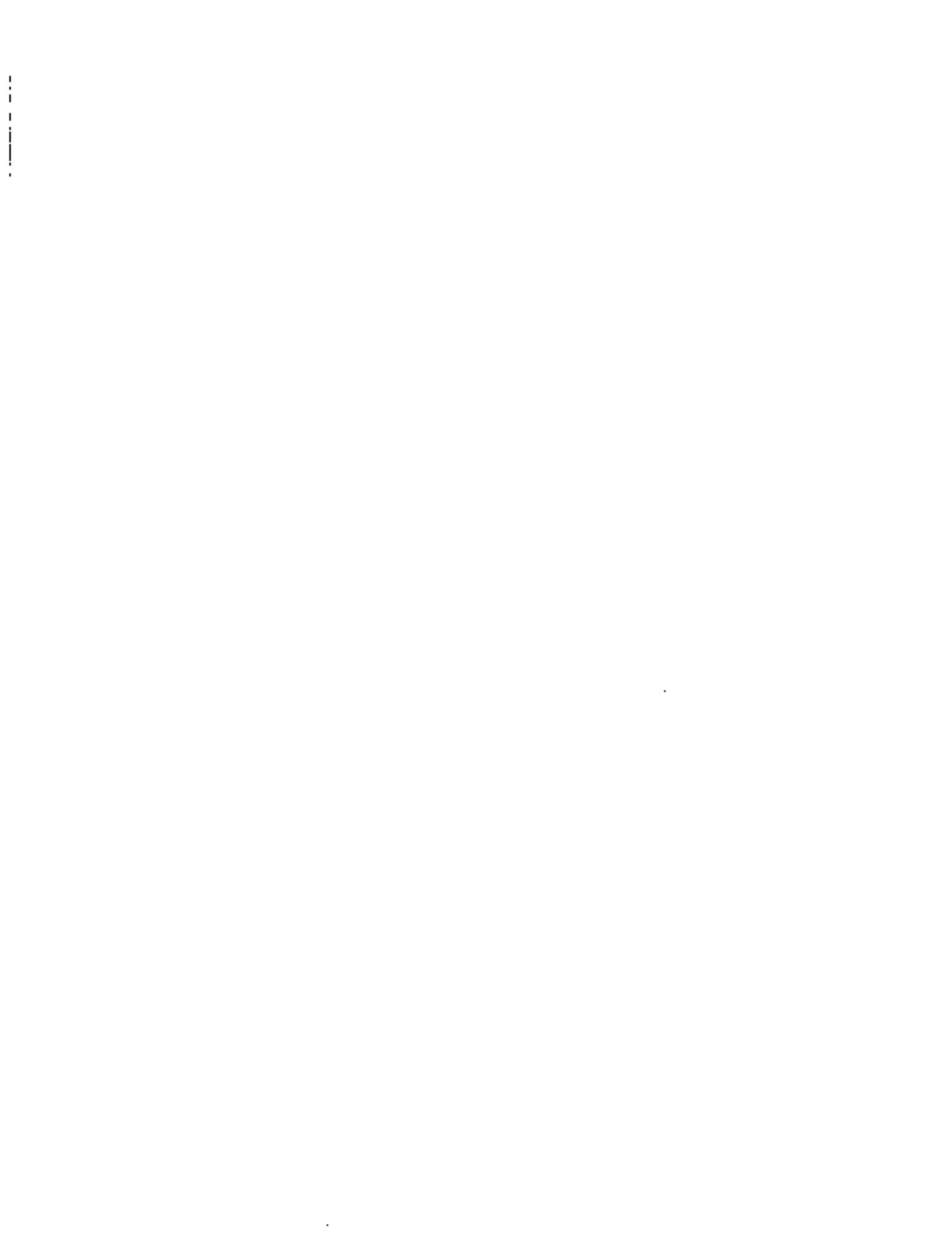
J.D. Haigh et al. An influence of solar spectral variations on radiative forcing of climate. *Nature*. Vol. 467, October 7, 2010, p. 696. Abstract available: [www.nature.com](#)

M. Lockwood et al. Are cold winters in Europe associated with low solar activity? *Environmental Research Letters*. Vol. 5, 024001, 2010.

S. Perkins. Pinning down the sun-climate connection. *Science News*. Vol. 159, January 20, 2001, p. 45. Available online: [www.sciencenews.org](#)

CITATIONS & REFERENCES :

S. Ineson et al. Solar forcing of winter climate variability in the Northern Hemisphere. *Nature Geoscience*. doi:10.1038/ngeo128



latimes.com/news/opinion/commentary/la-oe-evans-protestants-20111010,0,7586180.story

latimes.com

Op-Ed

Science and religion: A false divide

On most issues, there is very little conflict between religion and science.

By John H. Evans

October 10, 2011

Rick Perry has generated a lot of ink lately — for trumpeting his religious faith and for his attacks on evolution and global warming. I have no magic insight into the mind of the candidate jockeying for the GOP nomination, and I'm not a member of the religious right. But, as a sociologist studying religion in the United States, I do know that the fundamentalists and evangelicals who are disproportionately represented in the ranks of Republican primary voters don't all sound like Perry, or Michele Bachmann or Sarah Palin.

While many conservative Protestants disagree with the scientific consensus about evolution, you cannot infer their perspectives on other scientific issues such as climate change from this one view alone.

Fundamentalists' and evangelicals' relationship with science is much more complicated than the idea that they "oppose science."

I recently conducted survey research comparing the most conservative of Protestants — those who identify with a conservative Protestant denomination, attend church regularly and take the Bible literally, or about 11% of the population in my analysis — with those who do not participate in any religion. The conservative Protestants are equally likely to understand scientific methods, to know scientific facts and to claim knowledge of science. They are as likely as the nonreligious to have majored in science or to have a scientific occupation. While other studies have shown that the elite scientists who work at the 20 top research universities are less religious than the public, it appears that the vast majority of people with workaday scientific occupations are like their neighbors, religiously speaking.

On most issues, there is actually very little conflict between religion and science. Religion makes no claims about the speed of hummingbird wings, and there are no university departments of anti-resurrection studies — scientists generally are unconcerned with the vast majority of religious claims and vice versa.

There are, of course, a few fact claims in which conservative Protestant theology and science differ, such as the origins of humans and the universe. Here we find that typical conservative Protestants are

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likely to believe the teaching of their religion on the issue and not the scientific claim.

We could complain that they are being inconsistent in believing the scientific method some of the time but not always. Yet social science research has long shown that people typically are not very consistent. The people who are more consistent are those who are punished for inconsistency: philosophers, media pundits, political activists and politicians.

Besides, conservative Protestants don't think of their own views as inconsistent, and they have a long-standing way, going back to at least the mid-19th century, of dividing the scientific findings they believe and don't believe. They tend to accept scientists' claims that are based on direct observation and common sense and to reject those based on what might be called unobservable abstractions. Since nobody was around for the Big Bang and for human evolution from lower primates, these unobservable claims are treated with more skepticism than measurements of the effect of airborne carbon on planetary temperature. (Despite biblical passages suggesting the contrary, conservative Protestants believe the Earth orbits the sun, which is observable by scientists in the present.)

The greatest conflict between fundamentalists, evangelicals and science is not over facts but over values. While scientists like to say that their work is value-free, that is not how the public views it, and conservative Protestants especially have homed in on the moral message of science. William Jennings Bryan, famed defender of the creationist perspective at the Scopes "monkey trial," was not just opposed to evolution for contradicting the Bible but also concerned that the underlying philosophy of Darwinism had ruined the morals of German youth and had caused World War I.

The situation today is not that different: Contemporary "intelligent design" advocates, for example, are deeply worried that the teaching of evolution has a negative effect on children's values.

The same research that shows fundamentalists generally believe in science's ability to gather facts about the world also shows that they do not want scientists to lead the public debate on issues concerning morality.

Is it still futile then? Can the two "sides" never agree?

No, it isn't futile. Understanding what concerns the "other side" would help. Those wishing to affect public policy on issues such as climate change, for example, need to make it clear to conservative Protestants that the science of global warming is based more on direct observations than on analytic abstractions, that it is more like determining the average body temperature of a human than where humans came from.

Conservative Protestants, in turn, should make distinctions between scientific areas where in which they are in moral conflict with science, such as embryonic stem cell research, and those areas where they are not.

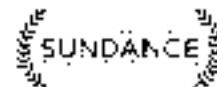
To move forward, we, as a country, need to lower the political conflict. Yes, the views found in fundamentalist churches are not exactly the same as those at the National Science Foundation. But we would see less of the polarizing "we real Americans" rhetoric from the religious right if its members were not ridiculed as know-nothings. Conservative Protestants are not fundamentally opposed to all science.

John H. Evans, professor of sociology in the UC San Diego Division of Social Sciences, is the author of "Contested Reproduction: Genetic Technologies, Religion, and Public Debate" and the forthcoming "The History and Future of Bioethics: A Sociological View."



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October 29, 2011

California Adopts Limits on Greenhouse Gases

By FELICITY BARRINGER

SACRAMENTO — Fifteen months after a similar effort died in Congress, California regulators adopted a system on Thursday for combating climate change that sets limits on greenhouse gas emissions and creates market incentives to encourage oil refineries, electricity generators and other polluters to clean up their plants.

The eight members of the Air Resources Board who were present gave a unanimous vote of approval. "We are charting new ground here," said Lydia H. Kennard, a board member, just before the vote. "The country and the world are watching." The plan will take effect in 2013.

The board members seemed keenly aware that they were giving the state a policy prescription regarded as poison in some parts of the country. But in an interview before the vote, the board's chairwoman, Mary D. Nichols, invoked the state's history of national environmental leadership, suggesting that if California acted first, the rest of the country would eventually come around.

"We are staking out new ground in the battle against global warming," she said. "And we are doing it in difficult times and doing it in a way we believe others will want to follow."

More than 70 people, from environmentalists to lawyers for the petroleum industry to union members fearful for their refinery jobs, addressed the board before the vote. The air regulators have been working for four years to devise an efficient system that will avoid problems that have dogged the European carbon market, like missed targets or pollution allowances that critics found too generous.

The plan arises from trailblazing legislation signed in 2006 by Arnold Schwarzenegger, then the governor, requiring California to develop regulations that will reduce greenhouse gas emissions to 1990 levels by 2020. The market incentives, known as cap and trade, are considered crucial to meeting that target.

California's ambitions are in striking contrast to those of much of the rest of the nation. A conservative political rebellion against cap and trade helped the Republican resurgence in 2010. Attacking the plan as "cap and tax," opponents argued that it would impose excessive costs on energy industries in a weak economy.

In a cap-and-trade system, the government sets a cap on the amount of carbon dioxide and other greenhouse gases that refineries, chemical companies, cement plants and other businesses are allowed to release. It then issues permits to those companies allowing them to emit a certain amount.

Because some companies can rein in their emissions more easily or at less cost than other businesses, they can profit by selling extra permits through the market to companies that find the cost of pollution-control technology prohibitive. In theory this ensures that heat-trapping gases are reduced at the lowest possible cost.

California's nascent market already reaches beyond its borders. While most of the businesses responsible for reducing their emissions over time are based here, they can offset up to 8 percent of their emissions by buying so-called offset credits generated anywhere in the country by other ventures that cut their emissions.

Landfill operators around the Southeast have been isolating and destroying methane, for example, earning offset credits that can one day be sold on California's carbon market. Intermediaries identify projects that are reducing emissions, verify that they are successful and seek credits for them.

This offset market cushions the polluters' transition to expensive new technologies that scrub carbon dioxide from their emissions.

Yet skeptics of the program are not hard to come by. Steven F. Hayward, a specialist on environmental issues with the conservative American Enterprise Institute, said he doubted that the new program would have much of a future.

"In the absence of a national program or even regional programs getting much traction, I don't think this will go far," he said. "It will probably get off with a bang, with some big early trades capturing some low-hanging fruit. But then it will wither and die an ignominious death."

In the short run, however, there have already been economic winners. While most of the 360 projects whose offsets have been approved are landfills, the biggest winner so far in this fledgling market may be Clean Harbors, a Massachusetts company whose hazardous waste

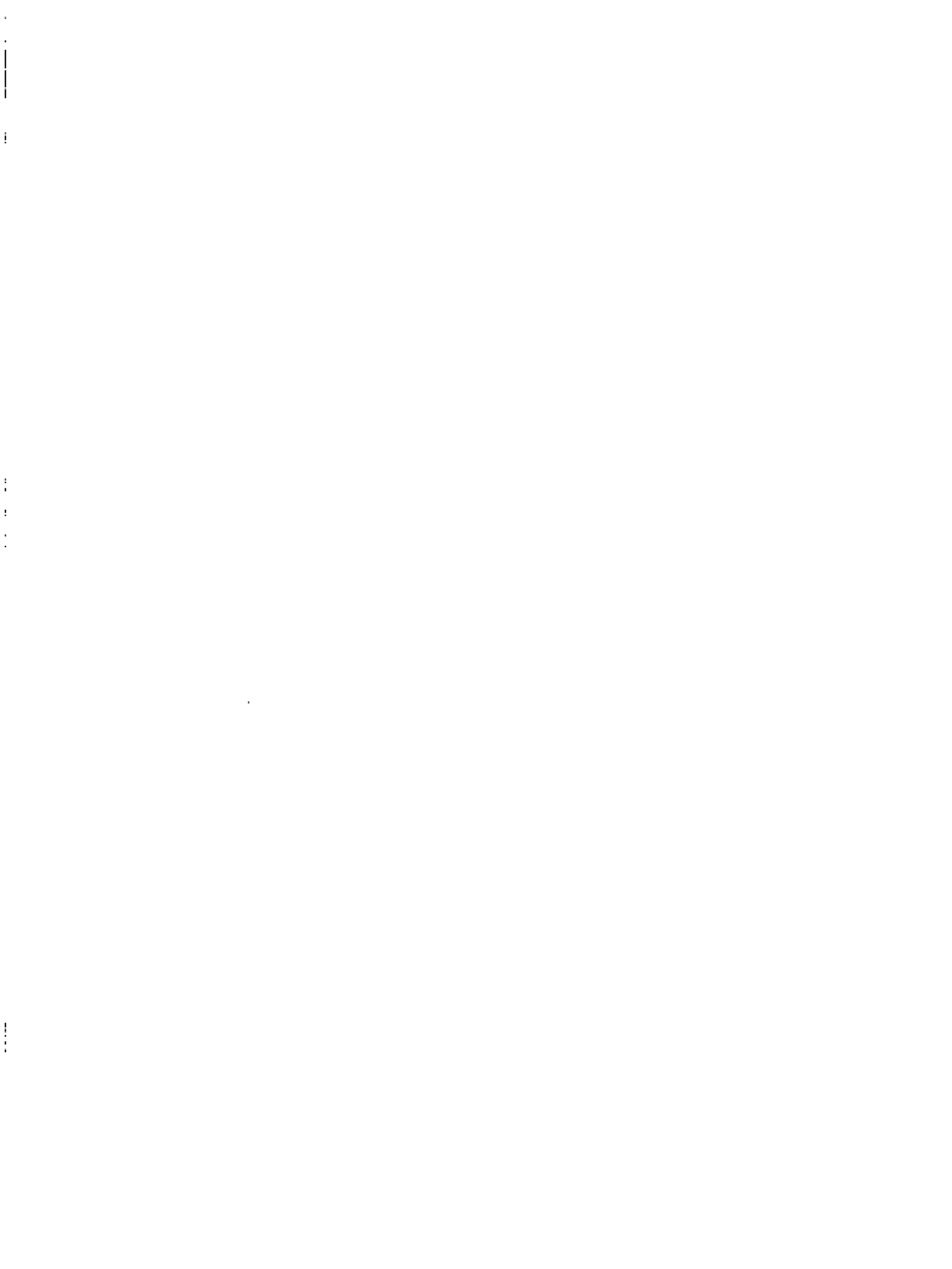
disposal operation in El Dorado, Ark., has spent years destroying old refrigerants. Known as chlorofluorocarbons, the pre-1995 refrigerants are potent greenhouse gases.

According to a list of approved offset projects prepared by the Climate Action Reserve, a nonprofit organization whose standards are nearly identical to those developed by state regulators, the Clean Harbor site in Arkansas has already offset the equivalent of 2.3 million tons of carbon dioxide emissions, which translates to 2.3 million offset credits worth \$10 to \$11 each.

"The beauty of the California program is that it allows offsets from anywhere in the United States," said Gary Gero, president of the Climate Action Reserve. "You don't have to pass a litmus test that you believe in climate change," he said. "If you think Californians are crazy, it doesn't bar you from participating."

The pre-1995 refrigerants, whose production is now banned worldwide because of their role in thinning the earth's protective ozone layer, would otherwise probably have been recycled into the innards of older grocery freezer compartments.

"This is a clear case where the carbon market has provided the financial incentive to make an environmental improvement over the status quo," said Arjun Patney, a carbon market strategist at Cargill, the agricultural and food processing giant, which markets the credits from the Arkansas operations.



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New Research Casts Doubt on Doomsday Water Shortage Predictions

By measuring the isotopes in river water, scientists have determined that mountain glaciers contribute less than thought to downstream water supplies

By Lisa Friedman and Simon Willmet Monday, October 24, 2011 11:11

From the Andes to the Himalayas, scientists are starting to question exactly how much glaciers contribute to river water used downstream for drinking and irrigation. The answers could turn the conventional wisdom about glacier melt on its head.

A growing number of studies based on satellite data and stream chemistry analyses have found that far less surface water comes from glacier melt than previously assumed. In Peru's Rio Santa, which drains the Cordillera Blanca mountain range, glacier contribution appears to be between 10 and 20 percent. In the eastern Himalayas, it is less than 5 percent.

"If anything, that's probably fairly large," said Richard Armstrong, a senior research scientist at the Boulder, Colo.-based Cooperative Institute for Research in Environmental Sciences (CIRES), who studies melt impact in the Himalayas.

"Most of the people downstream—they get the water from the monsoon," Armstrong said. "It doesn't take away from the importance [of glacier melt], but we need to get the science right for future planning and water resource assessments."

The Himalayan glaciers feed into Asia's biggest rivers: the Indus, the Ganges and the Brahmaputra in India, Pakistan and Bangladesh and the Yellow and Yangtze rivers in China. Early studies pegged the amount of meltwater in these river basins as high as 60 or 70 percent. But reliable data on how much water the glaciers release or where that water goes have been difficult to develop. Satellite images can't provide such regular hydroclimatic observations, and expeditions take significant time, money and physical exertion.

New methods, though, are refining the ability to study this and other remote glacial regions in detail. Increasingly, scientists are finding that the numbers vary depending on the river, and even in different parts of the same river.

Creeping hyperbole

"There has been a lot of misinformation and confusion about it," said Peter Gleick, co-director of the California-based Pacific Institute for Studies in Development, Environment and Security. "About 1.3 billion people live in the watersheds that get some glacier runoff, but not all of those people depend only on the water from those watersheds, and not all the water in those watersheds comes from glaciers. Most of it comes from rainwater," he said.

A key step forward came last year when scientists at Utrecht University in the Netherlands, using remote sensing equipment, found that snow and glacier melt is extremely important to the Indus and Brahmaputra basins, but less critical to others. In the Indus, they found, the meltwater contribution is 151 percent compared to the total runoff generated at low elevations. It makes up about 27 percent of the Brahmaputra — but only between 8 and 10 percent for the Ganges, Yangtze and Yellow rivers. Rainfall makes up the rest.

That in itself is significant, and could reduce food security for 4.5 percent of the population in an already-struggling region. Yet, scientists complain, data are often inaccurately incorporated in dire predictions of Himalayan glacial melt impacts.

"Hyperbole has a way of creeping in here," said Bryan Mark, an assistant professor of geography at Ohio State University and a researcher at the Byrd Polar Research Center.

Mark, who focuses on the Andes region, developed a method of determining how much of a community's water supply is glacier fed by analyzing the hydrogen and oxygen isotopes in water samples. He recently took that experience to Nepal, where he collected water samples from the Himalayan glacier-fed Kosi River as part of an expedition led by the Mountain Institute.

Based on his experience in the Rio Saata -- where it was once assumed that 80 percent of water in the basin came from glacier melt -- Mark said he expects to find that the impact of monsoon water is greatly underestimated in the Himalayas.

Jeff La Freniere, a graduate student at Ohio State University, is studying Ecuador's Chimborazo glacier, which forms the headwaters of three different watershed systems, serving as a water source for thousands of people. About 35 percent of the glacier coverage has disappeared since the 1970s.

La Freniere first came to Ecuador as part of Engineers Without Borders to help build a water system, and soon started to ask what changes to the mountain's glacier coverage would mean for the irrigation and drinking needs of the 200,000 people living downstream. Working with Mark and analyzing water streams, he said, is upending many of his assumptions.

Doomsday descriptions don't fit

"The easy hypothesis is that it's going to be a disaster here. I don't know if that's the case," La Freniere said. He agreed that overstatements about the impacts are rampant in the Himalayas as well, saying, "The idea that 2.4 billion people are going to be without water when the glaciers melt is just not the case. It's a local problem; it's a local question. There are places that are going to be more impacted than other places."

Those aren't messages that environmental activists will likely find easy to hear. Armstrong recalled giving a presentation in Kathmandu on his early findings to a less-than-appreciative audience.

"I didn't agree with the doomsday predictions, and I didn't have anything that was anywhere near spectacular," Armstrong said. But he added, "At the same time, it's just basic Earth science, and we want to do a better job than we have been."

The more modest numbers, they and other scientists stressed, don't mean that glacier melt is unimportant to river basins. Rather, they said, they mean that the understanding of water systems throughout the Himalayan region must improve and water management decisions will need to be made at very local levels.

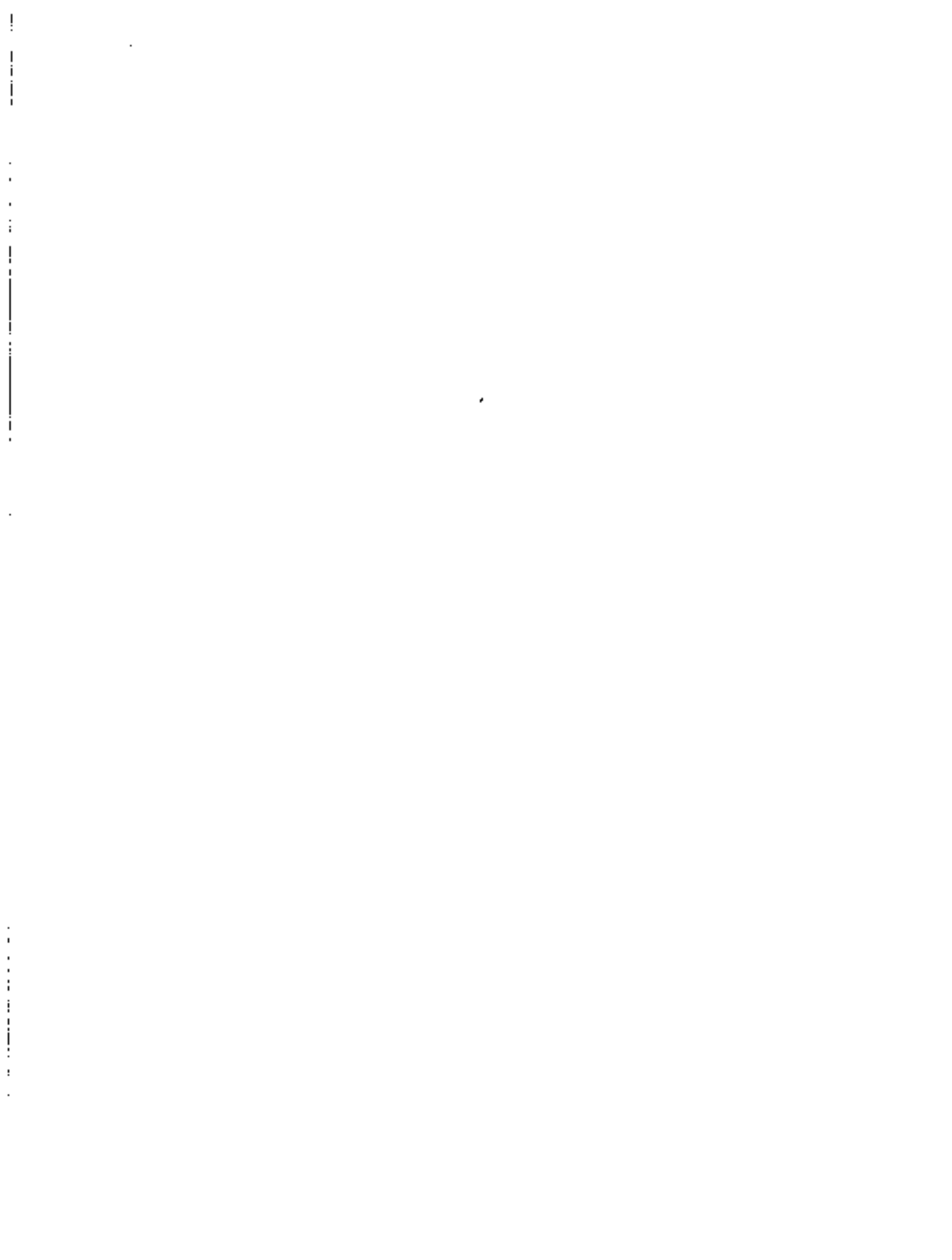
"We need to know at least where the water comes from," Armstrong said. "How can we project into the future if we don't know where the water comes from now?"

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Nissan Eyes 1.5 Million Electric Cars by 2016

The car company says it wants to be the world's largest player in zero-emission vehicles.

Mon Oct 24, 2011 01:17 PM ET | content provided by Yoshikazu Tsuno, AFP

Japanese auto giant Nissan is aiming to sell 1.5 million electric vehicles around the world by 2016, the company said Monday, as it looks to capitalize on growing demand for green products.

Japan's second-largest automaker behind Toyota said it wants to be the world's largest player in so-called "zero-emission vehicles", including a new fuel cell electric vehicle developed with Daimler.

PHOTOS: Top 10 Fastest Electric Vehicles

The company, which is 43.8 percent owned by French partner Renault, has sold 15,000 Leaf electric cars, the only model it produces, but plans to add a further seven models across the group.

"More consumers are demanding products in line with their values, including cars and trucks with a lower carbon footprint. At the same time, we are using technology to make our factories greener and more efficient," said Nissan President and Chief Executive Officer Carlos Ghosn.

"Nissan wants to be part of the solution toward a sustainable society -- for the sake of the planet and as a significant competitive advantage and a strategic differentiator in the global manufacturing sector."

In addition to the target of 1.5 million electric vehicles, the company said it is also aiming for an average 35 percent improvement in fuel economy on 2005 figures for vehicles sold in Japan, China, Europe and the United States.

Last month, Nissan said it was teaming up with US-based General Electric to explore ways to promote the use of electric vehicles.

DISCOVERY: What Would Life Be Like with an Electric Vehicle?

Japanese firms were hit hard by power and chronic parts supply shortages in the wake of March's earthquake and tsunami, with the likes of Nissan, Toyota and Honda having to sharply reduce production and shut plants due to a lack of crucial components.

However, Nissan's recovery has outpaced its peers with global production in June growing 18.5 percent year-on-year to 419,831 units. Toyota and Honda declined by 7.9 percent and 44.5 percent respectively.

Nissan sold a total of 1,056,000 vehicles globally in the first quarter of fiscal 2011, up 10.6 percent on-year.



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Column: Government shouldn't be picking Solyndras

Vid

By Bjorn Lomborg

Updated 3/11/11 11:45pm

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13

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The lesson from the federal government's failed backing of Solyndra is not that the United States should abandon energy innovation. It is that the government should not try to pick industry winners in the race to replace fossil fuels with an alternative.

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Solyndra is the now-bankrupt solar-panel manufacturer that received a \$535 million federal loan guarantee in 2009 to build a factory based on the proposition that solar power should be captured through solar cylinders rather than the more established technology of silicon wafers. Solyndra lost the gamble on its technology — and taxpayers lost a half-billion dollars. Congressional investigators are now probing whether any laws were broken in this venture, amid allegations of favoritism.

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Post photo by Paul Christy

May 2010: Solyndra Executive Vice President Ben Sieman (right) shows President Obama around. Behind them is Chief Executive Officer Chris Gronl.

Make no mistake, the long road to ending reliance on fossil fuels will be littered with many technologies that fail to live up to early promise. But the danger is when politicians and bureaucrats attempt to predict which technologies will be winners and back them to build an industry.

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The idea of capturing the sun's power through solar cylinders might have been a great idea, but the government should instead have spent half a million dollars on funding researchers to investigate such technology. If the research had proved the technology

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We also publish weekly columns by Ari Neufarth, USA TODAY's founder, and Delwayne Wickham, who writes primarily on matters of race but on other subjects as well. That leaves plenty of room for other views from across the nation by well-known and lesser-known names alike.

Columnists

How to submit a column

successful, private companies would have jumped in and sold cheap solar power to the world. And spending one-thousandth of the amount on research means we could have studied many potentially promising technologies — because Solyndra is hardly a unique case.

Why support research?

Many of you might ask why should government support research if business benefits?

First, private companies tend to significantly underinvest in R&D because the benefits of partial technology breakthroughs can take decades to be realized — and then the patents have expired.

Second, because we all benefit. Ultimately, investing in relatively inexpensive research across many technologies has greater promise of finding real, low-cost alternatives to fossil fuels.

Instead of building factories for the likes of Solyndra, money would be much better spent on relatively inexpensive research and development across a vast number of exciting but still-too-expensive ideas for green energy. This is just as we do for medical science, where governments support blue-sky research that decades later gets turned into life-prolonging products by pharmaceutical companies.

Rather than investing in research, many politicians globally are willing to fund technology all the way to production based on the feeling that we ought to be doing something right now. Here, it's necessary to understand that we remain probably two to four decades away from making a real change from our fossil-fuel-reliant economy.

In research for the Copenhagen Consensus Center in 2009, professors Christopher Green and Isabel Galiana of McGill University examined the present state of non-carbon-based energy: nuclear, wind, solar, geothermal, etc. They found that these technologies are only ready to take us a small part of the way toward a green energy society.

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Technology not ready

The needed technology also is not ready in terms of scalability or stability. Current technology is so inefficient that — to take just one example — if we were serious about

wind power, we would have to blanket most countries with wind turbines to generate enough energy for everybody, and we would still have the massive problem of storage. We don't know what to do when the wind doesn't blow.

But if we pursue innovation over the next few decades to make solar panels or wind turbines or some other technology cheaper than fossil fuels, we will effectively have solved global warming. Everyone — including developing nations — would simply switch to the cheaper, more effective, green technology.

The real focus has to be on direct research and development, although a modest carbon tax — adding something like six cents to each gallon of gasoline — could provide a small (but as we see in the real world, often a very divisive) part of the solution. Research commissioned by the Copenhagen Consensus Center showed that if governments invested globally about \$100 billion annually in non-carbon-based energy research, we could essentially fix climate change over the coming decades. \$100 billion is much less than is spent on ineffectual carbon-cutting policies just in Europe.

Where governments go wrong is in propping up today's not-ready technology. In this, the United States has company. Germany, a fairly cloudy country, spent \$75 billion on subsidizing solar panels, the net effect of which will be to postpone global warming by the end of the century by seven hours. That's simply throwing away money to feel good. What we need to do is support research into tomorrow's energy solutions, not subsidize today's poor technology.

Bjorn Lomborg is the director of the Copenhagen Consensus Center at Copenhagen Business School.

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12

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News analysis: Obama takes bipartisan heat on energy policy

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By Aamer Madhani, USA TODAY

Updated 10:25 ago

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15

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WASHINGTON — As his re-election campaign heats up, President Obama finds himself in an awkward position trying to defend his environmental policies against Republicans and disillusioned environmentalists who backed his campaign in 2008.

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He's under withering attack from GOP presidential contenders and lawmakers who say the Obama administration is handcuffing job growth with stifling regulations. Meanwhile, some environmental activists have expressed frustration that the White House has blocked or delayed several clean air and water regulations in recent weeks.

Some environmentalists — who were inspired by his calls in 2008 to reduce oil dependence and increase green energy investment — are disappointed that the State Department ruled in August that a plan to build a controversial Keystone XL pipeline — which would transport tar-sands oil from Canada to refineries in Illinois, Oklahoma and the Gulf of Mexico — would not cause significant environmental damage.

Obama will be greeted by hundreds of protesters calling on him to scrap the Keystone XL project when he travels to San Francisco on Tuesday, said Elijah Zarlin, a campaign organizer for the liberal group CREDO Action.

By Tom Ichniowski, AP

Protesters carry a mock pipeline in Lincoln, Neb., last month before a hearing on the project. The State Department in August ruled the plan would cause no serious damage.

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On Sunday, more than 400 young activists organized by the Energy Action Coalition protested in front of the Obama campaign office in Cleveland. And a coalition of activists are planning a major demonstration in front of the White House on Nov. 6 to protest the pipeline. Hundreds were arrested at an August sit-in at the White House against the project.

"What's disappointing is that this is a guy who seemed like he had the ability to explain complicated issues to people," said Zarkin, who worked on the new-media staff of Obama's 2008 campaign and was arrested at the recent White House sit-in. "The key is that people who supported Obama in 2008 still want to believe that he can lead and he will lead and will do the right thing."

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The criticism from the right is perhaps rougher. At last week's Republican presidential debate in Las Vegas, former Massachusetts governor Mitt Romney and Texas Gov. Rick Perry argued vociferously about their bona fides on health care and immigration policy, but they were in lock step as they criticized the Obama administration for handcuffing the oil industry with regulations.

"We've got 300 years of resources right under our feet in this country," Perry said. "Yet we've got an administration that is blockading our ability to bring that to the surface, whether it's our petroleum, our natural gas or our coal." Moments later, Romney added "He's absolutely right about getting energy independence and taking advantage of our natural resources here. We're an energy-rich nation that's acting like an energy-poor nation."

The intensified attacks on Obama's environmental record come on the heels of the administration's decision to block or delay implementation of a series of Environmental Protection Agency initiatives.

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Last week, the EPA notified Congress that it won't regulate the dust produced by farm operations in the Midwest. Earlier this month, the EPA eased an air quality rule that would require power plants in 27 states to slash emissions. Last month, the White House decided to take a pass on implementing new smog regulations.

Reprin
Index

Home N

The Natural Resources Defense Council and two other groups who backed tougher regulations commissioned a poll by Public Policy Polling that showed 70% of Americans

d's approved of Obama's stance on smog. The decision was particularly unpopular with women in the swing states of Michigan, Ohio and Pennsylvania, said Heather Taylor-Miesle, director of the NRDC Action Fund.

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"The biggest cost that Obama has got here is that he could be facing an enthusiasm problem," Taylor-Miesle said.

Rep. Steve Scalise, R-La., a member of the House Energy and Commerce Committee, said that Republican presidential candidates and lawmakers need to continue to press the issue with voters and make the case that Obama administration regulations have held back economic growth.

Ben LaBolt, the Obama campaign press secretary, countered that Republicans are offering "old energy ideas" that fail to enhance U.S. energy security or global competitiveness. He defended Obama's environmental record. "The president has done more to wean us off of foreign oil and transition the nation to a clean energy economy than any other," LaBolt said.

Both Republicans and environmentalists are waiting to see how the president comes down on the Keystone project and say it will be a seminal moment for the president.

Scalise said it's bewildering that Obama hasn't already backed the project that would bring billions of dollars in private investment and create thousands of jobs.

"He could create those jobs tomorrow if he sent out an executive order and said we're going to make this happen," Scalise said.

Republican lawmakers in Washington along with some Democrats — 22 House Democrats wrote to Obama last week endorsing the project -- have pushed Obama to quickly approve the deal. But some Republicans from Nebraska, one of six states the pipeline would cut through, have expressed reservations. Nebraska Gov. Dave Heineman, Sen. Mike Johanns and Rep. Jeff Fortenberry want the pipeline to be moved, saying a leak could contaminate the Ogallala aquifer. Heineman called Monday for the state legislature to hold a special session on Nov. 1 to see whether it can craft legislation to force moving the pipeline.

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From
ALEXANDER PAYNE
Director of
SIDEWAYS

October 26, 2011

Solar Power Industry Falls Short of Hopes in Job Creation

By **MATTHEW L. WALD**

GOVERNMENT help for solar power was supposed to be a triple play: jobs at a time of dire short-term need; incubation of an American industry sure to be important on a global scale in the next few years; and a long-term reduction in climate-changing pollution.

But at the same time that the Obama administration was pushing loan guarantees out the door — the one to Solyndra evidently too quickly — SolarWorld, the largest producer of solar cells in the Americas, was proudly asserting to its investors that labor expenses were less than 10 percent of its costs.

Solyndra, which took \$528 million in government loans before it declared bankruptcy, had a novel design, using cylinders instead of panels, and it was promising 1,000 or more jobs in the factory. But solar power, which makes extensive use of robots in fabricating the cells, and has no moving parts to service once it is up and running, may be an odd choice for job creation.

"It's just not that labor-intensive," said Howard Axelrod, an engineer and economist. And as for the jobs it creates, there may be a price elsewhere, Dr. Axelrod said. He described the energy world as being like a child's squeeze toy: "You squeeze it and the eyes pop out. If you push in one area, something else is going to happen."

Another economist, Seth Blumsack, an assistant professor of economics and energy at Pennsylvania State University, asked about making jobs, creating an industry and cleaning the environment simultaneously, replied, "It's probably difficult to argue we are doing all three of those things successfully right now."

That is not to say that the energy business does not produce jobs in his state. He said that "in the areas with the highest levels of natural gas drilling, the unemployment rate is basically about as close to zero as it could get."

But the energy industries eat one another's lunch. Jay Apt, executive director of the Energy Industry Center at Carnegie Mellon University in Pittsburgh, said it was possible to calculate the amount of electricity produced at a coal plant per person who works there. The number he cited per worker was about the same as would be produced over the course of a year by 20 megawatts of solar panels. Build enough solar plants and some coal plants will shut down; that would amount to firing Peter to hire Paul.

But despite all the emphasis on jobs, this relationship is largely unexamined. John Felroy, the chief economist at the American Petroleum Institute, pointed out that there were lots of good-paying jobs in the natural gas fracturing, or fracking, boom, but that implied fewer jobs in the coal sector, as natural gas displaced coal for electricity production.

But the analyses "tend to look at the individual industries," he said, and do not go to the next step: "You've got these gas jobs so you don't have these coal jobs."

His group, a petroleum industry trade association, makes a different point, that drilling in the United States means jobs here instead of jobs elsewhere — in Canada, if the drilling is for natural gas, and all over the world if the drilling is for oil. But petroleum jobs are not politically favored.

Something else not favored, at least not by American policy makers, is jobs in China. But Chinese solar panels are flooding the American market, so much so that SolarWorld (which is a German company) filed a dumping case against China with the American authorities on Oct. 19.

Nailing solar panels to a roof cannot be outsourced, but to some extent their manufacture already has been. Environment America, an advocacy group, said in a recent report that only about 24,000 people work in solar manufacturing in this country, compared with 52,500 in installation, out of a total of about 100,000. That is a hefty number, and up 6.8 percent in the last year. But the definition is a bit slippery. It applies to workers who spend at least half their time on solar work.

Outsourcing to China is one end of the spectrum; there is a flip side. Some coal jobs exist here because coal is exported. The nuclear industry employs thousands of workers who provide components and services for reactors abroad. Solar panel fabrication was intended as an export industry, but whether the country will continue as a net exporter is not certain.

And if the electricity from the solar installation is more expensive than the energy it replaced, then everybody who uses electricity will spend a little more for it, and everybody

who pays taxes will contribute to the government subsidies for solar. Thus there will be a little less money to spend on other activities that could also generate employment.

But this, too, is little examined. The Energy Department said it did not have any studies on that. Damien LaVera, a spokesman, said that even if the manufacture of solar cells were not labor-intensive, construction of the Solyndra factory provided jobs. "Hiring a thousand construction workers for a year or two years is short-term stimulus," he said. "They created 3,000 construction jobs in the worst construction downturn in the State of California's recent history."

Solyndra shut down operations at the end of August.

At a recent hearing of the House Energy and Commerce Committee, whose Republican majority has latched on to Solyndra with a vengeance, Scott DesJarlais, Republican of Tennessee, compared the benefits of solar power to the Tennessee farmer who drives into Alabama to buy watermelons for a dollar each and resells them at home for 75 cents.

"He does this a few times, and clearly he isn't making a profit," Mr. DesJarlais said. "And he comes to the conclusion that he needs a bigger truck."

This may prove unfair in the long run. If fossil fuel prices rise high enough or governments begin to collect big charges for carbon dioxide releases, solar power could turn into an unsubsidized success. Renewable energy is recognized as representing a hedge against future shifts in the prices of fuels and the strictness of pollution regulations.

But the effect on jobs is murkier. "Net jobs" is seldom mentioned. The object now is to put more man-hours into each megawatt-hour, after years of trying to slim down the system and minimize labor input.

And, economists point out, some of the work that renewable energy creates goes to people who already have jobs — roofers who install the panels or truck drivers who move them around, or steel workers who make towers for new wind machines.

Some of the jobs could eventually go elsewhere. Two years ago, Evergreen Solar, which got \$58 million in aid from Massachusetts for a factory in Devens, said it would shift production to China instead. Such a move would offer only a small advantage in labor costs — because those are small to begin with — but American experts say the Chinese offer more lavish subsidies.

The debate is part of a larger discussion of what constitutes a "green" job. In October 2009, Congress gave the Bureau of Labor Statistics a special appropriation to count them.

The first problem was to define the term. The bureau, an independent statistical agency within the Labor Department, established two definitions: jobs in business that "produce goods or provide services that benefit the environment or conserve natural resources," and "jobs in which the work performed makes the production processes of business establishments more environmentally friendly or use fewer natural resources."

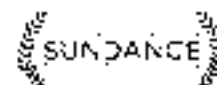
The bureau's first report is due early next year. The problem is that lots of jobs are partly green and partly not. At a House Energy and Commerce subcommittee hearing on Sept. 22, members got into an extended argument with an Obama administration witness about whether the driver of a hybrid bus, with its lower pollution and lower fuel consumption, had a green job.

"Driving a bus is driving a bus, right?" said Connie Mack, Republican of Florida. Hilda Solis, the secretary of labor, said they were "green buses." But aides later clarified that the bureau counted any bus driving job as green because it preserved natural resources.

None of this suggests that green is bad, just that it is not particularly job-heavy. In December 2010, Susan Combs, the comptroller of Texas, reported that school districts in her state were giving tax abatements to lure new jobs, but had to give \$1.6 million for every wind energy job. Manufacturing jobs could be created for \$166,000 each.

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October 26, 2011

Future of Solar and Wind Power May Hinge on Federal Aid

By KATE GALBRAITH

AUSTIN, Tex.

IN recent years, wind and solar power have been among the fastest-growing sources of energy in the country.

But questions loom over their future: Will federal incentives that are important to their growth continue? And what happens if those incentives expire?

For wind power, the situation is especially precarious, energy specialists say. The federal production tax credit, which has provided incentives for wind farm operators to produce power since 1992, expires at the end of 2012. Congress has extended it in the past, most recently in 2009 as part of the federal stimulus package. But this time, some in the industry fear that the mood for limited government in Washington could imperil an extension.

If Congress does not extend the credit, "I believe 2013 would have minimal if not close to zero wind built in the United States," said Michael O'Sullivan, the senior vice president for development at NextEra Energy Resources, a huge clean energy developer in Juno Beach, Fla.

The solar business faces the expiration of an important grant program at the end of this year. The grants were created as part of the stimulus package, and the industry is lobbying for a one-year extension.

The expiration of the program would have a "really significant compressing effect on the amount of renewable energy that gets financed," said Edward Fenster, the chief executive of SunRun, a San Francisco-based company that leases solar installations to homeowners. An extension would allow SunRun's business to grow 50 percent faster, though the company would grow even without it, he said.

Even if the grants expire, the solar industry can still use a 30 percent federal investment tax credit in place through 2016. Some other technologies, like fuel cells and small wind turbines, have access to similar tax credits through 2016.

The solar industry argues that the grant program is far more effective than the tax credit because it provides incentives for a broader range of private investors to help finance projects, as opposed to merely those with high tax obligations (the credit helps offset these).

The grant program also applies to wind power, though wind developers say the tax credit is more important for their industry.

Another major federal program, the provision of loan guarantees to aid large renewable energy projects, ended last month. That program became controversial after Solyndra, the first solar recipient, filed for bankruptcy, leaving taxpayers potentially liable for more than \$500 million.

Rhone Resch, president and chief executive of the Solar Energy Industries Association, said that while the loan guarantee program helped finance emerging technologies that were "higher-risk projects by definition," the grant program aided "extremely low-risk projects where you're using off-the-shelf technology."

In arguing for the continuation of federal incentives, advocates of renewable energy often point out that all forms of energy — including fossil fuels — rely on a complex web of state and federal credits and aid. Mr. Resch argues that more established technologies including oil and gas, coal and nuclear power are still taking advantage of incentives that were established in the 20th century.

"In the same way we've invested in oil and gas, it's time to invest in renewables," he said.

For younger technologies trying to establish themselves and reduce their costs, government incentives may be a make-or-break situation.

"Unlike oil and gas, where those companies could still make money doing their operating if they didn't have some of the credits they currently have, I'm not sure that would be true for the wind industry," said Amy Jaffe, director of the Energy Forum at Baker Institute at Rice University.

Solar and wind companies also argue that the perpetual threat that their incentives will expire makes long-term planning difficult.

"Our biggest issues is, we don't have certainty," said Danny Kennedy, founder of Sungevity, a residential solar installer in Oakland, Calif., who said he hoped that the federal grant program would be renewed but planned for its expiration. Fossil fuel companies, Mr. Kennedy said, "assume tax credits and subsidies as permanent and given."

One important federal incentive for oil and gas drilling, for example, has been in place since 1910s, though the Obama administration has proposed repealing it.

For renewable energy developers, the threatened expiration of incentives may have a few benefits. Mr. O'Sullivan, of NextEra Energy Resources, said that the wind deadline at the end of 2012 is "causing customers to accelerate decisions, which is good."

For that reason, many specialists expect 2012 to be a banner year for wind.

"At this point 2012 is poised to be one of the largest years, if not the largest year in the U.S. wind market, in terms of installation," said Alex Klein, research director for Renewable Power at IHS Energy Research, whose clients include renewable energy companies. "But the downside is, there's a strong likelihood of a pretty dramatic fall-off in 2013."

Greg Efthimiou, a spokesman for Duke Energy of Charlotte, N.C., said that although Duke built renewable energy projects to meet customer demands as opposed to the tax credit deadline explicitly, the federal incentives did help — and Duke planned to build five large wind farms next year, including two in Texas and two in Kansas.

If Congress renews the production tax credit for four years, wind power will probably reach 4 to 5 percent of the country's electricity supply by 2016, Mr. O'Sullivan said, up from 3 percent year to date.

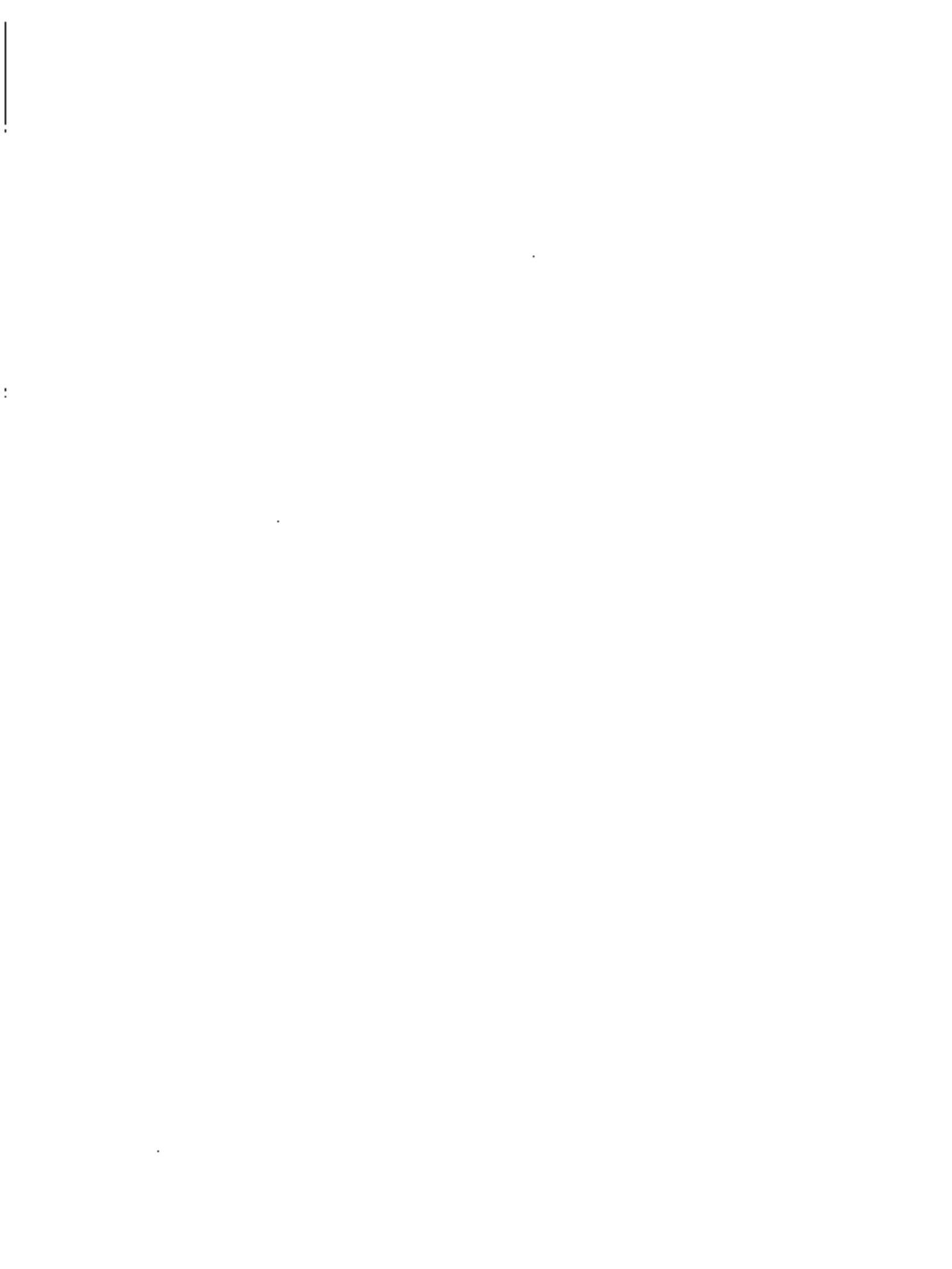
And if it does not? "We call it the P.T.C. cliff," he said of the production tax credit. "Everyone's making preparations," he said. The severe halt in 2013 would occur, he said, as companies waited to see if Congress would renew the credit even after it expired. If Congress did not, work may resume but would be significantly eroded, he said.

The costs of solar and wind have dropped substantially in recent years, although when, and if, the technologies will become competitive with fossil fuels without tax credits or grants is anyone's guess. (It bears noting that the technologies are cleaner than fossil fuels, and therefore create fewer pollution costs for society, many of which are not counted in the price of electricity.)

However, low natural gas prices have made it tough for wind to compete, especially if the production tax credit ends.

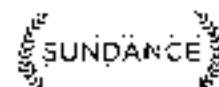
Meanwhile, uncertainty reigns.

"We're entering another boom-and-bust cycle for the wind industry that it hasn't had to face for several years," Mr. Klein said.



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October 25, 2011

In Clean Tech, Venture Capital Looks for Problem-Solvers

By CLAIRE GAIN MILLER
SAN FRANCISCO

SHELBY CLARK, the founder of a start-up called RelayRides, was honored last week as a rising star in clean technology. But as he took the stage alongside companies creating new kinds of energy, he felt out of place.

RelayRides is a car-sharing start-up. Since when did encouraging people to drive carbon-spewing cars qualify as clean tech?

In Silicon Valley, where venture capital dollars nurture fledgling technology companies, clean tech is getting a makeover. Many investors are shying away from the high risks and costs of creating new forms of energy. Instead, they are doing what they do best — using software to cope with problems, in this case caused by climate change.

RelayRides, which lets car owners rent their vehicles to others, takes cars off the road because people can avoid owning them and the service's users drive less than other people, Mr. Clark said.

"You can have a major impact on an individual's carbon footprint by re-creating business models or behaviors without inventing a new energy," he said.

This strategy has been percolating among some in Silicon Valley for a couple of years. But for many investors, doubts about alternative energy were confirmed last month when Solyndra, which made solar panel arrays and had raised more than \$1 billion in venture capital and \$528 million in government loans, filed for bankruptcy protection.

"A lot of people see it as a symbol of what they do not like in green investments or government involvement in tech," said Nathan E. Hultman, director of the environmental policy program at the University of Maryland and a fellow at the Brookings Institution. "If

the V.C.'s pull back, then a lot of these companies are going to have to fold, or at least put their plans on hold.

"This is a very familiar stage in the energy industry called the valley of death," he said.

Green tech investing had been declining even before Solyndra. Venture capitalists invested \$891 million in 80 such start-ups in the third quarter, an 11 percent decline from \$1 billion in 88 companies in the second quarter, according to the National Venture Capital Association.

Investors, accustomed to financing low-cost Web start-ups, had grown wary of spending the money needed to pay for basic research and build factories to produce energy. Adding to their caution is uncertainty over whether Congress will exact a carbon tax, an increase in natural gas production in the United States and the difficulty of competing with the established energy industry.

But the Solyndra bankruptcy further spooked venture capitalists and particularly the pension funds, endowments and foundations that invest in venture capital, said Mark Heesen, president of the National Venture Capital Association.

Investors, he said, would continue to shift from investing in alternative energy to investing in companies that cope with climate change by, for example, using software to make buildings and cars more efficient.

Venture capitalists are on track to invest \$275 million this year in start-ups that make software and other technologies that conserve energy or manage its use, up from \$234 million last year and \$104 million in 2009.

"Capital-intensive companies that take long cycles to create things, whether they're solar voltaic cells or giant wind turbines, are not very scalable, so those are really tough businesses to imagine as venture-funded opportunities," said Bill Maris, managing partner at Google Ventures.

His firm has invested in Relay Rides and other start-ups that stretch the definition of clean tech investing. They include the Climate Corporation, for extreme weather insurance; Clean Power Finance, which runs an online marketplace for financing residential solar panels; and Transphorm, which makes tools that reduce power loss when electricity is converted in data centers or industrial motors.

"It's tech companies that are applying their technology to this industry," Mr. Maris said. "Those are the kinds of companies we tend to really understand and like."

At first glance, companies like the Climate Corporation, which insures rural farmers, seem to have nothing to do with either technology or climate change. But David Friedberg, a Google veteran who is the company's co-founder and chief executive, said its goal was "to help all the world's business adapt to and understand climate change."

For farmers, that means analyzing "crazy big data," Mr. Friedberg said, from weather stations, government data feeds, soil moisture models and Doppler radar images. The Climate Corporation simulates the weather for the next two years and runs a Web site where farmers can enter their location and crop, buy insurance coverage and automatically receive payments for bad weather.

Soybean farmers in the Dakotas were recently paid for delayed planting because of an unusually rainy spring, and wheat farmers in Oklahoma and Texas were covered for a intense drought.

The Climate Corporation this month changed its name from WeatherBill, and Mr. Friedberg said he worried that the connection between his software and climate change was too vague for the new name to make sense.

"We were a little concerned about changing the name for fear of farmers thinking we're a bunch of hippie Californians," he said. "But the farmers said, 'Yeah, it's the climate that's totally messing with us. The weather today is not the weather of my pappy or grandpappy.'"

FirstFuel Software is another company using computers to cope with climate change. It analyzes a building's electric use based on data, without visiting the building, and produces an energy-saving plan. It raised \$2.4 million from Battery Ventures and Nth Power in September.

Opower, which has raised \$66 million from venture firms like Accel and Kleiner Perkins Caufield & Byers, gives electric and gas companies tools to communicate with customers, like text-messaging them midmonth if their electric bill is running particularly high.

Despite the interest in these types of companies, some venture capitalists are still betting on big alternative energy experiments.

Khosla Ventures announced this month that it had raised a \$1.05 billion fund, one of the biggest this year. About 60 percent will go into clean tech and the rest into Internet and mobile start-ups.

"We're not changing strategy," said Vinod Khosla, the firm's founder. "We're sticking to our guns."

The firm has invested in companies that make engines and biofuels and one that is trying to turn carbon emissions and seawater into cement. Mr. Khosla said he believed that start-ups that built efficiency software did not do enough to address climate change.

"They do the 5 to 10 percent improvements here and there," Mr. Khosla said. "What we need is the 100 percent or 400 percent improvements."

The problems brought on by climate change will not be solved without venture capital, he said. But what if Silicon Valley continues to recoil from tackling experiments like creating alternative energies?

"It's the survival-of-the-species question," said Eric Wesoff, a senior analyst on energy and venture capital at Greentech Media, a research firm. "If the V.C.'s are not willing to take that risk and the innovation slows, who's going to fill that gap? Is it going to be China?"

Already, the bulk of the innovation is coming from India, China and Europe, Mr. Heesen said.

"We have been behind," he said, "and we're just going to get further and further behind in an area that is one of the few that can actually create jobs in the next 10 years."



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Durban talks come at bad time: UN climate chief



AFP - Wire - December 10, 2009

UN climate talks that begin next month in South Africa coincide with a global financial crisis hurting efforts to raise money to fight climate change, the UN's climate chief said Wednesday.

"This is not the best time to be talking about finance, because all developed countries are in a financial crisis," Christiana Figueres, executive secretary of the UN Framework Convention on Climate Change, told a press briefing ahead of the November 28 to December 9 talks in Durban.

She urged developed countries to think of the funds as a long-term need that will outlive the gloomy economic picture currently troubling the euro zone.

"The financial needs of climate, both for adaptation and for mitigation, are not short-term needs. They are long-term needs, and they need to be seen in that respect. The financial crisis is a financial crisis that we have now, but that is not a long-term crisis for the next 20, 30 years," she said.

Negotiators are trying to raise money for a Green Climate Fund that would give \$100 billion a year by 2020 to developing countries to help fight climate change and its effects.

The fund was agreed at the 2009 climate talks in Cancun, but negotiators still have to hammer out where the money will come from and how it will be managed.

The other major issue on the agenda at Durban is the future of the Kyoto Protocol, whose current set of carbon curbs expires at the end of 2012.

Officials are calling Durban a make-or-break meeting for the future of the agreement, the only deal to date with legally binding commitments to cut the greenhouse gas emissions that scientists say spell disaster for the planet's health if left unchecked.

The host country's ambassador for the talks rejected the possibility of a new system of legally binding cuts to replace Kyoto, saying a too-ambitious agenda could wreck the negotiations.

"Talk of any legally binding instrument would be irresponsible, very irresponsible," said Ndlovu-Makate-Diseko, South Africa's ambassador-at-large for the conference.

"To even begin to suggest that the outcome of Durban must be a legally binding instrument would be irresponsible, because it will collapse the system."

Figueres said negotiators need to reach agreement on a "broader mitigation framework" that would combine a second round of Kyoto curbs with commitments from non-Kyoto countries to make comparable cuts.

The world's top two polluters, China and the U.S., are not part of the Kyoto Protocol's emissions cuts. And Canada, Japan and Russia have all said they will not sign up for a second round.



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Climate: which nations, cities most at risk?

By [Andrew Watt](#) and [Nick Les](#)

A third of humanity, mostly in [Africa](#) and South Asia, face the biggest risks from climate change but rich nations in northern [Europe](#) will be least exposed, according to a report released Wednesday.

Bangladesh, India and the [Democratic Republic of Congo](#) (DRC) are among 30 countries with "extreme" exposure to climate shift, according to a ranking of 193 nations by [Maplecroft](#), a British firm specialising in risk analysis.

Five Southeast Asian nations -- Indonesia, Myanmar, Vietnam, the Philippines and Cambodia -- are also in the highest category, partly because of rising seas and increasing severe tropical storms.

Maplecroft's tool, the Climate Change Vulnerability Index (CCVI), looks at exposure to extreme weather events, such as drought, cyclones, wildfires and storm surges, which translate into water stress, loss of crops and land lost to the sea.

How vulnerable a society is to these events is also measured, along with a country's potential to adapt to future climate change-related hazards.

Of 30 nations identified in the new report as at "extreme" risk from climate change, two-thirds are in Africa and all are developing countries.

Africa is especially exposed to drought, severe flooding and wildfires, the report says.

"Many countries there are particularly vulnerable to even relatively low exposure to climate events," said [Charlie Beldoa](#), co-author of the study.

Weak economies, inadequate healthcare and corrupt governance also leave little margin for absorbing climate impacts.

At the other end of the spectrum, Iceland, Finland, Ireland, Sweden and Estonia top the list of nations deemed to be least at risk.

With the exception of Israel and oil-rich Qatar and Bahrain, the 20 least vulnerable countries are in northern and central Europe.

China and the United States -- the world's No. 1 and No. 2 carbon emitters -- are in the "medium" and "low" risk categories, respectively.

In a parallel analysis of major cities at risk, Maplecroft pointed to Dhaka, Addis Ababa, Manila, Calcutta and the Bangladesh city of Chittagong as being most exposed.

Three other Indian metropolitan areas -- Chennai, Mumbai and New Delhi -- were listed as being at "high" risk.

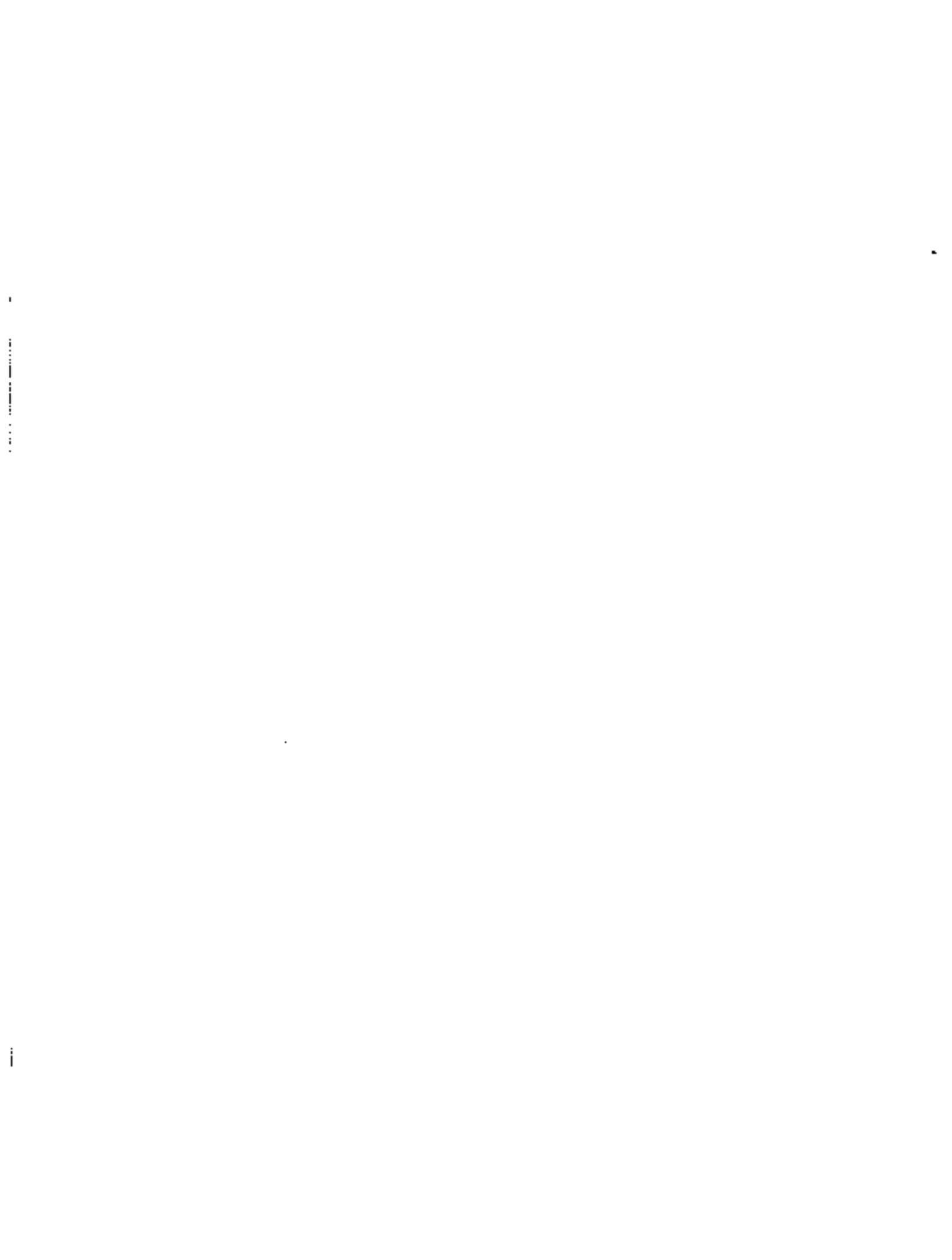
"Vulnerability to climate change has the potential to undermine future development, particularly in India," Beldoa observed.

Recent studies -- reviewed in a special report by the UN's Intergovernmental Panel on Climate Change (IPCC), due out next month -- point to strengthening evidence of links between global warming and extreme weather events.

Record droughts in Australia and Africa, floods in Pakistan and central America, and fires in Russia and the United States may all be fuelled in part by climate change, some experts say.

Current warming trends are on track to boost average global temperatures by 3.0 degrees Celsius (5.4 degrees Fahrenheit) above pre-industrial levels, according to some predictions.

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California panel resumes green energy tax b

AP *Associated Press* By JUDY LIN - Associated Press , AP - Wed, Oct 26, 2011

SACRAMENTO, Calif. (AP) — A state panel voted Tuesday to resume a tax break program after lawmakers found the effort has been working as intended to help foster alternative

The California Alternative Energy and Advanced Transportation Financing Authority has resumed a program after awarding \$25 million in sales tax breaks to the failed Fremont solar start

After a review of regulations, state Treasurer Bill Lockyer said he still believes in the program's authority.

"We learned from the experience with Solyndra's abrupt business failure that we can inform applicants and enforce state requirements to accomplish that objective," Lockyer spoke in a statement. "We will work with the Legislature and the state's own policies and procedures

Under legislation passed last year, the program allows qualified companies to waive the sales tax on manufacturing equipment in California. It was intended to promote the growth of alternative energy in the state and complement the state's push for renewable energy.

The state has approved 33 applicants for \$104 million in sales tax exemptions, according to

Solyndra was among 11 companies that claimed some of those tax breaks. The company later filed for bankruptcy protection. It also is the subject of congressional inquiries because of a loan that has become an embarrassment to the Obama administration.

Lockyer told lawmakers during a hearing last week that despite the risks associated with the program remains worthwhile. He said it was different from a federal loan guarantee because it does not spend taxpayer money.

Sen. Alex Padilla, D-Los Angeles, agreed.

"We will make improvements to this program, but we must not let the failure of one component derail the entire program," Padilla said in a statement.

California is one of a few states that require businesses to pay sales tax on manufacturing equipment. The tax has been a point of contention for manufacturing groups that say it puts the state at a competitive disadvantage.

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Talking Green Energy: Answers From the Top

Arun Majumdar, head of the DOE's Advanced Research Projects Agency for Energy, talks to Discovery News.

By Eric Niler | Wed Oct 26, 2011 11:23 AM ET

Arun Majumdar heads the Department of Energy's Advanced Research Projects Agency for Energy (or ARPAe), which funds high-risk, high-reward future energy technologies that aren't ready for the market yet. He's a former engineering professor at U.C. Berkeley and associate director at the Lawrence Berkeley Laboratory. Last month, ARPAe granted more than \$156 million to 25 projects from alternatives to rare earth metals, to a turpentine-based fuel from pine trees to a high-voltage electrical transformer the size of a car battery. Discovery News' Eric Niler spoke with Majumdar recently in his Washington, D.C. office about where energy research is headed.

Eric Niler: *Tell me about green oil.*

Arun Majumdar: If you have to make money in the oil business, the cheapest is to go for the next barrel of oil. The reason that the cost (of biofuels) is high, and it is less than 1 percent efficient to convert the energy from sunlight to oil (is that) you need a lot of land, a lot of fertilizer and a lot of water, (plus) the logistics of collecting biomass to convert that. That's the real problem. You need R and D to reduce the cost. That's what's going on today.

But this is going to take longer than the end of this decade to make it cost competitive with petroleum. We should be under no illusion of this. Biofuels will take some time and we should be patient about this.

But there are some things that are totally different; this is something called electro-fuels. It takes the waste product of oil, which is called sour crude. The sourness is the hydrogen sulfides. They throw it away. We say there is energy stored in there. We take energy from the electrons in there and feed it to chemo-synthetic bugs and they produce oil.

This is 10 times more efficient than plant-based photosynthesis, and it can work at night. People thought this was impossible to do. We are funding 15 teams and we're producing biofuel without sunlight. This is an entirely new route to make oil. They're taking shots that nobody else in the world has tried. If this works, it's an entirely new industry that does not exist today.

E.N.: *Renewable energies are still too expensive compared to fossil fuels. When will that change?*

A.M.: Different technologies have different time scales. For example, with onshore wind energy, the cost of energy production is pretty close to parity. In some parts of the country it is cost competitive today (with fossil fuels), in other parts it is not. That's why you see wind being deployed. Solar is not. Utility scale solar is about three to four times higher than lowest cost of electricity, which is from a natural gas



Photo: Arun Majumdar Credit: DOE

combined cycle, about five cents per kilowatt hour. Solar at the utility scale is 15 to 20 cents per kilowatt hour.

At the residential scale, it's about 25 to 30 cents per kilowatt hour. So sometimes you need very novel financing schemes to (be competitive). What we have done in DOE is to create the Sunshot initiative. You remember President Kennedy's Moonshot, where he said let's go to the moon and return within a decade? The Sunshot initiative says let's reduce the cost of solar to 5 cents per kilowatt hour within the decade. Why? First of all, it will scale without subsidies.

E. N.: How do you do that?

A.M.: The role of the technologist or scientist and the engineer is harder now because you want to reduce the cost much lower than what you would with a subsidy. But that's the harder job that we are willing to take.

Where does the cost come from? One is from the photovoltaic module itself. That cost is coming down. Then the cost of the power systems required to go from one voltage to another, the converters. We are investing heavily in power electronics to reduce the cost even further. Today it's 30 to 40 cents a watt, we want to reduce it to 10 cents a watt.

The third cost is balance of system, which is all the installation, all the permitting, all the safety requirements. It's not sufficient to do only technology, we have to do the other parts as well. In San Jose, for example, it takes two days to get a permit to put solar on top of your roof. In some parts of the country it takes nine months. I think there's room for improvement there. We want different counties to compete and be the fastest and the smoothest and that's going on right now.

In the mid 1990s, we had about 45 percent of the manufacturing volume of the in the world. Do you know much we have today? It's 7 percent. It's a warning sign of a Sputnik moment for us. We need to change it. We have to be competitive without subsidies. If you can integrate high-efficiency photovoltaics in your roof tiles, you don't need separate panels -- and that's happening right now.

But our biggest national security issue is on the transportation side. We are importing 50 percent of the oil we use from other nations. We are spending a billion dollars a day. If you could spend that money we would have much less financial problems than we do today. In the stationary sector, we have wind, solar, coal, natural gas. In transportation, we only have one fuel, oil. If there's any disruption of that, our nation is vulnerable. There are other ways of making oil.

E.N.: One of the big bottlenecks is holding onto the energy from wind and solar. If you have a coal plant you can turn it up or down. Is there a really cool way to store this renewable energy, whether it's some kind of cell or something?

A.M.: The cheapest way is pumped hydro. But you can only do it in certain parts of the country. We're not going to build dams all around the United States. There's an innovation that is coming out of MIT that is mind-boggling. They've created a liquid metal battery. Two liquids, when mixed together, when you pass an electrical current, the two metals separate out and plate out.

This process has come about by taking the manufacturing process for aluminum and turning it around for a battery. This is presumably scalable, a completely new idea for batteries for grid-level storage. They showed this in a lab in a pizza-box size. Now they've

started a company and got the IP rights from MIT. Now Bill Gates has invested with them and a French company called Total.

E.N.: *You would attach this to a solar panel?*

A.M.: Yes, somewhere on the grid and use it when you want to. Storage is important for transportation as well. You look at the Chevy Volt, it cost \$45,000 and the biggest cost is the battery. We in the United States have taken risks and then the costs have come down.

E.N.: *Are there other things that are really way out there?*

A.M.: There's is the BEEST program (Batteries for Electrical Energy Storage in Transportation). You want to make the electric car have a longer range than a gasoline-based cars, because then you can sell it without subsidies. That's the battery that you really need.

So the idea is let's say you want to drive from St. Louis to Chicago -- 300 miles -- on a single charge. That car does not exist today because the battery does not exist. We put up a challenge to the scientific and engineering community. That battery has to have double the energy density of today's lithium-ion battery at one-third the cost. And guess what: You give scientists and engineers and innovators a goal like this, a risky idea, and some money, they will go for it.

There's a whole portfolio of new batteries coming out. I'm not sure which one is going to succeed: an all electron battery being tried out at Stanford; a lithium flow battery, with completely new architecture, from MIT; a whole new class of metal air batteries. If one of them is successful, it will make the lithium ion battery obsolete. Just like the lithium ion battery made the nickel metal hydride battery obsolete.

This is the next wave that is coming. It's too risky for the private sector to develop. That's where the government comes in. It's equivalent of the Stealth technology or Internet technology that DARPA invested in.

E.N.: *What are the biggest obstacles?*

A.M.: We fund things that are pre-venture. The venture capitalists find it too risky. If they show their first prototype, we are hoping it will be picked up by the private sector. I think today in the United States, access to low-cost, long-term capital for creating manufacturing is an issue.

Innovative technologies are risky, that means the cost of capital may go up. That's one of the knobs we need to turn to keep manufacturing here. The second is markets. For example, the CAFÉ (Corporate Average Fuel Efficiency -- 54.5 mpg by 2025) standards will create the demand for all these batteries. We just need to line up several vectors: the science and technology, finance and markets, policy and education, if they are all aligned and pulling in the same direction, the United States is unbeatable.

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NEWS: Solar Power

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