

# Alternative Energy: The Role of Government

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***Alternative Energy 2008:  
Challenges to Development***  
LSU Center for Energy Studies  
Baton Rouge      23<sup>rd</sup> April 2008

## *Where is CEI coming from?*

- Non-profit, non-partisan public policy institute specializing in regulatory issues from a free market perspective.
- **Liberty** We support policies that fortify (or are at least consistent with) political and economic liberties.
- **Science** We believe that scientific objectivity must be scrupulously respected, regardless of our political preferences.
- **Life is a risk** We reject the one-sided precautionary approach and think that the costs and benefits of proposed policies must be compared.

## *Access to modern energy—then and now*

First Continental Congress, Philadelphia, 1774

- Virginia's slave-owning plutocrats came by horse-drawn carriages
- John Adams, the young Boston lawyer and Colossus of the Revolution, walked

Today

- I flew from Washington to Baton Rouge
- I expect most of you drove or flew
- Did anyone walk?

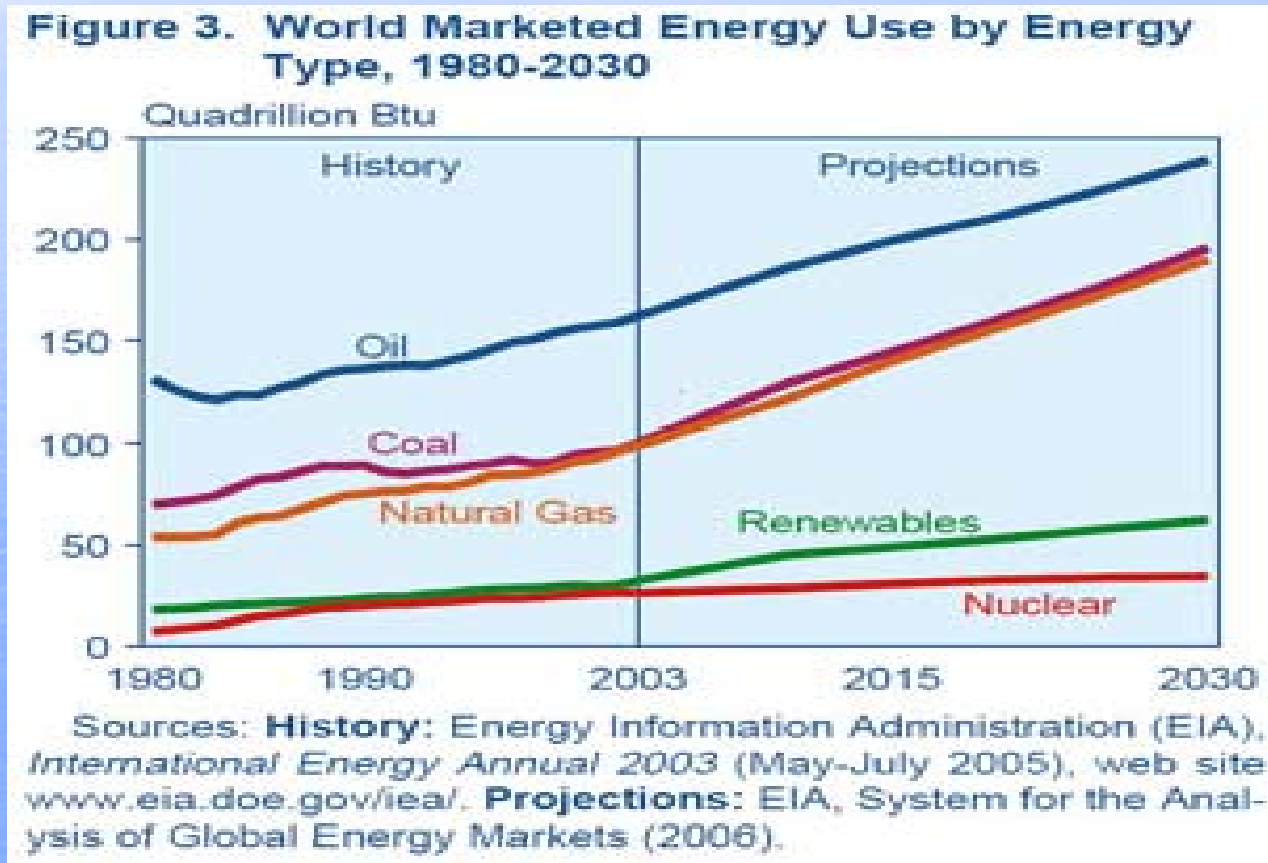
## *The blessings of modern energy*

- A decade ago, a study estimated that the average American has access to energy equivalent to having three hundred slaves.
- In countries that lack access to modern energy, slavery is still common. For example, Mauritania, where it has been officially abolished several times in recent decades.

*First, the energy reality is...*

*Global energy demand 2003-2030, +71%*

(from EIA's 2006 International Energy Outlook)



# *The current U. S. energy profile*

## Source

- Petroleum 39.8%
- Coal 22.6%
- Natural Gas 22.5%
- Nuclear 8.3%
- Renewables 6.8%

## Use

- Electricity 39.7%
- Transport 28.4%
- Industrial 21.6%
- Residential and Commercial 10.3%

## *The 6.8% renewables breakdown*

- Hydropower 2.9%
- Biomass 3.3%
- Geothermal 0.3%
- Wind 0.3%
- Solar 0.07%
- The other “alternative” energy: energy efficiency and conservation measures

# *Government involvement*

- Mandates
- Subsidies
- Trade barriers
- Research and development funding
- Regulatory obstacles
- Tax structure



## ***Back to the Seventies***

Current federal and state government energy policies are recreating the whole panoply of policies enacted by Congress during the Nixon, Ford, and Carter Administrations.

# Back to the Seventies

4 THE WALL STREET JOURNAL, Tuesday, Aug. 22, 1978

## Solar Power Seen Meeting 20% of Needs By 2000; Carter May Seek Outlay Boost

By WALTER S. MOSSBERG

Staff Reporter of THE WALL STREET JOURNAL

WASHINGTON—Federal planners have concluded that solar energy can contribute as much as 20% of U.S. energy needs by the

that a second, smaller review group be named to tailor policy options to a specific goal, preferably the environmental council's projection of a 25% solar share of U.S. energy by 2000.

A10 MONDAY, NOVEMBER 13, 2006 THE WALL STREET JOURNAL.

## Renewable Fuels May Provide 25% of U.S. Energy by 2025

By JOHN J. FIALKA

WASHINGTON—A new Rand Corp. study showing the falling costs of ethanol, wind power and other forms of renewable energy predicts such sources

of the nation's energy, and about half of that comes from hydroelectric dams. The study assumes renewable-energy costs will keep dropping at the rate of recent years. It says raising the use of renewables to 25% of all U.S. energy consumed

## ***The lesson we should have learned from 1970s energy policies***

***“In summary, the experience of the 1970s and 1980s taught us that if a technology is commercially viable, then government support is not needed; and if a technology is not commercially viable, no amount of government support will make it so.”***

from Energy Aftermath: How we can learn from the blunders of the past to create a hopeful energy future  
by Thomas H. Lee, Ben C. Ball, Jr., & Richard D. Tabors  
Harvard Business School Press, 1989

## *That '70s path:*

### *ethanol goes first*

- 51 cents per gallon refundable tax credit
- 2005 bill included a 7.5 billion gallons per year by 2012 ethanol mandate
- 2007 bill included a 36 billion gallons per year mandate—up to 15 billion from corn by 2015, then 21 billion more from “advanced” biofuels by 2022
- (Note: if ethanol can't make it with current oil prices, it ain't ever gonna make it.)

## *The unintended but predictable consequences*

- The ethanol mandate is already raising food prices. Corn, wheat, and soybean futures are at all time highs.
- A global crisis is looming: malnutrition, hunger, starvation. Warnings from UN Food Program, World Bank, Oxfam, etc.
- Several recent studies show that ethanol production increases greenhouse gas emissions.
- Mass clearing of tropical forests to grow palm oil for biofuels. European Environment Agency advises suspending EU biofuels mandate.

# ***The intended consequences seldom materialize, the unintended often do***

## Intended:

- Forcing (or providing incentives for) technological change, economies of scale, overcoming market entry barriers, the production experience curve, etc.

## Unintended:

- Mandates and subsidies almost always create corporate welfare dependency.
- Mandates and subsidies are often obstacles to technological breakthroughs.

***Number 8 on Google search for  
"solar power subsidies"***

Headline: Government Power Subsidies Vital in Making Solar Power Technology Price Competitive

"Government subsidies are expected to facilitate mass production and, thereby, drive down prices sooner," states Frost and Sullivan industry analyst Patricia Seifert. "Subsidies will be necessary for another three to five years until solar power can compete with more common energy sources such as natural gas or oil."

from Alternative Power  
[altpowermag.com](http://altpowermag.com)

# *Rent seekers are taking over corporate America*

- Example: Big Farm (especially ADM)
- Example: the Wall Street Journal's recent ECO:nomics conference in Santa Barbara
- Example: designing just the right kind of cap-and-trade



# ***Number 5 on Google search for "solar power subsidies"***

Headline: Cut Solar Subsidies?

"Subsidies can repress a market as much as they appear to help. They create a sense that there is no need to compete on even ground with competition....

Taking away subsidies might be just the push solar power needs to move the technology to the next level. An interesting exercise is comparing the removal of subsidies from New Zealand agriculture."

from [TreeHugger.com](http://TreeHugger.com)

2006

## *The rest of the list*

- Government funding for research and development
- Removing regulatory obstacles
- Improving the tax structure

## ***But what about the externality costs of global warming?***

- The impacts of global warming are negative externalities.
- The proper policy is a Pigouvian tax equivalent to the external costs.
- This is an alternative to mandates and subsidies and trade barriers for favored special interests.

# *Costs of Global Warming: Stern Review*

- 5-20% of global economic output “now and forever”
- Uses extreme scenarios
- Uses extreme cost estimates
- Assumes little or no adaptation
- Costs primarily occur in 22<sup>nd</sup> century when world economic output is many times that of today

## *Costs of Mitigation: Stern Review*

- No more than 1% of total world economic output in next two centuries
- Total costs of mitigation over two centuries must be paid by 2050
- According to Sir Partha Dasgupta, Frank Ramsey Professor of Economics, Cambridge University, this will require a 97.5% savings rate now
- Tol meta-analysis finds Stern is an outlier in the economic literature

## *Costs of warming: Tol's review*

- Richard S. J. Tol, one of the world's leading environmental economists and not a skeptic, reviewed 102 econometric studies published in peer-reviewed professional journals of the costs of the potential impacts of global warming.
- Tol concluded that nearly all the studies conclude that the negative externalities of global warming translate into a tax of no more than \$12 per metric ton of CO<sub>2</sub>-equivalent.
- And that \$2/mmt CO<sub>2</sub>-e was the most likely number.

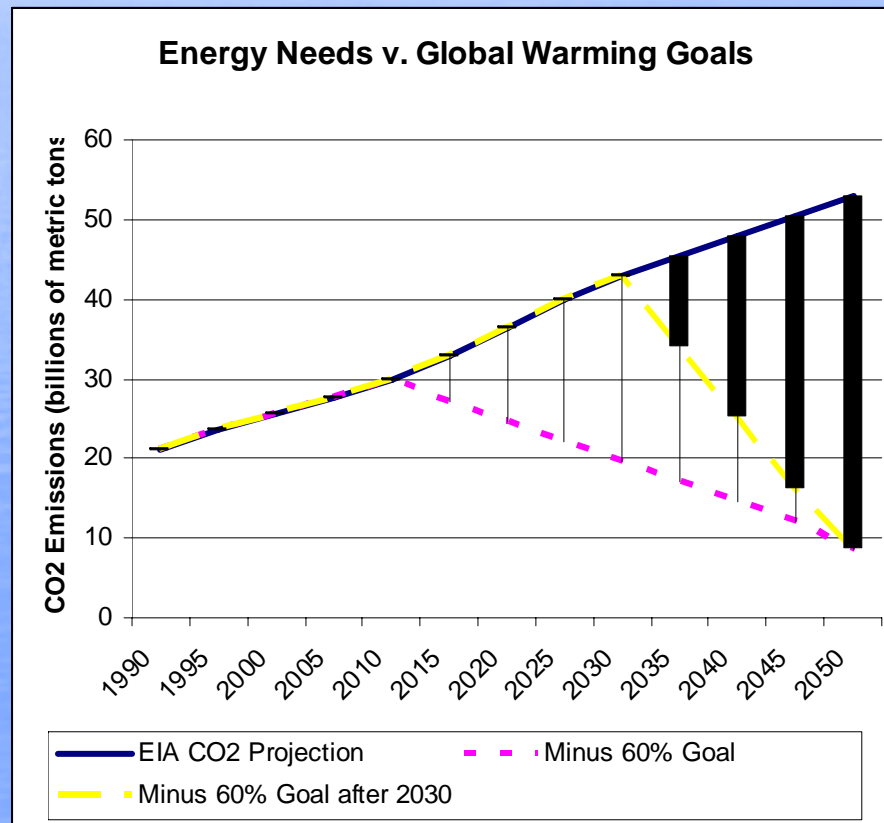
## *Nordhaus agrees with Tol*

- Professor William Nordhaus of Yale is the world's leading global warming economist and has been in the field since the 1970s. He is not a skeptic.

Nordhaus's model forecasts:

1. \$22 trillion in damages from global warming
2. Gore-level emissions reductions would reduce damages to only \$10 trillion
3. But Gore-level emissions reductions would cost \$34 trillion
4.  $\$10 + \$34 = \$44 = 2 \times \$22$

# *Here is what we would have to do to meet a Gore-ish emissions reduction target*





***According to the Department of Energy, cutting CO2 emissions by one Gigaton would require any of the following:***

- 1.** 136 new 1 GW nuclear power plants—roughly one third of existing global nuclear capacity
- 2.** 273 new 500 MW zero-emission coal-fired power plants—roughly 7% of current global capacity
- 3.** Replace 273 million cars that get 20 mpg with cars that get 40 mpg
- 4.** 14 times the number of windmills currently operating
- 5.** 273 times the photo-voltaic solar panels currently operating
- 6.** 1000 carbon sequestration projects of 1 million tons of CO2 per year—3 such projects exist today

## *Summary*

- Alternative energy is great, and a number of alternative technologies (including efficiency and conservation) are promising.
- Technological breakthroughs will occur, but can't be predicted or managed by government.
- Mandates and subsidies do more harm than good.
- Don't count on the global warming bandwagon.
- The world's energy needs are colossal.
- Prediction: alternative energies will meet a lot of that need, but not a lot in the next thirty years.







***The reality is...***

***the world needs more energy***

- **There are colossal unmet demands for energy**
- **For example, over 1.5 billion of the world's 6 billion people lack electricity**
- **Most of the increasing global demand for energy will be met by hydrocarbon fuels over the next three decades at least**

## ***Vulnerability to climate change***

- Modern industrial societies are not very vulnerable to changing weather or bad weather.
- Modern agriculture and silviculture are more vulnerable, but are highly adaptable.
- Subsistence societies are very vulnerable to changing weather and bad weather because they lack modern technology and energy.

## ***Vulnerability: cold weather kills***

- Washington Post headline, 12<sup>th</sup> December 2007:  
**“Midwesterners in the Clutches of a Deep and Deadly Freeze”**
- Studies show that cold weather kills approximately ten times as many people as hot weather.
- Global warming theory predicts that most of the warming will occur in the upper latitudes in the winter.
- Thus global warming will result in lower net human mortality.



## ***Vulnerability: precipitation patterns***

- Of all the potential impacts, changes in precipitation patterns matter the most
- Changes in precipitation patterns cannot be predicted on the basis of whether the global mean temperature is going up or down

## *The American people prefer warmer climates*

- Since air conditioning became practical and affordable, Americans have been moving south, as the U. S Census shows:
  1. Arizona had 2 House Members in 1950, 8 today.
  2. Nevada had 1 House Member in 1950, 3 today.
  3. Florida had 8 House Members in 1950, 25 today.
- Air conditioning uses a lot of energy.

*Mitigation is a catastrophic dead end  
because...*

**OPPORTUNITY**

**COSTS MATTER!**

# ***A richer-but-warmer world is better than a poorer-but-cooler world***

- Indur M. Goklany has analyzed official IPCC scenarios.

## Conclusions:

1. The faster growth/higher emissions scenario maximizes human well-being at least through 2100.
2. The potential risks or adverse impacts associated with climate change are more closely associated non-climate factors.
3. Thus the correct is high economic growth combined with direct measures to minimize adverse impacts.

## ***What would a sensible global warming policy look like?***

- Make the positive case for energy. To quote Professor John R. Christy: "Energy means life. Access to affordable energy enhances the quality and extends the duration of human life."
- Take advantage of the benefits and opportunities.
- Adapt to the negative impacts.
- Build resilience in societies.
- Develop new technologies.
- (Keep in mind that the role for government in each of these activities is minimal.)

## *Wisdom from Al Gore*

“And that is what is at stake. Our ability to live on planet Earth—to have a future as a civilization.

“I believe this is a moral issue.”

—*An Inconvenient Truth* (2006, page 298)

## ***Al Gore is right—it is a moral issue.***

- **The global warming debate is really about whether we are going to have a world of energy starvation or abundance.** In a world where nearly two billion people lack access to electricity, the world is not energy rich—it is energy poor. By producing affordable energy, the benefits to humanity are immense and are immensely greater than all the negative environmental externalities combined, including greenhouse gas emissions.
- To oppose taxes or cap-and-trade schemes on greenhouse gas emissions is not merely a matter of self-interest. **Whether we create a future of energy poverty or plenty is of the greatest importance to humanity.**

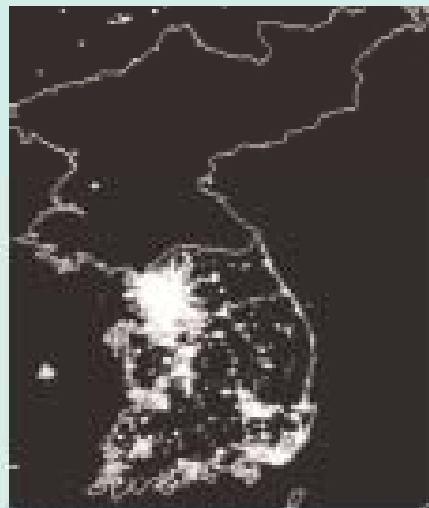
## *It's also a big vs. limited government issue*

- The environmental movement has framed the debate so that only mandatory actions count as doing something about global warming.
- The result, even if not the intention, would be a massive expansion of government control over people's daily lives and lifestyle choices.



# EVEN A SATELLITE CAN SEE THE DIFFERENCE BETWEEN DARKNESS AND FREEDOM.

When leaders in nations, people in the streets, and governments make a choice, they choose a direction. It is a choice that shapes the lives of millions of people. It is a choice that determines the future of a nation. It is a choice that shapes the lives of millions of people. It is a choice that determines the future of a nation.



View of the Middle East from a satellite



[www.12tharab.org](http://www.12tharab.org)

## *Conclusion*

Although global warming has been described as the greatest threat facing mankind, the policies designed to address global warming actually pose a greater threat. The Kyoto Protocol and similar domestic schemes to ration carbon-based energy use would do little to slow carbon dioxide emissions, but would have enormous costs. These costs would eventually fall most heavily on the poorest people in the poorest nations in the world.

## *Conclusion concluded*

Luckily, predictions of the extent of future warming are based on implausible scientific and economic assumptions, and the negative impacts of predicted warming have been vastly exaggerated. In the unlikely event that global warming turns out to be a problem, the correct approach is not energy rationing, but rather long-term technological transformation and building resiliency in societies by increasing wealth.

## *Some Resources*

Competitive Enterprise Institute:

- Myron Ebell, (202) 331-2256, [mebell@cei.org](mailto:mebell@cei.org)
- Also Marlo Lewis, Chris Horner, Iain Murray, William Yeatman, and Julie Walsh

*Cooler Heads Digest:*

- Weekly e-mail publication

Cooler Heads Coalition web site:

- [www.globalwarming.org](http://www.globalwarming.org) Also: [www.cei.org](http://www.cei.org)







## *Consequences of the train wreck*

- Costs of trying to reduce emissions will not be evenly distributed regionally.
  1. States that already have high electricity costs will not be hit as hard as States that are more dependent on cheaper coal-fired power plants.
  2. American industry has been concentrating in the heartland States where electricity costs are lower.
  3. As the price of electricity rises in low-cost States to the level of the high-cost States, American industry will move to foreign countries that have not undertaken mandatory emissions reductions.



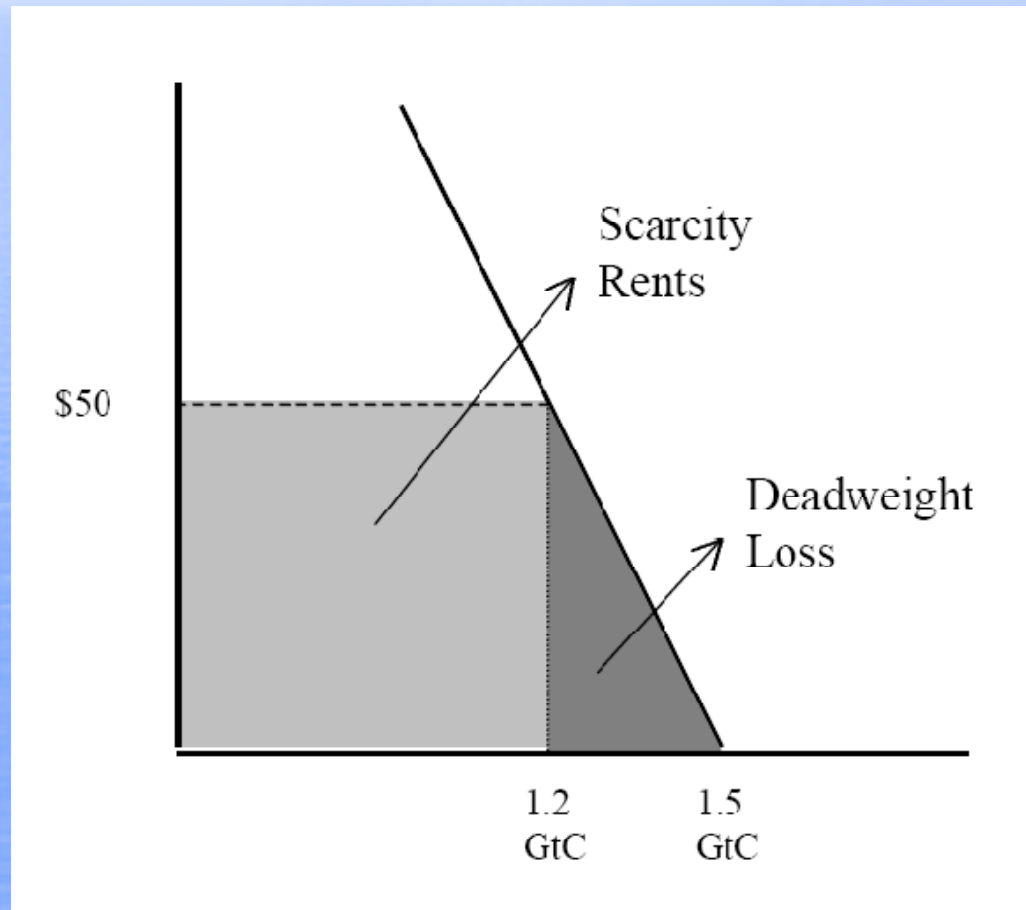
## *Consequences of the train wreck continued*

- The burden of reducing emissions will not be shared evenly by different income groups
- Poorer people pay a higher percentage of their incomes for energy. Thus, increasing energy prices will hurt poorer people more than the better off.

*If cap-n-trade doesn't work,  
why do so many companies want it?*

- The EU's Emissions Trading Scheme
- Enron
- Goldman Sachs
- U. S. Climate Action Partnership

*So if cap-n-trade doesn't work, why do so many companies want it?*



## *However, Americans support action on global warming*

- Recent polls show that most Americans rate global warming as a serious problem: 52% very serious, 37% major but not high priority (NYT/CBS poll, April 20-24, 2007).
- But only 15% rate it as the top environmental problem (NYT/CBS).
- And recent polls also show that most Americans support federal government action to address global warming.

## ***But the public is less enthusiastic about energy price increases.***

- 58% oppose higher taxes on gasoline (NYT/CBS poll, April 20-24, 2007).
- 76% oppose \$2 a gallon tax on gasoline (NYT/CBS).
- 70% oppose \$1 a gallon tax on gasoline (NYT/CBS).
- A more recent RFF poll showed that a small majority would pay \$2 more per month for electricity.
- People do support government mandates on big business as long as the costs are not passed along to consumers.

## ***Global Warming doesn't register with likely primary voters in a recent poll***

- Washington Post/ABC News poll of likely Democratic primary voters in Iowa found that 2 percent listed global warming as one of the top TWO issues.