

THE ENERGY LEARNING CURVE: Why We Need to Rethink Our Approach to Informing the Public

A Presentation by
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AAAS CONFERENCE ON PROMOTING CLIMATE LITERACY
THROUGH INFORMAL SCIENCE

Birch Aquarium at Scripps , San Diego, CA February 17, 2010

The Informed Public

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- Crucial concept in American democracy
- Functioning poorly in contemporary politics
- Three major problems
 - Message sent is message received
 - If people have information, they will respond to it rationally and quickly
 - Giving people facts means they understand what the choices are

The Energy Learning Curve

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- 2009 survey by Public Agenda
- National random sample, 1,001 adults over 18
- Over 90 questions: Designed to explore public's evolving views on energy and climate change
- Case study suggesting that current model of the informed public is not working

Decades of “Informing” the Public: Minimal Impact

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30 YEARS OF OUTREACH BY SCIENTISTS

- 1979: National Academy of Sciences says global warming is highly credible
- 1988: Congressional testimony of Dr. James Hansen
- 1990: First IPCC report predicts continued global warming
- 1997: Kyoto Protocol
- 2007: IPCC/Gore win Nobel Prize
- 2009: EPA declares carbon emissions hazardous

WIDESPREAD INATTENTION AND MISUNDERSTANDING

- 4 in 10 Americans cannot name a fossil fuel
- 6 in 10 cannot name a renewable energy source
- 56%: nuclear energy causes global warming
- 32%: solar energy causes global warming

Message Sent Does Not Equal Message Received

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The message from science:

- Climate change is one of greatest threats facing humanity

The public view:

- Gas prices, reliance on imported oil are more serious threats
 - 57% worry “a lot” about increases in the price of gas
 - 43%: dependence on foreign oil
 - 32%: global warming

Elements of Resistance

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KEY INFORMATION HAS BEEN ABSORBED

- 84%: Problems abroad may disrupt oil supply and drive up prices
- 83%: U.S. economy too dependent on oil
- 70%: Oil prices will rise because demand is rising and supplies are limited
- 54%: Driving cars, trucks than run on gas contributes a lot to global warming

BUT WISHFUL THINKING AND OPPOSITION TO KEY EXPERT SOLUTIONS REMAIN

- 68%: Speculators are main reason for high gas prices
- 65%: U.S. has more than 10% of world oil reserves (Reality: 2.4%)
- 71%: Oppose setting gas prices at \$4.00 to encourage alternatives;
- 57%: Oppose 40¢ gas tax to achieve energy independence

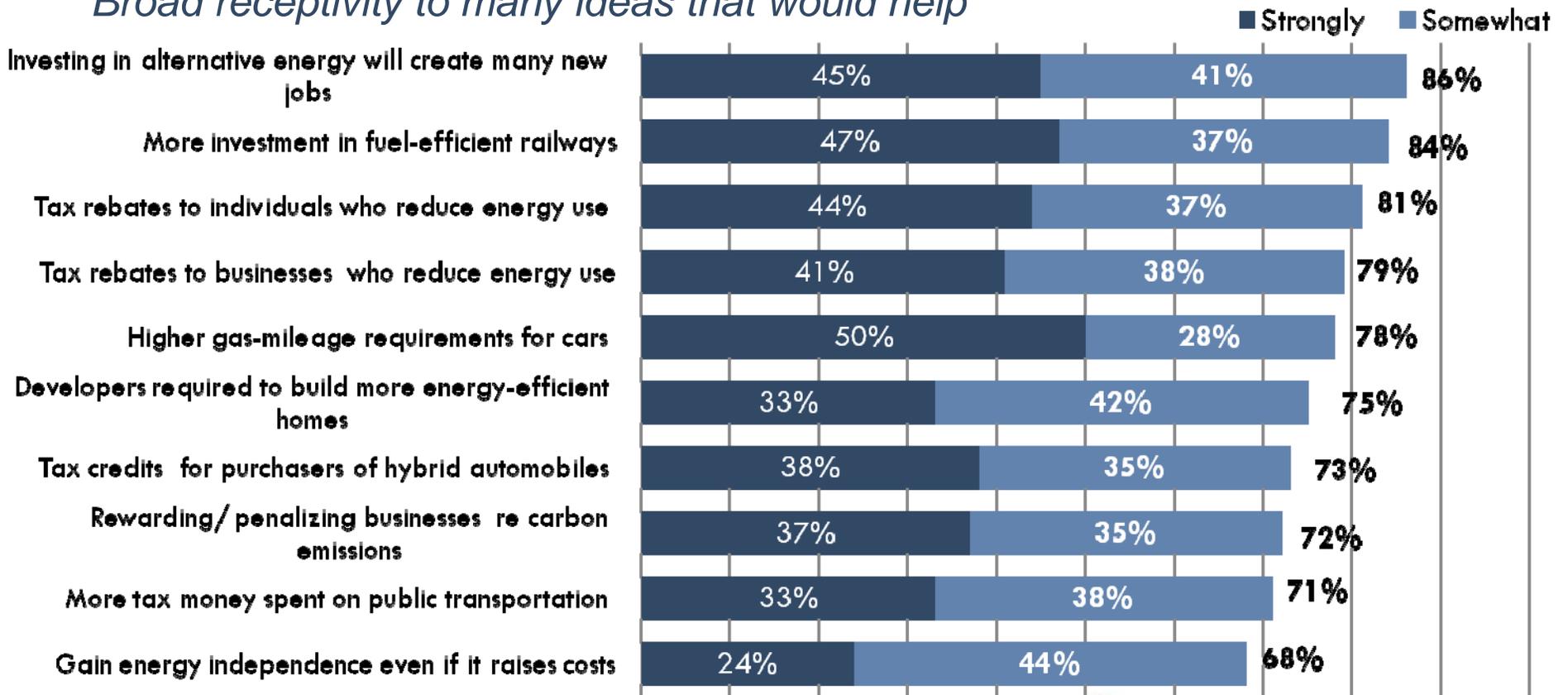
Yet There Is a Basis for Engagement

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Public “Realism” Despite Lack of Knowledge

- 73%: Reject idea that low gas prices mean we don't need to develop alternative energy

Broad receptivity to many ideas that would help



The Challenge to Science Now

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- An age of skepticism: few institutions enjoy much public trust
- A polarized discussion
- Rightly or wrongly, scientists seen as “pointing with alarm”
- Field has tried to teach people the “science” assuming they will sort out the choices naturally
- How important is it? Why does too much junk food cause people to gain weight?”
- An alternative role for scientists: credible neutral “explainers” who help people understand the choices

Scientists as Explainers: Three Requirements

1. Connect climate and energy challenges
 - 1 billion cars in China
 - A problem for global warming
 - A problem for supply of oil and price of gas
2. Focus on broad choices: gather ideas, assess, crystallize, and juxtapose
3. Choices must be inter-disciplinary/ Don't ignore economics
 - Include costs, but also economic advantages of change and economic perils of sticking the status quo

Scientists as Explainers Versus Scientists as Alarmists or Advocates

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MIT: *The Future of Coal, The Future of Nuclear Power*

- Inter-disciplinary: science, engineering, and economics
- Some areas where neutral guidance and choices would help
 - What are three, practical scenarios for reducing emissions, say, 25% or 30%?
 - What would each mean in terms of generating electricity/transforming the auto fleet?
 - When is drilling for natural gas dangerous to the water supply?
 - What about nuclear power?
 - How can we reduce the cost of alternatives?
 - And others?

THANK YOU

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