

The President's Economic Recovery Advisory Board voted 15-1 in favor of submitting the following memo to the President.

The President's Economic Recovery Advisory Board

MEMORANDUM FOR THE PRESIDENT

FROM: Economic Recovery Advisory Board

DATE: June 17, 2009

SUBJECT: Energy, the Environment and Technology

Energy and the climate are complex global issues with many different views on how to manage them. We are a diverse group of advisors, but we agree on some important matters and want to convey them to you.

We believe that a successful, lasting economic recovery should include energy and climate policies that accelerate innovation, reduce our CO₂ emissions and provide energy security. The three foundations for a sound energy policy are simple, widely accepted, and proven in different states across our country and different countries across the world:

- Let the market determine the most efficient way to achieve emissions targets
- Set clear, consistent long-term signals for enhanced energy performance
- Stimulate innovation in new technology

The single most important policy is to put a price on carbon. Businesses want the certainty that will unleash innovation and investment to create jobs now and ensure America is the worldwide leader of the next great global industry: sustainable energy. We are not on that path today.

In short, we endorse a cap on carbon emissions. It alone cannot meet all our objectives, so we must adopt complementary programs for an economically viable and smooth transition.

I. GREENHOUSE GAS EMISSIONS: WHY CAP THEM AND WHY NOW?

A. Why a Cap and Trade System?

We need Cap and Trade to reduce greenhouse gas emissions. There is broad consensus among scientists that global warming is a threat and greenhouse gases exacerbate the problem. Today, the world emits CO₂ into the atmosphere without any economic consequences, and the United States is one of its largest emitters. A globally negotiated Cap and Trade system would help the world reduce CO₂ emissions in a pragmatic and swift way.

We need Cap and Trade for the U.S. to be a market leader in the sustainable economy. A cap should create massive new markets for energy efficiency and renewable energy by setting a market-based price on carbon. For technology developers, it will signal a large, sustained market for lower carbon-emitting innovations. For utilities and project developers, a well-designed cap will accelerate deployment of lower emitting technologies. And for businesses and investors

financing capital expenditures, a price on carbon will provide certainty for investment decisions made today that will impact tomorrow.

The business community is often incorrectly portrayed as universally opposing climate policy. We believe businesses want certainty, and many favor clear rules for managing carbon. 25 major corporations, including General Electric and Caterpillar, joined the United States Climate Action Partnership (USCAP) to support Cap and Trade policy. USCAP proposes an economy-wide cap-and-trade system that would reduce emissions by 20% by 2020 and 80% by 2050. Their proposal rightly includes domestic and international offsets and calls for a strategic offset and allowance reserve pool to smooth spikes in allowance prices.

Cap and Trade works. The Clean Air Act Amendments of 1990 established a cap and trade system for sulfur and nitrogen pollution from power plants. The market found solutions at one-tenth the projected price, and cut these pollutants by more than half. We believe Cap and Trade works better than alternatives, especially alternatives where several agencies share authority. The potential conflicts between agencies could slow progress. To succeed, any Cap and Trade system should provide clear boundaries for and direction to the EPA and other agencies, so all U.S. government bodies act in concert. Regardless of the administering agency, the approach needs to recognize fundamental differences between the traditional regulation of local pollutants and the global, disperse nature and impact of greenhouse gas emissions.

B. Why Now?

We have already described the importance of the environmental impact of climate policy. It has an important competitive impact as well. If the U.S. fails to adopt an economy-wide carbon abatement program, we will continue to cede leadership in new energy technology to other nations. The U.S. is now home to only two of the ten largest solar photovoltaic producers in the world, two of the top ten wind turbine producers and one of the top ten advanced battery manufacturers. (See Appendix A.) That is, only one-sixth of the world's top renewable energy manufacturers are based in the United States. Last year, less than half the 8,500 gigawatts of wind turbines used in the U.S. were made in the U.S.

Losing our advantage in technologies that were pioneered in the U.S. would cost us dearly. Sustainable technologies in solar, wind, electric vehicles, nuclear and other innovations will, in the view of many on our board, drive the future global economy. We can either invest in policies to build U.S. leadership in these new industries and jobs today, or we can continue with business as usual and buy windmills from Europe, batteries from Japan and solar panels from Asia.

Leading the new green economy could be transformational for our country. Compare it to the internet. Fifteen years ago there was no web browser. There was no internet at your fingertips, no ecommerce, no search engines. Now, the internet has transformed our lives: how we learn and inform, how we entertain and communicate, how we buy and sell goods. Today, the internet economy is estimated at \$1 trillion with 1.5 billion internet users worldwide—and growing.

The new green economy has greater potential. Energy is a \$6 trillion market with 4 billion users of electricity—and usage doubling in 25 years. It is perhaps the largest economic opportunity of

the 21st century. With the right policies driving innovation and investment, America can retake the lead in energy technology and create millions of new green jobs and industries, preserve millions of indirect jobs and repower our economy.

II. CRAFTING AN ECONOMICALLY SOUND CARBON POLICY

A. Global Problems Require a Global Solution

Federal legislation to establish Cap and Trade will require complementary and coordinated international action. Even the best Cap and Trade system will not prevent many industries from facing serious competitiveness concerns, particularly from developing nations, in the absence of international regulatory and policy collaboration.

It is clear that the rest of the world must also move to lower carbon-emitting energy if we want to reduce global emissions by meaningful levels. It is also clear that global leadership is forming to define and craft a global policy solution. Indeed, we think it is imperative that the U.S. take the lead in shaping global policy and that it do so in Copenhagen. India and China are increasing emissions as their populations urbanize and seek the same energy intensive goods and services we do; if they do not reduce emissions, any decreases we generate could be outweighed by increasing emissions in Asia. In addition, if other countries do not adopt a comparable system, we could become less competitive as their goods and services could have lower costs.

We cannot convince China and India to lower emissions unless we are willing to do so ourselves. The United States, as an industrial powerhouse, uses almost as much energy each year as India and China combined, but has only 12% of their combined population. We emit more CO₂ from transportation than all of Europe, China and India combined. We must commit to a path to drive our CO₂ emissions down if we want secure footing in Copenhagen to help lead the world to a clean energy economy.

B. Offsetting the Costs of Carbon Pricing

Dramatic changes will come with a cost. While the cost of Cap and Trade will be much less than the cost of doing nothing, American households will be impacted by some level of carbon costs. Because a cap forces us to internalize the costs of our emissions, a carbon abatement policy will raise the prices of many goods and services that are central to our lifestyle. As Paul Krugman succinctly states, “A cap and trade system will raise the price of anything that directly or indirectly leads to the burning of fossil fuels. Electricity, in particular, would become more expensive, since so much generation takes place in coal-powered plants.” By increasing prices for carbon-intensive goods and services, carbon Cap and Trade should drive meaningful behavioral changes and should lead consumers to choose less carbon-intensive goods. At the same time, these price signals will increase the pace and trajectory of technological innovation for lowering carbon emitting energy and enhancing energy efficiency.

The level of these costs will vary over time, and will depend on the structure of the system, the amount of innovation and, crucially, on the efficiency of recycling revenues from carbon emissions back into the economy, or, alternatively, the handling of the initial allocation of

allowances. Current estimates of 2020 costs range from less than \$100 per capita to over \$1,000 per capita depending on many factors, including assumptions around how permits are provided and how much of permit revenue gets rebated to consumers. There is uncertainty among the various complex models, and these models do not account for the benefits of reduced emissions. We think it is important to consider the distributional impact of energy policy and to provide direct relief to consumers so they do not bear the full burden of the adjustment.

To control these costs, regardless of the level, we believe firms should be able to purchase offsets—verified, credentialed, voluntary emissions reductions by domestic or international entities not covered by the cap. Offsets reduce the cost of a climate policy by encouraging firms to implement low-cost reductions and allowing them to sell extra allowances to firms with higher costs for emissions abatement. Policymakers can reduce cost uncertainty by letting firms bank allowances when reductions are relatively cheap, and use those allowances or borrow future ones when emissions reductions are relatively expensive.

These allowances will create a new financial asset and market, and we should diligently oversee this new asset to make sure it develops into a healthy, stable market without unnecessary price volatility. An important part of this effort will be an effective verification and credentialing process and system. We need strict monitoring, including disciplined regulatory reforms, transaction transparency and disclosure, and tools for intervention to ensure the viability of this new market.

C. Smoothing the Coal Transition

We are not suggesting a wholesale, immediate rejection of all carbon-based technologies. Climate change policies need to be aligned with national energy policies, which in turn need to focus on energy security, domestic energy sources, and their availability and cost. To protect industries vulnerable to international competition—and the workers who depend on them—the Administration should consider measures to ensure that the burden of mitigating climate change does not render strategic American industries uncompetitive. A properly designed Cap and Trade program will include transition assistance funds for deploying lower carbon emitting technologies in heavily coal-dependent and energy-intensive economies.

Because coal constitutes roughly half of U.S. electricity generation, and an even larger portion of several emerging economies, including China (80%) and India (70%)¹, coal will be with us for some considerable time, and we must build a lower carbon strategy for coal. We recommend the Administration maintain, and add to, its focus on Carbon Capture and Storage (CCS) technologies. The Economic Recovery Act includes over \$2.4 billion for CCS technology research, development and deployment. We advise the DOE also to focus on CCS, to ensure its emergence as a serious energy strategy. We also recommend joint programs on CCS with China and India, as their adoption of the technology will be crucial to reducing global emissions.

¹ *China's coal output increased from 1.3 billion tons in 2000 to 2.23 billion tons in 2005 making China the world's largest coal producer (next largest is the U.S. with 1.13 billion tons produced in 2005). India's coal consumption increased from 360 million tons in 2000 to 460 million tons in 2005 (5.5%/year over this period).*

III. COMPLEMENTARY POLICIES TO CAP AND TRADE

A cap on carbon is the single most important energy and climate policy this nation could adopt. But it will be far stronger if it is accompanied by complementary policies. We do not have the space to go into detail on all our views on these policies, but they include:

- making utilities an engine of economic recovery through a unified national smart grid and through strong efficiency and renewable energy programs;
- making our buildings, cars and trucks as energy efficient as any in the world; and
- accelerating energy innovation through public, university and private sector R&D.

IV. SUMMARY

Mr. President, we urge you to support a market-based Cap and Trade system that is both economically sustainable and environmentally sound. We believe it can help propel our economy, enhance our energy security goals and help make America the worldwide leader in the next great global industry.

Appendix A. Top Renewable Energy Manufacturers by Market Capitalization
 Source: Lazard Freres, April 2009

Solar PV Suppliers: Top 10 by Market Capitalization

<u>Company Name</u>	<u>Market Cap</u>	<u>Domicile</u>
Kyocera	\$12,224	Japan
First Solar	10,834	United States
Sharp	8,853	Japan
Sanyo	2,738	Japan
Q-Cells	2,215	Germany
SunPower	2,045	United States
Suntech	1,821	China
Yingli Green Energy	764	China
Motech	714	Taiwan
JA Solar	566	China

Wind Turbine Manufacturers: Top 10 by Market Capitalization

<u>Company Name</u>	<u>Market Cap</u>	<u>Domicile</u>
GE	\$106,853	United States
Siemens	49,568	Germany
Mitsubishi	22,024	Japan
Vestas	8,131	Denmark
Acciona	6,385	Spain
Goldwind	5,875	China
Gamesa	3,088	Spain
Suzlon	1,253	India
Nordex	862	Germany
Clipper	127	United Kingdom

Advanced Battery Manufacturers: Top 10 by Market Capitalization

<u>Company Name</u>	<u>Market Cap</u>	<u>Domicile</u>
Panasonic	\$22,372	Japan
Mitsubishi	22,024	Japan
Sumitomo	10,650	Japan
Hitachi	8,936	Japan
Toshiba	8,306	Japan
Johnson Controls	7,131	United States
NGK	4,970	Japan
BYD	3,777	China
Sanyo	2,738	Japan
GS Yuasa	1,796	Japan

INDIVIDUAL MEMBER COMMENTS

The following are comments issued by PERAB members made in the course of deliberation through electronic mail.

From: [Monica Lozano](#)
To: [President's Economic Recovery Advisory Board;](#)
Subject: Re: VOTE ON ENERGY LETTER
Date: Wednesday, June 24, 2009 1:11:29 PM

I strongly support this recommendation but urge us to take into account the impact on small business and minimize the cost of implementation.

-----Original Message-----

From: Goolsbee, Austan D.

To:

CC:

perab@do.treas.gov

<perab@do.treas.gov>
Sent: Fri Jun 19 10:56:22 2009
Subject: VOTE ON ENERGY LETTER

The energy subgroup has completed their preparation and hereby officially present the attached letter on energy and climate change for consideration by the full board.

Please vote YES, NO or OBSTAIN in the first line of your email for whether to send this document to the President.

This is not a draft for editing. But anyone may then provide any analysis or explanation in the remaining body of your email.

These votes, explanations and deliberations will be recorded on the website for the public record.

Make sure you send it to perab@do.treas.gov (cc'd in the list above) and please send in your vote by WED, JUN 24th,

Austan

From: [REDACTED]
To: [REDACTED]
cc: [President's Economic Recovery Advisory Board;](#)
Subject: RE: VOTE ON ENERGY LETTER
Date: Thursday, June 25, 2009 1:27:51 PM
Attachments: [REDACTED]

please add the following to my vote:

" A market based solution for cap and trade trading is a key priority for success in reducing greenhouse gas emissions. As we have seen with other OTC and/or exchanged traded products, there will be a need for a globally coordinated, comprehensive framework including but not limited to disclosure, accounting standards, operational risk, and regulation to ensure that rules and controls are fully in place."

From: Wolf, Robert
Sent: Wednesday, June 24, 2009 2:24 PM
To: [REDACTED]
Cc: 'perab@do.treas.gov'
Subject: Re: VOTE ON ENERGY LETTER

Robert Wolf-YES.

From: Goolsbee, Austan D.

To: [REDACTED]

Cc: [REDACTED]

[REDACTED]

perab@do.treas.gov
Sent: Fri Jun 19 13:56:22 2009
Subject: VOTE ON ENERGY LETTER

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Austan

From: [Jeremy Smith](#)
To: [REDACTED]; [Anna Burger](#); [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
cc: [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[President's Economic Recovery Advisory Board](#);
Subject: RE: VOTE ON ENERGY LETTER
Date: Wednesday, June 24, 2009 4:57:35 PM

Austan,

Anna votes yes, with the following note of concern.

Although I am voting yes on this memo, I have serious concerns about the use of international offsets endorsed in section B of the memo, because they would permit US companies to meet carbon reduction targets without purchasing permits to emit carbon dioxide or reducing their emissions by shifting to cleaner energy. Instead of buying wind power, or insulating commercial office buildings in the US, companies could invest in solar power or energy efficiency projects in other countries if it was cheaper to do so. They could also invest in forest protection or other kinds of carbon sequestration projects overseas. In effect, this policy could allow for offshoring many of the new "green jobs" that are so needed domestically, and would be directly at odds with President Obama's goals to create a new domestic green economy as part of economic recovery. Furthermore, with the use of international offsets, it is possible that working families would be paying more for domestic energy, while US companies would be continuing to emit carbon dioxide and using funds from higher utility rates to make investments in projects in other countries.

Please let me know if you have any questions or concerns.

Jeremy Smith

From: Goolsbee, Austan D. [REDACTED]

Sent: Fri 6/19/2009 1:56 PM

To: [REDACTED]

Cc: [REDACTED]

[REDACTED]perab@do.treas.gov

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Austan

From: [Goolsbee, Austan D.](#)
To: [President's Economic Recovery Advisory Board;](#)
cc: [REDACTED]
Subject: FW: VOTE ON ENERGY LETTER
Date: Friday, June 26, 2009 1:40:02 PM
Attachments: [PERAB.C&T.June20.doc](#)

From: Martin Feldstein [REDACTED]
Sent: Saturday, June 20, 2009 5:52 PM
To: Goolsbee, Austan D.
Subject: Re: VOTE ON ENERGY LETTER

I vote NO and wish to have my explanation (attached) part of the public record.

Marty

On Fri, Jun 19, 2009 at 1:56 PM, Goolsbee, Austan D. <[REDACTED]> wrote:

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Austan

To: Members of the PERAB
From: Martin Feldstein

Recommendation on Cap and Trade
June 20, 2009

I am voting against the statement for the reasons discussed below.

I wonder what the purpose is in sending such a memo to the President. With the exception of some of the comments about coal, it basically just tells the President that we favor C&T, something to which he has been committed since the campaign. There are no further recommendations or comments on the specific legislation that is working its way through the Congress.

Shouldn't we comment specifically on the legislation that he must accept or negotiate to change. The piece as written is simply a blanket endorsement of any cap and trade system.

I do not favor enacting a C&T system now, particularly the Waxman-Markey bill. My advice to the president would be:

(1) Do not accept any US cap and trade legislation until we have an agreement with the Chinese, the Indians and other emerging market countries. Do not expect them to accept a reduction in their current CO₂ emission level. The negotiation should allow them to raise their CO₂ but at a slower rate than they would otherwise do. In principle, it should be on a path that relates to their rising GDP so that their CO₂ emissions are allowed to reach the level of CO₂ in the industrial countries when their incomes approach ours. There is no indication that the Chinese or Indians will follow us if we act now rather than seek to negotiate with them. We don't do trade policy by reducing our tariffs and hoping others will follow.

(2) Do not legislate a C&T plan that will automatically reduce CO₂ to very low levels in the distant future, as Waxman-Markey does. That is a recipe for a large automatic tax increase.

(3) Have this legislation sunset at the end of 7 years. That will give enough time to see how the cap and trade system works in practice and how well compliance works not only in the US but in other countries as well.

(4) The Waxman-Markey bill is full of administrative regulations that run counter to the goal of letting the market reduce emissions in the most efficient way.

(5) Do not claim this is worth doing to create jobs. Within a few years the US economy will return to full employment. We do not need an industrial policy to create full employment. A policy that favors some industries will simply take

employment away from other industries, not increase overall employment.

(6) In a cap and trade system the future price of CO₂ are inherently uncertain. If the aim is the "set clear prices" to guide business and household capital purchases, a carbon tax is preferable.

(7) The price increases that result from any cap and trade policy will affect the international competitiveness of U.S. firms. There is a danger that this will lead to calls for protectionism. Any legislation and any international agreement should specifically agree that tariffs or subsidies should not be used to offset these changes in international comparative advantage.

(8) Substantial research funds should be made available to study various forms of geo-engineering that would reduce global warming without the adverse effects on growth and on real incomes that would result from the cap and trade system or other forms of CO₂ reduction.

I don't expect the group to support all of these recommendations or comments. I just want everyone to understand why I do not support the Waxman-Markey bill and will not join the majority in supporting the recommendation to the President that supports cap and trade in general without making the above points.