

The Ripon Forum

November/December 2008
Volume 42, No. 5

MEG WHITMAN:
A New Generation
of Republican



MAN with a PLAN

Lamar Alexander's proposal to reduce
America's dependence on foreign oil

Plus: Jack Gerard discusses how advances
in technology have altered the drilling debate

And: Vern Ehlers explains why water, not oil,
is our most precious natural resource



Network Access Terminal



Mission Critical Communications Today ...on a network built for tomorrow

M/A-COM VIDA networks from Tyco Electronics, the industry pioneer in technologically superior, true end-to-end IP-based communication networks.

M/A-COM VIDA IP network solutions deliver secure Voice, Interoperability, Data and total Access for any communications system on a single IP backbone.

M/A-COM VIDA networks. Total *Secure* Access.

For more information: 1-800-368-3277 • www.macom-wireless.com

© 2008 Tyco Electronics Corporation



Our commitment. Your advantage.

The Ripon Forum

*"Ideas that matter,
since 1965."*

Volume 43, No. 5, November/December 2008

In the Arena

- 4 **Bobby Jindal: Calm in the Storm**
With a hurricane bearing down on the Gulf Coast, Louisiana's Governor provided his state with steady leadership.

Cover Story

- 5 **A New Manhattan Project for Clean Energy**
By Lamar Alexander
At a time when people are looking for solutions to the Nation's energy challenges, this Tennessee Senator sets forth a bold plan that would provide just that.

Articles

- 10 **What People Pay for Power**
By David Kreutzer
What if you had to deposit a coin every time you started your car or turned on your computer? As this energy expert shows us, the costs would quickly add up.
- 12 **Memo to the President-Elect**
By William Antholis & Charles Ebinger
Two scholars from the Brookings Institution propose a way for the new Administration to protect our climate and secure our energy future at the same time.
- 15 **How Technology has Advanced the Drilling Debate**
By Jack Gerard
A new consensus has emerged in support of offshore drilling. The reason has less to do with rising gas prices than with the fact that drilling is now safer.

Articles (cont'd.)

- 18 **Water, Not Oil, Is America's Most Precious Resource**
By Vernon J. Ehlers
As the United States focuses on energy security, this Michigan Congressman reminds us about the resource even more critical to our survival.
- 20 **America's Energy Grid: Building for the Future**
By Thomas R. Kuhn
Upgrading our electric infrastructure will require massive investments in energy efficiency programs, generation, transmission, and distribution
- 22 **The Use of Nuclear Power in the United States**
By Frank L. "Skip" Bowman
Far from being behind the curve compared with other countries, the U.S. leads the world in nuclear generating capacity and is preparing for more.

Politics & Perspective

- 24 **The Challenges That Lie Ahead**
By Chuck Hagel
The retiring Senator from Nebraska looks at the domestic and global challenges facing our next President.

Sections

- 3 **In this Edition**
- 28 **Ripon Profile**
Meg Whitman

Publisher The Ripon Society	Editor Louis M. Zickar	One Year Subscription: \$35.00 individuals \$10.00 students	Comments, opinion editorials and letters should be addressed to: The Ripon Forum, 1300 L Street, NW, Suite 900, Washington, DC 20005 or may be transmitted electronically to: editor@riponsociety.org.
President Richard S. Kessler	Editorial Assistants Meredith Freed Alli Brennan Eleanor Thompson		
Chief Administrative Officer George McNeill		The Ripon Forum (ISSN 0035-5526) is published bi-monthly by The Ripon Society. The Ripon Society is located at 1300 L Street, NW, Suite 900, Washington, DC 20005.	In publishing this magazine, the Ripon Society seeks to provide a forum for fresh ideas, well-researched proposals, and for a spirit of criticism, innovation, and independent thinking within the Republican Party.
Editorial Board William Frenzel William Meub Billy Pitts	© Copyright 2008 By The Ripon Society All Rights Reserved	Postmaster, send address changes to: The Ripon Forum, 1300 L Street, NW, Suite 900, Washington, DC 20005.	

46 Years of Public Policy



Founded 1962

1300 L Street, NW, Suite 900
Washington, DC 20005
(202) 216-1008
www.riponsociety.org

**THE RIPON SOCIETY HONORARY
CONGRESSIONAL ADVISORY BOARD**

Senator Chuck Hagel (NE)

Senate Chairman

Representative Thomas E. Petri (WI)

House Chairman

Senator Richard Burr (NC)

Senator Norm Coleman (MN)

Senator Susan M. Collins (ME)

Senator Judd Gregg (NH)

Senator Orrin G. Hatch (UT)

Senator Pat Roberts (KS)

Senator Gordon Smith (OR)

Senator Olympia J. Snowe (ME)

Senator Arlen Specter (PA)

Senator Ted Stevens (AK)

Representative Judy Biggert (IL)

Representative Roy Blunt (MO)

Representative Ken Calvert (CA)

Representative Dave Camp (MI)

Representative Eric I. Cantor (VA)

Representative Michael Castle (DE)

Representative Howard Coble (NC)

Representative Ander Crenshaw (FL)

Representative Thomas M. Davis III (VA)

Representative Vernon Ehlers (MI)

Representative Jo Ann H. Emerson (MO)

Representative Philip S. English (PA)

Representative Mike Ferguson (NJ)

Representative Vito Fossella (NY)

Representative Rodney Frelinghuysen (NJ)

Representative Kay Granger (TX)

Representative Robin Hayes (NC)

Representative David Hobson (OH)

Representative Ray H. LaHood (IL)

Representative Steven LaTourette (OH)

Representative Jerry Lewis (CA)

Representative Jim McCrery (LA)

Representative Deborah Pryce (OH)

Representative Adam Putnam (FL)

Representative Jim Ramstad (MN)

Representative Ralph Regula (OH)

Representative Christopher Shays (CT)

Representative Fred Upton (MI)

Representative James T. Walsh (NY)

Representative Edward Whitfield (KY)

The Ripon Society is a research and policy organization located in Washington, D.C. There are National Associate members throughout the United States.



In this Edition

Benjamin Franklin once said that death and taxes are the only things certain. For a time this summer, it appeared that rising gas prices could be added to the list. Although autumn has brought some relief at the pump, there can be little doubt that the energy challenges facing our nation remain.

The United States currently imports around 60 percent of its oil from foreign countries. With demand for oil increasing in rising powers such as China and India, refining capacities are at their limits and global supplies are being squeezed. Environmentally, a new political consensus has emerged that recognizes not only the threat posed by climate change, but the need to develop alternative sources of fuel.

In this edition of the FORUM, we take a look at those challenges and this new consensus. We center our coverage on the comprehensive plan introduced by Tennessee Senator Lamar Alexander, who believes America should create a 21st century equivalent of the Manhattan Project in pursuit of clean energy.

This edition also features a “Memo to the President-Elect” on energy from two scholars at the Brookings Institution, and an insightful essay by David Kreutzer with the Heritage Foundation on what people pay for power everyday.

In addition, Michigan Congressman Vern Ehlers shares his thoughts on what he considers the most precious resource of all, while the leaders of the petroleum, electrical, and nuclear sectors discuss what their respective industries are doing to meet the energy challenges we face.

With every challenge comes opportunity. At a time when the American people are looking for solutions to the nation’s most pressing problems, energy is an issue that provides Republicans with an opportunity to make a difference in people’s lives.

Solutions begin with ideas, and it is our hope that this edition has highlighted some that will merit further debate and discussion in the months ahead.

Louis M. Zickar
Editor
RIPON FORUM
editor@riponsociety.org

IN THE ARENA

"It is not the critic who counts: not the man who points out how the strong man stumbles or where the doer of deeds could have done better. The credit belongs to the man who is actually in the arena..."

Theodore Roosevelt



MEREDITH FREED

During a July 2008 interview, Louisiana Governor Bobby Jindal told Fox News that, "when something happens in your state, as a governor, you have got to [be] willing to make those hard choices and not worry about taking the blame later." In early September when hurricane Gustav pounded Louisiana, Governor Jindal personified this sentiment and proved himself a successful leader by taking decisive action in planning for, responding to, and rebuilding after the storm.

The first key to Jindal's success was thorough preparation. Land, rail, and air transportation were coordinated to facilitate the evacuation of 1.9 million residents, the largest ever in U.S. history. To assist with the evacuation, over 1,100 state troopers were put on notice along with over 7,000 members of the Louisiana National Guard. Search-and-rescue units were pre-positioned, shelters were opened, hundreds of thousands of meals ready to eat and liters of water were prepped for distribution, and contracts for ice were activated. Several days before Gustav's predicted landfall, Jindal issued a statewide declaration of emergency and contacted both President Bush and FEMA to request a pre-landfall federal disaster declaration and secure a streamlined response effort.

Governor Jindal demonstrated sound judgment and decisive action when unforeseen challenges arose. When buses contracted for the evacuation failed to

arrive, school buses were assembled to replace them. And when meals promised by FEMA were not delivered as scheduled, Governor Jindal chose not to sit and wait and instead called on local businesses and community groups to set up kitchens and help feed those in need.

Jindal's leadership continues to be integral to recovery efforts in hurricane-ravaged areas. In the aftermath of

hurricane Katrina in 2005, much criticism was leveled at the slow government response and lack of emergent leadership. The state-run Road Home program — initiated by the previous administration in response to hurricanes Katrina and Rita — has yet to provide aid to 15 percent of the applicants deemed eligible. By contrast, Jindal has emphasized that he is opposed to creating a similar bureaucracy. Instead, he prefers that the money go directly to local governments which can assess their own needs accordingly, believing it is in the best interest of the recovery process and the state. And that, perhaps, is the key to Jindal's success.

"I don't care if this is the last political office I hold," he told the Washington Times, "as long as I

do what's right for my state." Doing what's right for his state. It is this style of leadership that has contributed to Governor Jindal's success -- not only in Louisiana, but in the arena of public service, as well. **RF**



BOBBY JINDAL: CALM IN THE EYE OF A STORM

Meredith Freed is an editorial assistant with the Ripon Forum.

A New Manhattan Project for Clean Energy

LAMAR ALEXANDER

In 1942, President Franklin D. Roosevelt asked Sen. Kenneth McKellar, the Tennessean who chaired the Appropriations Committee, to hide \$2 billion in the appropriations bill for a secret project to win World War II. Senator McKellar replied, “Mr. President, I have just one question: where in Tennessee do you want me to hide it?”

That place in Tennessee turned out to be Oak Ridge, one of three secret cities that became the principal sites for the Manhattan Project. The purpose of the Manhattan Project was to find a way to split the atom and build a bomb before Germany could. Nearly 200,000 people worked secretly in 30 different sites in three countries. President Roosevelt’s \$2 billion appropriation would be \$24 billion today.

According to New York Times science reporter William Laurence, “Into [the bomb’s] design went millions of man-hours of what is without doubt the most concentrated intellectual effort in history.”

I propose that the United States launch a new Manhattan project: a 5-year project to put America firmly on the path to clean energy independence. Instead of ending a war, the goal will be clean energy independence – so that we can deal with rising gasoline prices, electricity prices, clean air, climate change and national security – for our country first, and – because other countries have the same urgent needs and therefore will adopt our ideas – for the rest of the world.

By independence I do not mean that the United States would never buy oil from Mexico or Canada or Saudi Arabia. By independence I do mean that the United States could never be held hostage by any country for our energy needs.

In 1942, many were afraid that the first country to build an atomic bomb could blackmail the rest of the world. Today, countries that supply oil and natural gas can blackmail the rest of the world.

In 1942, many were afraid that the first country to build an atomic bomb could blackmail the rest of the world. Today, countries that supply oil and natural gas can blackmail the rest of the world.

Not a new idea

A new Manhattan Project is not a new idea – but it is a good idea and fits the goal of clean energy independence.

The Apollo Program to send men to the moon in the 1960s was a kind of Manhattan Project. John McCain and Barack Obama have called for a Manhattan Project for new energy sources. So have former House Speaker Newt Gingrich, Democratic National Committee chairman Howard

Dean, Sen. Susan Collins of Maine and Sen. Kit Bond of Missouri – among others.

And, throughout the two years of discussion that led to the passage in 2007 of the America COMPETES Act, several participants suggested that focusing on energy independence would force the kind of investments in the physical sciences and research that the United States needs to maintain its competitiveness.

A new overwhelming challenge

The overwhelming challenge in 1942 was the prospect that Germany would build the bomb and

win the war before America did.

The overwhelming challenge today, according to National Academy of Sciences president Ralph Cicerone, is to discover ways to satisfy the human demand for and use of energy in an environmentally satisfactory and affordable way so that we are not overly dependent on overseas sources.

Cicerone estimates that this year Americans will pay \$500 billion overseas for oil – that’s \$1,600 for each one of us – some of it to nations that are hostile or even trying to kill us by bankrolling terrorists. Sending \$500 billion abroad weakens our dollar. It is half our trade deficit. It is forcing gasoline prices toward \$4 a gallon and crushing family budgets.

Then there are the environmental consequences. If worldwide energy usage continues to grow as it has, humans will inject as much CO2 into the air from fossil fuel burning between 2000 and 2030 as they did between 1850 and 2000. There is plenty of coal to help achieve our energy independence, but there is no commercial way (yet) to capture and store the carbon from so much coal burning – and we have not finished the job of controlling sulfur, nitrogen, and mercury emissions.

The Manhattan Project model fits today. In addition to the need to meet an overwhelming challenge, other characteristics of the original Manhattan Project are suited to this new challenge:

- It needs to proceed as fast as possible along several tracks to reach the goal. According to Don Gillespie, a young engineer at Los Alamos during World War II, the “entire project was

being conducted using a shotgun approach, trying all possible approaches simultaneously, without regard to cost, to speed toward a conclusion.”

- It needs presidential focus and bipartisan support in Congress.

- It needs the kind of centralized, gruff leadership that Gen. Leslie R. Groves of the Army Corps of Engineers gave the first Manhattan Project.

- It needs to “break the mold.” To borrow the words of Dr. J. Robert Oppenheimer in a speech to Los Alamos scientists in November of 1945, the challenge of clean energy independence is “too revolutionary to consider in the framework of old ideas.”

- Most important, in the words of George Cowan as reported in the excellent book edited by Cynthia C. Kelly, “... The Manhattan Project model starts with a small, diverse group of great minds.”

I said to the National Academies when we first asked for their help on the America COMPETES Act in 2005, “In Washington, D.C., most ideas fail for lack of the idea.” The America COMPETES model fits, too. There are some lessons, too, from America COMPETES.

Remember how it happened. Just three years ago – in May 2005 – a bipartisan group of us asked the National Academies to tell Congress in priority order the 10 most important steps we could take to help America keep its brainpower advantage.

By October, the Academies had assembled a “small diverse group of great minds” chaired by Norm Augustine which presented to Congress and to the President 20 specific recommendations in a report called “Rising Above the Gathering



I propose that the United States launch a new Manhattan project: a 5-year project to put America firmly on the path to clean energy independence.

Storm.” We also considered proposals by other competitiveness commissions.

Then, in January 2006, President Bush outlined his American Competitiveness Initiative to double over 10 years basic research budgets for the physical sciences and engineering. The Republican and Democratic Senate leaders and 68 other senators sponsored the legislation. It became law by August 2007, with strong support from Speaker Pelosi and the President.

Combining the model of the Manhattan Project with the process of the America COMPETES Act has already begun. The National Academies have underway an “America’s Energy Future” project that will be completed in 2010. Ralph Cicerone has welcomed sitting down with a bipartisan group to discuss what concrete proposals we might offer earlier than that to the new president and the new Congress. Energy Secretary Sam Bodman and Ray Orbach, the Energy Department’s Under Secretary for Science, have said the same. There is also bipartisan interest in Congress.

So, how to proceed?

New Mexico Senator Jeff Bingaman’s first reaction to the idea of a new Manhattan Project was that instead we need several mini-Manhattan Projects. He suggested as an example the “14 Grand Challenges for Engineering in the 21st Century” laid out by former MIT President Chuck Vest, the president of the National Academy of Engineering – three of which involve energy. I agree with Senator Bingaman and Chuck Vest.

Congress doesn’t do “comprehensive” well, as was demonstrated by the collapse of the comprehensive immigration bill. Step-by-step solutions or different tracks toward one goal are easier to digest and have fewer surprises. And, of course, the original Manhattan Project itself proceeded along several tracks toward one goal.

Here are my criteria for choosing several grand challenges:

- *Grand consequences, too* – The United

States uses 25 percent of all the energy in the world. Interesting solutions for small problems producing small results should be a part of some other project.

- *Real scientific breakthroughs* – This is not about drilling offshore for oil or natural gas in an environmentally clean way or building a new generation of nuclear power plants, both of which we already know how to do – and, in my opinion, should be doing.

- *Five years* – Grand challenges should put the United States within five years firmly on a path to clean energy independence so that goal can be achieved within a generation.

- *Family Budget* – Solutions need to fit the family budget, and costs of different solutions need to be compared.

- *Consensus* – The Augustine panel that drafted the “Gathering Storm” report wisely avoided some germane topics, such as excessive litigation, upon which they could not agree, figuring that Congress might not be able to agree either.

To borrow the words of Dr. J. Robert Oppenheimer in a speech to Los Alamos scientists in November of 1945, the challenge of clean energy independence is “too revolutionary to consider in the framework of old ideas.”

Seven grand challenges

Rather than having members of Congress proclaim these challenges, or asking scientists alone to suggest them, I believe there needs to be preliminary discussion – including about whether the criteria are correct. Then, Congress can pose to scientists questions about the steps to take to achieve the grand challenges.

To begin the discussion, I suggest asking what steps Congress and the federal government should take during the next five years toward these seven grand challenges so that the United States would be firmly on the path toward clean energy independence within a generation:

1. Make plug-in electric cars and trucks commonplace. In the 1960s, H. Ross Perot noticed that when banks in Texas locked their doors at 5 p.m., they also turned off their new computers. Perot bought the idle nighttime bank

computer capacity and made a deal with states to manage Medicare and Medicaid data. Banks made money, states saved money, and Perot made a billion dollars.

Idle nighttime bank computer capacity in the 1960s reminds me of idle nighttime power plant capacity in 2008. This is why:

-The Tennessee Valley Authority (TVA) has 7,000-8,000 megawatts – the equivalent of seven or eight nuclear power plants or 15 coal plants – of unused electric capacity most nights.

-Beginning in 2010 Nissan, Toyota, General Motors and Ford will sell electric cars that can be plugged into wall sockets. FedEx is already using hybrid delivery trucks.

-TVA could offer “smart meters” that would allow its 8.7 million customers to plug in their vehicles to “fill up” at night for only a few dollars, in exchange for the customer paying more for electricity between 4 p.m. and 10 pm. when the grid is busy.

-Sixty percent of Americans drive less than 30 miles each day. Those Americans could drive a plug-in electric car or truck without using a drop of gasoline. By some estimates, there is so much idle electric capacity in power plants at night that over time we could replace three-fourths of our light vehicles with plug-ins. That could reduce our overseas oil bill from \$500 billion to \$250 billion – and do it all without building one new power plant.

-In other words, we have the plug. The cars are coming. All we need is the cord.

Too good to be true? Haven't U.S. presidents back to Nixon promised revolutionary vehicles?

Yes, but times have changed.

Batteries are better. Gas is more expensive. We are angry about sending so many dollars overseas, worried about climate change and clean air. And, consumers have already bought one million hybrid vehicles and are waiting in line to buy more – even without the plug-in. Down the road is the prospect of a hydrogen fuel-cell hybrid vehicle, with two engines – neither of which uses a drop of gasoline.

Still, there are obstacles. Expensive batteries make the additional cost per electric car \$8,000-\$11,000. Smart metering is not widespread. There

will be increased pollution from the operation of coal plants at night. We know how to get rid of those sulfur, nitrogen, and mercury pollutants (and should do it), but haven't yet found a way to get rid of the carbon produced by widespread use in coal burning power plants. Which brings us to the second grand challenge:

2. Make carbon capture and storage a reality for coal-burning power

plants. This was one of the National Academy of Engineering's grand challenges. And there may be solutions other than underground storage, such as using algae to capture carbon. Interestingly, the Natural Resources Defense Council argues that, after conservation, coal with carbon capture is the best option for clean energy independence because it provides for the growing power needs of the U.S. and will be easily adopted by other countries.

3. Make solar power cost competitive with power from fossil fuels. This is a second of the National Institute's grand challenges. Solar power,



If worldwide energy usage continues to grow as it has, humans will inject as much CO2 into the air from fossil fuel burning between 2000 and 2030 as they did between 1850 and 2000.

despite 50 years of trying, produces one one-hundredth of one percent of America's electricity. The cost of putting solar panels on homes averages \$25,000-\$30,000 and the electricity produced, for the most part, can't be stored.

Now, there is new photovoltaic research as well as promising solar thermal power plants, which capture the sunlight using mirrors, turn heat into steam, and store it underground until the customer needs it.

4. Safely reprocess and store nuclear waste. Nuclear plants produce 20 percent of America's electricity, but 70 percent of America's clean electricity – that is, electricity that does not pollute the air with mercury, nitrogen, sulfur, or carbon. The most important breakthrough needed during the next five years to build more nuclear power plants is solving the problem of what to do with nuclear waste.

A political stalemate has stopped nuclear waste from going to Yucca Mountain in Nevada, and \$15 billion collected from ratepayers for that purpose is sitting in a bank. Recycling waste could reduce its mass by 90 percent, creating less stuff to store temporarily while long-term storage is resolved.

5. Make advanced biofuels cost-competitive with gasoline. The backlash toward ethanol made from corn because of its effect on food prices is a reminder to beware of the great law of unintended consequences when issuing grand challenges. Ethanol from cellulosic materials shows great promise, but there are a limited number of cars capable of using alternative fuels and of places for drivers to buy it. Turning coal into liquid fuel is an established technology, but expensive and a producer of much carbon.

6. Make new buildings green buildings. Japan believes it may miss its 2012 Kyoto goals for greenhouse gas reductions primarily because of energy wasted by inefficient buildings. Many of the technologies needed to do this are known. Figuring out how to accelerate their use in a decentralized society is most of this grand challenge.

7. Provide energy from fusion. The idea of recreating on Earth the way the sun creates energy and using it for commercial power is the third grand challenge suggested by the National Academy of Engineering. The promise of sustaining a controlled fusion reaction for commercial power generation is so fantastic that the five-year goal should be to do everything possible to reach the long-term goal. The failure of Congress to approve the President's budget request for U.S. participation in the International Thermonuclear Experimental Reactor – the ITER Project – is embarrassing.

Anything is possible

This country of ours is a remarkable place. Even during an economic slowdown, we will produce this year about 30 percent of all the wealth in the world for the 5 percent of us who live in the United States.

Despite “the gathering storm” of concern about American competitiveness, no other country approaches our brainpower advantage – the collection of research universities, national laboratories and private-sector companies we have.

And this is still the only country where people say with a straight face that anything is possible – and really believe it.

These are precisely the ingredients that America needs during the next five years to place ourselves firmly on a path to clean energy independence within a generation – and in doing so, to make our jobs more secure, to help balance the family budget, to make our air cleaner and our planet safer and healthier – and to lead the world to do the same.

RF

Lamar Alexander is the senior Senator from Tennessee in the United States Senate. He is a member of the Senate Environment and Public Works Committee, which oversees clean air and climate change issues. This essay is drawn from a speech he delivered in Washington, DC, earlier this year.

What People Pay for Power

DAVID W. KREUTZER, PH.D.

As a student (a drop-out student) I took a tour of Europe in 1977. Done on \$10 per day, the tour introduced me to coin-operated water heaters. They were not limited to cheap hotels, but were also found in some rental units of people I visited. I remember taking shorter and colder showers. Though I am very much against it, I wonder what our day would be like if all energy-consumption were on a coin-operated basis?

Before we wake up, we need some definitions. A watt is a measure of power. A watt-hour is a measure of energy. We are interested in energy -- that's how we pay for electricity. The standard measure is kilowatt-hour (kWh), and the average cost per kWh in the U.S. this past July was \$0.115, eleven and one-half cents. Running the hair dryer on medium (1,000 watts) would cost you \$0.115 for an hour.

Begin the day by turning off the alarm on the clock-radio. The radio is one of the best electricity deals in the house - it consumes one watt. That is

just 24 watt-hours or 0.024 kWh per day. You're on the hook for 2 cents per week for the radio.

Now for that shower. A 10-minute shower will use 25 gallons if you have a flow restrictor shower head. Some of that is cold water. The 15 gallons of hot water will cost you \$0.41. If you take a 12-minute shower,



it will cost 50 cents, and we can use quarters in the coin slot.

I still eat eggs for breakfast. For this thought experiment, you will too. A stove eye turned to up half way uses about 750 watts. Take six minutes to heat the pan and cook the eggs, and it costs about a penny. Two pieces of toast use 0.045 kWh and will cost another half-

penny. Coffee? We're still in the penny range. The electricity cost for one breakfast is about five cents. This is just for one person. And we didn't price the cost of keeping the OJ and eggs in the refrigerator.

How often would you need to feed coins into your refrigerator? Let's put a 24-hour meter on it so you don't need to make change so often. A five to 10-year-old refrigerator will use about \$85 worth of electricity per year. That's about a quarter per day.

Driving to work will cost you. The average commute is 16 miles each way. Gas mileage isn't so good during rush hour, so it's about two gallons per day round trip. Last July that cost over \$8 per day. Now it is less than \$6. We don't want you to be distracted by having to put coins in the box while you drive, so we'll charge you once per week. Okay, that's pretty much how it is done already.

The boss pays for energy at work. The meters start up again when you get home.

Turn on the lights when you come home. A 100-watt

incandescent bulb runs 1.15 cents per hour. The light-vending machines will take pennies. The problem is, there are a bunch of them, and they run a lot. If you have the equivalent of 10 100-watt bulbs running for eight hours, your light bill is almost a dollar per day or \$365 per year.

Want to watch TV? Conventional TVs use about 130 watts, but a 42-inch plasma version will run at 350 watts. That's about a nickel per hour. The average American watches four hours per day. That's twenty cents per day. Keep a bowl of nickels next to the bowl of potato chips. While we are talking about potatoes, the big problem is we can't put the coin machine on the remote. You'll have to get up. Is more than one TV going during those four hours? If "yes," then multiply.

It's time to check your email. Computers use about 350 watts. If you leave one on all day, it will cost you a buck. Two computers will run you \$60 per month just for electricity. You might want to think about turning them off.

From October through May the average household spends about \$5/day on heating. So you will need to keep several rolls of quarters near the thermostat.

Now go back to bed.

Oops! We forgot about dinner, and driving to the grocery store and going to Grandma's, and the coin machine the airlines will need to install with the seats (let's hope the other passengers remember to bring change), air-conditioning, laundry and

myriad other things. All of it together will add up to about \$5,000 per household per year (and that's not counting the jet fuel). It seems to be getting more expensive.

As energy prices rise, consumers do two things: They spend more and consume less.

As gasoline prices rose over the past year, people drove less, purchased fewer gas hogs, and got poorer.

This is very much what will happen with severe restrictions on CO₂ emissions. Right now 85 percent of our energy use comes from fossil fuels. The renewable-fuel supply cannot grow fast enough over the next

As energy prices rise, consumers do two things: They spend more and consume less.

couple of decades to substitute for the cuts in CO₂ outlined in congressional legislation. The EPA estimated that electricity costs will rise by nearly 80 percent by 2030 compared to the costs without CO₂ restrictions.

In response, consumers will, to some extent, go "green." A new refrigerator will use about 30 percent less electricity than that 10-year-old one. Since you will probably buy a new one in the next 20 years anyway, switching refrigerators isn't much of a problem. But the increased efficiency isn't enough to completely offset the higher electricity prices. So, poorer is still part of the equation.

Consumers also may switch to more efficient washers, dryers and dishwashers. But the high-efficiency models, here, cost up to twice as much. This leaves less money for everything else, and you still pay more in total for the electricity.

Similarly, switching to more efficient cars will involve both paying more and switching to something smaller. For some, going smaller may not matter much, but for families with car seats and soccer teams to move, it may matter a lot.

TVs and computers may get "smart" about turning themselves off or down. But they won't get smart for free. Smaller houses cost less to heat and cool. High energy costs will, again in part, be met by moves to smaller houses and apartments.

These adjustments and many more are exactly what we see when energy costs go up for whatever reason. We observe the changes over time when our energy costs rise, and we observe the different consumption patterns among countries with different energy costs.

So we know what will happen when energy becomes scarcer and more costly. Whether the scarcity is driven by growing worldwide demand or whether it's driven by legislation, we will adapt, but we will get less and pay more. **RF**

David W. Kreutzer, Ph.D., is a Senior Policy Analyst in Energy Economics and Climate Change at The Heritage Foundation.

Memo to the President-Elect

WILLIAM ANTHOLIS AND
CHARLES EBINGER

Building a secure energy future – including heading off catastrophic climate change — was a top campaign priority, second only to meeting the ongoing global economic crisis. Successfully addressing both issues simultaneously will require determination, bipartisan leadership and political courage.

We recommend that energy be a cornerstone of your first term. Your inaugural address can introduce the “Energy Security and Climate Protection Act of 2009” to expand on your campaign proposals in low-cost, high impact ways. In doing so, you would address two separate but complementary challenges:

- First, in the medium-term, the legislation will expand on your pledges to stimulate investment in alternative energy sources and the energy infrastructure, by also emphasizing energy-efficient infrastructure, particularly through a federal-state partnership.

- Second, over time, it will expand on your proposals to slash greenhouse gas emissions, by also

launching a global diplomatic energy security campaign and revamping our domestic energy policy institutions.

To accomplish all of this, you will need to invest significant political capital, but this surely is a battle worth fighting.



Your Stance, and Further Recommendations

In the Medium-term: Slash Oil Dependence and “Green” our Infrastructure. Short-term energy markets are impossible to predict or control. Indeed, the recent energy price roller-coaster has dramatically shifted the terrain of policy debates. Members of Congress will pressure you to keep energy prices low and will question whether we can afford investments in new technologies

at a time of economic belt-tightening.

We recommend that you argue that we cannot depend on price declines or be held hostage to price volatility. Reliance on a single commodity for 70 percent of our transportation remains

an economic and geopolitical risk that will only get worse when economic growth resumes. Reducing oil dependence will take time. And broader investment in green infrastructure should support this goal. For at least the next 20 years the vast proportion of our transportation fleet will remain

dependent on petroleum-based fuels. But we must start now.

Renewable energy and conservation: As you proposed in the campaign, switching our transportation fleet to renewable liquid fuels and linking our cars to the electricity grid transfers energy costs to more reliable and predictably priced sources. However, because the start-up costs are high, it has been hard to know whether alternatives can compete with oil. Your policies

can begin to eliminate this uncertainty.

As you laid out in the campaign, the nation can switch half of the auto fleet to plug-in hybrid electric vehicles by 2025, cutting oil consumption by one-third and carbon emissions dramatically. We also can eliminate the carbon footprint further by switching to cellulosic bio-fuels (such as ethanol made from products other than corn).

Conservation also is critical, and you should follow through on your campaign pledge to double automobiles' fuel efficiency. You can go further by promoting similar conservation in trucks and airplanes and emphasizing mass transit and commercial rail.

Federal-state partnership on energy infrastructure and standards; Your campaign pledges to ramp up energy efficiency and expand renewable energy can be best accomplished if you launch a new partnership with state governments, which spend half of all infrastructure funds, most notably on public transportation and smart-growth infrastructure. The variation in state policies—and their climate footprints—is extraordinary. For example, states set standards on air and water pollution, which should be harmonized so that industry does not confront 50 different standards.

The federal government also should provide funding and work with states to meet your campaign pledge to set standards for a “smart electric grid.” Likewise, coordination with the states is necessary to establish a national renewable portfolio standard

(requiring utilities to use renewable energy sources to provide a specified minimum, such as 10 or 20 percent, of all electricity they deliver), as well as to set limits on offshore oil and gas drilling to protect the environment.

Over the Long-term: Comprehensive Transformation of our Carbon Economy. You must remain focused on the long-term goal — and campaign pledge — of cutting CO₂ emissions by 80 percent by 2050. This requires establishing a “price signal,” which will allow industries to plan and will encourage markets to develop in a way that eliminates or

Reliance on a single commodity for 70 percent of our transportation remains an economic and geopolitical risk that will only get worse when economic growth resumes.

captures emissions as efficiently as possible. This system must have several components:

Domestic cap-and-trade; invest in coal and nuclear. We recommend you implement an economy-wide cap-and-trade program, as you pledged in your campaign. Each year the government will either allocate emissions rights or auction them, and companies will buy and sell rights among themselves. Annual emission allowances will decrease over time — eventually cutting total emissions by 80 percent— with responsibilities shared among oil refineries, power plants and

energy-intensive industries.

You have supported auctioning permits, as opposed to allocating them, as more efficient and less subject to political distortions. To control inadvertent stringency or laxity in the cap, you also should consider supporting the “banking” and “borrowing” of emissions permits.

Last summer cap-and-trade legislation failed in the Senate, with many Democrats from both coal-producing and coal-dependent states opposed. The coming recession will hit those states particularly hard, making these key votes even tougher to obtain. You can clear this political hurdle in three ways that build on your campaign promises:

- First, explicitly commit to use a portion of the auction revenue to pay for your medium-term alternative energy investments.
- Second, launch a 20-year R&D initiative to prove that carbon capture and storage technologies are viable and can be provided at reasonable cost. Coal is abundant, indispensable and — if carbon emissions continue unabated — devastating for the earth's climate. More than half of our electricity comes from coal, and over 200 years' worth of coal reserves lie within our borders.
- Third, we recommend that you work domestically and internationally to license and build the next generation of nuclear reactors. Industry should develop a plan of action to raise the contribution of atomic power to 35 percent by 2050. Industry and regulators together must guarantee public safety on nuclear

waste storage, and your diplomacy is needed to ensure that expansion of civilian nuclear power is both environmentally safe and strategically secure.

International: global energy diplomacy built on domestic action. Once domestic legislation is passed — but not before then — you will be in a position to negotiate a General Agreement to Reduce Emissions (GARE). Replacing the Kyoto Protocol with a “general agreement” will take advantage of lessons learned in successful trade negotiations. For example, the process must start with domestic U.S. action and then ratchet upwards, in sync with other nations. It would be particularly helpful if Congress grants you “Climate Protection Authority” — also patterned on “Trade Promotion Authority.” Once so empowered, you and your negotiators can work with other nations to align mutual ambitions in cutting carbon emissions and establishing a system to trade emissions permits across borders.

The GARE will avoid another major drawback of a “treaty protocol”: it does not need a two-thirds majority in the Senate, a minefield where countless treaties go to die. It requires only simple majorities in both houses.

Ask Congress for a resolution supporting a broader energy security diplomatic campaign that addresses a range of energy security issues. This would include convening of a special “E8” summit, bringing together the top eight energy consumers and contributors to the climate crisis: the United States, European Union, China, Russia, India, Japan, Brazil and South Korea.

This campaign should put a

special emphasis on an international collaborative effort to address coal, which has the potential to transform the climate debate worldwide. This should include making good on the U.S. promise to contribute to the new Clean Technology Fund at the World Bank — an effort spearheaded by Secretary Paulson, and which likely would be well received in the developing world. A new coal-fired electricity facility is added in China every week, and the economies of India, Pakistan, Indonesia, South Africa and Poland depend on coal. The United States must both lead and cooperate.

One-on-one energy diplomacy will be vital with China and India,

A new era in energy policy will require a thoroughgoing overhaul of our governing institutions.

in particular. Neither bears any responsibility under Kyoto, and both are reluctant to take on new obligations. They must come to see their own interest in building a more reliable and environmentally sustainable energy future. Both also must become critical partners in confronting nuclear renegades, such as Iran and North Korea.

Even with dramatic oil-price declines, powerful oil-rich nations (such as Russia and Saudi Arabia), as well as hostile regimes (such as Venezuela and Iran), must be central in your thinking about the broader energy security challenge. The fall in oil revenue will pose major problems for the stability of the entire group of oil-rich states, even if it does not affect

their outward taunts and behavior. It is in our country’s interest and theirs to begin to work toward ensuring “stability of oil demand” in exchange for “stability of oil supply.”

Reorganizing Government. A new era in energy policy will require a thoroughgoing overhaul of our governing institutions.

At the White House, you should create a National Energy and Climate Council, patterned on either the successful National Security Council or National Economic Council models. This will require a redesign of the 10 energy-related cabinet agencies and corresponding committees of Congress.

Specifically, the Department of Energy (DOE), Department of the Interior and Environmental Protection Agency will need to be redesigned to:

- advance the clean energy investments you have proposed
- reorder policy priorities towards energy efficiency, and
- develop less intensively carbon-based fuels and end-use technologies.

In particular, you will also have to determine whether DOE, EPA, Treasury, or a new SEC-type agency should establish and operate the domestic emissions trading system.

Given the oversight shortcomings that contributed to the recent financial crisis, any new market must be well regulated. **RF**

William Antholis is Managing Director of the Brookings Institution. Charles Eberling is Director of Brookings’s Energy Security Initiative.

How Technology has Advanced the Drilling Debate

JACK GERARD

The birthright of all Americans is our public lands and our federal offshore areas, which contain vast amounts of oil and natural gas. Many people are surprised by just how much oil and natural gas we, the people own. Yet, what surprises them even more is how much of it has been locked up by federal law, especially at a time when our nation is paying billions of dollars weekly to foreign suppliers for the energy it needs to stay prosperous and strong.

Polls show increasing support for developing these supplies. That may be why, before the election, Congress let lapse long-standing requirements – the so-called “moratoria” on leasing – that had prevented access to most of the oil and natural gas off our coasts for over 25 years. The congressional leadership didn’t try to extend the moratoria because they didn’t have the votes. However, the decision to let the bans expire may be tactical. Some in Congress say they’ll try to re-impose them next year.

Americans are on record favoring drilling by big margins, but anti-drilling advocates still feel they can convince Congress

to bring back the roadblocks to offshore development. Some may claim there’s not enough oil and natural gas offshore to matter. Others will contend there’s more than enough oil and natural gas where companies do



Jack Gerard

have access if they would only produce it. Neither argument is correct.

Crude oil prices hit record highs earlier this year, and companies have been investing more and drilling more. Nevertheless, thanks to the decline in production from existing wells, our domestic output continues to slide, and nearly two out of every three barrels of oil consumed are imported. It’s obvious we need to develop our most promising

oil and natural gas resources, much of which petroleum geologists agree is in federal areas. There’s enough oil and natural gas now locked up there to meet a substantial part of our requirements for decades to come, while also reducing reliance on foreign supplies, creating thousands of U.S. jobs, and delivering additional billions of dollars annually to government coffers in taxes, royalties and other payments.

But anti-drilling proponents won’t easily bow to such facts and common sense. Most likely, they’ll also try a different line of argument that’s worked before. They’ll claim drilling will destroy the environment.

This allegation was used to help justify the drilling moratoria when first imposed years ago and has been used to stop oil and natural gas development in northern Alaska and elsewhere. But, if judged by the facts – by how oil and natural gas are actually produced today – it’s just as spurious a claim as the others.

Oil and natural gas development in the United States is the safest and most environmentally responsible

anywhere in the world. The industry employs the most advanced technology and best-trained workers. It proceeds under the closest scrutiny, complying with some of the most comprehensive and stringent regulations to lower emissions, safely dispose of wastes and protect wildlife.

The multiple permits, environmental studies and other government review required for oil and natural gas development in federal areas ensure nothing is done without carefully considering and mitigating risks. The permit review process is thorough and includes input from a wide range of stakeholders. It often results in site-specific requirements, such as monitoring wells remotely to reduce traffic that might disturb wildlife or ensuring no threatened species are nearby when an offshore platform is removed.

Technology is a critical factor in the high level of environmental performance that our oil and natural gas companies demonstrate every day. Sound waves reflected off the underground geology and transformed via computer into 3-D or even 4-D time-

lapse visualizations provide engineers with a better idea of what oil and natural gas might be there before drilling begins. This decreases the amount of drilling necessary and reduces the number of dry holes.

Intelligent directional drilling, smaller well sites, ice roads (in Alaska), and zero-waste-discharge technology also reduce how much land is affected by oil and natural gas



Some of the industry's most advanced technology is offshore, including the deepwater platforms that are engineering achievements as breathtaking and technologically ambitious for their time as any of the ancient wonders of the world.

development. Companies can drill to a target the size of a walk-in closet located more than five miles from the drilling site and a mile or more below the surface – and modify direction as drilling is proceeding based on information fed from sensors on drill bits.

The Alpine oil field west of

Kuparuk, Alaska – the largest onshore field discovered in North America in the past 20 years – shows how these technologies come together to keep the environmental footprint small. The land over the producing formations extends outward to about 40,000 acres, yet the actual surface development, including two drill sites, manned camp facilities and a jet-serving airstrip, covers only 97 acres.

Some of the industry's most advanced technology is offshore, including the deepwater platforms that are engineering achievements as breathtaking and technologically ambitious for their time as any of the ancient wonders of the world.

The industry has drilled wells in 10,000 feet of water, the equivalent of standing 18 Washington Monuments on top of one another.

Computers monitor production units 24-7. Subsurface valve shutoff devices automatically stop the flow of oil when unusual events are detected, keeping oil out of the water.

According to the National Academy of Sciences, about 150 times as much oil oozes from the ocean floor naturally in

U.S. marine waters than the tiny amount spilled from offshore production platforms. The water is so clean around platforms off the coast of California that mussels attached to them are harvested and served at some of the country's finest seafood restaurants.

And offshore technology is as rugged as it is sophisticated. The U.S. Minerals Management Service (MMS) says that during Hurricanes Katrina and Rita the performance of offshore facilities was "remarkable," with "no accounts of environmental consequences resulting from spills from OCS facilities." As for this year's Hurricanes Gustav and Ike, MMS says there were "no reports of oil released

in the Gulf of Mexico federal waters impacting the shoreline or affecting birds and wildlife."

America is fortunate to be rich in energy resources, much of them located under federal lands and waters. The recoverable oil from federal areas could produce enough gasoline for more than 60 million cars and fuel oil for 3.2 million households for 60 years. The natural gas could meet the needs of 60 million households (the number of current users) for 160 years.

This oil and natural gas is not a complete energy solution. More alternatives, which oil and natural gas companies are investing in and developing, and more conservation are needed,

too.

But every serious energy projection shows continuing strong demand for oil and natural gas far into our future, and we're fortunate to have our own substantial supplies and the ability to develop them without significant harm to the environment.

This energy truly does belong to all of the American people, who increasingly believe it should be developed to help address the nation's energy challenges. Their instincts on this are absolutely right. **RF**

Jack Gerard is the President and CEO of the American Petroleum Institute.



LOOKING TO ADVANCE GLOBAL COMMUNICATIONS?

Broadband Deployment. Interoperable
Mobility. Network Security and
Efficiency. International Advocacy
Disability Access. Public Safety.
Research and Competitiveness.
Spectrum Allocation.

Connectivity. Innovation.
Leadership. Responsibility.

Building a global communications
infrastructure that is encouraged by
open trade and worldwide standards is
at the heart of TIA's guiding principles.

FOR ANSWERS, CONTACT TIA



tiaonline.org

TIA'S BOARD OF DIRECTORS includes senior-level executives from ACS, ADC, ADTRAN, Alcatel-Lucent, ANDA Networks, ArrayComm, AttivaCorp, Avaya, Bechtel Communications, Inc., Cam Communications, Cisco Systems, Corning Incorporated, Ericsson, Inc., Graybar, Henkels & McCoy, ILS Technology, Intel Corporation, LGE, Microsoft, Motorola, Nokia Siemens Networks, Nortel, OneChip Photonics Inc., Panasonic Computer Solutions Co., Qualcomm, Research In Motion, Sumitomo Electric Lightwave Corporation, Tellabs, Tyco Electronics, Ultracom, Inc., Verari Systems, Westell Technologies, Inc. and Zebra Technologies Corporation. **ADVISORS TO THE BOARD** include FAL Associates, Orca Systems and Telcordia Technologies.

Water, Not Oil, Is America's Most Precious Resource

VERNON J. EHLERS

This past summer, when gas prices were skyrocketing across the country, Congress struggled to find a solution that would immediately help people deal with this new financial burden. It is clear that the crux of the issue lies in our dependence upon crude oil. According to the Energy Information Administration, the cost of crude oil accounts for a large majority of the price of a gallon of gas, and much of the crude oil in our gasoline comes from other countries.

There is no doubt oil and other fossil fuels are precious to America's vitality today; they facilitate commerce, personal transportation, and recreation. But we are already taking steps in the United States to reduce our dependence on oil by developing alternative energy sources. Although oil is on everyone's mind, I believe we should be focusing on a more fundamental resource: Clean water.

As an environmentalist, I know clean water is America's most important natural resource.

I am not the only one. Even T. Boone Pickens recently began shifting away from the oil business to purchase water rights in Texas. Like oil, water facilitates commerce, transportation, and

for wildlife and organisms, and has made some waters unhealthy for human contact. This has created an extremely challenging situation because we are simultaneously trying to clean up decades-worth of pollution while protecting our waters from new contamination.

Since the Great Lakes account for about 84 percent of America's surface fresh water supply, it is critical that they are a high priority for protection. I was able to help pass an important piece of legislation for the Great Lakes during the 110th Congress, which President Bush recently signed into law. The Great Lakes Legacy

Reauthorization Act will extend the authorization for one of the most successful federal water cleanup programs in history. The original Great Lakes Legacy Act, which I authored in 2002, targeted cleanup efforts at polluted areas of concern in Great Lakes tributaries where toxic sediment threatened to spread into the lakes, where it would



Congressman Ehlers discusses the environmental health of the Great Lakes at a 2006 press conference held on the banks of the Grand River in downtown Grand Rapids.

recreation. More importantly, it sustains us as human beings. In fact, our bodies consist largely of water. Water also supports a variety of wildlife in ecosystems ranging from the Great Lakes to isolated wetland areas. Years of industrial pollution, agricultural runoff, and the irresponsible disposal of harmful materials has created a toxic habitat

be much more difficult to clean up. Around one million cubic yards of toxic sediment has been removed so far, and five areas of concern have been successfully remediated of contamination. The reauthorization bill will extend the program by two years at \$50 million dollars per year. I hope we can increase the authorization level to \$150 million in the next Congress, as we did in the House-passed version this year.

In addition to pollution, the Great Lakes are threatened by large-scale water diversion to other parts of the country. Despite their large size, the Great Lakes are an extremely fragile ecosystem, and large-scale diversions of water from the Great Lakes basin to arid parts of the country could be devastating. That is why Congress ratified the Great Lakes Compact this year, which gives states in the region control of how the water supply is used. There are consequences for over-developing arid parts of the country, and the Great Lakes cannot sustain explosions in development in arid locations such as the southwest. If you want a nice, sustainable green lawn, please consider moving to my home state of Michigan!

While the Great Lakes are a very important part of America's fresh water supply, all of our fresh water sources are critical. Lakes, rivers, streams, and wetlands all play an important role in supplying our country with fresh water, and provide habitats for a diverse and essential array of wildlife and organisms. One of the biggest threats to inland waterways is aging municipal wastewater systems around

the country. Events known as combined sewer overflows occur when heavy rains overwhelm old combined sanitary and storm sewers, forcing sewage to overflow into waterways, contaminating water miles downstream and getting into lakes.

My home town of Grand Rapids, Michigan, has taken great steps toward separating its storm system from its waste sewage system to prevent combined overflows from happening. The city was able to make these improvements partly because of the Clean Water State Revolving

**As an
environmentalist,
I know clean water
is America's most
important natural
resource.**

Loan Fund, which provides local governments, such as the City of Grand Rapids, with very low interest loans to help pay for infrastructure improvements. I regret that this federal program has seen funding cuts in recent years, and I will continue to advocate for higher funding levels in the next Congress. I included a \$20 billion reauthorization of the Revolving Loan Fund in the Great Lakes Collaboration Implementation Act, which I am hopeful Congress will take up and pass next year.

Neglecting America's precious fresh water resources today would result in devastating consequences in the future. In Michigan, I know the Great Lakes

will be integral to our struggling economy as we transition into new forms of business. Water is a critical resource for many forms of business and industry. If used responsibly, bountiful clean water would result in an economic boom for the state.

Conserving water in the Great Lakes basin, and around the country, will ensure that we do not run out of this limited resource. Some arid states are already taking highly effective steps to conserve, which will have a major impact on the fresh water supply around the country. For example, Arizona has implemented cutting edge conservation technologies in agriculture, and is developing new ways to save water in residential landscaping and at businesses by using water-saving devices such as front-loading washing machines and water-efficient toilets. Though it has a long way to go, the state is making great strides in sustainability, which will help to ensure clean water remains available to future generations.

We need clean, fresh water to survive. Now, it is also clear that we will rely on clean water for the economic survival of our nation. Like oil, fresh water is not a limitless resource, and we must proceed with caution in how we utilize our water resources. I am sure that the future of our society will hinge on the availability of fresh water, and on our careful stewardship of this precious natural resource. **RF**

Vernon J. Ehlers represents the 3rd District of Michigan in the U.S. House of Representatives.

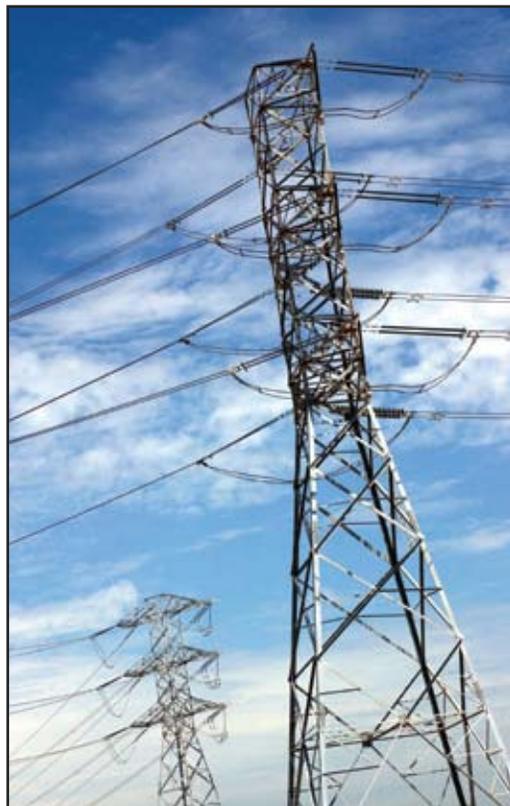
America's Power Grid: Building for the Future

THOMAS R. KUHN

In difficult economic times such as these, it can be hard to remain optimistic. But the nation's electric power industry is. We are building for the future. And we remain dedicated to ensuring that the next generation of Americans can continue to enjoy a reliable, affordable and environmentally friendly electricity supply.

A fundamental building block for this future will be giving our customers more control over their electricity bills. Today we are doing that by promoting the use of efficient electric appliances and the construction of energy-efficient buildings. Expanding our efficiency efforts also enables us to start reducing carbon emissions today as we meet the growing demand for electricity. Our vision for energy efficiency includes developing and deploying technologies — such as advanced electric meters and “smart” appliances—that will enable real-time communication between the consumer and electric utility. This will open the door for consumers to make automated choices over how they use energy, which can lead to even greater energy savings.

The widespread use of plug-in hybrid electric vehicles (PHEV) is another aspect of our strategy to help customers lower their overall energy bills and



address climate change. PHEVs are similar to today's hybrid cars, except that they have a larger battery, and that battery can be recharged through a standard, 110-volt home outlet.

Once charged, a PHEV can drive 20 to 60 miles on battery power alone, without using

any gasoline. That means less dependence on foreign oil, lower fuel costs for consumers, and lower emissions overall. The nation's electric utilities are collaborating with automobile manufacturers, suppliers, advocacy and governmental groups, and other stakeholders to bring PHEVs to the market.

The expanded use of renewable energy resources is another critical tool we are using to help meet demand and lower our carbon emissions in the near-term. The power industry brought on line almost 6,000 megawatts (MW) of new renewable energy last year, with wind capacity alone expanding by more than 5,200 MW. This represents a 45-percent increase in the nation's total wind power generating capacity, which makes the U.S. the fastest-growing wind power market in the world for the third straight year.

As renewables become more cost competitive, and as the transmission capacity is built that connects the typically remote locations where renewable energy resources are located with the population centers where the electricity is needed, we anticipate the use of renewables

to grow even faster.

But energy efficiency and renewable energy resources together will not be enough to meet the country's ever-increasing demand for electricity. We also must expand our use of coal and nuclear energy for generating electricity. Both of these domestic fuel sources will remain essential for keeping America's electricity supply secure, reliable, and affordable.

Coal, because of its low cost and abundance, generates about half of the country's electricity. We have begun to develop advanced coal plants that can generate electricity more efficiently. And we are beginning to develop the technologies that can capture, transport, and store carbon dioxide emissions from coal-based power plants.

Although these carbon capture technologies hold much potential, they are largely untested. There are significant cost and performance challenges facing large-scale capture technologies and permanent underground storage. As a result, they are not expected to be commercially deployable on a large scale until around 2020-2025.

Advanced nuclear energy plants will be needed to keep up with demand as well. Nuclear energy gives us our only source of on-demand, zero-emission electricity.

Upgrading and expanding our electric infrastructure to meet the needs of families and businesses will require massive investments in energy efficiency programs, generation, transmission, and

distribution. Likewise, under any scenario, reductions in greenhouse gas emissions will be expensive.

With debates over climate change legislation heating up in Congress, we are advocating that any legislation adopted be aligned with the time necessary to develop the zero- and low-emitting advanced technologies we need to reduce carbon emissions. This will be vital for protecting consumers and the economy from volatile energy prices.

Upgrading and expanding our electric infrastructure to meet the needs of families and businesses will require massive investments in energy efficiency programs, generation, transmission, and distribution.

So, too, will be explicit cost-containment measures on the price of trading emissions under an economy-wide cap-and-trade program. Allowing for "offsets"—actions, such as planting trees and capturing methane from landfills—is another cost-effective way to reduce carbon emissions both here and abroad.

Our involvement with international clean energy projects and initiatives that facilitate the adoption of advanced, low-carbon technologies is a step in the direction of helping countries around the world to meet their environmental, as well as their

developmental, goals. Clearly, without the participation of all nations—developed as well as developing—the world will not be successful in lowering carbon emissions.

Another issue on which we have begun working with Congress is an extension of the lower tax rate on dividends that went into effect in 2003. The law, which lowered the tax rate from 38.6-percent to 15-percent, will expire at the end of 2010.

The lower tax rate is important to the more than 50-percent of U.S. households who own stock in electric and gas utilities. And it is particularly important to senior citizens who represent almost two-thirds of utility shareholders.

With the massive investments needed to transform the industry ahead of us, the lower tax rate on dividends also has great significance for reducing the cost of capital utilities will need to pay. This helps keep customer costs down and reliability up.

Electricity is clearly a crucial commodity that America, and indeed the world, cannot take for granted. Regardless of the turmoil on Wall Street, America's electric power companies remain steadfast in their commitment to delivering the strong, reliable and affordable electricity supply that the economy and the country need to move forward.

For more information on these topics and all the key issues facing the nation's electric companies, I encourage you to visit www.eei.org. **RF**

Thomas R. Kuhn is the President of the Edison Electric Institute.

Nuclear Power in the United States: *Behind the Curve or Ahead of the Game?*

FRANK L. "SKIP" BOWMAN

Recently I was approached to provide insights on what the United States must do to catch up with other industrialized nations on the use of commercial nuclear power. The request illustrates the wide gap between perception and reality when it comes to some assessments of the role of nuclear energy in America's energy picture.

France is often cited as the nation with the most advanced commercial nuclear energy program. Spurred by its vulnerable energy position after the Middle Eastern oil embargo of the early 1970s, France committed to developing commercial reactors that today generate nearly 80 percent of its electricity. France's nuclear power industry produces electricity at among the lowest costs in Europe and it is the reason why the French enjoy the best air quality on the continent. Are we behind the curve?

To put the United States and French programs in perspective, France is smaller in square miles than Texas but has 59 commercial reactors in

operation, thus accounting for this high percentage of electricity generation. Nonetheless, the United States leads the world in nuclear generating capacity with its 104 nuclear plants — more than the next highest nuclear producers, France and Japan,



Calvert Cliffs Nuclear Power Plant, located on the shores of the Chesapeake Bay in Maryland.

combined. Nuclear energy produces nearly one-fifth of U.S. electricity.

U.S. reactors, on average, produce electricity at 92 percent of the time at full power — better than any other technology. High performance and reliability are reasons why nuclear production costs are lower than coal plants and about one-quarter of the production cost of natural gas-fired power plants.

As of mid-October, 17

companies have filed license applications with the U.S. Nuclear Regulatory Commission (NRC) for 26 new reactors. The NRC will take about three years to consider these applications, followed by a four-to-five year construction period, so my expectation is that four to eight new reactors likely will be in operation by 2016-2017. Assuming those first plants are meeting their construction schedules and cost estimates, the rate of construction would accelerate thereafter. With the necessary investment stimulus, the industry could add 20,000 megawatts of new nuclear capacity to the U.S. electricity grid by about 2020.

There is also compelling evidence of the environmental value of nuclear energy in the U.S. energy mix. Nuclear energy is the only expandable, large-scale energy source capable of producing electricity around the clock without emitting air pollutants or greenhouse gases. Despite the move towards expanding renewable sources, nuclear energy produces nearly 75 percent of all carbon-free

electricity in America. Nuclear plants, in fact, annually prevent carbon dioxide emissions equivalent to the amount from virtually all U.S. passenger cars.

There is, however, a consensus emerging on the role that nuclear energy must play if we are to achieve greater U.S. energy independence and at the same time reduce greenhouse gases. In October 2008, the Organization for Economic Cooperation and Development issued a report describing nuclear power as one of the greenest energy sources available.

This past June, the U.S. National Academy of Sciences joined the scientific academies of the 13 leading industrial and developing nations, urging world leaders to act more forcefully to limit the threat posed by climate change. The statement included a recommendation to speed the adoption of new energy technologies, including increased investment in nuclear energy technologies.

Analyses of the various congressional proposals to reduce greenhouse gases — including modeling conducted by the U.S. Environmental Protection Agency and the U.S. Energy Information Administration—show that nuclear energy must be significantly expanded in a carbon-constrained world.

Nuclear energy's reliable, low-cost power production and clean-air benefits are also driving record-high public support. A national survey by Bisconti Research Inc./GfK shows a record-high 74 percent of Americans favor nuclear energy, and those who strongly favor the

use of nuclear power outnumber those strongly opposed by a 3-1 margin. The survey also found that nearly seven out of 10 Americans believe energy companies should definitely build more nuclear power plants in the future — a 10 percentage point gain from April. Three-fourths of Americans say they would find it acceptable to add a new reactor at the nearest existing nuclear power plant site.

Nuclear energy is just part of a portfolio of technologies and energy sources that is essential to address U.S. environmental

...the United States leads the world in nuclear generating capacity with its 104 nuclear plants — more than the next highest nuclear producers, France and Japan, combined.

concerns and to provide adequate supplies of electricity. Although each technology has its own set of challenges, the largest single challenge cross-cutting the entire electric sector is financing.

New baseload power plants are capital-intensive: \$3-to-\$4 billion for 600-megawatt-scale coal-fired power plants and \$6-to-\$8 billion for average 1,400 megawatt new nuclear plants. The U.S. electric power sector consists of many relatively small companies that do not have the size or financial strength to finance power projects of this scale on their own, in the numbers required. These projects

require financing support—loan guarantees from the federal government and assurance of investment recovery from state governments.

The current financial crisis only emphasizes the need for federal loan guarantees, which provide access to capital for companies seeking to build large-scale, clean energy projects. Without loan guarantees, most companies would find it difficult to finance these plants in the numbers required even if financial markets were completely stable. Equally important, financial modeling shows a substantial reduction in the cost of electricity to the consumer with loan guarantees.

The U.S. Department of Energy has received loan guarantee applications from 17 companies for 26 new reactors, representing an aggregate loan guarantee volume of \$122 billion. The existing loan guarantee availability, just \$18.5 billion for all nuclear power projects, is plainly inadequate.

Nonetheless, the U.S. nuclear energy industry is moving cautiously but steadily down the path to build the new nuclear power plants that will provide clean, safe and reliable energy to millions of America's homes and businesses. It is a long road, but one that leads to greater energy and national security, cleaner air, job growth, and an even better standard of living for all Americans. **RF**

Frank L. "Skip" Bowman is the President and CEO of the Nuclear Energy Institute.

The Challenges That Lie Ahead

CHUCK HAGEL

Elections are about course corrections, and Americans are in a serious mood to change the direction of their country. According to a recent Washington Post-ABC Poll, eighty-four percent of Americans believe America is headed in the wrong direction. Gallup says it's eighty-three percent. These are historic numbers, and they register the depth of discontent with the current policies, leadership, and politics of our country. I believe what awaits the next President is an inventory of problems more complicated than what Franklin Roosevelt faced on March 4, 1933, and will require the same boldness of leadership and initiatives that FDR brought to his time.

The great challenges facing mankind in this new century are not unique to nations, regions, religions, or cultures. All citizens of the world must confront the threats of nuclear proliferation, terrorism, pandemic health issues, endemic poverty, environmental degradation, and the most insidious and difficult of all, despair. These are Twenty First century challenges that will require Twenty First century thinking within a Twenty First century frame of reference. History instructs and is a guide, but it cannot navigate our way, develop our strategy, or implement our policy. The rate and intensity of change today in a world of less and less margin of error has brought with it an unprecedented immediacy to actions, reactions,

and consequences. But wise leadership exercising wise judgment that results in wise policy is never outdated.

I believe America is in trouble. The next president's challenge will be to fix problems and make a better world. That's what defines leadership.



I believe America is in trouble.

America's competitive position and strength in the world demands that we address the domestic challenges that are eroding our economic strength and consuming our government budgets. Our next President will be faced with a long list of important issues that touch every American and will require serious reform, such as: entitlement programs (Social Security, Medicare, and Medicaid); tax and regulatory systems; public infrastructure; health care; and immigration.

Our national debt, and its rate of accumulation of deficits, is not sustainable. If this continues, America's debt burden will crush our children's future.

Economic strength is the foundational base that determines our ability to project and use all of our instruments of power, including diplomatic and military power. Trade, however, is not a guarantee. The ongoing credit crisis and skyrocketing world food and energy prices are among the recent temptations for countries to restrict markets and veer toward protectionism that leads to dangerous insular thinking. These temptations must be

resisted and the hard-earned lessons of history not forgotten.

Energy drives prosperity in the world and is a principal determinant of our economic welfare. There is no near-term substitute for oil, natural gas, and coal. But our next president needs to initiate policies that will eventually break our long-term reliance on oil. This includes more investment, research and focus on technology, alternative and renewable sources of energy (particularly nuclear energy), conservation, mass transit, and seriously improving our mileage standards.

Our infrastructure is in a state of crisis. As Kansas City Mayor Mark Funkhouser stressed when he told the Senate Banking Committee in June, "We are witnessing a quiet collapse of prosperity." Morgan Stanley has projected that emerging economies will spend \$22 trillion on infrastructure over the next ten years. Like our workforce, our nation's infrastructure is aging and will require new initiatives like the bill that Senator Chris Dodd and I have introduced to create a National Infrastructure Bank that would allow private investment to finance public infrastructure projects.

As America is working its way through its most pressing issues, we continue to spend billions of dollars a week stuck in Iraq and Afghanistan.

We cannot escape the reality that Iraq and Afghanistan will remain centers of gravity for U.S. foreign policy. Yet, our ability to influence and shape outcomes will be measured by the larger and longer term objectives of common interests in all areas of our security — not just in those two countries. The success of our policies and efforts will depend not only on the extent of our power, the strength of our purpose, and cohesion of regional alliances, but also by an appreciation of great power limits.

America's long-term security interests are directly connected to alliances, coalitions, international institutions and our standing in the world. No country, including the United States, is capable of successfully meeting the challenges of the Twenty First century alone, whether it is terrorism, economic growth, climate change or

nuclear proliferation. Yet today, much of the world has lost its trust and confidence in our purpose and questions our intentions. The next President will have to reintroduce America to the world in order to regain its trust in our purpose as well as our power.

International institutions are more important now than at any time in modern history. Our post-World War Two alliances and partnerships, particularly with the European Union, Australia, Japan, South Korea and Turkey, must be strengthened and recalibrated to recognize that these powers are no longer American Twentieth century surrogate powers expected to automatically do our bidding or agree with our positions. Our relationships with these nations and others have matured bringing more equality and balance to the relationships. Working through international institutions and alliances to build broad, diplomatic consensus may be difficult, time-consuming, and frustrating but they are the best options...and smartest approaches to sustainable and effective strategic outcomes. The alternative of unilateral action is no substitute.

... today, much of the world has lost its trust and confidence in our purpose and questions our intentions.

Nuclear proliferation will require special attention by the next President. Today's post-Cold War nuclear nonproliferation framework has become inadequate as more states seek nuclear capacity, and nuclear know-how is becoming increasingly more accessible. The world must build a new Twenty First century nuclear nonproliferation and disarmament framework...and the United States, Russia, China, India, and the European nuclear powers must lead this effort.

The United State must pay particular attention to three key relationships — China, India and Russia. America's relationships with each of these three countries will continue to be comprehensive, including areas of agreement and disagreement. We cannot, however, allow these relationships to be dominated and shaped by our differences...or we risk creating dynamics that can quickly get beyond our control and move down a dangerous and irreversible path. We must define these relationships on our common interests.

The Middle East today is more dangerous, more complicated, more interconnected, and more combustible than ever before. Regional, comprehensive strategies – rather than individual nation-by-nation compartmentalized policies – will be required in this troubled region. As one of his most immediate priorities, the next President will need to implement a comprehensive geostrategic approach to the broader Middle East region spanning North Africa to Afghanistan and Pakistan. This will require employing all of our instruments of power – diplomacy, trade, exchange and economic assistance programs, alliances, intelligence, and military might.

We are engaged in a war of ideas and ideologies to win over the youth of this region. Classrooms are the battlefields. This will require a revolutionary universe of new thinking and policies. The human dynamic always dictates outcomes.

The United States must enhance its initiative in support of Israel-Palestinian negotiations. We should make clear our support for direct Israel-Syria and Israel-Lebanon negotiations and be prepared, at the right time, if asked, to become directly involved, including as a sponsor. We should take the initiative to re-engage Syria by returning the U.S. Ambassador to Damascus.

The United States should open a new strategic direction in U.S.-Iran relations by seeking direct, comprehensive and unconditional talks with the Government of Iran, including opening a U.S. Interest Section in Tehran. We must avoid backing ourselves into a military conflict with Iran. We are currently in a strategic cul-de-sac in the Middle East. We need to find our way out with new policies. Engagement is not appeasement. Diplomacy is not appeasement. Great nations engage. Powerful nations must be the adults in world affairs. Anything less will result in disastrous, useless, preventable global conflict.

America's occupation of Iraq and Afghanistan is not a 'win-lose' proposition. That is an inaccurate context for our objectives and policies. Stability, security, prosperity and peace are the objectives. That is the appropriate context. There

will not be a military victory in these conflicts. As General David Petraeus stated in a recent Senate Foreign Relations Committee hearing, there is no military solution in Iraq. The outcome in Iraq and Afghanistan will be decided by the people of these nations, and that outcome will be much influenced by their neighbors. Iran, Pakistan and Saudi Arabia are the three most critical nations in this equation.

The leaders of Iraq need to find a common ground of political accommodation preparing for political reconciliation to govern their country and assume responsibility for the security and prosperity of its people. As CSIS President and former Deputy Secretary of Defense Dr. John Hamre has written, "Iraqis genuinely want us to leave, and the only issue in question is when and how quickly...what we now need is realism about Iraq. We haven't failed, but winning won't fit any traditional definition of success."

The next President will need to pursue a responsible phased troop withdrawal from Iraq that will slowly, steadily but surely bring to an end the U.S. occupation of Iraq.

America's way out of Iraq will require a regional diplomatic strategy that includes a sustained and disciplined American engagement with all of Iraq's neighbors, notably Iran and Syria, as well as the international community. This would also include a regional security conference supported by key international institutions. Our goal should be to build a constructive regional and security framework supported by the international community to help the Iraqis achieve a core of political stability. It is up to the Iraqis how they will shape their government and build their country.

While Afghanistan's future remains uncertain, the success of the Paris donor's conference earlier this summer – where more than \$20 billion, including \$10 billion from the United States, was pledged to assist Afghanistan – could be a foundation to build a new international strategic priority on Afghanistan. We need to emphasize institution building, including increased budgetary assistance and vigorous anti-corruption programs. More

**We are currently
in a strategic
cul-de-sac in the
Middle East. We
need to find our
way out with new
policies.**

effective and integrated international coordination, preferably through the UN Special Envoy and working from the Afghan Government's priorities, should be central to our overall approach.

Strong and capable Afghan security forces will be the only sustainable solution for Afghanistan's stability. That must be our strategic objective. Until that is achieved, international forces are needed in Afghanistan... but we must be careful about the U.S. and NATO military footprint in Afghanistan. We need more troops to prevent security vacuums from emerging, as we witnessed in the southern province of Kandahar earlier this year. But we also need more effective NATO capacity, some of which remains constrained by national restrictions on the rules of engagement, known as "national caveats."

Another challenge that awaits the new President is the human condition of the world's impoverished populations. While the last sixty years brought unparalleled progress and prosperity for America and many parts of the world, it is equally true that there are billions of people who have been left behind. The impoverished regions of the world are the most unstable, volatile, and dangerous areas representing the greatest threats to America and the world. Extremism and terrorism breed in these locations. Therefore, we

must pay attention to them.

RF

Chuck Hagel is retiring as the senior Senator from Nebraska.



Quality Care. Quality Living. Quality First.

2.8 million baby boomers are turning 60 this year. Now more than ever, it's important to protect the future of quality long term care for ourselves and our loved ones.

The American Health Care Association is committed to serving as a force for change within the long term care field, providing information, education, and administrative tools that enhance quality at every level.



The American Health Care Association (AHCA) is a non-profit federation of affiliated state health organizations, together representing more than 10,000 non-profit and for-profit assisted living, nursing facility, developmentally-disabled, and subacute care providers that care for more than 1.5 million elderly and disabled individuals nationally. www.ahca.org

Ripon

Profile

Name: Meg Whitman

Hometown: Atherton, California

Occupation: President and CEO of eBay Inc. for 10 years; retired in March 2008. National finance co-chair for Mitt Romney during primaries. During the general election, national co-chair of Senator McCain's campaign.

Previous Jobs: General manager of Hasbro Inc.'s Preschool Division, responsible for the marketing of products like Arthur, Barney, and my favorite, Mr. Potato Head. Prior to Hasbro, President and CEO of Florists Transworld Delivery (FTD). I have also held leadership positions at Stride Rite and Disney.

Individual who inspired me as a child: No question, my mother. When I was growing up, she told me I could achieve anything I wanted to as long as I worked hard and always delivered the results. She instilled in me a desire to win and never give in. She is an amazing person and an intrepid innovator. My mom has accomplished really extraordinary things in her life.

Historical figure I would most like to meet: Teddy Roosevelt. He was a fearless leader. He was a progressive thinker with a wonderful long-term vision. Many of his ideas, especially regarding our environment and natural resources, still benefit the nation to this day. He was determined to do what was right for the people and took on the tough issues that mattered most to Americans.

Issue facing America that no one is talking about: Education needs to be considered a national security issue in America. Without a renewed commitment to improving our schools, we will not be able to produce the strong, educated workforce America needs to compete in the global economy. Our ability to innovate and create the next generation of jobs goes hand-in-hand with the quality of our schools, especially in the areas of math, science and technology. We must make America number one in education again.

What the GOP must do to reclaim its congressional majority: Republicans must provide real solutions to the problems facing Americans in every walk of life. We must develop specific proposals to encourage the next generation of high-paying jobs, make education reform a top priority, commit to energy independence, and end the escalating costs of health care that are crushing families and small businesses. Republicans also need to put forward plans that will significantly reduce government spending. We must walk the walk on fiscal discipline.





AmerisourceBergen
is a proud supporter
of the Ripon Society

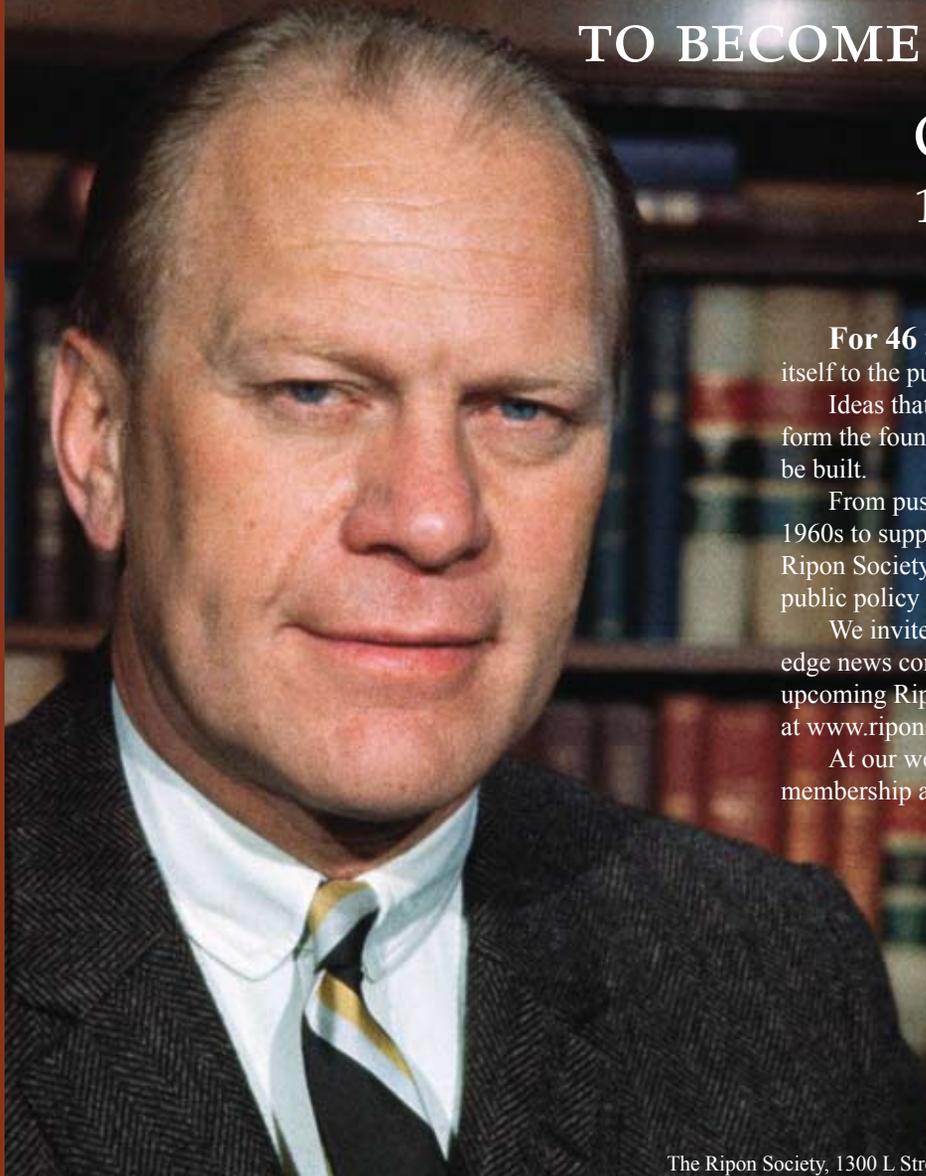


AmerisourceBergen®

“Not long after I became Republican leader of the House of Representatives, I was asked this question: ‘*What is the mission of the minority?*’ My answer was:

“‘THE MISSION OF THE MINORITY IS TO BECOME THE MAJORITY.’”

GERALD FORD
1968



For 46 years, the Ripon Society has dedicated itself to the pursuit of ideas.

Ideas that not only make a difference. But ideas that form the foundation upon which a governing majority can be built.

From pushing for Civil Rights legislation in the early 1960s to supporting the Global War on Terror today, the Ripon Society has been at the forefront of America’s public policy debate.

We invite you to join us in the debate. For cutting edge news commentaries and the latest information on upcoming Ripon Society events, please visit our website at www.riponsociety.org.

At our website, you’ll be able to update your membership and read the *Ripon Forum* online.



The Ripon Society, 1300 L Street, NW, Suite 900, Washington, DC 20005 (202) 216-1008

Ripon Society
1300 L Street, NW
Suite 900
Washington, DC 20005

PRST STD
US POSTAGE
PAID
COLUMBIA, MD
PERMIT No. 334