

A NEW MANHATTAN PROJECT FOR CLEAN ENERGY INDEPENDENCE

*A 5-year plan to deal with gasoline prices, electricity,
climate change, clean air and national security*

In 1942, President Franklin D. Roosevelt summoned a bipartisan group of congressional leaders to the White House to discuss a secret plan to win World War II. At the conclusion of the briefing, the President asked Kenneth McKellar, the Tennessean who chaired the Senate Appropriations Committee, if the senator could “hide two billion dollars in the appropriations bill for this project to win the war.”

Sen. McKellar replied, “That will be no problem, Mr. President, but I have one question: just 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 – along with Hanford in Washington and Los Alamos in New Mexico – that became the principal sites for the Manhattan Project.

The purpose of the Manhattan Project was to end the war by finding 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 equaled \$24 billion in today’s dollars.

Less than three years later the project succeeded when on August 6 and 9, 1945, the first atomic bombs were dropped on Hiroshima and Nagasaki. On August 14, Japan surrendered unconditionally.

According to *New York Times* science reporter William Laurence, who watched the Nagasaki bombing, “Into its design went millions of man-hours of what is without doubt the most concentrated intellectual effort in history.”

The goal: victory over blackmail

On Friday, May 9, I will go to one of those “secret cities” – Oak Ridge – to 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 supplies.

In 1942, many were afraid that the first country to build an atomic bomb could blackmail the rest of the world. The overwhelming challenge, in Manhattan Project veteran George Cowan’s words, was “the prospect of a Fascist world and the need to build a weapon so powerful that it would quickly guarantee victory.”

Today, countries that supply oil and natural gas can blackmail the rest of the world. Today’s need is to create clean energy independence to quickly guarantee victory over that kind of extortion.

Not a new idea

Such a concentration of brainpower directed toward an urgent national need is not a new idea – but it is a good idea and fits the goal of clean energy independence.

The Apollo project to send men to the moon in the 1960s was a kind of Manhattan Project. Sen. Susan Collins of Maine has suggested a goal of energy independence by 2020 comparable to the goal of putting a man on the moon. Others, such as Sen. Kit Bond of Missouri and Congressman Randy Forbes of Virginia, have suggested a Manhattan Project for clean energy or energy independence. As part of their ongoing presidential campaigns, both Sen. John McCain and Sen. Barack Obama have called for a Manhattan Project for new energy sources. Likewise, former House Speaker Newt Gingrich and Democratic National Committee chairman Howard Dean have said a Manhattan Project-type program is needed to develop technologies to free us from oil dependence.

George Cowan in the 1980s created the Santa Fe Institute to focus “meta-engineering,” as Harris Mayer termed it, on the problem of what to do about religious fanatics who use violence to achieve their ends.

And, throughout the two years of discussion that led the passage of the America COMPETES Act, several participants suggested focusing on energy –

believing that solving the energy challenges would force the kind of investments in the physical sciences and research and teaching that the America COMPETES Act seeks to encourage.

“A new overwhelming challenge”

The Manhattan project in 1942 was in a response to an overwhelming challenge – the prospect that Germany would build the bomb and win the war before America did.

In his address to the annual meeting of the National Academy of Sciences yesterday, Academy president Ralph Cicerone described today’s overwhelming challenge: the need to discover ways to satisfy the human demand and use of energy in an environmentally satisfactory and affordable way so that we are not overly dependent on overseas sources.

According to Cicerone, this year Americans will pay nearly \$500 billion overseas for oil – that’s \$1,600 for each one of us – some of it to nations that are hostile to us or even trying to kill us by bankrolling terrorists. That 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 projected and fossil fuels continue to supply over 80 percent of that energy, humans would inject as much CO₂ into the air from fossil fuel burning between 2000 and 2030 as they did between 1850 and 2000. We have plenty of coal to help achieve our energy independence, but no commercial way – yet – to capture the carbon from the coal, and we have not finished the job of controlling sulfur, nitrogen, and mercury emissions.

So instead of finding ways to build a bomb to win a war, the new goal would be to find ways to help our country – which consumes 25 percent of the energy in the world – achieve clean energy independence, and to do it at a price families can afford and with the hope that rest of the world follows America’s lead.

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 will require meta-engineering.

- 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 put aside old biases and subsidies and instead “break the mold.” As Dr. J. Robert Oppenheimer said in a speech to Los Alamos scientists in November of 1945 about the atomic bomb, the challenge of clean energy independence is “too revolutionary to consider in the framework of old ideas.”
- Most important, again in the words of George Cowan as reported in a book on the project edited by Cynthia C. Kelly, “[the first Manhattan Project] wouldn’t have come into existence at all without initial concepts that were spelled out by a small number of extraordinary people...The Manhattan Project model starts with a small, diverse groups of great minds.”

As I said to the National Academies when we first asked for their help on competitiveness in 2005, “In Washington, most ideas fail for lack of the idea. We need ideas from the best minds we have.”

The America COMPETES model fits, too

I know that the purpose of this meeting today is to talk about how to fund the America COMPETES Act, the blueprint enacted by Congress to help America keep its brainpower advantage so we can keep our best jobs from going overseas.

I feel confident that every other speaker will talk about that.

So instead I am using my few minutes to let you know that on May 9 in Oak Ridge I will propose a second Manhattan Project for clean energy independence because I believe that the work we did together during America COMPETES has important lessons for solving our energy challenge.

Remember how America COMPETES 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 keep America’s brainpower advantage. Basically, we were asking for the antidote to the problems set out in Tom Friedman’s book, *The World is Flat*.

By October 2005, 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 Storm.”

We worked with the Bush administration in a number of “homework sessions” to refine the proposals and considered a number of other very good proposals by competitiveness commissions.

Then, in January 2006 President Bush outlined his American Competitiveness Initiative to double over ten years basic research budgets for the physical sciences and engineering, and he included money to do that in his budgets.

The Republican and Democratic Senate leaders became principal sponsors of the legislation that became the America COMPETES Act – and retained that principal sponsorship even after the Senate changed hands politically after the 2006 elections. At one time or another, seventy senators signed on. It became law by August 2007, with strong support from Speaker Pelosi and President Bush.

Today, we are meeting to support the 18 percent funding increase the president has asked for in physical sciences and to add to the budget money for education programs. We also want to commend and encourage more private contributions like those by ExxonMobil, the Gates Foundation and Susan and Michael Dell.

Oak Ridge address, May 9

Last week, I telephoned Ralph Cicerone. I told him about my proposed May 9 Oak Ridge speech. He told me about his address on energy and the National Academies’ work on “America’s Energy Future” that will be completed in 2010.

I told Ralph that what I will be proposing in Oak Ridge will require more specific and quicker action than what the Academies already have underway. I would hope that within the next few weeks a bipartisan group of us from Congress

could meet with the Academies and see what concrete proposals we might offer the new president and the new Congress – and complete that work this year.

Democrat Congressman Bart Gordon, Chairman of the Science Committee in the House of Representatives – and one of the original four signers of the 2005 request to the National Academies that led to the America COMPETES Act – will join me in Oak Ridge on May 9, along with Congressman Zach Wamp, a senior member of the House Appropriations Committee in whose district we will be. I will be talking this week with Sens. Bingaman and Domenici who played such a large role in America COMPETES, and to Sen. Murkowski who will succeed Sen. Domenici as senior Republican on the Energy Committee.

During this presidential election year, I have no illusions about the difficulty of bipartisan congressional action. But I hope that members of Congress and presidential candidates of both parties will start *now* to compete to see who can propose the most effective New Manhattan Project for clean energy independence – knowing that in the end, it will take the kind of bipartisan cooperation that we had with America COMPETES to get a result. After all, the people didn't elect us to take a vacation this year just because there is a presidential election.

Anything is possible

This country of ours is a remarkable place.

Even during this economic slowdown we will produce this year about 30 percent of all the wealth in the world for just the 5 percent of us who live here.

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 can 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 – 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.