UniStar NUCLEAR ENERGY

EXPLORING OUR CLEAN ENERGY POLICY OPTIONS

A UniStar Issue Brief

Today, Americans recognize the need for energy sources that are reliable, environmentally friendly, safe and cost effective, and that will strengthen our national security by helping America achieve energy independence. A substantial investment in building new nuclear energy facilities is a clear path to meeting all of these needs. The federal government must establish clear policy positions, buttressed by concrete actions, that will substantially accelerate the construction of nuclear generating facilities in the United States. Such policies and actions will provide greater certainty for industry to build the generating stations and to invest in an expansion of nuclear energy manufacturing capabilities, creating more opportunities for U.S. companies to supply nuclear energy products and services to domestic and international markets.

LOAN GUARANTEES ARE JUST THE BEGINNING

The Energy Policy Act of 2005 (EPAct), the current guiding legislation on energy issues in the United States, included provisions to encourage the development and deployment of certain energy technologies, including loan guarantees by the U.S. Department of Energy (DOE).

Loan guarantees are used to help financial organizations realistically price the financing of large, long-lead-time projects. Recently, loan guarantees have been used by the U.S. Department of Transportation for projects such as highway expansion and by the U.S. Department of Commerce to encourage the expansion of broadband internet access in rural areas.

Loan guarantees are important tools, but they are not the only tools needed to encourage energy solutions that meet national priorities. Direct federal support has been provided for other clean energy technologies currently under development and being promoted for widespread implementation.

For example, so called “clean coal” and carbon sequestration projects have enjoyed massive financial support from the U.S. government.

FutureGen, a much-debated project involving the potential capture and sequestration of carbon from coal-fired electricity generation, would cost the U.S. government $1.8 billion or

How the EPAct 2005 loan guarantee program works:

- Congress established a pool of funds and authorized the DOE to issue loan guarantees for clean-energy projects that “avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gasses.”[2] (Energy Policy Act of 2005)
- Companies receiving loan guarantees will pay a “credit subsidy” to cover the cost of potential defaults plus the cost of DOE administering the program.
- Projects must demonstrate that they are commercially viable and are able to repay their loans.
- The loans themselves are actually provided by other lending sources that receive a guarantee from DOE of payment in the event the company defaults on the loan.

DOE is currently reviewing loan guarantee applications for four nuclear energy projects, including UniStar’s proposed third nuclear generating unit at Calvert Cliffs, Maryland.

more.[1] The current administration has signaled a willingness to provide broad subsidies for other energy technologies in development as well.

Such distributions of public funds are widely used to bring technologies that offer public benefits to market. However, some of the technologies currently under consideration for loan-guarantee support, such as photovoltaic solar power, may not be able to be developed on a very large commercial scale. Premature support for large scale projects using immature technologies may not result in the greatest long-term benefit for the funds used.

"…[President Obama's] $3.55 trillion budget proposal for fiscal 2010 calls for spending $150 billion over 10 years to promote clean energy and energy efficiency."

"Obama Lays Out Clean-Energy Plans," The Washington Post, *March 24, 2009.*

OTHER TOOLS TO CRAFT THE WAY FORWARD

UniStar Nuclear Energy has worked closely with leadership groups like the Western Governors Association, as well as state leaders in New York and Maryland, to help design energy policies and tools to promote diverse, reliable, economic, and clean sources of electricity.

Although loan guarantees are vital to financing capital projects of the scope of new nuclear energy facilities, they must be complemented by other policy initiatives. We need the right mix of additional tools that will result in the U.S. having an effective energy policy well into the future. These tools include tax incentives, energy bonds, R&D funding, and portfolio standards among others:

Tax Incentives

Tax incentives are a time-honored mechanism by which the federal and state governments encourage consumers and businesses to adopt favored technologies, for example:

- Consumers are encouraged to support new technologies by methods such as the federal government offering a tax credit for purchasing a hybrid vehicle, or states such as West Virginia[2] and California offer tax incentives for installing solar cells on residences.
- The federal government can incentivize whole industries by production tax credits, accelerated depreciation, and other techniques that have minimal federal budget impacts.

Government-Issued Energy Bonds

- By encouraging public investment and offering a set rate of return, bonds provide investors with an interest in the outcome of the nation's energy research and development.
- Government-issued bonds have been used with great success to answer other national challenges (think War Bonds during World War II).
- Many groups have joined the call for the development of a bond program to support a Clean Energy Investment Fund as a way to raise revenue for clean-energy technologies.[3]

Direct Research & Development (R&D) Funding

- The government uses its resources to fund pure science and applied research in areas that could have future commercial application but are not currently (and may never be) market ready. DOE's National Laboratories, research centers established for the purpose of advancing science and helping to promote the economic interests of the United States, are the prime example of this—the government funds and hosts the research efforts.
- R&D generally supports very long term, usually broader policy goals, since the ultimate outcome is unknown.

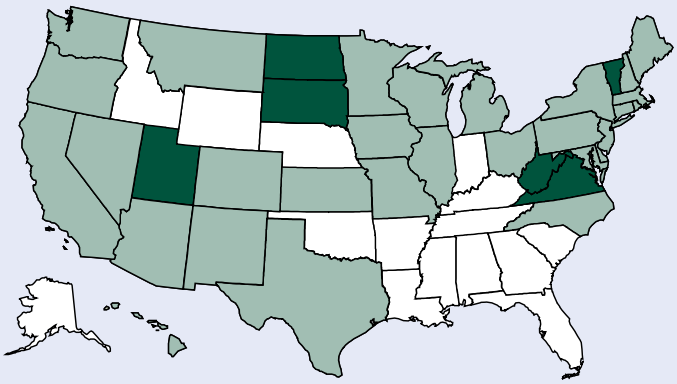
Portfolio Standards

- Through legislation or executive order, energy "portfolio standards" mandate the mix of energy sources to be used for electricity generation. These frequently are used at the state level to mandate the development of renewable energy.

Right now, each of these energy policy options—from federal loan guarantees for clean energy technologies, to renewable portfolio standards, and even direct regulatory action by agencies such as the U.S. Environmental Protection Agency—have two things in common. They all limit carbon and greenhouse-gas emissions from electricity-generating sources and encourage development of emission-free sources.

Renewable Portfolio Standards

29 states and DC have RPS; Six states have goals.



State Renewable Portfolio Standard State Renewable Portfolio Goal

Source: www.dsireusa.org, November 2009

PURSUING THE RIGHT CARBON POLICY

The policy conversation about carbon focuses on two possible solutions—a tax on all carbon emissions, scaled to the level of emissions, and a "cap-and-trade" system, in which the federal government allocates a specific level of carbon emissions for each producer, then creates a market where these allowances can be traded. Companies in a position to reduce their emissions could sell their excess credits on the open market to those needing to expand their emissions capacity.

Each system has advantages and disadvantages, supporters and detractors. Supporters of a carbon tax say it will help soften effects on the economy by encouraging price certainty for emissions reductions, allowing companies to plan for the future. Those who favor a cap-and-trade system praise it as a free-market solution that will encourage innovation and do more than a carbon tax to limit emissions.

UniStar Nuclear Energy believes that nuclear energy will emerge as the most viable source of baseload-energy generation in a carbon-constrained marketplace. Nuclear energy is a proven technology that provides electricity around the clock, while producing no greenhouse gases. As policy changes increase the costs of generating sources that emit greenhouse gases, nuclear energy will become an increasingly attractive way to power our economy.

ENERGY POLICY FROM EPACT 2005 TO THE FUTURE

Four years ago, EPAct 2005 set the framework for America's current energy policy discussions. As the first articulation of a national energy policy in 30 years, it has served as a strong first step in setting priorities for the 21st century. Now, the challenge is to continue that momentum toward a sensible energy policy that encourages the technologies that are best for both our economy and our environment.

The non-partisan National Commission on Energy Policy is looking to do just that, releasing a report with recommendations designed to align policy priorities with their intended results. The Commission called for $2 billion in research and development over 10 years for one or two advanced nuclear energy pilot projects.[4]

In addition, the federal government should employ all of the policy tools at its disposal, fully funding the loan guarantee program and providing for the approval of all qualified projects.

At the time of this writing, the most expansive piece of energy legislation to build on EPAct 2005 is the American Clean Energy and Security Act of 2009, also known as "ACES" or the "Waxman-Markey" bill, named after its two lead sponsors in the U.S. House of Representatives. The House passed the legislation by a very narrow margin in the summer of 2009.[5] The outlook for passage of companion legislation in the U.S. Senate remains unclear.

ACES contains a number of the policy options explored above: a requirement to reduce greenhouse gas emissions by 17 percent from 2005 levels by 2020, and by 83 percent by 2050; an emissions "allowance" system, with 85 percent of the initial allowances to be given away for the first 10 to 20 years; and a Clean Energy Development Administration, funded by $7.5 billion in "green bonds."[6]

Under this legislation, electricity producers—such as UniStar's American parent company Constellation Energy—will be required to generate 15 percent of their electricity from renewable sources by 2020, and to show a reduction of five percent in energy demand through efficiency gains.

NUCLEAR ENERGY IS THE BEST CHOICE—IN ANY POLICY ENVIRONMENT

Calvert Cliffs Nuclear Power Plant, Lusby, Md.

To protect the nation's energy and national security needs, new energy policy must support the use of nuclear energy. UniStar supports national and state energy policies that encourage the broad development of new nuclear generating facilities, including policies that classify nuclear energy as a renewable energy source in renewable-energy-standards legislation.

Nuclear energy aligns with the nation's goal of reducing greenhouse gas emissions in the United States while providing safe, reliable electrical generating capacity. Although the expansion of nuclear energy is not the entire solution to reaching the nation's energy goals, there is no real solution without nuclear energy. To effectively ensure the best, cleanest, most effective mix of electrical production for our country, policy changes must support increasing nuclear energy.

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If you want to look closer at the research behind the information in this publication, please visit our web site at www.unistarnuclear.com. There you will find an annotated version of this Issue Brief with links to the original research and other data behind this publication as well as all of the other publications in the Issue Briefs series.

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