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*CONGRESSIONAL TESTIMONY*

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# Spurring Investment in America's Clean Energy Technology

## U.S. Senate Committee on Energy and Natural Resources

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My name is Nicolas Loris. I am a senior energy policy analyst and the Herbert & Joyce Morgan Fellow at The Heritage Foundation. The views I express in this testimony are my own, and should not be construed as representing any official position of The Heritage Foundation.

I want to thank Chairman Wyden, Ranking Member Murkowski and members of the U.S. Senate Committee on Energy and Natural Resources for this opportunity to discuss clean energy investments in the United States.

Over the past several decades Congress has implemented a number of policies to spur the investment of renewable forms of energy. Through a multitude of policies, the federal government has attempted to build a clean energy economy with the help of the American taxpayer and by doing so is skewing risk and reward of energy investments.

All energy sources and technologies should have an opportunity to compete in the market place. Those investment decisions are best left for the private sector. The government's intervention in capital markets artificially lowers the risk of a project, decreases the incentive to innovate and increases the incentive to use the political process to lobby for handouts. Full or partial government investments reward special interests over market viability; those technologies that are truly marketable should not need financial support from the taxpayer.

Congress should adopt free-market policies and reduce unnecessary roadblocks to clean energy investments, but it is not the role of the federal government to play venture capitalist. Private investors should take the risk and reap the benefits or suffer the losses from their investments. Government involvement impedes that process at the risk of the taxpayer and to the detriment of the American economy.

**Government Meddling Distorts Investment Opportunity**

The number of investment opportunities is broad and expansive but the capital to finance them is not. This requires that choices be made among the different investments. Through a number of mechanisms including grants, loans, loan guarantees, mandates and targeted tax credits, the federal government clouds these decisions. Government investments essentially pull capital out of those limited reserves and dictate who should receive it. While established and "sure-bet" companies will likely still receive a loan, those that are more on the margin may lose an opportunity.

Because capital is in limited supply, a dollar loaned to a government-backed project will not be available for some other project. This means that the higher-risk, higher-reward companies that drive innovation and bring new services and technologies into the marketplace may not get support, while companies with strong political connections or those that produce something that politicians find appealing will get support.

The market, not politicians in Washington, is a much better at determining how to allocate resources to meet consumer demand. When a firm minimizes costs, the firm not only maximizes profit but also maximizes value to the consumer. The government's interference in capital markets significantly distorts that process.

By attempting to force government-developed technologies into the market, the government diminishes the role of the entrepreneur and crowds out private-sector investment. This practice of the government picking winners and losers denies energy technologies the opportunity to compete in the marketplace, which is the only proven way to develop market-viable products. When the government attempts to drive technological commercialization, it circumvents this critical process.

Furthermore, when the government dictates how private-sector resources are spent, both industries that stand to benefit and those that are harmed by those policy decisions will concentrate more effort into lobbying for government handouts to prevent competitors from receiving the handout.

This process, which results in the political process continually picking winners and losers, has been identified by economist Gordon Tullock and later defined by economist Anne Kreuger as rent-seeking.[1] Rather than engaging in a profit-seeking behavior the producer is engaging in a rent-seeking behavior. The more the government involves itself in decisions that should be made in private financial markets, the more the American economy will experience misallocated labor and capital. The result will be less economic growth, not more.

**Capital Markets, Opportunity and the Valley of Wealth**

The barometer of whether a good or service should be in the marketplace should be determined by the value of the output being greater than the input. We see investments that pay off, in both the short run and the long run, all the time – without the federal government artificially propping up the value by lowering the risk with taxpayer dollars.

Contrary to popular assertion, private investors will finance projects with longer term payoffs. Amazon.com was founded in 1994 and went public in 1997 with a business plan that did not expect a profit for four to five years. The dot-com bust delayed Amazon's progress, and it made its first full-year profit in 2003.[2]

More recently and in terms of energy development, the United States is witnessing a shift to a cleaner energy: natural gas. The investments are pouring in and the result has been

[1]Tullock, Gordon (1967). "The Welfare Costs of Tariffs, Monopolies, and Theft". *Western Economic Journal* **5** (3): 224–232. doi:10.1111/j.1465-7295.1967.tb01923.x. Krueger, Anne (1974). "The Political Economy of the Rent-Seeking Society". *American Economic Review* 64 (3): 291–303. JSTOR 1808883.
[2] Saul Hansell, "TECHNOLOGY; Amazon Reports First Full-Year Profit," The New York Times, January 28, 2004, http://www.nytimes.com/2004/01/28/business/technology-amazon-reports-first-full-year-profit.html (accessed July 16, 2013).

lower energy prices, increased employment and resurgence in the manufacturing industry.

Proponents of government investments in energy are quick to respond that the federal government helped create the shale oil and shale gas boom. But government involvement came years after the private sector developed the method. The roots of hydraulic fracturing go back as far as the 1860s and Stanolind Oil and Gas Corporation began studying and testing the method, with a patent issued in 1949 and a license granted to Halliburton to frack on two commercial wells.

The Department of Energy partially funded data accumulation, microseismic mapping, the first horizontal well, and tax credits to extract unconventional gas. These activities would likely have occurred and should be driven by the oil and gas industry. Nevertheless, the real driver behind the revolution was George Mitchell, who invested millions of his own money in research and development for fracking and horizontal drilling. His company's geologist, Jim Henry, first identified Barnett shale as a possibility for more energy. It took 20 years for their experiments with fracking fluids and techniques to find one that was cost effective and, as we know now, wildly successful.

Saying that without government spending we would not have the natural gas production we have today is like saying without the grocery store down the street from your house, you would starve. You find another way to get food.

The problem with the federal government's investment in the clean energy economy is that it does not allow technologies and companies to find another way but instead rely on the crutch of the taxpayer. If the cost renewable energy technologies decreases or improves and price of conventional energy increases, we may see increased generation. However, the signals of profits and losses determine what adds economic value and should determine the extent of that transition and investors should obtain their financing in private markets to properly align the risk and reward of such investments.

To be clear, the market opportunity for clean energy investments already exists. Americans spent $481 billion on gasoline in 2011.[3] Both the electricity and the transportation fuels markets are multi-trillion dollar markets. The global market for energy is $6 trillion.[4] Clean energy investments alone totaled one trillion dollars from 2004-2011.[5] Any clean energy technology that obtains a part of that market share will make tens, if not hundreds, of billions of dollars annually.

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[3] Janice Podsada, "Americans Spent Record Sum on Gasoline in 2011," January 3, 2012, http://articles.courant.com/2012-01-03/business/hc-gasoline-record-spending-2011-20111230_1_tom-kloza-oil-price-information-service-crude (accessed July 16, 2013).

[4] SelectUSA, "The Energy Industry in the United States," http://selectusa.commerce.gov/industry-snapshots/energy-industry-united-states (accessed July 16, 2013).

[5] Bloomberg New Energy Finance, "Clean energy attracts its trillionth dollar," December 6, 2011 http://bnef.com/PressReleases/view/176 (accessed July 16, 2013).

Families in the United States and all over the world desire to get their vehicles from point A to point B and to turn their light switches on with a sense of reliability and affordability. The market demand for transportation and electricity is incentive enough to spur competition in the industry and obtain private financing without distortions from the federal government.

**More Internets, Less Solyndras.**

When the government involves itself in capital markets, Americans are continually promised the next Internet but we continually experience the next Solyndra. That is not to say, however, that the federal government does not have a role or that innovative technologies cannot emerge from federal research. But there is a stark difference between how the Internet became commercially viable versus attempts to commercialize energy technologies.

Government projects that have become commercial successes—the Internet, computer chips, the global positioning system (GPS)—were not initially intended to meet a commercial demand but instead national security needs. Entrepreneurs saw an opportunity in these defense technologies and created the commercially viable products available today. The role of the DOE should be to conduct the basic research that the private sector would not undertake and create a system that allows the private sector, using private funds, to tap into that research and commercialize it. Federal labs should allow basic research to reach the market organically.

**Socializing Losses**

Private investors look at government loans and loan guarantees as a way to substantially reduce their risk. Even if a project may be an economic loser but has a huge upside, private companies can invest a smaller amount if the government provides a loan. Those investments are especially attractive if the federal government complements loans with other policies like targeted tax credits, DOE research dollars, and fuel efficiency standards that allow electric vehicles to accumulate credits and then trade them with non-compliant manufacturers. If the project fails, private investors still lose money, but the risk was artificially distorted.

For instance, private investors sunk $1.1 billion into the electric vehicle company Fisker but much of the private financing came after the Department of Energy approved and closed the loan for Fisker. Fisker, formed in August 2007, raised $94 million before the DOE approved the loan in September 2009.[6] After DOE closed the loan, Fisker raised over $1 billion in various rounds of venture capital funding.[7] The same holds true for the much-maligned bankrupt solar firm Solyndra. Private investors sunk $1.1 billion into

[6] Fisker raised $68 million of the $94 million after submitting the loan application.
[7] PrivCo, "FISKER AUTOMOTIVE'S ROAD TO RUIN: How a "Billion-Dollar Startup Became a Billion-Dollar Disaster" http://www.privco.com/fisker-automotives-road-to-ruin (accessed April 22, 2013).

Solyndra. Much of the private financing came after the Department of Energy announced Solyndra was one of 16 companies eligible for a loan guarantee in 2007.[8]

When economically uncompetitive technologies and companies cannot survive without the taxpayer's crutch, there is a good reason these companies cannot fully attract private financing. These investors are using political calculus to hedge their bets. Thus far, Americans have witnessed 19 taxpayer-funded failures.[9]

**Privatizing Gains**

Supporters argue a few failures are worth the risk and the numbers of success stories far outweigh bankrupt companies or ones facing difficult financial times. But even if a project receives government investment, it is a mistake to attribute that company's success to the federal government's investment.

There are companies that would, and often do, receive investment from the private sector because their technology is profitable or because investors find their technology promising and want to pursue the risk. In these cases, the government's investment partially offsets private-sector investments that would have been made without the federal backing. Although it remains to be seen if the electric vehicle company Tesla will be profitable in the long run, the automaker may be a prime example of this. Tesla, the recipient of a $465 million loan through the ATVM program, had its initial public offering in June 2010 and paid off its loan early. If Tesla's electric vehicles are the wave of the future, they should have and could have secured investment and loans through the private sector.

In other cases, the government investment is blatant corporate welfare. For example, Cogentrix of Alamosa received a loan guarantee for $90.6 million. Cogentrix is owned by a subsidiary of Goldman Sachs, a company that has a market capitalization of $77 billion and is one of the most successful financiers in the world.[10] NRG's biggest loan guarantee was for its BrightSource project, where NRG's partners include subsidiaries of BP, Chevron, and Statoil. The Dow Chemical Company received a $9 million Advanced Manufacturing Program grant. The Dow Chemical Company also had $57 billion in sales in 2012 and invests over $1 billion annually in research and development.[11]

Furthermore, a successful federally-backed company does not mean it is a good deal for energy consumers, though federal involvement gives this impression. One of the loan guarantee recipients, SolarReserve, has a project under construction and recently entered a contract to sell power to California's largest utility.

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[8] IStockAnalyst, "Fremont's Solyndra Goes from Stealth to Solar Star," October 7, 2008, at http://fefwww.istockanalyst.com/article/viewnewspaged/articleid/2686855/pageid/1 (September 30, 2011).
[9] Rachael Slobodien, "Green Graveyard: 19 Taxpayer-Funded Failures," The Foundry, November 5, 2012, http://blog.heritage.org/2012/11/05/green-graveyard-19-taxpayer-funded-failures/ (accessed July 16, 2013).
[10] Bloomberg, The Goldman Sachs, Inc, http://www.bloomberg.com/quote/GS:US (accessed July 16, 2013).
[11] The Dow Chemical Company, "Our Company," http://www.dow.com/company/index.htm (accessed May 16, 2013), and The Dow Chemical Company, "Research and Development," http://www.dow.com/michigan/locations/midmichigan/research.htm (accessed July 16, 2013).

But California law mandates that the utility must purchase 25 percent of its electricity from renewable sources by 2016 and 33 percent by 2020. With respect to SolarReserve entering into a contract with utility PG&E, the state utility commissioner acknowledged, "This is expensive, there's no getting around it, but I think this technology is something that's worth investing in." Those investments should be determined in the free market, not artificially skewed by using the political process to pick one technology over another.

If electricity generated by these projects were competitive with other sources of energy, there wouldn't be a law mandating its use. Instead, families are forced into buying pricier electricity and taxpayers are on the hook if the project fails.

**Expanding Market Opportunities for Renewable Energy**

Opportunities exist to implement market reforms that would allow renewable energy companies and all other energy technologies to be more competitive and operate on a level playing field. To that end, Congress should:

- **Allow all energy companies to form Master Limited Partnerships**. Under an MLP, businesses have the tax structure of a partnership or a limited liability company, but ownership equity trades publicly on a securities exchange. The partnership structure allows the business's owners to pay its tax on their individual tax returns while providing the flexibility and opportunity to raise capital from smaller investors directly from the stock market. About 81 percent of MLPs today are in the energy and natural resources industry, with investment and financial services making up most of the rest. Most of the energy MLPs constructed today are related to oil and gas activities; 52 percent of MLPs are in midstream and downstream activities, and 14 percent are in oil and gas exploration and production. Coal leasing and production comprises only 4 percent. The combination of the partnership tax status and the liquidity of a publicly traded company make MLPs an attractive investment opportunity for renewable energy companies as well.

- **Make immediate expensing permanently available for all business investments.** For exploration and production, companies have the ability to expense capital costs in the year of purchase. Immediate expensing allows companies to deduct the cost of capital purchases at the time they occur rather than deducting that cost over many years based on cumbersome depreciation schedules. Expensing is the proper treatment of capital expenditures for any business. Depreciation raises the cost of capital, which causes businesses to purchase less. Less capital means businesses create fewer jobs and are not able to increase wages as much as they otherwise would have for existing employees.

- **Allow states to conduct the environmental review and permitting process for all energy projects**. One of the primary reasons shale oil and shale gas production has been so successful economically and environmentally is state

government management. State regulators and private land owners have the local knowledge and the proper incentives to promote economic growth while protecting their environment. They understand site-specific challenges and can address concerns efficiently. Congress should consider privatizing some of that land, but in the meantime, transferring the management of federal lands to state regulators would encourage energy resource development on the federal estate while maintaining a strong environmental record. This could bode well particularly for renewable energy projects who may have thinner profit margins. The United States Chamber of Commerce identified 351 energy projects stalled by "not in my backyard" suits, regulatory red tape and legal challenges, mostly from environmental activist organizations. Almost half these projects (140) are renewable-energy ones. Transferring authority to the state would allow renewable projects to come online in a timely manner while protecting the environment.

**Conclusion**

Congress should resist the temptation to distort the energy market even further. Specifically, Congress should refuse to expand loan guarantee programs or to implement any new capital subsidy programs. American taxpayers cannot afford these programs, and they would put taxpayers on the hook for an untold number of projects that could fail. If they are economically viable, they can be funded by the owner of the project. The government should pursue free-market policies that allow all energy technologies to compete rather than using financing programs to pick winners and losers in the marketplace. Renewable energy may be the way of the future, but America's experiences with government interference regardless of the type of energy show that we're doing more to hurt renewables and the energy sector right now than help them.

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