



SUBSIDIES ARE THE PROBLEM, NOT THE SOLUTION, FOR INNOVATION IN ENERGY

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Good afternoon Chairman Weber, Ranking Member Grayson, and members of the subcommittee. Thank you for inviting me here to discuss the Department of Energy’s energy efficiency and renewable energy programs. I appreciate the opportunity to testify.

My name is Veronique de Rugy, and I am a senior research fellow at the Mercatus Center at George Mason University, where my primary research interests include the US economy, the federal budget, federal programs, and tax policy.

The Obama administration’s FY 2016 budget asks for a 42 percent increase in funding for the Department of Energy’s Office of Energy Efficiency and Renewable Energy (EERE) and its portfolio of programs. Yet more than 40 years after President Richard Nixon announced “Project Independence”—to wishfully wean the American economy off oil and decades of federal involvement in efforts to develop “alternative” energies—we are once again discussing how many more taxpayer dollars should be thrown at the alternative energy wall in the hopes that something will finally stick.

Far from suggesting that alternative energies aren’t welcome or desirable, I believe that it’s time for policymakers to recognize that allowing the marketplace to determine winners and losers is preferable to a politicized, top-down approach that has produced more black eyes than benefits.

These black eyes belong to both parties and extend well beyond Solyndra and the ill-fated 1705 energy loan program, which has become a symbol of the problems with federal involvement in energy markets. Indeed, a short list of the federal missteps over the years would include so-called clean coal, the Synthetic Fuels Corporation, the Clinch River Breeder Reactor, National Ignition Facility, Superconducting Super Collider,

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FutureGen, Partnership for a New Generation of Vehicles, FreedomCAR, and the Yucca Mountain nuclear waste repository mess.¹

I would argue that the most important consideration today should not be whether the Obama administration wishes to spend too much on EERE programs. (It does.) Nor should it be to figure out which special-interest squeaky wheels should get the most grease. What I believe we should be discussing is whether these subsidy programs should exist at all. I would argue that EERE programs should be abolished, along with all other energy subsidies—including those that benefit fossil-fuel production—because

- 1) government lacks the incentives to manage funds that private investors have;
- 2) giving subsidies to some businesses puts other businesses that do not receive such subsidies at a disadvantage, distorting investment and other economic activity; and
- 3) the existence of government subsidies increases the incentive to lobby and the power of special interests.

GOVERNMENT LACKS THE PROPER INCENTIVES

Even with the best of intentions, elected officials and bureaucrats simply do not possess the proper incentives to manage taxpayers' money prudently. They are not rewarded when they maximize consumer value; nor are they punished when they take unnecessary risks or fail to minimize costs. Government actors operate with limited knowledge. While individuals acting in markets are able to use price signals to guide their decisions. When a private company fails, the owners and its investors lose. Government decision makers have no such guide. They have no way of accounting for the value or costs of their decisions. And when the government fails, taxpayers lose.

Subsidies are justified as being necessary to encourage the development of alternative energies because the private sector is unwilling to undertake the risk necessary for their development. The truth is that private investors *should* avoid throwing scarce dollars at endeavors that do not make economic sense. Instances where the private sector will not invest signal that it would also be a bad idea for taxpayers to “invest.”

Policymakers who believe that entrepreneurs and venture capitalists are investing insufficiently in new technologies should focus their efforts on reducing the federal tax burden on businesses and investment rather than attempting to subsidize specific firms, industries, or technologies. Lowering the tax burden is more likely to result in higher economic growth, innovation, and job creation—the same canned justification that policymakers often fall back on to justify subsidy programs.

It is amazing that many of the policymakers who believe that the private sector needs the government to fill this mythical investment gap are the same ones who want to further tax the rewards of investment, and support sending the money to agencies like EERE that fund the research and development of commercial products. Advanced research and development subsidies are a form of corporate welfare because the rewards end up going to private interests while the costs are borne by taxpayers. This cycle of “tax and subsidize” is just another example of the government robbing Peter to pay Paul. Policymakers like to tout Paul’s “success stories” when defending energy subsidies, but somehow Peter escapes acknowledgement.

1. See Chris Edwards, “Energy Subsidies” (Downsizing the Federal Government, Cato Institute, Washington, DC, February 2009), <http://www.downsizinggovernment.org/energy/energy-subsidies>.

SUBSIDIES DISTORT ECONOMIC ACTIVITY

Policymakers justify energy subsidies by arguing that they are needed to fix alleged imperfections in the marketplace. The imperfections, however, are typically short-term issues (e.g., oil price spikes) that the marketplace will address—if allowed. Policymakers often rush to address short-term concerns with government interventions, including subsidies, which end up distorting economic activity and generating failures of their own.² The problem is compounded by the reality that policymakers usually have political and parochial interests in mind when creating and sustaining subsidy programs. When government intervenes,

- 1) subsidized firms get an unfair competitive advantage over firms that do not receive a government subsidy, and
- 2) policymakers, instead of the market, pick winners and losers.

Unseen Losses of Unsubsidized Competitors

By aiding particular businesses and industries, subsidies put other businesses and industries at a disadvantage. This market distortion generates losses to the economy that are not easily seen and thus generally aren't considered by policymakers. For example, energy companies that don't receive a government subsidy are disadvantaged when they compete against companies that do receive government backing. A company or entrepreneur with a superior product or technology might never reach the market because they didn't have access to government handouts. The result is a diversion of resources from businesses preferred by the market to those preferred by policymakers, which leads to losses for the overall economy.

The Cost of Policymakers Picking Winners and Losers

When the government starts choosing industries and technologies to subsidize, it often makes bad decisions at taxpayer expense, because policymakers possess no special knowledge that allows them to allocate capital more efficiently than markets. Businesses and venture capital firms make many mistakes as well, but they bear the consequences of those mistakes. When the government picks losers, the costs are involuntarily borne by taxpayers.

Even the supposed “success stories” that government officials and the direct beneficiaries of subsidies like to tout at congressional hearings do not come without cost. In addition to the taxpayer money that's spent when policymakers try to steer the market in certain directions, government intervention can also delay the development of superior alternatives by companies and entrepreneurs who didn't receive government backing. Worse, young companies and entrepreneurs can have a harder time acquiring capital because private investors usually prefer to provide capital to projects that are subsidized over ones that are not.

In a 2009 article in *Wired* magazine, Darryl Siry, a former executive with Tesla Motors, which has benefitted from government handouts, wrote that startup companies applying for energy subsidies “have admitted that private fundraising is complicated by investor expectations of government support.”³ He noted that the government trying to pick winners distorts the market for private capital, which “will have a stifling effect on innovation, as private capital chases fewer deals and companies that do not have government backing have a harder time attracting private capital.”⁴

2. See Jerry Taylor and Peter Van Doren, “Energy Interventions” (Downsizing the Federal Government, Cato Institute, Washington, DC, February 2009), <http://www.downsizinggovernment.org/energy/intervention>.

3. Darryl Siry, “In Role as Kingmaker, Energy Department Stifles Innovation,” *Wired*, December 1, 2009.

4. *Ibid.*

CORRUPTING INFLUENCE OF SPECIAL INTERESTS

Numerous economists have demonstrated that government officials benefit by acting on behalf of special interests under the guise of working on behalf of the public good.⁵ Policymakers aren't driven by the profit motive as is the case in the marketplace; rather, concerns about reelection and other self-rewarding benefits drive the decision-making process. Thus, interest groups who gain, or stand to gain, from government subsidies are willing and able to exploit the natural self-interest of policymakers.

When “free” government money is up for grabs, interests that stand to benefit have a strong incentive to organize and lobby for a slice of the pie. Policymakers face little or no cost for conferring benefits on particular interests who return the favor by delivering votes and campaign funds. Adding in the lack of incentive for policymakers to be good stewards of taxpayers' money results in government programs that exist to pick winners and losers in the marketplace—the “winner” being a politically predetermined outcome. Unfortunately, when the government tries to pick winners and losers, it often picks the wrong horse at the expense of taxpayers and the broader economy.

Government subsidies create an unhealthy—and sometimes corrupt—relationship between commercial interests and the government. The more the government has intervened in energy markets, the more lobbying activity has been generated. The more subsidies that it hands out to businesses, the more pressure policymakers face to keep the federal spigot flowing. As the number of lobbyists grow, more economic decisions are made on the basis of politics, and more resources are misallocated. And the door opens to cronyism and corruption.

Solyndra has become emblematic of these issues, even as policies expanding subsidies for alternative energy companies have been pursued enthusiastically over the past several years. According to the *New York Times*, Solyndra “spent nearly \$1.8 million on Washington lobbyists, employing six firms with ties to members of Congress and officials of the Obama White House” during the period of time that its subsidized loan request was under review by the Department of Energy.⁶ Beyond Solyndra, the *Washington Post* found that “\$3.9 billion in federal grants and financing [from the Department of Energy] went to 21 companies backed by firms with connections to five Obama administration officials.”⁷

THE DEPARTMENT OF ENERGY'S 1705 LOAN PROGRAM⁸

The Department of Energy's 1705 loan program is a good example of the gap between what subsidy proponents claim they will achieve and what actually happens. The program was a key part of the Obama administration's 2009 stimulus program and was justified on the grounds that viable renewable energy companies lack sufficient access to capital. The alleged imperfections of capital markets is a common—and mistaken—claim often used by policymakers to justify government intervention in various areas of the economy.

In reality, nearly 90 percent of the 1705 loan guarantees went to subsidize projects backed by large, politically connected companies including NRG Energy Inc. and Goldman Sachs. Thus, it's hard to believe that taxpayer-backed loans were necessary to make up for a supposed lack of capital available to economically viable commercial concerns.

The 1705 program is also a good example of the government favoring multiple interest groups at the expense of taxpayers: (1) lenders who are reimbursed by taxpayers in the event of a default and (2) the companies that

5. See Mancur Olson, *The Logic of Collective Action* (Cambridge, MA: Harvard University Press, 1971); and Gordon Tullock, “Rent Seeking,” *New Palgrave Dictionary of Economics*, ed. Steven N. Durlauf and Lawrence E. Blume (Palgrave Macmillan, 2008).

6. Eric Lipton and John M. Broder, “In Rush to Assist a Solar Company, U.S. Missed Signs,” *New York Times*, September 22, 2011.

7. Carol Leonnig and Joe Stephens, “Federal Funds Flow to Clean-Energy Firms with Obama Administration Ties,” *Washington Post*, February 14, 2012.

8. This section is a summary of testimony I previously delivered on the subject, which is attached: Veronique de Rugy, “A Guarantee for Failure: Government Lending under Sec. 1705” (Testimony before the House Committee on Oversight and Government Reform, Subcommittee on Regulatory Affairs, Mercatus Center at George Mason University, Arlington, VA, July 18, 2012).

borrow at beneficial rates and conditions. But while banks and companies that receive the guarantees get the upside of the program, taxpayers bear the risk and shoulder the burden when companies like Solyndra go under and default on their loans.

While the results of the 1705 loan program speak for itself, the true problem is deeper than the numbers. Like most government interventions, this program—and government interventions in general—create serious and systemic distortions in the market. These distortions create the conditions for businesses to maximize profits by pleasing government officials rather than customers. This is called cronyism, and it entails enormous—and, most often, unseen—economic costs.

CONCLUSION

When the government subsidizes businesses, it weakens profit-and-loss signals in the economy and undermines market-based entrepreneurship. Most of America's technological and industrial advances have come from innovative private businesses in competitive markets. Indeed, it is likely that most of our long-term economic growth has come not from existing large corporations or governments but from entrepreneurs creating new businesses and pioneering new industries. Such entrepreneurs have often had to overcome barriers put in place by governments and dominant businesses receiving special treatment.

Policymakers who are interested in supporting the entrepreneurs and companies that will deliver the next generation of energy supplies and products should focus their attention on correcting the federal government's hostile tax climate and dispense with the futile hopes of outsmarting the marketplace.



A GUARANTEE FOR FAILURE: GOVERNMENT LENDING UNDER SEC. 1705

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Testimony Before the House Committee on Oversight and Government Reform, Subcommittee on Regulatory Affairs
The Administration's Bet on Abound Solar: Assessing the Costs to the American Taxpayers
July 18, 2012

In 2009, renewable energy company Solyndra received \$535 million through the federally backed 1705 loan guarantee program of the Department of Energy (DOE). Two years later, the firm filed for bankruptcy and had to lay off its 1,100 employees, leaving taxpayers to bear the cost of the loan. For obvious reasons, more than any other recent events, this waste of taxpayer money has attracted much attention.

But Solyndra isn't the only company to fail after receiving a loan through this particular program. Back in October, Beacon Power Corp., an energy-storage company that received \$43 million in backing from the 1705 loan program, filed for bankruptcy. More recently, Abound Solar, Inc, a U.S. solar manufacturer that was awarded \$400 million through the program, announced that it would suspend operations and file for bankruptcy. Abound borrowed about \$70 million against the guarantee, which is likely to result in a cost of \$40 million to \$60 million to U.S. taxpayers after Abound's assets are sold and the bankruptcy proceeding is completed.

In addition, there are signs that other companies may follow in the steps of Solyndra and Abound. First Solar's Antelope Valley project, which received a \$646 million 1705 loan in 2011 through its partner Exelon, is one likely casualty; SunPower's California Valley Solar Ranch— now owned by NRG Solar—is another. The ranch received a \$1.2 billion loan guarantee last September. Whether these companies will fail or not is not yet clear, and the potential cost to taxpayers is not known. However, the precarious situation of these companies exemplifies the risk faced by taxpayers when the government extends loan guarantees to high-risk companies.

Now, the important question is whether or not these examples are representative of the 1705 loan program. What we find is that loan guarantees in this program go to two types of projects:

- Projects that would not have been funded in the open market without a government guarantee because they are too risky, and
- Projects that could have gotten a loan but were happy to benefit from the lower interest rate available through a DOE loan guarantee.

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The failure of Solyndra has attracted much attention, but the problems with loan guarantees are much more fundamental than the cost of one or more failed projects. In fact, the economic literature shows that every loan guarantee program (a) transfers the risk from lenders to taxpayers, (b) is likely to inhibit innovation, and (c) increases the overall cost of borrowing. At a minimum, such guarantees distort crucial market signals that determine where capital should be invested, resulting in lower interest rates that are unmerited and a reduction of capital for more worthy projects. At their worst, these guarantees introduce political incentives into business decisions, creating the conditions for businesses to seek financial rewards by pleasing political interests rather than customers. This is called cronyism, and it entails real economic costs.¹

Yet these loan programs remain popular with Congress and the executive branch. That's because in general most of the financial cost of these guaranteed loans will not surface for many years. Consequently, Congress can approve billions of dollars to benefit special interests with little or no immediate impact to federal appropriations, because these dollars are almost entirely off budget.

HOW DO THESE LOAN GUARANTEES WORK?

The DOE Loan Programs Office (LPO) administers three separate loan programs: (1) Section 1703 loan guarantees, (2) Section 1705 loan guarantees, and (3) Advanced Technology Vehicles Manufacturing (ATVM) loans. Here are descriptions of the three loan programs, as explained by DOE:

- Section 1703 of Title XVII of the Energy Policy Act of 2005 authorizes the U.S. Department of Energy to support innovative clean energy technologies that are typically unable to obtain conventional private financing due to high technology risks.
- Advanced Technology Vehicles Manufacturing (ATVM) loans support the development of advanced technology vehicles (ATV) and associated components in the United States. They also meet higher efficiency standards.
- The Section 1705 Loan Program authorizes loan guarantees for U.S.-based projects that commenced construction no later than September 30, 2011 and involve certain renewable energy systems, electric power transmission systems, and leading edge biofuels.²

According to LPO's website, DOE's loan guarantee authority originated from Title XVII of the Energy Policy Act of 2005 (P.L. 109-58).³ Under Section 1703, the federal government can guarantee 80 percent of a project's total cost. The American Recovery and Reinvestment Act of 2009 (P.L. 111-5) amended the Energy Policy Act of 2005 by adding Section 1705.⁴ Section 1705 was created as a temporary program, and 1705 loan guarantee authority ended on September 30, 2011.

The dollar volume of loans that can be guaranteed under DOE's authority is predetermined by congressional appropriations that oversee the program. A simple way to explain how these loans work is this: If a recipient defaults on its loan, the federal government pays the remainder of the debt to the lenders and repossesses all of the assets from the unfinished projects.⁵

1. Matt Mitchell, "The Pathology of Privilege: The Economic Consequences of Government Favoritism" (Mercatus Research, Mercatus Center at George Mason University, Arlington, VA, July 2012).

2. United States Department of Energy, accessed June 13, 2012, <https://lpo.energy.gov/>.

3. Section 1703 of the Energy Policy Act of 2005 (P.L. 109-58).

4. Section 1705 of the Energy Policy Act of 2005 (P.L. 109-58). Section 1705 was created by amending the Energy Policy Act of 2005 through the American Recovery and Reinvestment Act of 2009 (P.L. 111-5).

5. However, the Office of Management and Budget has calculated that only 55 percent of loans can be recouped from the sale of assets.

As with other loan programs, the federal government has established a credit subsidy fee to prevent taxpayer exposure. In this case, the cost of the fee is determined by DOE, with guidance from the Office of Management and Budget (OMB). The lenders usually charge the up-front guarantee fee to the borrower after the lender has paid the fee to DOE and has made the first disbursement of the loan.

Lenders handle fees differently for 1705 loans, however. Under the stimulus bill, DOE received appropriated funds to pay for credit subsidy costs associated with Section 1705 loan guarantees, which, after rescissions and transfers, was \$2.435 billion. As the Congressional Research Service rightly puts it, “Section 1705 loan guarantees were very attractive as they provided an opportunity to obtain low-cost capital with the required credit subsidy costs paid for by appropriated government funds.”⁶

DOE does not provide loans directly. Instead, borrowers have to apply to qualified lenders, who are expected to perform a complete analysis of the application. DOE then reviews the lender’s credit analysis, rather than conducting a second analysis, and DOE makes the final credit and eligibility decision.

DO LOAN GUARANTEES DO WHAT THEY CLAIM TO DO?

Leaving aside the question of whether the government should encourage the production of certain goods or services, the economic justification for any government-sponsored lending or loan-guarantee program must rest on a well-established failure of the private sector to allocate loans efficiently (meaning that deserving recipients could not have gotten capital on their own). Absent such a private-sector deficiency, the DOE’s activities would simply be a wasteful subsidy at best, and a politically motivated one at worst, to this sector of the economy.

Yet many argue that some public policy objectives require the sacrifice of marketplace efficiency. It is an accepted feature of modern American government that some public interests or social policy gains outweigh economic losses. In the case of green energy, the government’s lending programs could fulfill specific public policy objectives that the marketplace on its own would either not serve, or would supply at suboptimal levels. But do these programs do what they claim to do?

The DOE proclaims that its loan guarantees help save the planet⁷ by helping to secure funding for early-stage technologies or for the later (risky) commercialization stage—known as the manufacturing “Valley of Death.”⁸ It also claims that loan recipients will generate economic growth and “green” jobs that otherwise would not appear. DOE can thus be judged on its ability to meet these public policy goals—specifically, on its ability to fill the supply-and-demand gap in the clean energy loan market, particularly for startups.

To measure the DOE results, I looked at the flow of DOE credits to evaluate who receives them and whether the DOE is meeting its stated policy objectives of promoting new startups and encouraging the creation of green jobs. Close examination demonstrates that neither stated DOE policies nor actual lending patterns provide evidence that DOE’s loan guarantees serve any of their defined public policy purposes.

6. Phillip Brown, “Solar Projects: DOE Section 1705 Loan Guarantees” (Congressional Research Service, October 25, 2011), accessed June 13, 2012, [http://op.bna.com/env.nsf/id/jstn-8mzsy/\\$File/CRSSolar.pdf](http://op.bna.com/env.nsf/id/jstn-8mzsy/$File/CRSSolar.pdf).

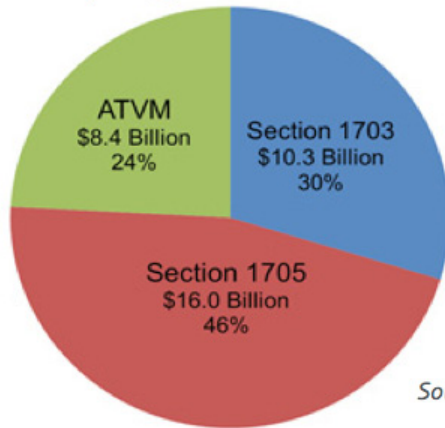
7. Mike King and W. David Montgomery, “Let’s Reset Our Energy Policy Starting with Loan Guarantees,” in *Pure Risk: Federal Clean Energy Loan Guarantees*, ed. Henry Sokolski (Arlington, VA: Nonproliferation Policy Education Center, 2012).

8. Sustainablebusiness.com, “Clean Energy: Crossing the Valley of Death,” June 2010, <http://www.sustainablebusiness.com/index.cfm/go/news.display/id/20544>.

FOLLOWING THE 1705 LOAN GUARANTEE PROGRAM MONEY

Since 2009, DOE has guaranteed \$34.7 billion, 46 percent of it through the 1705 loan program, 30 percent through the 1703 program, and 24 percent through the ATVM.⁹

Loan Guarantees by Program



Source: U.S. Department of Energy, Loan Guarantee Programs

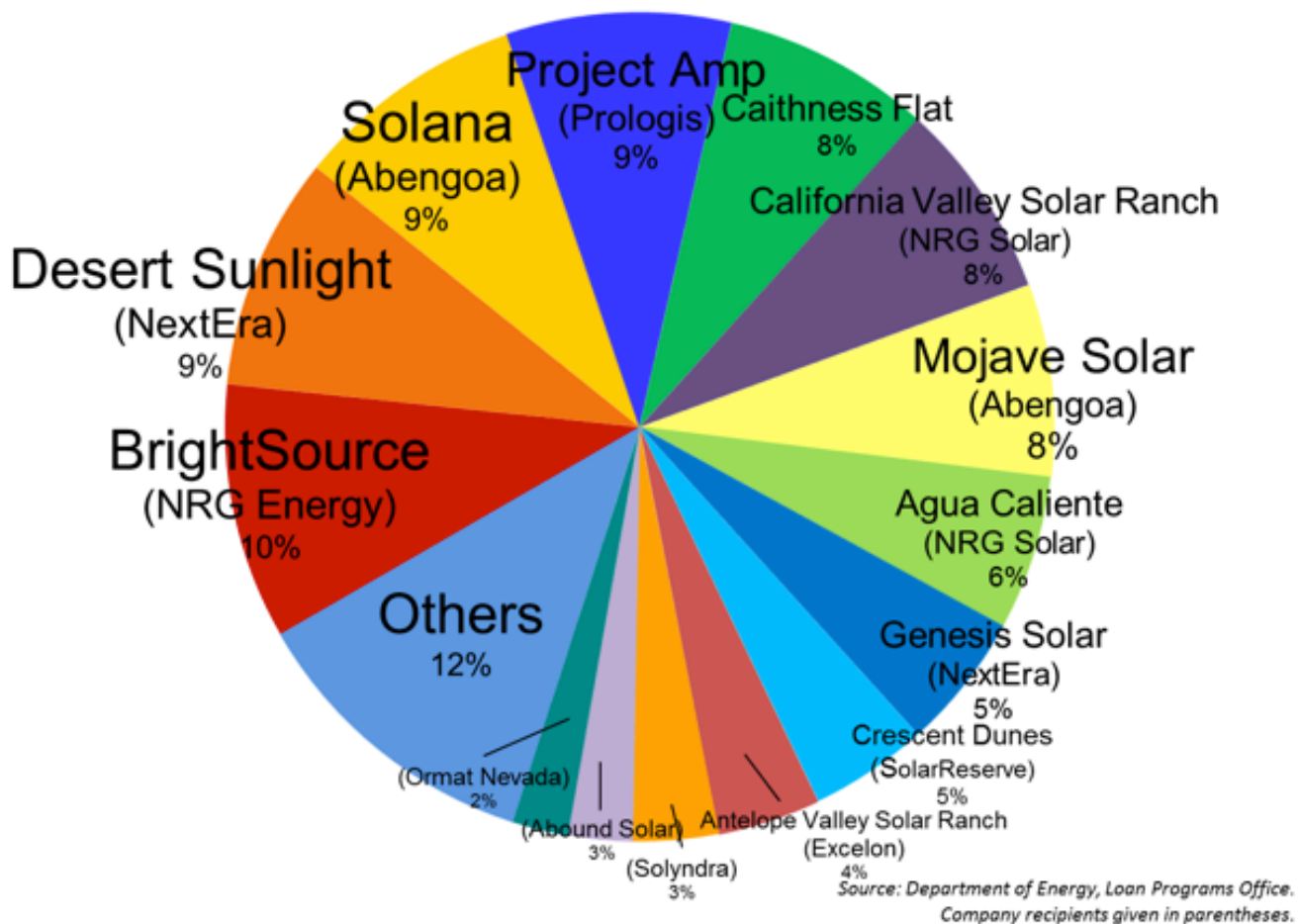
As noted earlier, the 1705 program (under which Solyndra received funding) is a product of the economic stimulus bill of 2009. This program offered borrowers better terms than the 1703 program; in fact, in some cases the government paid a substantial fee out of appropriated funds, a fee that is the borrower's responsibility under the 1703 plan. Also, many 1703-eligible projects were also eligible under the 1705 program.

The data on the 1705 program shows that 26 projects were funded under the 1705. Further analysis showed that

- The program guaranteed roughly \$16 billion in all.
- Some 2,378 permanent jobs were claimed to be created under the program. That works out to a taxpayer exposure of \$6,731,034 per job.
- The recipient of the most 1705 loans was NRG Energy Inc. (BrightSource), which received \$1.6 billion, or 11 percent of the overall amount guaranteed under the program.
- The top 10 recipients of loans under the 1705 program were all solar generation companies, which received a combined \$12.2 billion in loan guarantees (76 percent of the overall amount guaranteed). Included were NextEra Energy Resources, LLC (Desert Sunlight), a Fortune 200 company; Abengoa Solar Inc. (Solana), a Spanish multinational company; and Prologis (Project Amp), a global real estate investment trust. Utility firms like NRG Energy received three separate loans in the top-10 recipient list.
 - ♦ Prologis received \$1.4 billion (8.75 percent of the total) to install solar panels on top of a building it owns.
 - ♦ Cogentrix, a wholly owned subsidiary of the Goldman Sachs Group, Inc., received a \$90 million guarantee from the government.
 - ♦ Three companies have filed for bankruptcy so far: Solyndra, which received \$535 million in loan guarantees (3.34 percent of the total); Abound Solar, which received \$400 million (3 percent of the total); and Beacon Power, which received \$43 million (less than 0.1 percent).

9 U.S. Department of Energy, Loan Programs Office: https://lpo.energy.gov/?page_id=45.

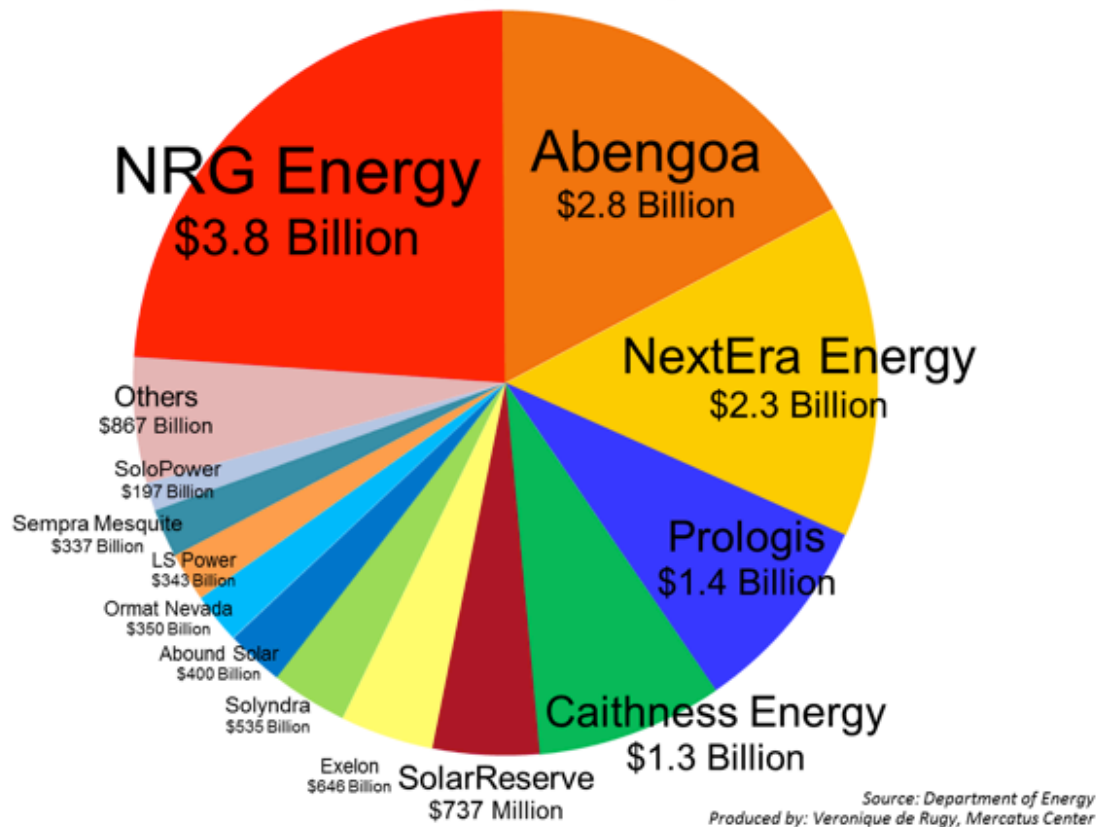
Section 1705-Supported Projects



If we organize the data by the companies that received the 1705 loans, we find

- The recipient of the most 1705 loans was NRG Energy, Inc., which received a total of \$3.8 billion—23.7 percent of the overall amount guaranteed under the 1705 program.
- Four companies— NRG Energy, NextEra Energy, Arbogea, and Prologis—received 64 percent, or \$10.3 billion, of the total amount guaranteed under the program.

Section 1705-Supported Companies



So what can we make of these figures? First, it should be noted that very few permanent green jobs were created under the 1705 loan program, or any of the other loan programs. The Obama administration had initially pushed these projects as job generators, claiming that these programs could create 5 million American jobs through investment in green technology. Also, to the extent that green jobs were created, the \$6.7 million taxpayer exposure per job is quite spectacular. This number alone would seem to debunk the idea that these DOE loan programs efficiently generate new permanent jobs.

Second, our data demonstrates that under the 1705 program most of the money has gone to large, established companies rather than to startups. Companies that benefited included established utility firms, large multinational manufacturers, and a global real estate investment fund. In addition, the data shows that nearly 90 percent of the loans guaranteed by the federal government since 2009 went to subsidize lower-risk power plants, which in many cases were backed by big companies with vast resources. This includes loans such as the \$90 million guarantee granted to Cogentrix, a subsidiary of Goldman Sachs. Currently, Goldman Sachs ranks number 80 on the list of America's Fortune 500 companies.¹⁰

Quoted in the *New York Times* recently, David W. Crane, NRG's chief executive, explained, "I have never seen anything that I have had to do in my 20 years in the power industry that involved less risk than these projects," he said. "It is just filling the desert with panels."¹¹

10. CNN Money, "America's Fortune 500 Companies," <http://money.cnn.com/magazines/fortune/fortune500/2012/snapshots/10777.html>.

11. Eric Lipton and Clifford Krauss, "A Gold Rush of Subsidies in Clean Energy Search," *New York Times*, November 11, 2011, <http://www.nytimes.com/2011/11/12/business/energy-environment/a-cornucopia-of-help-for-renewable-energy.html?pagewanted=all>.

This probably means that if there were an actual gap between supply and demand in the area of loans for energy companies, startups, and others, this program wouldn't be filling it. In fact, most of these loans look like government transfers of the worst kind. Subsidies to very large corporations smack of cronyism.

Further, while these projects are relatively low risk and backed by large companies, that does not mean that they are risk-free for taxpayers. These projects are organized as separate corporations from the parent companies, so in case of a problem, the parent company could simply restructure and get rid of the struggling project, leaving taxpayers with the bill.

Third, some of the loans went to provide capital for high-risk projects—projects likely unable to get financing from the broader market without a government guarantee. Either the company or the technology did not have the credibility that is normally required for a major loan, or the company had serious, existing financial woes that were not alleviated by the loan. Companies like Solyndra, Beacon Power, and Abound fall in this category; it may also prove to be the case for BrightSource, Solar Reserve, US Geothermal, First Solar, and California Valley Solar Ranch.

Fourth, there seems to be an even more troubling trend of “double dipping” by large companies that received loan guarantees from the DOE program. Many of the companies that have benefitted from subsidized loans under the 1705 guarantee program also received grants under the American Recovery and Reinvestment Act (ARRA). Prologis, for example, received \$1.4 billion in subsidized loans and also received a grant for \$68,000 under the Recovery Act for the purpose of “rent for warehouse space.”

Green Mountain Energy, a company of NRG Energy, received two grants under the ARRA in the second quarter of fiscal year 2011. Likewise, Reliant Energy and Reliant Energy Tax Retail LLC, two other NRG Energy companies, reported receiving *at least 37 grants* under the ARRA. These grants augmented the \$3.8 billion in loan guarantees distributed to NRG Energy under the Section 1705 loan program.

NRG will also be eligible to receive \$430 million from the Department of the Treasury.¹² Many other companies that have received DOE loan guarantees have also benefited from the Department of Treasury 1603 grants.¹³

Overall, NRG and its partners have secured \$5.2 billion in federal loan guarantees, plus hundreds of millions in other subsidies for four large solar projects.¹⁴ Examples abound of companies benefitting from multiple assistance programs initiated during this period. For instance, in addition to the \$538 million it received under the 1705 loan program, Solyndra benefited from a \$10.3 million loan guarantee that the Export-Import Bank extended to a Belgian company (described in the Ex-Im deal data as “Zellik Ii Bvba”) to finance a sale of Solyndra products.¹⁵

Solyndra isn't alone. First Solar's Antelope Valley project received a \$646 million 1705 loan in 2011 through its partner Exelon, and per my calculation from the Ex-Im Bank FOIA deal data information for FY2011,¹⁶ the company also scored \$547.7 million in loan guarantees to subsidize the sale of solar panels to solar farms abroad.

12. Eric Lipton and Clifford Krauss, “A Gold Rush of Subsidies in Clean Energy Search,” *New York Times*, November 11, 2011, <http://www.nytimes.com/2011/11/12/business/energy-environment/a-cornucopia-of-help-for-renewable-energy.html?pagewanted=all>

13. Department of Treasury, “1603 Program: Payments for Specified Energy Property in Lieu of Tax Credits,” <http://www.treasury.gov/initiatives/recovery/Pages/1603.aspx>.

14. Eric Lipton and Clifford Krauss, “A Gold Rush of Subsidies in Clean Energy Search,” *New York Times*, November 11, 2011, <http://www.nytimes.com/2011/11/12/business/energy-environment/a-cornucopia-of-help-for-renewable-energy.html?pagewanted=all>.

15. Export-Import Bank of the United States, 2011 Annual Report, <http://www.exim.gov/about/reports/ar/2011/index.html>, p. 30.

16. Export-Import Bank of the United States, “Open Government Initiative,” <http://www.exim.gov/open/>.

More troubling is the fact that some of the Ex-Im money went to a Canadian company named St. Clair Solar, which is a wholly owned subsidiary of First Solar.¹⁷ St. Clair Solar received a total of \$192.9 million (broken into two loans) to buy solar panels from First Solar. In other words, the company received a loan to buy solar panels from itself. Incidentally, First Solar also received a \$16.3 million loan from the government in 2010 to expand its factory in Ohio.¹⁸

Unfortunately, this double dipping by energy companies isn't new—and while there is no doubt that the deals are lucrative for the companies involved, taxpayers have a lot to lose. Further, double-dipping provides evidence that businesses will be tempted to steer away from productive value creation for society and instead work on narrowly serving political interests for financial gain.

THE CASE AGAINST CLEAN ENERGY LOAN GUARANTEES

The case of Solyndra—a startup that received \$528 million in federal loans before it went bankrupt, laid off over one thousand workers, and left taxpayers to foot the bill—is striking, but it actually represents only one aspect of the fundamental problems caused by loan guarantee programs in general, and DOE's clean energy loan programs in particular.

Socialized Losses and Privatized Gains

One conspicuous issue is the default rate. Historically, loans guaranteed by the government have had a higher default rate than loans issued by the private sector. For instance, the Small Business Administration (SBA) has a long-term default rate of roughly 17 percent.¹⁹ This compares to 4.3 percent for credit cards and 1.5 percent for bank loans guaranteed by the Federal Deposit Insurance Corporation.

The Congressional Budget Office has calculated that the risk of default on the DOE's nuclear loan guarantee program is well above 50 percent.²⁰ In 2011, the CBO updated its study and replaced this embarrassing default rate with a list of variables affecting the rate.²¹ The report now asserts that higher equity financing of these projects would reduce the risk of default; such a solution seems unlikely, however, as most loan guarantee programs cover 80 percent of their financing through debt rather than equity.

Moreover, according to the CBO, when the federal government extends credit, the associated risk of those obligations is effectively passed along from private lenders onto taxpayers who, as investors, would view this risk as costly. In other words, when the federal government encourages a risky loan guarantee it is “effectively shifting risk to the members of the public.”²²

Another issue might best be summarized as the sharing of loss versus the privatizing of gain. If a loan is not repaid, the cost of the investment devolves to the taxpayers. But what if the loan is repaid? The lender will benefit from all the interest payments it collected thanks to a low-risk loan, and the borrower will benefit from its successful

17. Tim Carney, "Firm Sells Solar Panel to Itself: Taxpayers Pay," *Washington Examiner*, March 18, 2010, <http://campaign2012.washingtonexaminer.com/article/firm-sells-solar-panels-itself-taxpayers-pay/434251>.

18. Tim Carney, "Firm Sells Solar Panel to Itself: Taxpayers Pay," *Washington Examiner*, March 18, 2010, <http://campaign2012.washingtonexaminer.com/article/firm-sells-solar-panels-itself-taxpayers-pay/434251>.

19. Veronique de Rugy, "Banking on the SBA" (Mercatus on Policy, Mercatus Center at George Mason University, Arlington, VA, 2007), accessed on June 13, 2012, <http://mercatus.org/publication/mercatus-policy-banking-sba>.

20. Pamir Wang, "Federal Clean Energy Loan Guarantees: Their Moral Hazards," in *Pure Risk: Federal Clean Energy Loan Guarantees*, ed. Henry Sokolski (Arlington, VA: Nonproliferation Policy Education Center, 2012).

21. Congressional Budget Office, "The Cost-Effectiveness of Nuclear Power for Navy Surface Ships" (May 12, 2011), <http://www.cbo.gov/publication/41454>.

22. Congressional Budget Office, "Fair-Value Accounting for Federal Credit Programs" (Issue Brief, March 2012).

business venture. In other words, loan guarantee programs are yet another way that the federal government socializes losses while privatizing benefits.²³

The Moral Hazard

Federally backed loans create a classic moral hazard. Because the loan amount is guaranteed, banks have less incentive to evaluate applicants thoroughly or apply proper oversight. In other words, the less skin the lender has in the game, the less likely it is that the lender will vet the quality of the project. In addition, the company that borrows the money risks less than it would if its loan weren't guaranteed. Further, each time the government bails out a firm or shoulders the cost of a loan guarantee, it conveys to borrowers and bankers alike the mistaken idea that it's okay for them to take excessive risks.

In a March 2012 report, the Government Accountability Office (GAO) found that the DOE loan guarantee program was riddled with program inefficiencies, which calls the fairness of its decisions into question.²⁴ When the GAO requested data from the DOE on the status of applications, the DOE did not have consolidated data readily available and had to assemble the data from various sources over several months. Inadequate documentation and out-of-date review processes reduce one's sense of confidence in the consistency and fairness of DOE's decisions and raise questions about DOE's ability to fully assess and mitigate project risks.

Moreover, the private sector (in the absence of government intervention) builds the infrastructure to assess risk, but the federal government has neither the expertise nor the incentive to build such a safety net. This increases the likelihood that loan guarantees will be awarded based on factors other than the ability of the borrower to repay the loan, such as political connections and congressional pork.²⁵

The moral hazard of loan guarantees increases when rules intended to prevent the program from being a pure company giveaway are removed. When, as part of the stimulus bill of 2009, the government lifted the subsidy fees for 1705 loans, the cost to taxpayers went up and high-risk companies were drawn in.

Mal-investment

Loan guarantee programs can also have an impact on the economy beyond their cost to taxpayers because mal-investment—the misallocation of capital and labor—may result. In theory, banks lend money to the projects that represent the greatest likelihood of success, in terms of loan repayment, profits, and economic growth. However, since there isn't an infinite amount of capital available at a given interest rate, loan guarantee programs could redirect resources from politically neutral projects to politically motivated ones. Think about it this way: When the government reduces a lender's exposure to fund a project it wouldn't have funded otherwise, it reduces the amount of money available for projects that would have been viable without subsidies.

This government involvement can distort the market's signals further. For instance, the data shows that private investors tend to congregate toward government guarantee projects, regardless of the merits of the projects. This takes capital away from unsubsidized projects that have a more viable business plan and a better probability of success without subsidies. As the GAO noted, "Guarantees would make projects [the federal government] assists

23. Russ Roberts, "Gambling With Other People's Money" (Mercatus Center at George Mason University, Arlington, VA, April 28, 2010), accessed June 13, 2012, <http://mercatus.org/publication/gambling-other-peoples-money>.

24. Government Accountability Office, "DOE Loan Guarantees: Further actions are needed to improve tracking and review of applications" (March 2012), accessed June 13, 2012, <http://www.gao.gov/assets/590/589210.pdf>.

25. King and Montgomery, "Let's Reset," 22.

financially more attractive to private capital than conservation projects not backed by federal guarantees. Thus both its loans and its guarantees will siphon private capital away.”²⁶

This reallocation of resources by private investors away from viable projects may even take place within the same industry—that is, one green energy project might trade off with another, more viable, green energy project.

More important, once the government subsidizes a portion of the market, the object of the subsidy becomes a safe asset. Safety in the market, however, often means low return on investments, which is likely to turn venture capitalists away. As a result, capital investments will likely dry out, and innovation rates will go down.²⁷

In fact, the data show that in cases in which the federal government introduced few distortions, private investors were more than happy to take risks and invest their money— even in projects that required high initial capital requirements. The Alaska pipeline project, for example, was privately financed at a cost of \$35 billion, making it one of the most expensive energy projects undertaken by private enterprise.²⁸ The project was ultimately abandoned in 2011 because of weak customer demand and the development of shale gas resources outside Alaska.²⁹ However, the undertaking proves that the private sector invests money even when there is a chance that it could lose it. Private investment in U.S. clean energy totaled \$34 billion in 2010, up 51 percent from the previous year.³⁰

Finally, when the government picks winners and losers (in the form of a technology or a company), it often fails. Two factors come into play. First, the government does not have an advantage in information or technology over private agents. In many cases their decision makers are insulated from market signals and won’t learn important and necessary lessons about the technology or the market. Second, the resources that the government offers are so addictive that companies may switch their focus from the needs of the customer to the wishes of government officials.

Cronyism

In a 2003 speech to the National Economists Club in Washington, D.C., then–Federal Reserve Governor Edward M. Gramlich argued that loan guarantee programs are unable to save failing industries or to create millions of jobs, because—he explained—the original lack of access to credit markets is caused by serious industrial problems, not vice versa. If an applicant’s business plan cannot show a profit under reasonable economic assumptions, private lenders are unlikely to issue a loan, and rightly so.

Then why is the federal government still guaranteeing loans? Because it serves three powerful constituencies: lawmakers, bankers, and the companies that receive the subsidized loans.

Politicians are able to use loan programs to reward interest groups while hiding the costs. Because such loan programs are almost entirely off budget, Congress can approve billions of dollars in loan guarantees with little or no impact on appropriations. Moreover, unlike Solyndra, most failing projects take years to collapse, allowing politicians to collect short-term rewards while skirting, or postponing, political blame. It’s like buying a house on credit without having a trace of the transaction on your credit report.

26. Wang, “Federal Clean Energy,” 15.

27. Wang, “Federal Clean Energy,” 15.

28. Peter Bradford, “Taxpayer Financing for Nuclear Power: Precedents and Consequences” (Nonproliferation Policy Education Center, 2008), http://www.npolicy.org/article_file/Taxpayer_Financing_for_Nuclear_Power-Precedents_and_Consequences.pdf.

29. Ben Casselman, “Alaska Pipeline Scrapped,” *Wall Street Journal*, May 18, 2011, <http://online.wsj.com/article/SB10001424052748703509104576329541913338186.html>.

30. The Center for the Next Generation website, “Advanced Energy and Sustainability,” accessed June 13, 2012, <http://www.tcng.org/programs/advanced-energy-and-sustainability>.

It is also easy to understand why companies and company executives seek these loans. The preferential treatment they enjoy comes at the expense of the taxpayer, however, and ultimately at the expense of our market and political system.

Another potential beneficiary of these loans is the financial institution that issues them. With other loan programs, such as the SBA's, evidence suggests that lenders may have an incentive to favor borrowers that qualify for a loan with a government guarantee over those that do not. When a small business defaults on its obligation to repay a loan, bankers do not bear most of the cost; taxpayers do. Meanwhile, lenders make large profits on SBA loans by pooling the guaranteed portions and selling investors trust certificates that represent a claim to the cash flow.

How profitable is this? Testifying before Congress in April 2006, David Bartram, the president of the SBA Division of U.S. Bancorp, the nation's sixth largest financial services company, explained that "return on equity of SBA loans can exceed 70 percent."³¹ A 70 percent return on equity (RoE) is remarkably high. Right now, the five-year average RoEs for the two biggest banks in America—Citigroup and Bank of America—are 16.2 percent and 14.5 percent, respectively.

More study is required to determine whether a similarly outsized return to financial institutions occurs with the DOE program, but the parallels between the DOE and SBA programs suggest that this is a possibility.

CONCLUSION

The Department of Energy's loan guarantee programs have been the focus of much public attention since energy companies Solyndra, Beacon Power, and Abound went bankrupt, leaving taxpayers to shoulder hundreds of millions of dollars in loan guarantees. The evidence strongly suggests that these programs fall short of their stated goals of developing clean energy and creating jobs. Of equal concern is the indirect damage to the nation's economic fabric through distortion of market signals, cronyism, and mal-investment. Companies are pursuing financial benefit through the political system, and the economy—and our country—are paying the price.

31. Veronique de Rugy, "Banking on the SBA" (Mercatus on Policy, Mercatus Center at George Mason University, Arlington, VA, 2007), <http://mercatus.org/publication/mercatus-policy-banking-sba>.

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