

BACKGROUND

No. 2840 | SEPTEMBER 3, 2013

Advanced Energy Trust Fund: Tying a Good Idea to a Bad One

Nicolas D. Loris

Abstract

Senator Lisa Murkowski introduced the idea of an Advanced Energy Trust Fund that would use government revenues from oil and gas production on federal lands that are currently off-limits for spending on alternative energy technologies. Congress should open access to prohibited federal lands in order to increase energy supplies and spur job creation. But the royalties that the government collects should not go to unnecessary and duplicative spending on advanced energy technologies. The Heritage Foundation's Nicolas Loris explains how the free market is the true driver of technological innovation in the energy sector.

Senator Lisa Murkowski (R-AK) recently released draft legislation outlining her idea of an Advanced Energy Trust Fund. The trust fund would create a new stream of revenue for the Secretary of Energy to spend on basic and applied research for new energy technologies—with funding coming predominately from oil and gas production on federal lands currently off-limits to development. Senator Murkowski's proposal ties a good idea to a bad one: Opening areas to oil and gas exploration and production will increase energy supplies, create jobs, and grow the economy; but using the federal revenues for new energy technologies is wasteful, duplicating a number of federal spending programs already in place. Fundamentally, the proposal ignores the fact that competition in the marketplace is the most effective mechanism to drive technological innovation.

KEY POINTS

- Senator Murkowski's Advanced Energy Trust Fund would use federal revenues collected from energy development on currently closed federal lands to spend on alternative energy technologies.
- Increasing access to oil and gas development on federal lands and federal waters would increase American energy supplies, create jobs, and grow the economy. Congress should lift onshore and offshore drilling bans.
- Congress should not use the money that the federal government collects from energy production on federal lands to create a new fund for alternative energy technologies. Doing so would be a waste of money, duplicating many federal and state programs.
- Markets will drive new energy technologies to the market and Congress can help by no longer picking winners and losers, allowing the truly promising and wealth-creating ideas and technologies to move forward.

This paper, in its entirety, can be found at <http://report.heritage.org/bg2840>

Produced by the Thomas A. Roe Institute
for Economic Policy Studies

The Heritage Foundation
214 Massachusetts Avenue, NE
Washington, DC 20002
(202) 546-4400 | heritage.org

Nothing written here is to be construed as necessarily reflecting the views of The Heritage Foundation or as an attempt to aid or hinder the passage of any bill before Congress.

How the Advanced Energy Trust Fund Would Work

Under Senator Murkowski's Advanced Energy Trust Fund, the U.S. Department of Energy would award grants of no more than \$25 million per project for basic and applied research on "the most promising energy technologies within the most promising energy-related fields."¹ In the Senator's comprehensive energy blueprint outlined earlier this year, those fields included renewable energy, energy efficiency, alternative fuels, and advanced vehicles.²

Financing for the trust fund would predominantly come from money the federal government collects from oil and gas production on federal lands. Energy producers pay money to bid on the land, make rental payments to maintain the right to develop resources in the future, and pay royalties for the oil and gas produced. Senator Murkowski proposes financing the trust fund with these revenue streams, but only from energy production on federal lands that are currently off-limits. Voluntary contributions to the trust fund from individuals, companies, and nongovernmental organizations would also be accepted. In an attempt to create more fuel diversity, the trust fund would devote at least 50 percent of the grants to transportation-related technologies.

Energy Expansion Will Create Jobs, Energy Supply, and Revenue. While the U.S. has witnessed an energy boom in recent years thanks to production of oil and gas on private and state-owned lands, an abundance of resources lies beneath land owned by the federal government. The federal government owns 28 percent of the land in the United States, including significant portions of the energy-abundant West. Further, the federal government controls leasing off America's coasts, where an estimated 86 billion barrels of oil and 420 trillion cubic

feet of natural gas lie, about 12 years' and 17 years' worth at current consumption rates, respectively.³ But even these numbers will likely be an underestimation as we learn more and continue to explore these untapped areas. Opening up new federal lands and waters to exploration and development would increase supply to help drive prices down.

Further, expanding the opportunities to explore and drill for oil and gas on federal lands would create more opportunity for job growth. Already since 2007, employment in the oil and gas industry has grown by 40 percent, and this in spite of a recession and the President's offshore moratorium in 2010. Employment growth across the private sector grew only 1 percent over the same period.⁴

Federal and state governments would stand to benefit as well since increased production would increase revenues from bonus bids (for new leases), royalties, rents, and increased economic activity. For onshore production on federal lands, states receive 50 percent of the royalty while much of the rest goes to the national Reclamation Fund. However, the U.S. Treasury collects most of the revenue from offshore production with only 27 percent going to the states. In 2012, royalty revenues from energy production on federal lands totaled over \$12 billion, with the U.S. Treasury collecting \$6.6 billion, states collecting \$2.1 billion, and the Reclamation Fund collecting \$1.6 billion.⁵

Trust Fund Duplicates Existing Programs. While increasing access to natural resources on federal lands would be good, tying it to a trust fund duplicates other federal programs, thereby wasting taxpayer dollars. The U.S. already has several programs in the Department of Energy (DOE) that promote the commercialization of alternative vehicle technologies, including programs that focus on hydrogen production, delivery storage, and fuel

1. "Advanced Energy Trust Fund," Murkowski discussion draft, http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=7f583064-b880-4869-83e6-130a96f1427e (accessed August 2, 2013).
2. Lisa Murkowski, "Energy 20/20: A Vision for America's Energy Future," February 4, 2013, http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=099962a5-b523-4551-b979-c5bac6d45698 (accessed August 19, 2013).
3. Bureau of Ocean Energy Management, "Oil and Gas Energy Program," <http://www.boem.gov/Oil-and-Gas-Energy-Program/Index.aspx> (accessed August 2, 2013).
4. Energy Information Administration, "Oil and Gas Industry Employment Growing Much Faster than Total Private Sector Employment," *Today In Energy*, August 8, 2013, <http://www.eia.gov/todayinenergy/detail.cfm?id=12451&src=email> (accessed August 13, 2013).
5. Elizabeth Malm, "Federal Mineral Royalty Disbursements to States and the Effects of Sequestration," The Tax Foundation, May 30, 2013, http://taxfoundation.org/article/federal-mineral-royalty-disbursements-states-and-effects-sequestration#_ftn17 (accessed August 20, 2013).

cell technologies; bioenergy research in feedstocks, conversion, biorefineries, and infrastructure; and vehicle technologies research in hybrid and vehicle systems, energy storage, power electronics and electrical machines, advanced combustion engines, fuels and lubricants, and materials technologies.⁶ In addition to these programs, the DOE conducts research in the Office of Science on hydrogen and battery storage, and on bioenergy creation and production, with the end goal of advancing alternative fuel technologies. The federal government is not lacking in programs and funding for alternative energy technologies.

In fact, there are too many, such that the DOE's role in basic research has mutated into corporate welfare. One such example is the DOE's Advanced Technology Vehicles Manufacturing (ATVM) loan program in which the agency has provided \$8.4 billion in loans to private companies since 2009 to develop advanced vehicle technologies and associated equipment.⁷ Two of the loans went to established companies, Ford and Nissan, to retool their factories to produce more fuel-efficient and electric vehicles. Another two went to electric vehicle companies Fisker Automotive and Tesla Automotive, the first of which is on the verge of bankruptcy, while the latter has had recent financial success. A fifth loan went to the Vehicle Production Group to make a wheelchair-accessible vehicle that runs on natural gas, which is also encountering financial difficulties. If any of these companies thought the investment was worth the risk, they should have obtained private financing outside the DOE. Loans from the federal government privatize the benefits and distribute any potential losses among the taxpayers.

In addition to these programs, the Department of Energy spends multiple billions of dollars through the Office of Science, giving money to DOE

laboratories to conduct basic research that the private sector would not undertake, and in many instances has aspirations of technological innovation in the energy sector. Further, the Advanced Research Projects Agency–Energy (ARPA-E) is another program designed to fund high-risk, high-reward projects on which the private sector would not embark on its own. However, the federal government has awarded several ARPA-E grants to companies and projects that are neither high-risk nor something that private industry cannot support.

These problems with ARPA-E were recently identified by the Government Accountability Office (GAO) and the DOE's Inspector General.⁸ Of the 44 small and medium-size companies that received an ARPA-E award, the GAO found that 18 had previously received private-sector investment for a similar technology. The GAO found that 12 of those 18 companies planned to use ARPA-E funding to either advance or accelerate previously funded work. The problems with ARPA-E show just how quickly these programs can stray from their original intent.

In addition to all these government programs, federal and state incentives exist for alternative vehicles, as does a mandate to produce 36 billion gallons of alternative fuels by 2022. To varying extents, these programs guarantee a market for different renewable and alternative energy technologies, making it even more unnecessary to have a trust fund.

A Better Role for the DOE

Rather than a new trust fund for alternative energy technology as Murkowski's bill recommends, there are reforms Congress and the executive branch can make that better accomplish what the trust fund is meant to do. The Department of Energy does not need another program to promote

6. U.S. Department of Energy, "Fuel Cell Technologies Office," <http://www1.eere.energy.gov/hydrogenandfuelcells/> (accessed August 19, 2013); U.S. Department of Energy, "Bioenergies Technologies Office," <http://www.eere.energy.gov/topics/biomass.html> (accessed August 19, 2013); and U.S. Department of Energy, "Vehicle Technologies Office," <http://www1.eere.energy.gov/vehiclesandfuels/> (accessed August 19, 2013).

7. U.S. Department of Energy Loan Programs Office, "The Financing Behind America's Clean Energy Economy," https://lpo.energy.gov/?page_id=45 (accessed August 19, 2013).

8. U.S. Government Accountability Office, "Advanced Research Projects Agency–Energy Could Benefit from Information on Applicants' Prior Funding," January 2012, <http://www.gao.gov/assets/590/587667.pdf> (accessed August 19, 2013), and U.S. Department of Energy Office of Inspector General, Office of Audits and Inspections, "Audit Report: The Advanced Research Projects Agency–Energy," August 2011, <http://science.house.gov/sites/republicans.science.house.gov/files/documents/hearings/2011%2008%20DOE%20IG%20ARPA-E%20Audit.pdf> (accessed August 19, 2013).

energy innovation. In fact, the failures of the existing programs should raise a red flag as to how bad the federal government is at developing, much less commercializing, new technologies. Taxpayers have been on the hook for a number of failed clean energy investments, but the economic damage extends beyond the losses incurred to the taxpayer.

Labor and capital will flow toward projects that have federal backing because of the perceived reduced risk and increased chance of success the government's backing lends. Government investments crowd out opportunities for new ideas and innovative technologies that may not reach the market because investments are instead made in projects that have political backing. The overall result is less wealth and job creation and a distorted market that rewards lobbying and special-interest politicking.

With many of these federal spending programs, Americans are continually promised the next Internet, which came from government-funded research, but they continually experience another Solyndra, a government-funded venture that has since gone bankrupt. There is a stark difference between how the Internet became commercially viable and federal attempts to commercialize energy technologies.

Government projects that have become commercial successes were not initially intended to meet a commercial demand but 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 to meet the federal government's needs 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. What is needed, then, is not another energy trust fund, but reform in the national labs that allows basic research to reach the market organically.⁹

The Market Rewards Innovation. Solyndra, Fisker, and other bankrupt or failed companies rightly give taxpayers cause for concern and indicate just how poorly the federal government plays an investment banker. However, supporters of DOE loans, loan guarantees, and other government intervention in the marketplace will argue that the success stories far outweigh the economic losers. Some of those projects may be too early in their operations to allow a judgment whether they will be financially viable in the long term, and many have been propped up by other federal subsidies as well as generous state subsidies and mandates. But even if a government-backed project is financially viable, it merely reinforces the notion that government investments in good ideas were not needed in the first place.

Commercially viable technologies and companies do not need backing or investment from the federal government—they should be able to obtain private financing on their own. Politicians are currently pointing to Tesla Motors, recipient of the Advanced Technology Vehicles Manufacturing loan program, as a success of a government investment helping a company overcome the investment valley of death.¹⁰ The electric vehicle company paid back its government loan early, *Motor Trend* magazine recently announced the Tesla Model S as the car of the year, and *Consumer Reports* recently called the Model S “the best car ever tested.”¹¹ But the ATVM loan did not make Tesla the success that it currently is. An innovative idea and a technology as promising as Tesla could—and should—have been able to secure loans and obtain entirely private financing.

Lack of financing is not an issue. In fact, Ethan Zindler, head of policy at Bloomberg New Energy Finance, a market research firm focused on clean energy, recently testified before the Senate Energy and Natural Resources Committee saying,

9. Matthew Stepp, Sean Pool, Jack Spencer, and Nick Loris, “Turning the Page: Reimagining the National Labs in the 21st Century Innovation Economy,” The Information Technology & Innovation Foundation, June 19, 2013, <http://www.itif.org/publications/turning-page-reimagining-national-labs-21st-century-innovation-economy> (accessed August 15, 2013).

10. News release, “Wyden Urges Investment in Clean Energy Technology,” Senate Energy and Natural Resources Committee, July 18, 2013, <http://www.energy.senate.gov/public/index.cfm/democratic-news?ID=686ad0dd-a9b4-4ff1-879a-2847265f2d6b> (accessed August 19, 2013).

11. Angus Mackenzie, “2013 Motor Trend Car of the Year: Tesla Model S,” *Motor Trend*, January 2013, http://www.motortrend.com/oftheyear/car/1301_2013_motor_trend_car_of_the_year_tesla_model_s/viewall.html (accessed August 19, 2013), and “Tesla Model S Review: An Electric Sports Car Earns Our Top Test Score,” *Consumer Reports*, July 2013, <http://www.consumerreports.org/cro/magazine/2013/07/tesla-model-s-review/index.htm> (accessed August 2, 2013).

I would argue that today there simply is no shortage of capital (debt, equity, so called tax equity, or other) available for high quality clean energy projects—that is, projects being developed by reputable companies, with relevant permits in hand and, most importantly, firm long-term agreements signed to sell their electricity at a reasonable price to a credit-worthy buyer such as a major utility. The financial community will gladly underwrite such a project.¹²

Furthermore, if a company is \$25 million short (the maximum amount that would be awarded in the Advanced Energy Trust Fund) of funding for a viable alternative to the internal combustion engine or replacing oil as a transportation fuel, that company will be able to find the private financiers to make that happen. The market for transportation is a multi-trillion-dollar market; the most promising technologies will yield billions of dollars in profit, which alone will drive innovation forward. Individuals and enterprises should not supplement a trust fund with voluntary contributions as Senator Murkowski's proposal suggests, but instead invest their money as they see fit. Government programs skew those investments and pull private capital out of the market by steering those investments to politically motivated projects.

Allowing the Most Promising Technologies to Speak for Themselves. The best way the government can promote American's energy interests is to ensure access to energy resources—both domestically and abroad—and remove subsidies for all energy sources. To that end, Congress should:

- **Lift offshore and onshore exploration and drilling bans.** The United States is the only country that has made a majority of its territorial waters off-limits to oil exploration. The government should open waters and unblock prohibited areas onshore. Congress should require the Secretary of the Interior to conduct lease sales if a commercial interest exists.
- **Devolve permitting and environmental review for energy production on federal lands to the states.** States are in the best position to promote economic growth and to protect the environment, which is why state regulators should manage energy production and resources in their respective states. The Federal Land Freedom Act of 2013 (S. 1233 and H.R. 2511), introduced by Senator James Inhofe (R-OK) and Representative Diane Black (R-TN), proposes to do just that by allocating more authority to the states to control their energy future.¹³ Devolving authority to the states would also increase the likelihood that promising energy projects of all kinds will not be stopped or significantly slowed down by federal regulatory red tape.
- **Remove subsidies for all transportation fuels.** This includes removing federal incentives, DOE spending to commercialize alternative fuel technologies or loan and loan guarantee programs, the Renewable Fuel Standard, and *actual* oil subsidies.¹⁴
- **Implement 50/50 revenue sharing.** A state should receive 50 percent of the revenues generated by onshore and offshore oil and natural gas production on federal lands that lie within the boundaries of that state. States should be able to use their share of the revenue however they choose.
- **Create flexibility and remove bureaucracies at the DOE.** Congress and the Department of Energy should reform the DOE to increase the effectiveness of taxpayer money spent on basic scientific research, ensure that labs are well positioned to leverage private-sector investment, and create more flexibility in the lab system to allow

12. Ethan Zindler, testimony before the Committee on Energy and Natural Resources, U.S. Senate, July 18, 2013, http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=0f6c8a76-a016-4693-9093-621a84bc130e (accessed August 2, 2013).

13. Nicolas D. Loris, "Energy Production on Federal Lands: Handing Keys Over to the States," Heritage Foundation *Issue Brief* No. 3979, June 27, 2013, <http://www.heritage.org/research/reports/2013/06/energy-production-on-federal-lands-handing-keys-over-to-the-states>.

14. Congress should not eliminate broadly available tax credits that the oil and gas industry receives, and which are often targets of drilling opponents. For more information, see Nicolas D. Loris and Curtis S. Dubay, "What's an Oil Subsidy?" Heritage Foundation *WebMemo* No. 3251, May 12, 2011, <http://www.heritage.org/research/reports/2011/05/whats-an-oil-subsidy>.

research that has potential commercial application to reach the market efficiently and is not motivated by political preference.¹⁵

Trust in the Market

Opening federal lands to energy production is a laudable goal but the private sector should be driving innovation in new energy technologies. New oil and gas production on currently closed federal lands and off America's coasts would spur job creation, increase energy supplies, and contribute to economic growth.

However, Congress should not add another program for taxpayer-funded spending on new energy technologies. Instead, Congress should recognize that the market will move promising ideas forward, and remove the existing energy programs that divert labor and capital to politically favored companies and crowd out opportunities for true innovation in the energy sector.

—Nicolas D. Loris is Herbert and Joyce Morgan Fellow in the Thomas A. Roe Institute for Economic Policy Studies at The Heritage Foundation.

15. Stepp, Pool, Spencer, and Loris, "Turning the Page."