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Introduction

Chairman Smith, Subcommittee Chairmen Weber and Loudermilk, Ranking Members Johnson, Grayson, and Beyer, and Members of the Subcommittees, thank you for the opportunity to appear before you today. My name is Mark McCall, and I am the Executive Director of the Loan Programs Office (LPO) at the Department of Energy (DOE or Department). I have served in this position at the Department since July 2015.

Prior to joining DOE, I spent seventeen years as a Managing Director and the Chief Financial Officer for Lime Rock Partners, a private equity firm focused on the energy sector. From 1998 to 2010, I also served as the firm's General Counsel. Before joining Lime Rock Partners, I served as Vice President at Delus Corp., was an associate in the mergers and acquisitions group of Lehman Brothers, and the Director of Operations for E-II Holdings in Moscow.

I feel honored to have the opportunity to serve the public and apply my private sector experience in finance and investments to lead the LPO. My background in the upstream oil and gas market has informed my view of the challenges and opportunities for the U.S. to be at the cutting edge of commercializing new energy technologies.

Overview of the Loan Programs Office

The LPO issues loans and loan guarantees to accelerate the commercial deployment of clean energy projects and advanced vehicle manufacturing in the U.S. under two programs: the Title XVII loan guarantee program and the Advanced Technology Vehicles Manufacturing (ATVM) loan program.

The Title XVII loan guarantee program was authorized by the Energy Policy Act of 2005 and signed into law by President George W. Bush. It directs the Department to issue loan guarantees to support the commercial deployment of clean energy projects that utilize innovative technology and reduce, avoid, or sequester greenhouse gases. The program covers a number of eligible

technology areas including advanced fossil energy, advanced nuclear energy, renewable energy, and energy efficiency.

The ATVM loan program was authorized under Section 136 of the Energy Independence and Security Act of 2007. It directs the Department to issue direct loans to auto manufacturers and component suppliers to manufacture fuel-efficient vehicles and components in the U.S.

The Importance of the Loan Programs Office

Deploying clean energy technologies at commercial scale for the first time entails both technology and market risk. Advancing these technologies further requires significant amounts of capital. Commercial lenders and bondholders are often unwilling to finance projects that use new technologies because those technologies have not been deployed at full commercial-scale and do not yet have a history of performance.

The Title XVII program fills a critical gap in the marketplace, providing project developers sufficient full-term debt financing to design and construct projects.

The ATVM program fulfills another critical role in the marketplace by providing low-cost, long-term financing to expand domestic auto manufacturing and help manufacturers achieve future fuel economy standards.

Without these important programs, U.S. leadership in energy and auto manufacturing will suffer. Congress has recognized these market gaps and LPO's unique ability to address them by issuing loan and loan guarantees in situations where traditional debt providers are either unwilling or unable to assume the debt.

Even as LPO addresses market gaps, every transaction is a public-private partnership. While the Department issues loans and loan guarantees to provide the necessary debt financing for these projects, project sponsors must provide significant equity investments. Equity invested from private sources must represent at least 20 percent of the total cost of every project, and is frequently more. The LPO has a portfolio of more than $30 billion in loans, loan guarantees, and conditional commitments, which supports about $50 billion in total project costs. To that end, at financial close of these loans and loan guarantees, borrowers will have provided over $18 billion in financing to support their LPO-financed projects. In other words, the borrowers with which the LPO works have significant "skin in the game" because they have contributed substantial amounts of financing.

Strong Portfolio Performance

Although LPO's mission – by its nature – carries some degree of financial risk, LPO has maintained strong financial performance – even when compared with private financing of conventional energy and manufacturing projects in the United States. In total, LPO currently manages a $32 billion portfolio comprised of loan guarantees, loans, and conditional commitments that includes a diverse array of technologies in 20 states across the country. Twenty-two LPO projects are currently operating and four are under construction or development. The loans and loan guarantees issued by LPO are all structured to be fully repaid

with interest over the tenor of the loan. Each project in the portfolio must begin repaying the principal and interest on its loan around the time it reaches completion. As many of LPO's projects have reached completion in recent years, project sponsors have begun repayment of their loans. As of January 2016, $5.72 billion in principal and $1.38 billion in interest were repaid. Because of prudent due diligence on the part of LPO and reduced risk with maturation of the portfolio, actual and estimated losses for the portfolio represent just above two percent of closed and committed loans and loan guarantees – a rate that would be viewed favorably even in the private sector for a portfolio of a similar type.

Risk and Portfolio Management

The Department of Energy takes its responsibility to the American taxpayer very seriously. As a result, the LPO underwrites and structures its loans and loan guarantees to protect the interests of taxpayers and maximize prospects for full repayment. Before making a loan or loan guarantee, the LPO conducts extensive due diligence on the application, with rigorous financial, technical, legal, environmental and market analysis by DOE's professional staff, including qualified engineers, financial experts, and outside advisors.

The LPO also has one of the largest, most experienced project finance teams in the world that has the capabilities and tools to support a number of different project types, all while managing risk appropriately. Transactions are structured to identify and mitigate risk as effectively as possible before proceeding with a loan or loan guarantee. Once a project closes, the LPO continues to use powerful monitoring tools — including strong covenants and strict project milestones — to control the amount of risk it assumes. LPO requires borrowers to meet clear benchmarks before disbursing funds and staggers these disbursements to ensure borrowers are meeting their obligations under the loan guarantees. DOE will continue to be an active manager, continuously monitoring projects, their market environments, and other identified risks to seize all opportunities to minimize exposure to loss.

As stated in a previous Government Accountability Office (GAO) report, some private lenders have noted that the Department's due diligence is as rigorous – or more so –than that performed in the private sector. Due in large part to the Department's meticulous due diligence, its commitment to establishing protections within all agreements and robust project monitoring, the portfolio as a whole continues to perform very well with total losses to date of only about two percent.

Despite these efforts, and consistent with Congressional intent through the appropriation of credit subsidy, we have experienced some losses and thus constantly strive to improve every aspect of our operations. Given the nature of our work, we have benefited from several recommendations for improvement, including recommendations from Congress, the GAO, DOE's Inspector General (IG), and independent consultants such as former U.S. Department of Treasury official Herb Allison.

DOE has adopted many of these improvements, including but not limited to:

- strengthening its internal oversight of LPO by restructuring the former LPO Credit Division to encompass a Risk Management Division;
- streamlining the application process;
- adding appropriate transparency to the approval process;
- filling key positions with experienced professionals, who bring private sector experience;
- clarifying authorities, strengthening internal oversight of the programs;
- developing a state-of-the-art workflow management system;
- establishing a robust early warning system through which LPO monitors market, regulatory, and counterparty risks that can affect credit performance and develops periodic reports for each transaction which provide an in-depth analysis of the risks; and
- improving reporting and transparency to the public.

Furthermore, LPO continuously looks for additional ways of improving its underwriting and asset monitoring activities to incorporate lessons learned and ensure best practices to protect taxpayer interests.

Advancing Clean Energy Technologies

To date, the LPO has been successful in advancing its mission of accelerating the commercialization of new technologies and advancing an "all-of-the-above" energy strategy that avoids, reduces, and sequesters greenhouse gases. As of September 2015, LPO projects have avoided 25 million metric tons of carbon dioxide (CO2) emissions, and the amount of CO2 avoided will continue to grow as projects achieve full commercial operation. In addition, LPO projects have supported local economies, supporting 56,000 good-paying American jobs across 16 states. The following are sample projects debt-financed by LPO that illustrate the Department's commitment to American competitiveness and achieving an "all-of-the-above" energy strategy:

Supporting Construction of America's First New Nuclear Reactor in 30 Years

In 2010, the Department offered a total of $8.3 billion in conditional commitments to Georgia Power Company (GPC), Oglethorpe Power Corporation (OPC) and Municipal Electric Authority of Georgia (MEAG Power) to support the construction of two new 1,100 megawatt (MW) Westinghouse AP1000® nuclear reactors at the Alvin W. Vogtle Electric Generating Plant in Waynesboro, GA. I had the opportunity to visit the Vogtle Project one month ago and was impressed at the breadth and complexity of the project. The Vogtle project represents a new generation of advanced nuclear reactors in the United States and the first new nuclear reactors to begin construction in the United States in nearly three decades.

LPO reached financial close on the last loan guarantees for this project in June 2015. The deal took several years to finalize in large part due to its uniqueness and complexity, the use of innovative technology that had never been deployed commercially in the U.S., and several different borrowers.

The deployment of this innovative technology at commercial scale has put the U.S. at the forefront of a new generation of advanced nuclear reactors, as two more reactors using this technology are currently under construction in the U.S. Vogtle has helped to revive a world-class workforce with specialized expertise at building nuclear power projects and trained a new generation of engineers, technicians, electricians, welders, and more.

These loan guarantees are an important part of the Administration's commitment to restart the U.S. nuclear power industry and ensure the continued role of safe nuclear power in America's electricity mix.

Launching Utility-Scale PV Solar in the U.S.

In 2009, there were exactly zero photovoltaic (PV) solar facilities larger than 100 MW in the U.S. A number of project developers with long-term power purchase agreements (PPAs) were interested in building large, utility-scale projects, but were unable to secure the necessary debt financing due to the scale and innovative nature of the projects. LPO helped to address this market roadblock by providing $4.6 billion in loan guarantees to support the first five utility-scale PV projects larger than 100 MW, representing more than 1,500 MW of capacity. With the loan guarantee for the Desert Sunlight project, LPO worked with a number of commercial lenders through the Financial Institution Partnerships Program (FIPP), enabling them to build experience with utility-scale PV projects.

Following these five projects, 28 additional PV projects larger than 100 MW were financed solely by commercial lenders in the U.S, illustrating how LPO helped launch the utility-scale PV market and facilitated private lenders taking over debt financing for this new market. Today, solar projects at this scale are readily financed by private lenders – many of whom began their participation in the solar sector working with the LPO through FIPP. These lending partners include leading financial institutions, such as John Hancock, Bank of America, and Citigroup.

This sequence of events demonstrates the ability of the LPO to reduce the risk of new technology while supporting the entrance of commercial lenders into new markets.

Scaling Up Concentrating Solar Power:

LPO has also been instrumental in launching the first commercial-scale concentrating solar power (CSP) plants in the United States in decades - including the first ever with thermal energy storage. Unlike PV solar panels that absorb sunlight to directly generate electricity, CSP uses mirrors to reflect the sun's rays onto a focal point that warms up a heat transfer fluid. The heat transfer fluid heats water to create steam to power a turbine that generates electricity, just like a conventional fossil fuel power plant. A benefit of thermal energy storage is that heat can be stored for later use, which allows CSP plants to continue operating during cloud cover or even after the sun sets, helping provide energy on demand when the resource is not available.

Between 2010 and 2011, LPO financed five of the world's largest CSP projects. By integrating thermal energy storage, two of these projects brought the first utility-scale "nighttime solar" to the United States. An example of this technology is the 250 MW Solana CSP facility in Gila Bend, Arizona. LPO helped finance Solana with a $1.4 billion loan guarantee issued in 2010.

This facility uses parabolic trough technology and includes the world's largest operating molten salt storage system, which allows the facility to produce six hours of energy without any sunlight. In 2014, Solana earned the Innovation Award for utility-scale projects at Energy Storage North America and was recognized as a Top Plant by POWER Magazine.

Similarly, the Mojave solar project, also a parabolic trough concentrating solar plant, is one of the world's largest CSP facilities. The Mojave project uses innovative solar receiver and frame designs to further enhance already proven parabolic technology. The construction of this solar plant created 830 construction jobs and supports 70 permanent jobs. The Mojave project received a $1.2 billion loan guarantee from the Department in 2011.

As you are aware, Solana and Mojave have been in the news recently not because of their award-winning innovation, but due to the financial status of Abengoa, S.A.

I want to take this opportunity to make clear that LPO is not currently guaranteeing any loans to Abengoa S.A. or its subsidiaries. Rather, the DOE guaranteed loans for both the Solana and Mojave solar projects are currently for separate project companies – Arizona Solar One LLC and Mojave Solar LLC – whose sole business activities are the ownership and operation of the Solana and Mojave plants, respectively. Mojave Solar LLC is owned by Atlantica Yield Plc (formerly Abengoa Yield Plc) and Arizona Solar One LLC is owned by Atlantica Yield and Liberty Media Interactive. The projects have long-term contracts with investment grade utilities for the sale of the power generated by the projects. The repayment of the loans guaranteed by DOE is based on the revenues from the sale of this power to the utility, and not the financial standing of other companies. This arrangement helps to insulate the borrowers from financial distress of others. Today, Solana and Mojave are both operating and current on their principal and interest repayments to DOE.

The five utility-scale CSP plants that have received DOE loan guarantees will generate enough clean electricity to power 252,000 homes. In addition to adding substantial clean energy to the grid, constructing these projects in Arizona, California and Nevada has put thousands of Americans in the Southwest to work and created a value chain that stretches across the United States with manufacturing supply chains like steel, mirrors, and gear.

Supporting the American Auto Industry Resurgence

Ford Motor Company is helping to position the U.S. auto industry as a leader in fuel-efficient vehicles worldwide. Through LPO's ATVM program, Ford retooled and modernized factories in the United States, which created and preserved manufacturing jobs for more than 33,000 Ford employees.

The factory improvements from this project enabled Ford to continue improving fuel efficiency in more than a dozen popular vehicles, including the Escape, F-150, Focus, Fusion, and C-Max. The innovations include the family of Ford EcoBoost engines, which are available in almost all models, and introductions of new hybrid, plug-in hybrid, and all-electric plug-in vehicles. At the

end of last year, Ford announced that it was on track to sell more than 1 million cars with EcoBoost Engines for the first time in a single year.

In addition to supporting established American automakers like Ford, the ATVM program helped launch Tesla Motors, America's first all-electric automaker. Tesla's $465 million loan enabled it to reopen a shuttered auto manufacturing plant in Fremont, California and to produce battery packs, electric motors, and other powertrain components. The construction of the Tesla plant initially created more than 3,000 full time jobs in California. Tesla now employs 12,000 individuals – far more than the company initially estimated – and is building out a supply chain that supports numerous additional jobs and technologies, which has helped bring advanced manufacturing technology back to America. In May 2013, Tesla repaid the entire remaining balance on its loan nine years earlier than required.

If the U.S. Does Not Lead, Other Countries Will

So far I have shared what LPO is, how it works, and what it has achieved. However, it important to talk about what LPO can achieve in the future and why it is critical. The energy and auto manufacturing sectors include some of the most fiercely-competitive industries in the world. These industries also present enormous economic growth opportunities and in some cases are the backbone of economic development in countries. As a result, countries are racing to increase their market share and stake claim to the technological advancements in these industries. Although many advanced technologies in the energy and automobile spheres have been developed in the United States, other countries--including China and Germany– are leading.

In 2009, China replaced the United States for the first time as the world's largest car market. Today, China is not only the world's largest market for selling automobiles, but is also the world's top auto producer. China is also a leading investor in the $6 trillion global energy market. Renewable energy is a large and growing piece of this market, and China has positioned itself as the dominant player in the manufacturing and deployment of renewable electricity generation systems and technologies. Recent data shows that China led the world with $26.7 billion invested in renewable energy in just the 3rd quarter of 2015. The U.S. was second for the same period at $13.4 billion.

There is no doubt that energy innovation is the future. The U.S. needs to lead on innovation, related jobs, and intellectual property to ensure our continued economic growth. The LPO has demonstrated how to prudently finance game changing technologies; making these investments now will mean a stronger economy in the future.

Conclusion

Moving forward, LPO will focus on three priorities:

1) Getting good deals done: Starting in December 2013, when LPO issued its first new solicitation since 2011, the Title XVII and ATVM programs have received applications from a diverse array of innovative projects for more than $20 billion in loans and loan guarantees. We will continue to move these applications efficiently through the process, engage in rigorous due diligence, and close on good and prudent deals.

2) Diligently managing the existing portfolio: Once LPO closes a loan or loan guarantee, projects are monitored and evaluated throughout project development, construction, commissioning, and operation until the loan has been repaid in full. LPO's team of financial, technical, environmental, and legal professionals will continue to protect taxpayer interests through this very important function.

3) Continuing to build out a pipeline of clean energy and auto manufacturing projects that support LPO's mission: LPO currently has more than $16 billion in remaining authority for the ATVM direct loan program and three open loan guarantee solicitations for Title XVII – $12.5 billion for Advanced Nuclear Energy Projects, $8.5 billion for Advanced Fossil Energy Projects, and $4.5 billion for Renewable Energy & Efficient Energy Projects (REEE).

Deploying new technologies at commercial scale is critical to moving the U.S. towards a stronger future. I am confident that LPO programs can continue to play an important role in supporting this effort, while protecting the taxpayer. I appreciate your attention and look forward to any questions you may have.