Written Statement for the Record of Jonathan Silver
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Introduction

Chairman Bingaman, Ranking Member Murkowski, and members of the Committee, thank you for the opportunity to testify today. My name is Jonathan Silver, and I am the Executive Director of the Department of Energy's (DOE) Loan Programs Office (LPO). I want to thank you for your leadership in supporting clean energy investments. DOE's loan programs are a critical part of the Administration's commitment to transition to a cleaner, greener economy that will create jobs, protect our national security, and protect the environment.

I welcome the opportunity to present the Administration's views on the loan programs. I am particularly excited to share with you the progress that we have made to date and additional changes we are making to continue that progress.

Global and Domestic Context in which the Loan Programs Operate

Before reviewing the specifics of the programs, I'd like to touch briefly on the broader context in which we operate. As Secretary Chu often notes, America's future prosperity may well depend on our ability to lead in the global transition to a clean energy future. Yet, according to a report by the Pew Charitable Trusts, while the U.S. had the world's highest GDP in 2009, we ranked eleventh in clean energy investment as a percentage of GDP.[1] Allowing this gap to continue to grow will have serious implications not only for our global competitiveness, but also for our national security and the environment.

The United States can and should retain a position of global clean energy leadership through the widespread and large-scale deployment of new and innovative clean energy technologies. Government policies, such as those proposed by this Administration can encourage and facilitate such deployment. But only the private sector can provide the type of massive, sustained investment that is required to achieve our national clean energy goals.

Yet the private sector has not invested in clean energy at the the scale necessary to drive meaningful change. The economic crisis slowed the pace of investment in clean energy projects. Traditional lenders have pared back their appetite for risk, resulting in reduced liquidity in the market. Additionally, the tax equity market – one of the principal sources of equity for renewables projects – has shrunk by more than half since 2007.

[1] "Who's Winning the Clean Energy Race," 2010 Global Energy Profile, The Pew Charitable Trusts, at 10.

A fundamental impediment for investors in the clean energy space stems from the relatively high completion risks associated with clean energy projects, including, in particular, technology risk and execution risk. Private sector lenders have limited capacity or appetite to underwrite such risks on their own, particularly because large-scale clean energy projects are very capital-intensive and often require loans with unusually long tenors. Without the federal government's financial support -- following a careful review of the underlying technology -- many promising technologies may not get funded or reach commercial scale or scope.

The Department of Energy's loan programs were designed to address these impediments. Loan guarantees lower the cost of capital for projects utilizing innovative technologies, making them more competitive with conventional technologies, and thus more attractive to lenders and equity investors. Moreover, the programs leverage the Department's expertise in technical due diligence, which private sector lenders are often unwilling or unable to conduct themselves.

Simply put, achieving our nation's clean energy goals will require the deployment of innovative technologies at a massive scale, and the DOE loan guarantee program is an important element of federal policy to facilitate that deployment.

Background on the Loan Programs

As you know, the LPO actually administers three separate programs: Title XVII Section 1703, Section 1705 -- and also the Advanced Technologies Vehicle Manufacturing loan program, or ATVM. While my testimony today will focus primarily on the Title XVII programs, I do want to briefly highlight ATVM's significant accomplishments to date.

The ATVM program is charged with issuing loans to support the development of advanced vehicle technologies to help achieve higher CAFE standards, create jobs, and reduce the nation's dependence on oil. To date, DOE has committed and closed four ATVM loans, totaling $8.4 billion, which will support advanced vehicle projects in eight states. According to information provided by the project's sponsors, these projects will create or save over 37,000 U.S. jobs. We anticipate making a number of additional ATVM loan commitments in the coming months. While the rest of my testimony will focus on the 1703 and 1705 programs, I note that many of the same issues that are challenges in these programs also apply to ATVM.

The 1703 and 1705 programs are often conflated, but they are in fact quite different in a number of important ways. 1703 was created as part of the Energy Policy Act of 2005 in order to support the deployment of innovative technologies that avoid, reduce, or sequester greenhouse gas emissions. Currently, the program has $18.5B in loan guarantee authority for nuclear power projects, $18.5B in authority for energy efficiency and renewable energy projects, $8 billion for advanced fossil projects, $4 billion for front-end nuclear projects, and $2 billion in mixed authority, following the reprogramming of $2 billion from mixed to front end nuclear authority.

The Section 1703 program was designed to be cost-neutral to the government. To that end, the legislation directs DOE to charge fees sufficient to cover the program's administrative costs. 1703 has, so far, been executed as a "self pay" program, meaning that applicants pay the credit subsidy cost associated with any loan guarantees they received from DOE.

The Section 1705 program was created as part of the American Recovery and Reinvestment Act of 2009 (Recovery Act), to jumpstart the country's clean energy sector by supporting projects that had difficulty securing financing in a tight credit market. The 1705 program has different objectives than 1703, and different programmatic features. Most notably, applicants under 1705 are not required to pay the credit subsidy costs associated with the loan guarantees they receive. Those costs are paid by DOE, using monies appropriated by Congress (though applicants still must pay application and other fees). Additionally, to qualify for 1705 funding, projects must begin construction no later than September 30, 2011. DOE's authority to issue guarantees under 1705 expires on that date, as well.

Under the Section 1703 program, DOE has offered conditional commitments for four projects so far, including nuclear power, front end nuclear, and two efficiency projects. Under 1705, we have issued conditional commitments to 10 projects so far, totaling over $4 billion in loan volume.

Although we have, under 1703, the $18.5 billion in renewbles authority referenced above, there has been very little demand for renewables loan guarantees under that program. This may, in part, reflect the ability of renewable projects to apply for a guarantee under 1705.

Recent Progress

These programs have made great strides since this Administration took office twenty-one months ago. At that time, DOE had yet to issue a single loan guarantee under the loan programs. In March 2009, under Secretary Chu's leadership, the Title XVII programs issued the first ever conditional commitment for a loan guarantee. Since then, the Department has issued conditional commitments to 13 more Title XVII projects, four of which have reached financial close – with more to follow soon.

Together, these 14 projects represent loan guarantees totaling almost $13 billion, and have total project costs exceeding $22 billion. They are spread across 12 states, represent an array of clean energy technologies -- including wind, solar, geothermal, transmission, battery storage, and nuclear. Project sponsors estimate these projects will create over 13,000 construction jobs, and over 4,000 operating jobs. Cumulatively, according to data provided by their sponsors, these 14 projects will produce almost 4GW of clean energy capacity, and they will remove approximately 38 million tons of carbon dioxide from the air every year.

These projects are not just noteworthy; they represent a real and significant contribution to the clean energy landscape in the United States.

Recent Improvements to Loan Programs

Our ability to underwrite 14 projects in the past 18 months is a function of the many improvements we have made to the loan programs. By better leveraging our existing resources and re-engineering our processes, we have been able to significantly reduce the amount of time it takes to review applications, to expedite the transaction approval process, and to provide greater transparency into our work. For example:

- We have increased our staff and are now able to process applications more efficiently and effectively. As recently as January 2009, the loan programs had only 16 federal employees. Through aggressive recruitment efforts, we now have over 80 federal employees supported by a number of subject-matter experts engaged on a contract basis.

- We created a new online portal for completing and submitting applications electronically, which has both improved the quality of applications and shortened the amount of time that it takes to complete and process them. It used to take DOE up to 2-3 months to complete the initial review of an application; we can now complete that review in approximately 30 days, and we are working to reduce that time period even more.

- We have developed a model for issuing more targeted and understandable solicitations for applications, as exemplified by our recently issued Manufacturing solicitation. We expect simplified solicitations to result in better applications that will more directly address the critical issues, and which can be reviewed more efficiently and effectively by our staff.

- We have improved communication with applicants.

- We reorganized our staff into technology domain groups, to create efficiencies and capitalize on the expertise of our staff.

- We have worked creatively to ensure that projects seeking loan guarantees can meet important and fast approaching deadlines, including the year-end expiration date for the Section 1603 cash grant program, which is critical to many of our projects, and the 1705 program's sunset date of September 30, 2011.

In light of these many changes and improvements, the Loan Programs are well positioned to carry out the important mission we have been given by Congress and the Secretary. Over the last few months, we have significantly improved the pace at which we are processing transactions, and aim to do even better.

The Process of Reviewing and Approving a Loan Guarantee Application

I would like to take this opportunity to describe the process through which DOE reviews and approves loan guarantee applications. The loan programs accept applications only through targeted solicitations, so that we can award loan gurantees on a competitive basis. DOE currently has three open solicitations: the first seeks applications for renewable energy generation or transmission projects using innovative technology; the second is open to renewable energy manufacturing projects employing commercial technology; and the third is issued under our FIPP program, through which DOE partners with private sector lenders for renewable energy generation projects employing commercial technology.

A loan guarantee goes through a number of stages as it moves through the review process. Those are: (1) Intake, (2) Due Diligence and Term Sheet Negotiation, (3) Credit Analysis and Review; (4) Deal Approval and Conditional Commitment, (5) Post-Conditional Commitment Due Diligence and Financing Documents Negotiation, and (6) Closing.

Intake. Our Intake process has two phases, Part I and Part II. In Part I, an applicant submits only a summary application, which LPO reviews to determine if the proposed project is eligible for the program. In Part II, the applicant submits a more comprehensive application, which is analyzed to determine if the project warrants additional review and discussion and, possibly, negotiation of a term sheet. This two-part process was designed so that applications deemed ineligible in Part I could avoid paying the larger fees required for the full review.

Initial Due Diligence and Term Sheet Negotiation. The second stage combines the initial due diligence and term sheet negotiation. Deals that are not rejected during the intake process move into full due diligence. The due diligence includes, among other things, a close examination of the technology, and an analysis of the financial model and plan for the project. The projects also undergo detailed legal, market, and environmental reviews, including an evaluation to determine if they are and will be in compliance with the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), Davis-Bacon labor requirements, and other state and local laws and regulations. It is during this work that the LPO deal team engages outside consultants and advisors with specialized expertise relevant to the project to assist with the transaction.

After due diligence has proceeded to a point where discussion of substantive business issues makes sense, LPO begins an often lengthy negotiation with the applicant on the terms and conditions of the potential loan guarantee. In some instances, the proposed project must be significantly restructured to ensure that it is creditworthy and meets the statutory requirement of a reasonable prospect of repayment.

Credit Analysis and Review. During the second phase, the LPO credit staff undertakes a comprehensive credit analysis of the proposed transaction. The credit team calculates an estimated credit subsidy score based on the agreed upon term sheet between the applicant and DOE. This credit subsidy score is calculated using a methodology approved by OMB. As

part of this analysis, LPO credit staff reviews and scores every aspect of the transaction, including, but not limited to: pledged collateral, market risk, technology risk, regulatory risk, contractual foundation, operational risk, and recovery profile. The result is a credit subsidy range that incorporates all available information regarding the project and financing at the time.

Deal Approval. Once the term sheet has been agreed upon between the applicant and the LPO, the transaction is submitted for the necessary approvals culminating in the Secretary determining whether to issue a loan guarantee.

The first step in the approval process is the credit committee, which consists of senior DOE officials with significant financial and technical expertise. If the credit committee recommends the project for approval, the transaction is then presented to the Department's Credit Review Board (CRB), which consists of senior-level officials. Prior to presenting the deal to the CRB, LPO presents it to OMB and Treasury for review, consistent with statutory requirements. If CRB recommends approval of the deal, it is presented to the Secretary, who has the ultimate authority to approve loan guarantees.

Following the Secretary's approval, LPO offers a conditional commitment for a loan guarantee. If the applicant signs and returns the conditional commitment with the required fee, it becomes a conditional commitment of the Department. This commitment is "conditional" because it is contingent on the applicant meeting a number of conditions precedent to financial close. These are articulated in the agreed-upon term sheet between the parties.

Post-Conditional Commitment Due Diligence and Financing Documents Negotiation. After conditional commitment, the LPO staff completes any remaining due diligence, ensuring that any conditions identified in the conditional commitment are met by the applicant prior to closing. The parties simultaneously draft and negotiate the final loan documentation. In some instances, the applicant is also negotiating the final project documents at the same time.

Closing. Once all of the due diligence is completed and the necessary financing documents are agreed -- and all other statutory, regulatory, and other requirements have been met -- the LPO credit staff conducts a comprehensive credit analysis. This analysis is based on the final terms and conditions of the loan, and any other updated information, and results in the calculation of the project's estimated credit subsidy cost. OMB must review and approve the credit subsidy cost. Once the credit subsidy score is finalized, the project may move to a financial closing. At closing, the loan guarantee is obligated by DOE.

After the guarantee is obligated and issued, the applicant often can immediately draw on the loan to support the proposed project. However, sometimes, there are additional conditions that must be satisfied under the financing documents before the loan may be disbursed.

Key Considerations in Analyzing a Loan Guarantee Application

DOE takes its responsibility to protect the US taxpayer seriously. DOE's review of each application includes a thorough review of all financial, technical, legal, environmental and other relevant data. DOE's internal review is complemented and supported by outside technical, legal, and financial consultants. Based on the results of this analysis, DOE identifies key risks and works diligently with applicants to mitigate those risks to the extent possible. There are a number of financial and technical features that help distinguish strong applications with respect to meeting eligibility requirements and creditworthiness.

Financial Attributes**:**

- **Ability to service the debt from operation cash flows.** A critical component of any debt transaction is the ability of the project to repay the debt on agreed upon terms from operating cash flows. Applicants can prove this ability by showing strong contracts with both their intended suppliers and consumers. These contracts may provide a reliable source of raw materials for the project, or may take the form of revenue contracts such as off-take agreements for generation projects or purchase orders for manufacturing projects. Applications that do not include such agreements, even in draft form, may not be compared favorably to those that do. The strongest applications will provide agreements with third-parties that also have strong credit profiles for a term that exceeds the proposed tenor of the loan.

- **Simplicity rather than complexity.** A project that has numerous credit instruments, an abundance of sponsors, a complex proposed capital structure may have strong economics, but should be prepared for a longer period of due diligence based on its complexity. Conversely, projects that have strong equity participation that pledges to be involved in ongoing project operations, straight amortizations and relatively quick paybacks, improve project transparency and can speed loan processing.

- **Clear, flexible, well-defined financial model.** A demonstrated ability to forecast the financial performance of a project both during construction and operation is critical in DOE's evaluation of a project. Each model should include supporting documents that offer a thorough explanation of the assumptions underlying the model and a robust ability to change those assumptions to test sensitivities within the model. Although each project will have different characteristics, an example of key elements in the financial model include the following:

    - Detailed construction budgets – applications that do not provide detail for the construction phase of their project typically fail to contemplate the total cost of the plant as a single item, may fail to provide for reserves or contingencies, and often face an increased risk of cost overrun.

- Identification of resources – Strong applications clearly identify and account for all resources necessary for their projects to become fully and profitably operational, including capital goods, raw materials, O&M requirements, and decommissioning.

- Market and competition – The model should also provide information on the intended market for their products and detailed information on potential and existing competitors in those markets. This information should include assumptions around market sizing, average prices, market segmentation, and both historical and projected macro and micro economic trends that may affect the intended market.

- Proposed capital structure, including sources of equity - A strong financial model will also detail the intended capital structure of the proposed transaction and will identify the proposed sources of equity for the project. The model should show a capital structure that is fully able to support the project, irrespective of DOE's involvement with a loan guarantee. Equity is a piece of this capital structure, and therefore significant equity participation is a requirement for all projects in the Loan Programs. Each applicant should clearly substantiate each source and the terms behind their equity support.

- **Proven leadership by management**. Each applicant should have a management team that can demonstrate successful relevant experience for their project. This experience may include operating within the project's development stage, industry/technology sector, or intended markets and regulatory frameworks. Projects that show seasoned, successful, relevant experience will be viewed more favorably than those that do not.

- **Strong development and operational relationships.** Another key component for each project is the contractual relationships with the partners that will help design, develop, construct and operate the project. Strong EPC (engineering, procurement, and construction) and O&M contracts (operations and maintenance) often provide for liquidated damages and performance guarantees by the contractor, which reduces the risk of default by the borrower. While strong EPC and O&M contracts may not be included in every project, an application that lacks these elements may be deemed weaker than comparable applications in a given technology that includes these agreements.

- **Intellectual Property.** Strong applications will demonstrate both clear rights to the intellectual property necessary to implement the project, and an understanding that such rights must be assigned to DOE as collateral in the event of default. By assigning the IP rights to DOE in a default scenario, DOE may continue operating the project at its discretion, which mitigates some of the default risk associated with a particular transaction.

- **Site selection, permitting and environmental review.** Applicants should identify the potential sites for their projects, as whether the site is on public or private land can affect the federal nexus with regard to environmental reviews. Applicants should also demonstrate control over project site(s), or document the steps necessary to assume control. In addition, applicants should fully meet all permitting requirements, particularly those of NEPA (National Environmental Policy Act) and all state, local, and tribal authorities. The timely acquisition of the relevant federal, state, local, and tribal permits may be needed to implement a project within their projected timelines. More guidance on NEPA and the environmental requirements for loan guarantees may be found on the Program website at (http://loanprograms.energy.gov).

Technical Attributes**:**

- **Pilot / Demonstration Data**. In general, applicants proposing innovative projects should be able to submit a minimum of 1,000 to 2,000 hours of operating data from a demonstration facility that uses the same technology as proposed in the project application.

- **Engineering reports**. Strong applications include an engineering report that discusses the technology in the specific context of the proposed project, rather than a report that addresses the technology only generally.

- **Technological advantages**. Applications required to satisfy Section 1703 should discuss and highlight how the technology, as proposed in the project, constitutes a new or significant improvement over existing competing technologies in the commercial marketplace today.

- **Mitigation of technology risk**. Strong applications, particularly those proposing innovative projects, will discuss how to mitigate technology risk. They will present alternative scenarios in the vent that critical technologies fail or do not perform as expected (e.g., warranties, production or performance guarantees, performance bonds, etc.).

Challenges Facing the Loan Programs

Despite the improvements referenced above, we are aware that there remains frustration in the Congress and in the private sector that the programs move too slowly. While we have made significant improvements, we continue to work to simplify the process and complete deals more quickly. However, there are a number of factors that affect the timeline. Some of these constraints are inherent to the types of deals that we do, while others are programmatic or statutory in nature.

First, the deals processed by the loan programs are often large and complex, sometimes involving billions of dollars and an array of diverse parties. As a result, to ensure necessary protection of taxpayer resources, significant due diligence and negotiations are required. Indeed, even in the private sector, the due diligence and negotiations surrounding such transactions are measured in months, not weeks. The renewables projects for which LPO has issued conditional commitments have an average total project cost of over $600 million – and this does not include the multi-billion dollar nuclear projects for which we have issued conditional commitments under 1703. Moreover, as government lenders, the projects we support must, unlike those financed in the private sector, also meet NEPA, Davis-Bacon, and other regulatory requirements and guidelines.

Second, as a loan guarantor, DOE is only one of several parties to each transaction. At each stage in the process -- from due diligence to negotiation to closing -- we require the cooperation of the borrowers, the project sponsors, various other project participants, and, in some cases, other lenders. Not surprisingly, the parties often have separate interests that are not perfectly aligned, and any one party can slow down the process significantly, if it so chooses, or if contractual, legal, or other obstacles, outside its control, arise.

Pending Legislative Proposals Regarding the Loan Programs

I would like to touch briefly on potential legislative changes that could improve our Loan Programs. The Administration has proposed several changes which we believe would facilitate better program execution. Specifically, the Administration supports legislation that would:

- Provide that subsidy costs for modifications to Title XVII loan guarantees can be paid from a combination of borrower payments and appropriated funds.

- Expand the 1705 program to include energy efficiency technologies and systems.

- Permit project applicants and sponsors to submit more than one application for a given technology under 1705. This amendment will broaden the pool of projects eligible for the program – which is consistent with the stimulative intent of 1705.

- Clarify that an eligible project may be located on two or more non-contiguous sites in the United States. Some phased, or bundled, projects do not apply for the programs under the mistaken belief that they are ineligible. This change will provide assurances to the sponsors of such projects and remove a perceived application barrier that has proved problematic.

Conclusion

Over the last year and a half, the Department's Loan Programs have started delivering on the promises Congress made in creating and funding them. We are making a serious contribution to our clean energy goals, and we look forward to continuing that trend.

That being said, it is important to recognize that the loan programs represent only one of a variety of potential approaches to providing federal support for clean energy. Moving forward, we must think about enabling private sector clean energy financing in a comprehensive manner, ensuring that our limited resources are deployed in the most effective and coordinated manner possible. Only then will we be able to create an environment where the private sector will invest in clean energy technologies at the scale needed to reach our national clean energy goals.

Thank you again for inviting me here today, and for allowing me to submit this statement for the record. I look forward to responding to your questions.