United States Government Accountability Office

Report to Congressional Committees

April 2015

DOE LOAN PROGRAMS

Current Estimated Net Costs Include $2.2 Billion in Credit Subsidy, Plus Administrative Expenses

GAO-15-438

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GAO Highlights

Highlights of GAO-15-438, a report to congressional committees

Why GAO Did This Study

DOE's Loan Programs Office administers the LGP and the ATVM loan program to support certain renewable or innovative energy technologies. Both programs can expose the government and taxpayers to substantial financial risks if borrowers default. DOE accounts for two types of program costs: credit subsidy costs and administrative costs. The Energy Policy Act of 2005 requires LGP to charge and collect fees to cover applicable administrative expenses.

GAO has an ongoing mandate to review the LGP. Because DOE administers the LGP and ATVM loan program through one office, GAO included both programs in this review. This report (1) describes DOE's loan portfolio and the portfolio's current status, (2) describes the current estimated credit subsidy costs of the loan programs and the extent to which credit subsidy cost estimates changed, and (3) examines DOE's administrative costs for the loan programs and the extent to which fees have covered LGP's administrative costs. GAO analyzed regulations and guidance, prior audits, and DOE data on credit subsidy estimates and administrative costs for all loans and guarantees originated under these loan programs. GAO also interviewed DOE officials.

What GAO Recommends

GAO is making no recommendations in this report. In written comments, DOE generally agreed with GAO's findings.

View GAO-15-438. For more information, contact Frank Rusco at (202) 512-3841 or ruscof@gao.gov.

What GAO Found

The Department of Energy's (DOE) loan programs portfolio consists of 34 loans and loan guarantees totaling about $28 billion in support of 30 projects in a diverse array of technologies. DOE's Loan Guarantee Program (LGP) encourages certain types of energy projects by agreeing to reimburse lenders for the guaranteed amount of loans if the borrowers default. These guarantees have been for nuclear, solar, and wind generation; solar manufacturing; and other energy projects. The Advanced Technology Vehicles Manufacturing (ATVM) loan program has made direct loans for projects aiming to produce more fuel-efficient vehicles. Most LGP and ATVM loan program projects have completed construction and are in operation—producing power or automobiles, for example. However, borrowers have defaulted on loans for 5 projects, including 2 solar manufacturing projects, 2 advanced automotive manufacturing projects, and 1 energy storage project.

As of November 2014, DOE estimates the credit subsidy cost of the loans and loan guarantees in its portfolio—that is, the total expected net cost over the life of the loans—to be $2.21 billion, including $807 million for loans that have defaulted. The credit subsidy cost for each loan made or guaranteed is the net present value of the difference between projected cash flows to and from the government over the life of the loan (excluding administrative costs). To account for changes over time, DOE is required to reestimate credit subsidy costs annually. As part of estimating and reestimating credit subsidy costs, DOE adjusts the projected cash flows for default risk and other factors. Changes in these estimates have varied by program and technology. The credit subsidy cost estimate for LGP's portfolio increased from an estimated $1.33 billion when the loan guarantees were issued to $1.81 billion as of November 2014, mainly because of loan guarantee defaults. The credit subsidy cost estimate for the ATVM loan program's portfolio decreased from $3.16 billion to $404 million. Even though two ATVM loans defaulted, the overall estimate for the ATVM loan program portfolio decreased, mostly because the credit rating of one loan improved significantly.

Since 2008, administrative costs have totaled about $312 million—$251.6 million for LGP and $60.6 million for the ATVM loan program—and, for LGP, borrower fees partially offset these costs. Support services such as contractors constitute more than 70 percent of the administrative costs for both programs. LGP fee collections have totaled approximately $196 million, or about 78 percent of LGP's administrative costs for fiscal years 2008 through 2014. DOE has revised its fee structure in new solicitations to allow increases in certain borrower fees, potentially addressing the gap between administrative costs and fee collections. At this time, it is too early to tell whether DOE's actions will result in sufficient funds to offset LGP's future administrative costs.

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Abbreviations

ATVM	Advanced Technology Vehicles Manufacturing
CSC2	Credit Subsidy Calculator 2
DOE	Department of Energy
EISA	Energy Independence and Security Act of 2007
EPAct	Energy Policy Act of 2005
FCRA	Federal Credit Reform Act
LGP	Loan Guarantee Program
OMB	Office of Management and Budget
STARS	Standard Accounting & Reporting Enterprise System

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April 27, 2015

The Honorable Lamar Alexander
Chairman
The Honorable Dianne Feinstein
Ranking Member
Subcommittee on Energy and Water Development
Committee on Appropriations
United States Senate

The Honorable Mike Simpson
Chairman
The Honorable Marcy Kaptur
Ranking Member
Subcommittee on Energy and Water Development,
and Related Agencies
Committee on Appropriations
House of Representatives

Since issuing its first loan guarantee in 2009, the Department of Energy's (DOE) Loan Programs Office has issued a total of about $30 billion in loans and loan guarantees under its Loan Guarantee Program (LGP) and Advanced Technology Vehicles Manufacturing (ATVM) loan program. LGP was designed to encourage certain types of innovative or renewable energy technologies, and the ATVM loan program was designed to support the manufacture of more fuel-efficient vehicles and components. DOE reports various numbers related to the costs of its loan programs in reports, financial statements, and budget documents. Other entities including Congress and the public rely on this information to understand the results of the loan programs. The variety and complexity of these figures can lead to confusion. For example, DOE reported in November 2014 that the loan programs had already earned more than $810 million in interest and that DOE expects to earn $5 billion in interest payments over the life of the loans and loan guarantees. However, in part because this report did not include the interest that DOE pays the government to finance its lending, the information on expected interest earnings has been misinterpreted in several press accounts as projecting $5 billion in profits for the DOE loan programs.

In light of the confusion around costs of the DOE loan programs, this report focuses on the federal government's official method of accounting

for loan programs. To accurately account for the actual and expected costs of federal loan programs, agencies estimate the costs of a program in accordance with the Federal Credit Reform Act (FCRA) of 1990 by calculating "credit subsidy costs" for loans and loan guarantees, excluding administrative costs.[1] The credit subsidy cost for loans and loan guarantees is the net present value of the difference between projected cash flows to and from the government over the life of the loan. DOE estimates the credit subsidy cost for each loan or loan guarantee by, among other things, projecting disbursements to the borrower as well as interest and principal repayments from the borrower, and adjusting these projected cash flows for default risk and other factors.

Under FCRA, agencies estimate the credit subsidy costs when making or guaranteeing a loan and set aside funds to cover these credit subsidy costs. In addition to FCRA, the authorizing legislation for the DOE loan programs—the Energy Policy Act of 2005 (EPAct) and the American Recovery and Reinvestment Act of 2009 (Recovery Act) for LGP and the Energy Independence and Security Act of 2007 (EISA) for the ATVM loan program—also govern credit subsidy costs. For example, under EPAct, DOE must either receive an appropriation for the credit subsidy cost or it must collect payments from borrowers to offset the credit subsidy cost.[2] For the loans and loan guarantees made under LGP and the ATVM loan program as of November 2014, DOE set aside approximately $4.6 billion in appropriations to cover initial credit subsidy costs. As of November 2014, borrowers had not made payments which would offset any portion of the credit subsidy costs.

At any point in time, the sum of the credit subsidy cost estimates across all loans and loan guarantees in DOE's portfolio represents the net present value of the total expected cost to the government of the loans and loan guarantees over the lifetime of the loans. However, the final credit subsidy cost of a given loan or loan guarantee will not be known until the life of the loan is complete. Until then, the credit subsidy cost of the loans and loan guarantees are generally reestimated every year for actual loan performance and changes in expectations of future

[1]Pub. L. No. 101-508, title XIII, subtitle B, § 13201,104 Stat. 1388, 1388-609 (Nov. 5, 1990), *codified at* 2 U.S.C. §§ 661-661f.

[2]In the case of borrower payments, DOE would collect payments from borrowers in such an amount that the credit subsidy cost is estimated to be zero.

performance. Therefore, the credit subsidy cost is expected to change over time if the loan or loan guarantee does not perform as DOE had anticipated. For example, some loans may ultimately default, causing their credit subsidy cost estimate to increase; other loans will be repaid in full or will experience an improvement in credit quality over time, and their credit subsidy cost estimates may decrease. Because of these expected changes, in accordance with FCRA, agencies are required to reestimate the credit subsidy costs periodically during the life of each loan. DOE does this annually as required by Office of Management and Budget (OMB) Circular A-11.[3] The reestimates result either in DOE requesting additional funds from the Treasury—through permanent indefinite authority—to cover increases in credit subsidy cost estimates or in funds being returned to the Treasury's general fund when credit subsidy cost estimates decrease.

In addition to the credit subsidy costs of the loans and loan guarantees, DOE incurs costs for administering the loan programs. FCRA and OMB guidance notes that administrative costs for loan programs should be budgeted separately from credit subsidy costs.[4] Administrative costs cover such activities as making policy decisions for credit programs, reviewing and processing loan and loan guarantee applications, and originating and monitoring loans and loan guarantees. In the case of LGP, EPAct provides that DOE should collect fees from borrowers to offset administrative expenses.[5] With regard to the ATVM loan program, administrative costs are covered entirely by appropriated funds from the Treasury. The ATVM loan program is similar to most other federal credit programs in this respect, according to DOE officials.

This report responds to GAO's ongoing mandate under the Consolidated Appropriations Act of 2014 to review DOE's implementation of the LGP.[6]

[3]OMB Circular No. A-11, *Preparation, Submission, and Execution of the Budget* (Washington, D.C.: Aug. 3, 2012).

[4]OMB Circular No. A-11, *Preparation, Submission, and Execution of the Budget* (Washington, D.C.: Aug. 3, 2012). OMB Circular No. A-129, *Policies for Federal Credit Programs and Non-Tax Receivables* (Washington, D.C.: Jan. 2013). OMB Circular No. A-136, *Financial Reporting Requirements* (Washington, D.C.: Sept. 18, 2014).

[5]Pub. L. No. 109-58, title XVII, §1702(h),119 Stat. 594, 1119 (2005), *codified at* 42 U.S.C. §16512.

[6]Pub. L. No. 113-76, § 307, 128 Stat. 5,175 (2014), *codified at* 42 U.S.C. §16515.

Because DOE has combined the LGP and the ATVM loan program into one Loan Programs Office, we have included both programs in this review. Our objectives for this report were to (1) describe DOE's loan portfolio and the portfolio's current status, (2) describe the current estimated credit subsidy costs of the loan programs and the extent to which credit subsidy cost estimates changed, and (3) examine DOE's administrative costs for the loan programs and the extent to which fees have covered LGP's administrative costs.

To address these objectives, we reviewed federal laws and regulations, DOE guidance, and past GAO reports describing DOE's administration of the loan programs. To describe DOE's loan portfolio and its current status, we acquired and reviewed summary information and data for all loans and loan guarantees in DOE's portfolio and we interviewed DOE officials regarding this information. To describe the current credit subsidy cost estimates for the loans and loan guarantees in DOE's portfolio and the extent to which credit subsidy cost estimates have changed from initial estimates, we analyzed DOE fiscal year-end 2014 credit subsidy cost reestimate data as found in output files from OMB's Credit Subsidy Calculator 2. We did not evaluate the reasonableness of the reestimates or the assumptions used to calculate them. We also interviewed DOE officials and DOE contractors, as well as OMB officials responsible for approving DOE's credit subsidy estimates, to understand the elements that make up the credit subsidy cost estimates and how those estimates are produced. The credit subsidy cost estimation data we analyzed covered all loans and loan guarantees made through the program—the first loans and loan guarantees were made in 2009, most of the loan guarantees were made in 2011, and the most recent were in 2014. We assessed the reliability of credit subsidy data by reviewing DOE's external auditor's (KPMG) financial audit documentation and interviewing KPMG officials to understand the process by which credit subsidy cost estimates are audited. We found these data to be sufficiently reliable for the purposes of this report. To describe DOE's administrative costs and the extent to which borrower fees have covered LGP's administrative costs, we collected and analyzed program cost and fee data for fiscal years 2008 through 2014 and interviewed DOE budget officials. We assessed the reliability of the administrative cost and fee data by interviewing agency officials knowledgeable about the data and reviewing documentation of audits of DOE's accounting system and found these data to be sufficiently reliable for the purposes of this report. A more detailed description of the objectives, scope, and methodology of our review is provided in appendix I.

We conducted this performance audit from June 2014 to April 2015 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

The LGP and ATVM loan program have related missions to advance technologies in the energy and automotive sectors. Because they are credit programs, they are both subject to FCRA requirements which, among other things, specify how DOE must estimate and account for the credit subsidy and administrative costs of the programs. Both programs can expose the government and taxpayers to substantial financial risks if borrowers default.

Loan Guarantee Program

The LGP was established in Title XVII of EPAct to encourage early commercial use of innovative technologies in energy projects by agreeing to reimburse lenders for the guaranteed amount of loans if the borrowers default. LGP was originally designed to address a fundamental impediment to innovative and advanced energy projects: securing funding. Projects with risks such as technology risk—the risk that the new technology will not perform as expected—and execution risk—the risk that the borrower or project will not perform as expected—can face difficulty in securing enough affordable financing to survive the period between developing innovative technologies and commercializing them. Because the risks that commercial lenders must assume to support new technologies can put the cost of private financing out of reach, companies may not be able to commercialize innovative technologies without the federal government's financial support.

Title XVII of EPAct—specifically section 1703—authorized DOE to guarantee loans for energy projects that (1) use new or significantly improved technologies as compared with commercial technologies already in service in the United States and (2) avoid, reduce, or sequester emissions of air pollutants or man-made greenhouse gases. In February 2009, Congress passed the Recovery Act, which amended Title XVII by adding section 1705, under which DOE could guarantee loans for projects using existing commercial technologies. Projects supported by section 1705 were required to employ renewable energy systems, electric power transmission systems, or leading-edge biofuels that met certain criteria.

Under Title XVII and the Recovery Act, DOE has made two different types of loan guarantees.[7] Full loan guarantees cover 100 percent of loans, and the loan is provided through the Treasury's Federal Financing Bank, which serves as the lender.[8] Partial loan guarantees occur when the project developer secures funding from a private lender. The private lender applies to DOE for a loan guarantee for up to 80 percent of the total loan principal amount. The lender is required to hold at least 20 percent of the credit exposure for the loan.

Congress authorized $34 billion in loan guarantee authority for section 1703 loan guarantees. Initially, Congress provided no appropriation to cover the credit subsidy costs of loan guarantees under section 1703, requiring all borrowers that receive a loan guarantee to make a payment to offset the credit subsidy costs of their own projects.[9] In April 2011, Congress appropriated $170 million to pay credit subsidy costs for energy efficiency and renewable energy projects, which DOE estimated would cover about $848 million in loan guarantees. As of November 2014, DOE had about $28.7 billion in remaining loan guarantee authority under section 1703, and it had three open solicitations for loan guarantee applications that account for much of that remaining authority. Specifically, in December 2013, DOE announced a solicitation for up to $8 billion in new loan guarantees for innovative, advanced fossil energy projects; in July 2014, DOE announced a new solicitation for up to $4.0 billion in new loan guarantees for innovative renewable energy projects and energy efficiency projects; and in December 2014, DOE announced a solicitation that will provide as much as $12.5 billion in new loan guarantees for innovative nuclear energy projects. Each of these loan guarantee solicitations expires on November 30, 2016.

For section 1705, the Recovery Act provided $2.5 billion to cover applicants' credit subsidy costs, which DOE estimated would be sufficient

[7]Title XVII of EPAct authorizes DOE to guarantee loans for up to 80 percent of the total project costs for eligible projects.

[8]The Federal Financing Bank is a government corporation, created by Congress, under the supervision of the Secretary of the Treasury. *See* 12 U.S.C. 2281 et seq. Full loan guarantees are considered to be "direct loans" for the purposes of credit subsidy cost estimation.

[9]DOE would collect payments from borrowers in such an amount that the credit subsidy cost is estimated to be zero.

to cover about $18 billion in loan guarantees.[10] The authority to enter into loan guarantees under section 1705 expired on September 30, 2011.

ATVM Loan Program

The ATVM loan program was established by EISA in December 2007 to provide up to $25 billion in loans for projects to produce more fuel-efficient passenger vehicles and their components.[11] The fiscal year 2009 continuing resolution appropriated $7.5 billion to DOE to support the program's direct loans to manufacturers of passenger vehicles and their components by paying the credit subsidy costs of the loans. DOE provides these loans to the borrowers by borrowing funds from the Federal Financing Bank to finance DOE's lending. The ATVM loan program remains open to applications on a rolling basis and had more than $16 billion of remaining loan authority as of November 2014.

Federal Credit Reform Act and Credit Subsidy Costs

FCRA was enacted in 1990 to require agencies to place the cost of federal credit programs on a budgetary basis equivalent to other federal spending. FCRA established a present value budgetary accounting for the cost of federal credit programs in order to more accurately measure the government's cost of federal credit programs, as well as to permit better cost comparisons among credit programs and between credit and noncredit programs. The act gave OMB responsibility for coordinating credit program estimates required by the act,[12] and OMB's guidance to agencies on preparing cost estimates is contained in OMB Circular A-11.[13] Agencies are required to estimate the net cost of extending credit over the life of a loan, which requires an estimate of future loan performance.[14] This cost—referred to as the credit subsidy cost—is the

[10]The Recovery Act initially appropriated nearly $6 billion to pay credit subsidy costs; however, Congress subsequently reduced this amount by transfer and rescission to fund other priorities.

[11]Pub. L. No. 110-140, §136, 121 Stat. 1492, 1514 (2007), *codified at* 42 U.S.C. §17013.

[12]Federal Credit Reform Act of 1990, as amended, Pub. L. No. 101-508, title XIII, subtitle B, §13201(a), 104 Stat 1388-610 (1990), *codified at* 2 U.S.C. §661b.

[13]OMB Circular No. A-11, *Preparation, Submission, and Execution of the Budget* (Washington, D.C.: Aug. 3, 2012).

[14]OMB Circular No. A-11 requires that agencies calculate this estimate for each "risk category" which, under the direction of OMB, is determined to be each Title XVII loan guarantee and ATVM loan.

estimated present value of projected cash flows from the government minus the estimated present value of projected cash flows to the government over the life of the loan.[15] The credit subsidy cost does not include administrative costs. The credit subsidy cost for each loan or loan guarantee is equal to the amount of estimated losses or gains to the federal government over the life of the loan.

To estimate the credit subsidy costs, agencies use historical information and various assumptions including the probability of loan default; borrower repayments and prepayments; recoveries; and the projected timing of these events to estimate future loan performance. The credit subsidy cost estimates are reestimated on an annual basis to reflect any changes in actual loan performance since the estimates were prepared, as well as any expected changes in assumptions related to future loan performance. For DOE's loan programs, these reestimates are independently audited by an external auditor when completed. Estimates and reestimates are also reviewed and approved by OMB, which examines whether estimates are consistent with guidance and proper methodologies.

DOE's Calculation of Credit Subsidy Costs

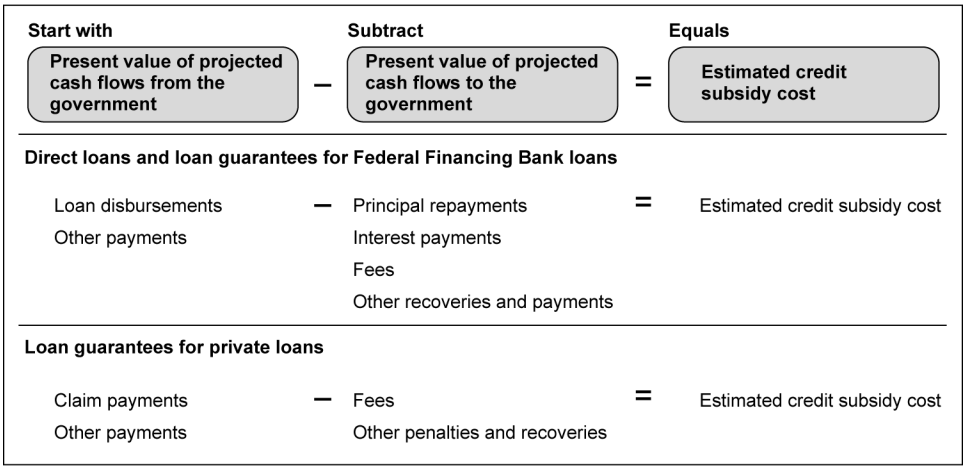
According to DOE policy, DOE follows OMB guidance in calculating credit subsidy costs to ensure it is meeting FCRA requirements.[16] Because of differences between the ATVM direct loans, LGP loan guarantees through the Federal Financing Bank, and LGP loan guarantees of private loans, DOE accounts for different cash flows in calculating credit subsidy costs. Specifically, for ATVM direct loans and LGP loan guarantees through the Federal Financing Bank, cash flows from the government include loan disbursements to the borrower while cash flows to the government include interest and principal repayments and borrower fees, as well as any recoveries in the case of a loan default. For LGP loan guarantees to private lenders, cash flows from the government include DOE payments to lenders in the case of loan defaults—called claim

[15]Present value is the worth of the future stream of returns or costs in terms of money paid immediately. In calculating present value, prevailing interest rates provide the basis for converting future amounts into their "money now" equivalents.

[16]The credit subsidy cost is calculated in the same manner for every loan or loan guarantee. DOE calculates credit subsidy costs as required per OMB Circular A-11 and other OMB guidance in a manner similar to other agencies unless directed by OMB to the contrary.

payments—while cash flows to the government include nonadministrative borrower fees, penalties, and recoveries in case of a default (see fig. 1).

Figure 1: Calculation of Credit Subsidy Cost for Direct and Guaranteed Loans under the Department of Energy's (DOE) Loan Programs



Source: GAO. | GAO-15-438

To calculate credit subsidy costs, DOE projects cash flows over the expected life of each loan, considering borrower interest rates and adjusted for the probability of loan default. To calculate the probability of loan default, DOE considers a variety of factors that may affect the borrower's ability to pay back the loan as agreed. These factors include the risk of the technology not performing as expected; the financial strength and track record of the borrower; market risk, including an assessment of the project's ability to withstand possible market price and demand fluctuations; and risks associated with project development and construction. From these and other risk factors, DOE first generates an internal credit rating for each loan and loan guarantee, and then matches its credit rating to equivalent default probabilities reflected in general default curves—derived from published historical data on default risk from

established credit rating agencies.[17] DOE uses a rating system similar to the private sector's, with ratings ranging from AAA for the least risky loans and loan guarantees to D for those in default.[18] Each letter rating has its own likelihood of default based on the default curve used. For example, in year 10 of a 25-year loan, a BB+ rated loan or loan guarantee may have an 11 percent chance of default, while a CCC loan or loan guarantee may have a 60 percent chance. These probabilities of default are applied to each year of the loan or loan guarantee, and then expressed in the projected cash flows for each loan or guarantee. For ATVM direct loans and loan guarantees through the Federal Financing Bank, a lower credit rating means a higher likelihood of default, which results in lower expected principal and interest payments over time in the credit subsidy calculation. For LGP's private loan guarantees, a lower credit rating means a higher likelihood of default, which is reflected in higher expected claim payments to lenders by DOE pursuant to its guarantee to cover borrower delinquencies. For both direct and guaranteed loans, the credit subsidy cost estimate also accounts for the expected amount of assets that would be recovered in case of a default, known as the recovery rate.

At any point in time, the sum of the credit subsidy costs for all loans and loan guarantees in DOE's portfolio represents the net present value of the expected, lifetime cost of the programs, mainly reflecting default risk, but also accounting for factors such as changing interest rates, changing recovery rates, the timing of repayments and defaults, and other relevant contract terms from loan agreements. For most DOE loans and loan guarantees, credit subsidy cost estimates are positive, meaning the net present value of total expected payments from the government is greater than the net present value of total expected payments to the government. However, in some cases, the net present value of total expected

[17]DOE subscribes to historical rating agency corporate bond default data. DOE obtains updated data annually and uses the data to build default curves that are modified to correct for data anomalies and to project the default curves forward to cover the life of the longest potential repayment schedules. The source data and final, modified default curves are submitted to the OMB examiner assigned to the DOE loan programs for review and approval prior to their application to the credit subsidy estimation and reestimation processes.

[18]Loans in the DOE portfolio are given a credit rating ranging from AAA to D, as is similarly done with loans in the private sector. Using this rating scale, AAA is more highly rated that AA+, which is followed by AA, then AA-, then A+, etc. The loans that had initial credit subsidy rate estimates greater than 20 percent each had credit ratings of B or worse (e.g., CCC+).

payments to the government is projected to be greater than the net present value of payments from the government. In this case, the credit subsidy cost estimate will be negative, representing a projected net gain to the government. A negative subsidy could result from a combination of higher borrower interest rates, low default risk, or high recovery rates, among other factors.

In the case of ATVM direct loans and loan guarantees through the Federal Financing Bank, which account for more than 80 percent of DOE's loan portfolio by obligation amount, the credit subsidy cost estimates also reflects the cost of DOE borrowing funds from the Federal Financing Bank to finance DOE's lending. DOE must repay the principal, with interest, and uses borrower payments to do so. In the case of private loan guarantees, DOE generally does not borrow money from the Federal Financing Bank but instead is guaranteeing a portion of loan principal amounts provided to the borrower from private financial institutions. In this case, DOE pays the private lender only in the case of a borrower default.

For the portion of the LGP authorized under section 1703 of EPAct, DOE must generally collect payments from borrowers to offset the initial credit subsidy costs. In contrast, for the portion of the LGP authorized under EPAct section 1705, which expired September 30, 2011, and for the ATVM loan program, Congress appropriated funds to pay initial credit subsidy costs. For all three programs, credit subsidy reestimates are completed on an annual basis, and DOE either returns funds to the Treasury for cost decreases or requests additional funds from the Treasury to cover increases.[19]

Program Administration and Fees

DOE administers the LGP and ATVM loan program under its Loan Programs Office. In carrying out its administrative functions, the Loan Programs Office conducts multiple stages of due diligence on potential loans and loan guarantees before a loan agreement is recommended for approval, and then once the loan has been made or guaranteed, the office monitors the loans and loan guarantees over the life of the loan. The general loan and loan guarantee review and monitoring process includes intake, due diligence, conditional commitment, closing, and

[19]FCRA provides permanent, indefinite budget authority to cover increases in costs. 2 U.S.C. § 661c(f).

monitoring. See figure 2 below for the LGP process. The process is essentially the same for the ATVM loan program, with a few differences, such as approval of final credit subsidy costs at conditional commitment.

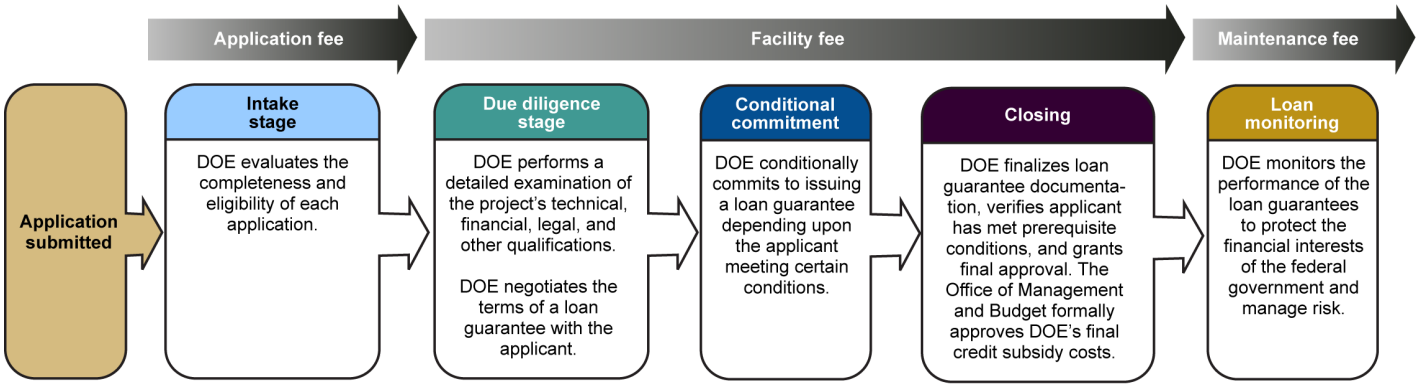
EPAct Title XVII, section 1702(h), requires DOE to "charge and collect fees for guarantees in amounts the Secretary determines are sufficient to cover applicable administrative expenses" of LGP with respect to Title XVII. Administrative functions include developing solicitations, assessing loan guarantee applications, estimating the credit subsidy cost, originating loan guarantees, and monitoring loan guarantee performance. In this regard, the Loan Programs Office charges applicants and borrowers four different types of fees that align with the different parts of the loan guarantee process. Such fees are generally described as follows:

- **Application fees** cover the intake stage, which generally has two parts: an initial review of the completeness of applications and the financial and technical eligibility of projects, and then a review using technical and financial criteria to determine if applications should move on to due diligence. Application fees are paid in two installments corresponding to these initial and subsequent reviews.
- **Facility fees** cover the due diligence, negotiation, and documentation of the loan guarantee and are paid prior to or at the time of closing on the loan guarantee agreement. Applicants are required to pay a portion of the facility fee upon execution of the conditional commitment, and the remainder of the fee is paid when the loan guarantee agreement is executed. The facility fee amount is set forth in the solicitation under which a borrower applied, and it is usually expressed as a small percentage of the loan principal.
- **Maintenance fees** are annual fees that must be paid until the guaranteed loan is fully repaid. These fees are designed to cover DOE's administrative costs, other than extraordinary expenses, to service and monitor the loan guarantee from the issuance of the loan guarantee until the payment in full of the guaranteed obligation. The expected maintenance fee amount is set forth in the solicitation under which a borrower has applied and is negotiated between DOE and the borrower. The maintenance fee is specified in the final Loan Guarantee Agreement.
- **Extraordinary expense fees** may be charged if a project experiences complications or issues requiring DOE to incur time or expenses significantly beyond those associated with standard monitoring. For example, a borrower could be charged an extraordinary fee after experiencing an engineering failure or measures to work out a

troubled loan guarantee. In these situations, the Loan Programs Office notifies the applicant of these charges at the time the borrower submits a request for a waiver, amendment, or consent to the loan guarantee agreement that requires DOE to expend additional time and effort beyond that required for routine loan monitoring.

DOE's review and monitoring process for loan guarantees and the associated fees are shown below in figure 2.

Figure 2: Department of Energy (DOE) Loan Programs Office Process for Loan Guarantee Review and Monitoring and Associated Borrower Fees



Source: GAO presentation of DOE data. | GAO-15-438

The fee amounts that can be charged by DOE vary significantly depending on the solicitation under which a loan guarantee is made and the amount of the loan guarantee (see app. II for the full schedule of LGP fees by solicitation). For the ATVM loan program, EISA authorized DOE to charge a loan fee;[20] however, like most other loan programs, the ATVM loan program's administrative costs are paid entirely from appropriated funds from the Treasury.

[20]Pub. L. No. 110-140, §136, 121 Stat. 1492, 1516 (2007), *codified at* 42 U.S.C. §17013(f).

DOE's Portfolio Includes Loans and Loan Guarantees for a Variety of Projects, Most of Which Are Operational

DOE's loan programs portfolio consists of 34 loans and loan guarantees in support of 30 projects in a diverse array of technologies—including solar, wind, geothermal, and nuclear generation, as well as advanced automotive manufacturing—with loan and loan guarantee amounts varying from $39 million to almost $6.0 billion. Most projects have completed construction and are in operation—producing power or automobiles, for instance. However, 5 projects have defaulted, including 2 solar manufacturing projects, 2 advanced automotive manufacturing projects, and 1 energy storage project.

DOE's Portfolio Includes Loans and Loan Guarantees for 30 Projects Deploying a Variety of Technologies

Between 2009 and 2014, DOE issued 38 loans and loan guarantees supporting 34 projects developing a diverse array of technologies. Of these 38 loans and loan guarantees, 4 loan guarantees were canceled before any loan principal was disbursed,[21] leaving DOE's portfolio with 34 loans and guarantees supporting 30 projects as of November 2014.[22] Specifically, DOE's loan portfolio includes 2 section 1703 loan guarantees totaling $6.2 billion in support of a nuclear power generation project; 27 section 1705 loan guarantees totaling $13.6 billion in support of 24 energy projects including solar and wind generation, geothermal and biomass generation, solar panel manufacturing, energy storage, and electricity transmission; and 5 ATVM loans totaling $8.1 billion for advanced automotive manufacturing projects including the manufacture of fuel-saving enhancements of conventional vehicle technology, plug-in hybrids, and all-electric vehicles, and other advanced vehicle technologies.[23,24] Loan and loan guarantee amounts for the projects vary

[21]Of the four canceled loan guarantees, in two cases, the borrower withdrew from the loan agreement (one electrical transmission project and one biomass project) and, in two cases, DOE deobligated the loan amounts before initial disbursement (one solar manufacturing project and one solar generation project).

[22]Of the 34 loans and loan guarantees in DOE's portfolio, one loan has not yet had any disbursements, and one loan has been paid back in full.

[23]Loan amounts reflect obligated monies as of November 2014. For some loans, loan amounts have decreased since the loan was made because of deobligations. Deobligations can occur for numerous reasons, including when a borrower determines it is no longer in need of the full, agreed-upon loan amount, or if a borrower does not meet the terms of the loan, including when the borrower defaults on repayment.

[24]As of November 2014, DOE had three conditional loan guarantee commitments under section 1703—two issued in 2010 and one in 2014—totaling almost $4 billion. The section 1705 loan program expired on Sept. 30, 2011. On March 26, 2015, DOE announced a conditional commitment for a new ATVM loan for $259 million.

widely, within and across technologies, from as little as $39 million for an innovative energy storage technology project to as much as almost $6.0 billion to an established automaker to develop more fuel-efficient vehicles. Within technology sectors, projects vary widely in the types of technologies under development. For instance, 2 of the 5 ATVM loans were provided to established automakers and three loans went to startup automotive companies. ATVM projects were aimed at enhancing the technology and improving fuel efficiency of gasoline-fueled internal combustion engines or developing alternative vehicles or components with newer technologies. Section 1705 loan guarantees for solar generation projects were similarly variable, supporting projects developing technologies such as concentrated solar arrays—including the world's largest solar thermal facility—as well as projects using more conventional photovoltaic technologies. See table 1 for a summary of the DOE loan portfolio.

Table 1: Loans Made and Guaranteed and Projects Funded through Department of Energy Loan Programs, as of November 2014

Dollars in millions

Program/technology	Number of loans/ loan guarantees	Number of projects	Range of loan/ loan guarantee amounts[a]
LGP section 1705			
Solar generation	14	11	$85 - $1,359
Wind generation	4	4	101 - 1,293
Solar manufacturing	3[b]	3	68 - 535
Geothermal	3	3	83 - 350
Biomass	1	1	127
Electrical transmission	1	1	324
Energy storage	1	1	39
All LGP section 1705	**27**	**24**	**39 - 1,359**
LGP section 1703 – nuclear generation	**2**	**1**	**2,722 - 3,462**
ATVM loan program – automotive manufacturing	**5[c]**	**5**	**49 - 5,907**
All technologies	**34**	**30**	**$39 - $5,907**

Source: GAO analysis of DOE data. | GAO-15-438

Note: DOE's loan programs include the loan guarantee program (LGP), which has two components—one authorized under section 1703, and one under section 1705 of the Energy Policy Act of 2005—and the Advanced Technology Vehicles Manufacturing (ATVM) loan program.

[a]Loan and loan guarantee amounts based on obligations.

[b]Includes one loan guarantee that has not had any disbursements.

[c]Includes one loan that has been repaid in full.

Most Projects Have Completed Construction and Are Operating

Most projects have completed construction and are operating—producing power, transmitting power, manufacturing vehicles, or otherwise meeting project objectives. As of November 2014, 19 of 30 projects had completed construction and 4 more were more than 95 percent complete. Also, 21 of 30 projects were producing power or otherwise meeting project objectives (see table 2). Construction on 4 additional projects is expected to be completed before June 2015. According to DOE officials, the construction phase of these projects is the most likely time for a project to default; once construction is complete, and operations begin, the project begins to generate revenue for the borrower, making defaults less likely. For a list of project status by loan and loan guarantee see appendix III.

Table 2: Status of Projects in the Department of Energy's Loan Portfolio as of November 2014

Program/technology	Number of loans	Number of projects	Number of projects that are at least 95 percent constructed	Number of projects producing power or otherwise meeting project objectives
LGP section 1705				
Solar generation	14	11	11	9
Wind generation	4	4	4	4
Solar manufacturing	3[a]	3	0	0
Geothermal	3	3	2	3[b]
Biomass	1	1	1	0
Electrical transmission	1	1	1	1
Energy storage	1	1	1	1
LGP section 1705 subtotal	**27**	**24**	**20**	**18**
LGP section 1703 – nuclear generation	**2**	**1**	**0**	**0**
ATVM loan program – automotive manufacturing	**5**	**5**	**3**	**3**
Total	**34**	**30**	**23**	**21**

Source: GAO analysis of DOE data. | GAO-15-438

Note: DOE's loan programs include the loan guarantee program (LGP), which has two components—one authorized under section 1703, and one under section 1705 of the Energy Policy Act of 2005—and the Advanced Technology Vehicles Manufacturing (ATVM) loan program.

[a]Includes one project that has not had any disbursements

[b]One project is producing power while still under construction.

Loans and Loan Guarantees to Manufacturers Account for Most Defaults

Five of the 34 loans and loan guarantees in DOE's portfolio have defaulted as of November 2014. Specifically, the defaults include 2 loan guarantees supporting solar manufacturing projects, 1 loan guarantee supporting an energy storage project, and 2 loans supporting ATVM projects.[25] Original loan and loan guarantee amounts for the defaulted loans ranged from $43 million to $535 million, although total default losses will be less than the amounts loaned or guaranteed because none of these loans were fully disbursed, and because DOE has recovered some assets and expects some additional asset recoveries.[26] In total, DOE obligated about $1.53 billion to the loans and loan guarantees that defaulted, but disbursed less than 60 percent of that. In addition, DOE has recovered more than $58 million from these defaulted loans and loan guarantees, and expects to recover millions more, according to DOE data, although the actual amount will not be known until the defaults are settled. The riskiness of these defaulted projects was reflected in their initial credit ratings: 3 of 5 projects that defaulted were rated CCC+, 1 was rated B, and 1 was rated B+. None of the projects that defaulted had revenue streams that were provided for under long-term contracts for the sale of energy produced by the project pursuant to a power purchase agreement, offtake agreement, or similar contractual language. In contrast, there have been no defaults to date among the 21 energy generation, transmission, or other projects that had power purchase or offtake agreements.[27] These power purchase agreements and offtake agreements generally guarantee a stream of revenue to the project owner for 20 or 25 years after the project begins generating electricity, effectively ensuring a buyer for the produced power.[28]

[25]The loan for the energy storage project was restructured after the default, and the restructured loan is currently in payback status.

[26]Some of the defaulted loans are still pending final resolution. As such, total losses from these five defaults are projected.

[27]Four of the 21 projects have nontraditional offtake agreements that assure a source of revenue for the projects.

[28]One power purchase agreement has a 15.5-year tenor, one has a 30-year tenor, and another has a 41-year tenor.

Total Credit Subsidy Costs Are Currently Estimated at $2.21 Billion, with Increases and Decreases Varying by Program and Technology

DOE estimated total credit subsidy costs for its loan programs to be $2.21 billion as of November 2014, including $807 million for loans and loan guarantees that have defaulted. The credit subsidy cost estimate for LGP increased from $1.33 billion to $1.81 billion, mainly the result of loan guarantee defaults. The credit subsidy cost estimate for the ATVM loan program decreased from $3.16 billion to $404 million, mostly the result of the dramatic improvement in one loan's credit rating.

Total Credit Subsidy Costs Are Currently Estimated to Be $2.21 Billion, Including $807 Million for Loans and Loan Guarantees That Have Defaulted

As of November 2014, DOE estimated the total lifetime cost of the loans and loan guarantees in DOE's portfolio—the credit subsidy cost—to be $2.21 billion (see table 3).[29] This amount represents the sum of DOE's credit subsidy cost estimates for each of its loans and loan guarantees over the life of each loan. As explained above, the credit subsidy cost for each loan or loan guarantee is the net present value of the difference between projected cash flows to the government and projected cash flows from the government over the life of the loan, excluding administrative expenses. The credit subsidy cost includes adjustments for default risk, interest payments and other factors, and it ultimately will equal the cost of that loan or loan guarantee to the government. The main factors affecting changes in credit subsidy cost estimates are risk of default, recovery rates, and changes to interest rates, with other factors, such as projected timing of advances and repayments, also affecting the estimates. As of November 2014, about 78 percent of the $27.9 billion obligated for loans and loan guarantees under DOE's loan programs has been disbursed.

[29]Credit subsidy costs in this report are based on obligations and disbursements for each loan as of November 2014. For some loans, loan amounts have decreased since the loan was made because of deobligations, and many loans have yet to be fully disbursed. Deobligations can occur for numerous reasons, including when a borrower determines they are no longer in need of the full, agreed-upon loan amount, or if a borrower does not meet the terms of the loan, including when the borrower defaults on repayment.

Table 3: Summary of the Department of Energy Loan Programs' Estimated Credit Subsidy Costs as of November 2014

Dollars in millions

Program/technology	Number of loans/ guarantees	Total obligated loan/guarantee amount[a]	Total disbursed loan/guarantee amount	Total estimated credit subsidy cost[b]
LGP section 1705				
Solar generation	14	$10,167	$9,641	$1,163
Wind generation	4	1,674	1,580	31
Solar manufacturing[c]	3	746	596	591
Geothermal	3	532	473	50
Other 1705[d]	3	491	409	40
LGP section 1705 subtotal	**27**	**13,609**	**12,700**	**1,875**
LGP section 1703 – nuclear generation	**2**	**6,184**	**1,725**	**(68)[e]**
ATVM loan program[f] – automotive manufacturing	**5**	**8,061**	**7,281**	**404**
Total	**34**	**$27,854**	**$21,706**	**$2,211**

Source: GAO analysis of DOE data. | GAO-15-438

Notes: DOE's loan programs include the loan guarantee program (LGP), which has two components—one authorized under section 1703, and one under section 1705 of the Energy Policy Act of 2005—and the Advanced Technology Vehicles Manufacturing (ATVM) loan program.

Numbers may not sum due to rounding.

[a]Portions of some loans and loan guarantees have been deobligated since the loan agreement was made.

[b]Estimated credit subsidy cost based on total disbursements.

[c]One solar manufacturing loan guarantee had no disbursements. Therefore, its estimated credit subsidy cost is zero for the purposes of this table.

[d]Includes loan guaranteess for one biomass project, one energy transmission project, and one energy storage project. These projects have been combined to prevent disclosure of credit subsidy data for individual loans.

[e]The credit subsidy cost estimate for the LGP section 1703 loans is negative, meaning the present value of projected cash flows to the government exceeds the present value of projected cash flows from the government.

[f]Includes a loan that has been repaid in full.

Undisbursed funds are not included in official credit subsidy cost reestimates, in accordance with OMB guidance and FCRA. However, the credit subsidy cash flow models do project future loan disbursements and have a credit subsidy cost associated with them. Including the projections on these undisbursed funds would decrease the estimated current credit subsidy cost of DOE's loan portfolio by about $26 million. This decrease is primarily because of the negative credit subsidy associated with undisbursed 1703 loan guarantees. DOE officials noted that

disbursements are largely contingent on project companies meeting specified conditions to funding. The officials further explained that undisbursed funds can be deobligated.

The $2.21 billion total credit subsidy cost estimate across all loans and loan guarantees includes estimated credit subsidy costs of $807 million for the 5 loans and loan guarantees that have defaulted and $1.40 billion in estimated credit subsidy costs for the remaining 29 loans and loan guarantees in the portfolio (see table 4).

Table 4: Summary of the Department of Energy Loan Programs' Estimated Credit Subsidy Costs from Defaulted Loans/Guarantees as of November 2014

Dollars in millions

Program	Number of loans/ guarantees	Number in default	Total obligated loan/guarantee amount[a]	Estimated credit subsidy cost of defaults	Estimated credit subsidy cost of non-defaulted loans/guarantees	Total estimated credit subsidy cost
LGP section 1705	27	3	$13,609	$617	$1,258	$1,875
LGP section 1703	2	0	6,184	0	(68)[b]	(68)[b]
ATVM loan program[c]	5	2	8,061	190	214	404
Total	**34**	**5**	**$27,854**	**$807**	**$1,404**	**$2,211**

Source: GAO analysis of DOE data. | GAO-15-438

Notes: DOE's loan programs include the loan guarantee program (LGP), which has two components—one authorized under section 1703, and one under section 1705 of the Energy Policy Act of 2005—and the Advanced Technology Vehicles Manufacturing (ATVM) loan program.

Numbers may not sum due to rounding.

[a]Portions of some loans and loan guarantees have been partially deobligated since the loan agreement was made.

[b]The credit subsidy cost estimate for the LGP section 1703 loans is negative, meaning the present value of projected cash flows to the government exceeds the present value of projected cash flows from the government.

[c]Includes a loan that has been repaid in full.

As of November 2014, the estimated credit subsidy costs to date of $807 million from the 5 defaults represents about 2.9 percent of the $27.9 billion in total obligated loan and loan guarantee amounts, about 3.7 percent of the $21.7 billion in total disbursed amounts, and about 17.7 percent of the $4.6 billion in credit subsidy appropriations initially set aside for the current loans and loan guarantees. See table 5 for details by loan program.

Table 5: Summary of the Department of Energy Loan Programs' Estimated Credit Subsidy Costs from Defaulted Loans/Guarantees as a Percentage of Obligations, Disbursements, and Initial Credit Subsidy Set-asides, as of November 2014

Dollars in millions

Program	Estimated credit subsidy cost of defaults	Total obligated loan/ guarantee amount[a]	Defaults as a percentage of total obligation	Total disbursed amount	Defaults as a percentage of total disbursement	Total set aside to cover initial credit subsidy costs[b]	Defaults as a percentage of total initial set-asides
LGP section 1705	$617	$13,609	4.5%	$12,700	4.9%	$1,398	44.2%
LGP section 1703	0	6,184	n/a	1,725	n/a	0	n/a
ATVM loan program[c]	190	8,061	2.4	7,281	2.6	3,163	6.0
All programs	**$807**	**$27,854**	**2.9%**	**$21,706**	**3.7%**	**$4,561**	**17.7%**

Source: GAO analysis of DOE data. | GAO-15-438

Notes: DOE's loan programs include the loan guarantee program (LGP), which has two components—one authorized under section 1703, and one under section 1705 of the Energy Policy Act of 2005—and the Advanced Technology Vehicles Manufacturing (ATVM) loan program.

Numbers may not sum due to rounding.

[a]Portions of some loans and loan guarantees have been partially deobligated since the loan agreement was made.

[b]This amount is the initial credit subsidy rate at the time the loan agreement was closed multiplied by the amount of the loan disbursed as of November 2014.

[c]Includes a loan that has been repaid in full.

Credit Subsidy Cost Estimates Increased from $1.33 Billion to $1.81 Billion for LGP, Primarily as a Result of Defaults and Shifts in Credit Ratings

The sum of initial credit subsidy costs for the LGP loan guarantees—which were made over several years—totaled about $1.33 billion.[30] Initial credit subsidy rates for the loans varied widely across the different technologies supported by LGP—reflecting the relative risk of the different types of projects. The credit subsidy rates averaged about 3.5 percent for wind generation projects, 7.2 percent for geothermal generation projects, 12.5 percent for solar generation projects, and 16.8 percent for solar manufacturing projects.[31] The two loan guarantees for the nuclear generation project had negative credit subsidy rates, reflecting a projection of positive net cash flow to DOE from those loans (see table 6). Initial credit subsidy rate estimates also varied widely within some technology categories. For example, initial credit subsidy rate estimates for solar generation projects ranged from less than 5 percent to more than 20 percent.[32] Differences in initial credit subsidy rate estimates reflect differences in perceived borrower and project risk, as well as differences in estimated recovery rates. For example, loan guarantees with initial credit subsidy rate estimates greater than 20 percent were to borrowers with relatively low initial credit ratings, reflecting greater perceived borrower risk. In contrast, loan guarantees to support electricity generation or transmission projects—all of which had power purchase or offtake agreements—had credit subsidy rate estimates below 10 percent, on average.

[30]This initial credit subsidy cost estimate amount is based on disbursed funds for each loan guarantee as of November 2014. At the time the loan guarantees were made, about $1.9 billion was obligated for credit subsidy costs based on original loan obligation amounts, including the four loans that were deobligated before disbursement.

[31]These averages are weighted by loan size within each technology sector. To calculate the weighted average of the initial credit subsidy estimates, each individual credit subsidy rate estimate was weighted by the loan obligation amount at loan closing. When calculating the initial credit subsidy cost estimate, DOE estimates the present value of projected cash outflows for each loan and the present value of each loan's inflows. The difference of these two numbers is the credit subsidy cost estimate for the loan. The credit subsidy cost estimate is then compared to the total obligated loan amount to determine the credit subsidy rate, represented as a percentage of the loan amount. This procedure is initially completed at loan closing for LGP and at conditional commitment for the ATVM loan program. For both programs, the credit subsidy cost reestimate is completed each year, resulting in an updated credit subsidy rate for each loan or guarantee.

[32]We are not providing specific details of credit subsidy rates in this report at the request of DOE, which indicated that such information is business-sensitive.

Table 6: Initial Credit Subsidy Rates for the Department of Energy's Loan Guarantee Program (LGP)

Program/technology	Number of loan guarantees	Number of projects	Average initial credit subsidy rate estimate, weighted by loan guarantee size[a]
LGP section 1705			
Solar generation	14	11	12.5%
Wind generation	4	4	3.5
Solar manufacturing	3	3	16.8
Geothermal	3	3	7.2
Other[b]	3	3	9.6
All LGP section 1705	**27**	**24**	**11.4**
LGP section 1703 – nuclear generation	**2**	**1**	**(4.2)[c]**
All technologies	**29**	**25**	**6.6%**

Source: GAO analysis of DOE data. | GAO-15-438

[a]Weighting based on loan guarantee amount obligated at closing of loan agreement.

[b]The "other" category includes loan guarantees for one biomass project, one energy transmission project, and one energy storage project. These projects have been combined to prevent disclosure of credit subsidy data for individual loan guarantees.

[c]The credit subsidy cost estimate for the LGP section 1703 loans is negative, meaning the present value of projected cash flows to the government exceeds the present value of projected cash flows from the government.

Credit subsidy estimates for the LGP loan guarantees are $1.81 billion as of November 2014 (see table 7). The nearly $482 million increase in credit subsidy cost estimates for LGP is the sum of changes to the credit subsidy cost estimates of the individual loan guarantees in the LGP portfolio between loan guarantee agreement closing and November 2014, primarily resulting from defaults. While the majority of the 29 LGP loan guarantees have had credit subsidy rate estimates increase or decrease by fewer than 5 percentage points, the credit subsidy rate estimates for nine loan guarantees changed more substantially. Specifically, the credit subsidy rate estimates for the three defaulted loans guarantees resulted in credit subsidy rate estimates increasing by more than 40 percentage points over original estimates for each loan guarantee. These defaults resulted in credit subsidy cost estimate increases of more than $551 million. For the other six loan guarantees with large changes, the increases or decreases were between 5 and 16 percentage points. These increases and decreases in credit subsidy rate estimates were the result of changes to loan guarantee credit ratings and other factors. For

instance, the credit rating for one loan guarantee decreased from a BB+ to a CCC between 2010 and 2014, contributing to a 14 percentage point increase in credit subsidy rate estimate. In sum, the combined effect of the changes for the 26 LGP loan guarantees that have not defaulted is a decrease in credit subsidy cost estimate of almost $69.7 million from initial estimates.

Table 7: Summary of Change in Credit Subsidy Cost Estimates since Initiation for the Department of Energy's Loan Guarantee Program (LGP), as of November 2014

Dollars in millions

Program/technology	Number of loan guarantees	Number in default	Total obligated loan guarantee amount[a]	Sum of initial estimated credit subsidy costs[b]	Sum of current estimated credit subsidy costs[c]
LGP section 1705					
Solar generation	14	0	$10,167	$1,233	$1,163
Wind generation	4	0	1,674	48	31
Solar manufacturing[d]	3	2	746	58	591
Geothermal	3	0	532	34	50
Other[e]	3	1	491	25	40
LGP section 1705 subtotal	**27**	**3**	**13,609**	**1,398**	**1,875**
LGP section 1703 – nuclear generation	**2**	**0**	**6,184**	**(73)[f]**	**(68)**
Total	**29**	**3**	**$19,793**	**$1,325**	**$1,807**

Source: GAO analysis of DOE data. | GAO-15-438

Note: Numbers may not sum due to rounding.

[a]Portions of some loan guarantees have been partially deobligated since the loan guarantee agreement was made.

[b]Initial credit subsidy cost estimates are based on disbursements for each loan guarantee and reflect the initial credit subsidy rate estimate.

[c]Current credit subsidy costs are based on disbursements for each loan guarantee.

[d]Includes one loan guarantee that has not yet been disbursed.

[e]Includes loan guarantees for one biomass project, one energy transmission project, and one energy storage project. These projects have been combined to prevent disclosure of credit subsidy data for individual loan guarantees.

[f]The credit subsidy cost estimate for the LGP section 1703 loans is negative, meaning the present value of projected cash flows to the government exceeds the present value of projected cash flows from the government. The initial negative credit subsidy cost estimate resulted in $0 of charges to the borrowers.

For the 21 LGP projects with power purchase or offtake agreements, there are 25 total loan guarantees. Of these 25, only 6 credit subsidy rate estimates increased or decreased by more than 5 percentage points from initial estimates, with 12 estimates decreasing, and 13 estimates increasing. None of the projects with a power purchase or offtake agreement has defaulted, and just 2 have seen credit subsidy rate estimates increasing by more than five percentage points. In general, the increases and decreases in credit subsidy cost estimates for these loan guarantees resulted from changes in project credit ratings and predicted rates of default, changes in the expected rates of recovery from a default, and changes to disbursement and repayment schedules.

Credit Subsidy Cost Estimates Decreased from $3.16 Billion to $404 Million for the ATVM Loan Program, Primarily as a Result of Large Decreases for One Loan

The sum of initial credit subsidy costs for the ATVM loans—made from 2009 to 2011—totaled about $3.16 billion.[33] The initial credit subsidy estimates for these five loans had a weighted average of 39 percent—higher than any of the average credit subsidy estimates for LGP technology sectors, reflecting the perceived risk of these loans. These credit subsidy estimates ranged widely from less than 5 percent to more than 50 percent. Similar to LGP loan guarantees, this range reflected a number of factors related to the perceived risk of each loan.

As of November 2014, DOE estimated the credit subsidy cost for ATVM loans to be about $404 million, a decrease of about $2.76 billion. This decrease in estimated credit subsidy costs for the ATVM loans is mostly attributable to a significant drop in the credit subsidy cost estimate for one loan—the result of a significantly improved credit rating. In addition, two ATVM loans have defaulted, resulting in an increase in credit subsidy costs for those loans, and one loan was repaid in full 9 years ahead of schedule, resulting in a decrease in estimated credit subsidy cost and a net gain to the Treasury.

[33]This initial credit subsidy cost estimate amount is based on disbursed funds for each loan as of November 2014. At the time loans were conditionally committed to, about $3.3 billion was obligated for credit subsidy costs based on original loan obligation amounts.

Administrative Costs Have Totaled $312 Million, with LGP Costs Partially Offset by Fees

From fiscal years 2008 through 2014, DOE's administrative costs for both the LGP and the ATVM loan program totaled approximately $312 million, and, for the LGP, borrower fees partially offset these costs. Support services such as contractors constitute more than 70 percent of the costs for both programs. LGP fees collected have not covered costs, in part, because maintenance fees were too low.

Administrative Costs Have Totaled About $252 Million for LGP and $61 Million for the ATVM Loan Program, Mostly for Support Services

From fiscal year 2008 through fiscal year 2014, DOE's administrative costs for the loan programs totaled about $312 million—approximately $251.6 million for LGP and $60.6 million for the ATVM loan program. These costs varied annually, as shown in table 8. DOE's costs of administering the LGP increased from $2.9 million at the beginning of the program in 2008 to $58.7 million in 2011, when DOE made 27 of its 33 loan guarantees, and then dropped to $36.4 million in 2014. ATVM loan program costs peaked at $17.7 million in 2010, when DOE had made 4 of the 5 loans for the program, then fell to $5.7 million in 2014. DOE officials noted that costs in 2014 do not necessarily indicate what future costs will be.

Table 8: Administrative Costs of the Department of Energy Loan Programs, Fiscal Years 2008 through 2014

Dollars in millions

	2008	2009	2010	2011	2012	2013	2014	Cumulative costs
LGP	$2.9	$14.1	$37.5	$58.7	$58.7	$43.4	$36.4	$251.6
ATVM loan program	0	10.3	17.7	9.9	9.7	7.3	5.7	60.6
Total	**$2.9**	**$24.4**	**$55.2**	**$68.6**	**$68.4**	**$50.7**	**$42.0**	**$312.1**

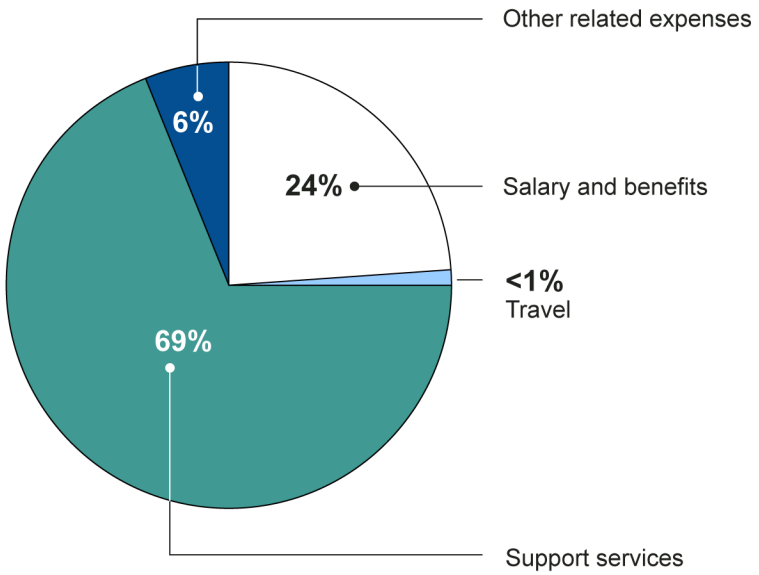
Source: GAO analysis of DOE data | GAO-15-438

Notes: DOE's loan programs include the loan guarantee program (LGP), which has two components—one authorized under section 1703, and one under section 1705 of the Energy Policy Act of 2005—and the Advanced Technology Vehicles Manufacturing (ATVM) loan program.

Numbers may not sum due to rounding.

More than 70 percent of the total administrative costs for both programs were for support services—primarily contractors. Contractors support federal staff in all areas of the Loan Programs Office's operations and also provide specialized legal, technological, financial, and market expertise. Staff salaries and benefits are the next largest cost category, making up about 20 percent of costs, with travel and other related expenses comprising the rest of costs (see figs. 3 and 4 for breakdowns by program).

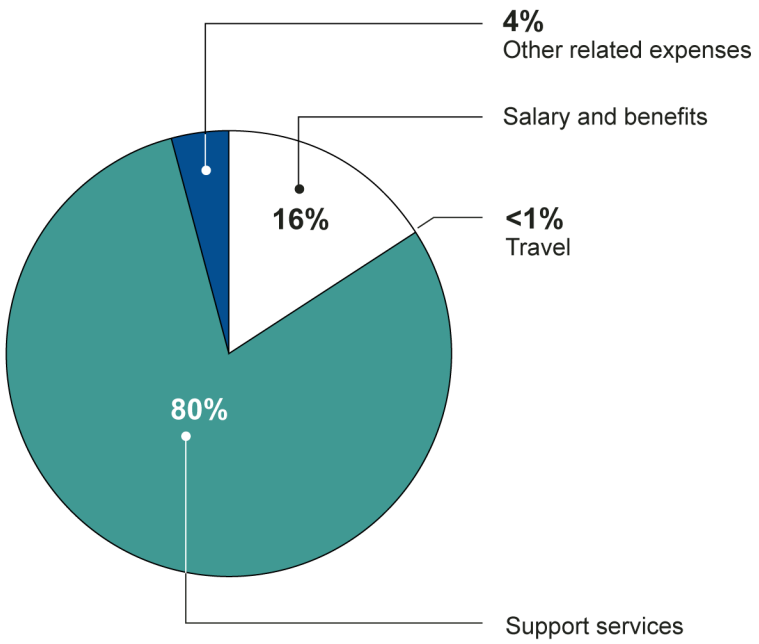
Figure 3: Loan Guarantee Program Cumulative Administrative Costs (Fiscal Years 2008 – 2014), by Category



Source: GAO analysis of DOE data. | GAO-15-438

Note: Numbers may not sum due to rounding.

Figure 4: Advanced Technology Vehicles Manufacturing Loan Program Cumulative Administrative Costs (Fiscal Years 2008 – 2014), by Category



Source: GAO analysis of DOE data. | GAO-15-438

Note: Numbers may not sum due to rounding.

The percentage of administrative costs accounted for by support services has decreased since the early years of the programs, but it remained the largest component of the Loan Programs Office's administrative costs at 55 percent in fiscal year 2014. In DOE's fiscal year 2015 and 2016 budget justifications, the agency highlighted that it intends to continue to reduce reliance on contractors and fill current vacancies with federal employees. For all categories of expenses, the ATVM loan program does not collect fees to offset costs, while LGP does. As noted, the ATVM loan program's administrative costs are covered entirely by appropriated funds from the Treasury.

Fees Have Not Fully Covered LGP Administrative Costs Because of Low Maintenance Fees

Administrative fees have not fully covered DOE's LGP administrative costs primarily because of low maintenance fees. From 2008 through 2014, DOE's total fee collections for the program amounted to $196 million or 78 percent of LGP administrative costs. Through fiscal year 2014 DOE had used about $143 million of those fees to offset administrative costs. Those administrative costs not offset by fees have been paid with taxpayer funds. DOE's fee collections have varied widely

from year to year and have been largely composed of facility fees—generated when DOE makes new loan guarantees. Facility fees account for more than 70 percent of collections (see table 9).

Table 9: Department of Energy Loan Guarantee Program Fee Collections, by Fiscal Year and Type

Dollars in millions

Fiscal year	Application	Facility	Maintenance	Extraordinary	Total
2008	$4.9	$0	$0	$0	$4.9
2009	22.3	4.4	<0.1[a]	0	26.7
2010	8.7	18.0	0.1	0	26.7
2011	3.4	93.9	1.0	0	98.3
2012	0	0	1.5	0	1.5
2013	0	0	1.7	1.0	2.7
2014	0.9	26.4	1.9	6.0	35.0
Total	**$40.1**	**$142.6**	**$6.3**	**$7.0**	**$196.0**

Source: GAO analysis of DOE data | GAO-15-438

Note: Numbers may not sum due to rounding.

[a]In 2009, DOE collected $25,000 in maintenance fees.

The fees DOE has collected have not been sufficient to cover all of its administrative expenses for the program in part because the maintenance fees on the current loan guarantees were too low to cover ongoing monitoring costs. More specifically, maintenance fees have accounted for 3 percent of total collections and have averaged $1.7 million per year since 2012—by which time DOE had made most loan guarantees. Costs for the Loan Programs Office's Portfolio Management Division—primarily responsible for ongoing monitoring—have averaged $11.2 million per year since 2012. According to DOE officials, the agency established the maintenance fees at the beginning of the program based on professional judgment and estimates of future ongoing monitoring costs. DOE officials also noted that, in setting fee levels, they must balance trying to cover their expenses with keeping the fees from being a deterrent to applicants. As we found in our May 2014 report, DOE had limited staff in its Portfolio Management Division until 2011.[34] Once DOE's Portfolio Management

[34]GAO, *DOE Loan Programs: DOE Should Fully Develop Its Loan Monitoring Function and Evaluate Its Effectiveness,* GAO-14-367 (Washington, D.C.: May 1, 2014).

Division was in place and monitoring loan guarantees, DOE had a better sense of what actual monitoring costs were and thus what fees should be. The maintenance fee collections are also low because the majority of loan guarantees DOE has made were from solicitations with lower fees. More specifically, of the 34 loan guarantees that paid maintenance fees from 2009 to 2014:[35] 13 came from solicitations with the lowest annual maintenance fee range ($10,000 to $25,000), and 18 from solicitations with the next lowest maintenance fee range ($50,000 - $100,000). In contrast, 3 loan guarantees came from solicitations with the highest maintenance fee range ($200,000 to $400,000). For more details on the fees associated with specific solicitations, see appendix II.

DOE has addressed the low maintenance fee levels by changing the fee structure in its new solicitations to allow increased maintenance fees—up to $500,000 per year.[36] DOE officials noted that the new fee structure should allow DOE to cover a greater portion of LGP monitoring costs on new loan guarantees, though the actual fee amounts will depend on the individual loan guarantees and negotiation of the loan guarantee agreements, making predictions of future fee income a challenge. DOE officials also stated that the gap between maintenance fees and monitoring costs on DOE's current loan guarantees will narrow over time because monitoring costs are highest when projects are under construction and should decrease as projects become fully operational. At this time, it is too early to tell whether DOE's actions will result in sufficient funds to offset LGP's future administrative costs.

Agency Comments and Our Evaluation

We provided a draft of this report to DOE and OMB for review and comment. In its written comments, reproduced in appendix IV, DOE generally agreed with GAO's findings. DOE makes the point that Loan Programs Office-supported project companies have made approximately $4.4 billion in principal and interest payments, and this amount will

[35]In addition to the 29 current Title XVII loan guarantees discussed above, the 34 loan guarantees referenced here also include 4 deobligated loan guarantees, which paid maintenance fees prior to deobligation, and 1 in which the applicant withdrew its application in 2011 after having already paid its first installment of nonrefundable maintenance fees.

[36]DOE also changed the fee structure in the new solicitations by increasing facility fees and restructuring the application fees, in response to concerns and public comments that application fees were too high.

increase as repayments continue. We believe it is important to understand that these payments have been included in the calculation of the $2.2 billion net cost estimate cited in our report. Reporting the principal and interest collected without that context could lead to the misperception that the loan programs are earning a profit. DOE and OMB also provided technical comments that were incorporated, as appropriate.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Energy, the Director of the Office of Management and Budget, and other interested parties. In addition, the report is available at no charge on the GAO website at http://www.gao.gov.

If you or your staff members have any questions concerning this report, please contact me at (202) 512-3841 or ruscof@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix V.

Frank Rusco
Director, Natural Resources and Environment

Appendix I: Objectives, Scope, and Methodology

This appendix details the methods we used to examine the costs of the Department of Energy's (DOE) loan programs. This report responds to GAO's ongoing mandate under the Consolidated Appropriations Act of 2014 to review DOE's implementation of the Loan Guarantee Program (LGP).[1] Because DOE has combined the LGP and the Advanced Technology Vehicles Manufacturing (ATVM) loan program into one Loan Programs Office, we have included both programs in this review. In this report, we (1) describe DOE's loan portfolio and the portfolio's current status, (2) describe the current estimated credit subsidy costs of the loan programs and the extent to which credit subsidy cost estimates changed, and (3) examine DOE's administrative costs for the loan programs and the extent to which fees have covered LGP's administrative costs.

To address all of our objectives, we reviewed relevant federal laws and regulations, DOE guidance, and past GAO reports describing DOE's administration of the loan programs. To describe DOE's loan portfolio and its current status, we acquired and reviewed DOE summary data for all loans and loan guarantees in DOE's portfolio, and we interviewed DOE officials regarding this information. These data included information on loan and loan guarantee amounts, types of loans, length of loans, interest rates, and other loan and loan guarantee characteristics. Although LGP was established in 2005, and the ATVM loan program was established in 2007, no loans were made or guaranteed until 2009, so our data and analysis covers loans and loan guarantees made between 2009 and 2014. In our interviews with DOE officials, we discussed which loan and borrower characteristics are most significant to the loans' and loan guarantees' performance, among other topics.

To describe the current credit subsidy cost estimates for the loans and loan guarantees in DOE's portfolio and the extent to which credit subsidy cost estimates have changed from initial estimates, we analyzed fiscal year-end 2014 DOE credit subsidy cost estimation data as found in output files from the Office of Management and Budget's (OMB) Credit Subsidy Calculator 2 (CSC2). The CSC2 is a discounting tool issued by OMB for agencies to use in calculating credit subsidy costs for direct loans and loan guarantees. We collected output data from the CSC2 for each loan and loan guarantee in DOE's portfolio and used these data to determine initial credit subsidy cost estimates and current credit subsidy cost

[1]Pub. L. No. 113-76, § 307, 128 Stat. 5,175 (2014), *codified at* 42 U.S.C. §16515.

estimates for each loan and loan guarantee. We calculated the total current credit subsidy cost estimate for each loan and guarantee by multiplying the original credit subsidy rate by total disbursements and adding the lifetime reestimates. We did not evaluate the reasonableness of the reestimates or the assumptions used to calculate them. To help us understand these output files and how the credit subsidy estimates are produced, we interviewed DOE officials, DOE contractors, and OMB officials responsible for approving DOE's credit subsidy estimates. The credit subsidy cost estimation data we analyzed covered all loans and loan guarantees made by the program—the first loans and loan guarantees were made in 2009, most of the loan guarantees were made in 2011, and the most recent were in 2014. For general guidance on federal credit programs and credit subsidy costs, we referred to the OMB Circular A-11 Section 185, OMB Circular A-129, OMB Circular A-136, and the Federal Credit Reform Act (FCRA) of 1990.[2] We report credit subsidy cost estimates based on current disbursements rather than on loan amounts at the time the loan was made or guaranteed. This reporting method is consistent with FCRA and OMB guidance. We assessed the reliability of credit subsidy data by reviewing DOE's external auditor's (the audit firm KPMG) financial audit documentation and interviewing KPMG officials to understand the process by which credit subsidy cost estimates are audited. While we found the credit subsidy data we received to be sufficiently reliable for the purposes of our study, we did identify some limitations that affect our ability to present some data. Specifically, we are not reporting credit subsidy estimates on an individual loan or loan guarantee basis due to the sensitive nature of this information. In addition, our ability to provide some summary information was hindered by the small number of loans or loan guarantees and the vast difference in loan sizes and credit subsidy estimates in some technology categories.

To describe DOE's administrative costs and the extent to which borrower fees have covered LGP's administrative costs, we collected and reviewed data on administrative costs and fee collections for DOE's loan programs. We analyzed administrative costs by program and category, and we

[2]OMB Circular No. A-11, *Preparation, Submission, and Execution of the Budget* (Washington, D.C.: Aug. 2, 2012); OMB Circular No. A-129, *Policies for Federal Credit Programs and Non-Tax Receivables* (Washington, D.C.: Jan. 2013); OMB Circular No. A-136, *Financial Reporting Requirements* (Washington, D.C.: Sept. 18, 2014); and Pub. L. No.101-508, title XIII, subtitle B, 104 Stat. 1388, 1388-609 (Nov. 5, 1990), *codified at* 2 U.S.C. §§ 661-661f.

assessed trends in those costs over time. We analyzed borrower fees by fee type and solicitation. To understand how borrower fees have changed over time, we compared all existing DOE solicitations and reviewed public comments regarding the fee amounts. We examined administrative cost and fee data from fiscal year 2008 through fiscal year 2014. We included 2008, even though the first loans and loan guarantees were not made until 2009, because some administrative costs and fees occurred before the first loans and loan guarantees were signed as administrative tasks were necessary to initiate the loan programs. DOE provided administrative cost and fee collection data in spreadsheets that pulled data directly from DOE's Standard Accounting & Reporting Enterprise System (STARS). We assessed the reliability of the data by interviewing agency officials knowledgeable about the data and reviewing documentation of audits of DOE's accounting system. We found the administrative cost and fee collection data to be sufficiently reliable for the purposes of our study. We interviewed DOE budget officials to better understand how they set fees in each solicitation, the extent to which these fees were meant to cover administrative costs, and to understand how and why fees have changed under new solicitations.

We conducted this performance audit from June 2014 to April 2015 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Standardized Fees Associated with Obtaining a Loan Guarantee, by Solicitation

The following tables show the standard fees associated with obtaining a loan guarantee, listed by DOE solicitation. Table 10 presents the fees for solicitations that are now closed and table 11 presents fees for the three solicitations open to applicants as of April 2015.

Table 10: Standardized Fees Associated with Obtaining a Loan Guarantee - Closed Solicitations

		Application fee				
Solicitation/date	**Loan guarantee amount**	**Total application fee amount**	**Part I**	**Part II**	**Facility fee**	**Maintenance fee per year**
Mixed 06, 8/8/06	Less than or equal to $150,000,000	$10,000	N/A	$10,000	1% of the guaranteed amount	$25,000
	Above $150,000,000 - $500,000,000	$25,000	N/A	$25,000	$375,000 + 0.75% of the guaranteed amount	$25,000
	Above $500,000,000	$50,000	N/A	$50,000	$1,625,000 + 0.50% of the guaranteed amount	$25,000
Nuclear Front-End, 6/30/08	N/A	$800,000	$200,000	$600,000	½ of 1% of the guaranteed portion of the guaranteed obligation	$200,000 to $400,000
Nuclear Power, 6/30/08	N/A	$800,000	$200,000	$600,000	½ of 1% of the guaranteed portion of the guaranteed obligation	$200,000 to $400,000
Energy Efficiency and Renewable Energy or EERE 08, 6/30/08	Less than or equal to $150,000,000	$75,000	$18,750	$56,250	1% of the guaranteed amount	$50,000 to $100,000
	Above $150,000,000 - $500,000,000	$100,000	$25,000	$75,000	$375,000 + 0.75% of the guaranteed amount	$50,000 to $100,000
	Above $500,000,000	$125,000	$31,250	$93,750	$1,625,000 + 0.50% of the guaranteed amount	$50,000 to $100,000
Fossil, 9/22/08	N/A	$800,000	$200,000	$600,000	½ of 1% of the guaranteed portion of the guaranteed obligation	$200,000 to $400,000
Energy Efficiency and Renewable Energy or EERE 09, 7/29/09	Less than or equal to $150,000,000	$75,000	$18,750	$50,250	1% of the guaranteed amount	$50,000 to $100,000

Solicitation/date	Loan guarantee amount	Application fee: Total application fee amount	Application fee: Part I	Application fee: Part II	Facility fee	Maintenance fee per year
	Above $150,000,000 - $500,000,000	$100,000	$25,000	$75,000	$375,000 + 0.75% of the guaranteed amount	$50,000 to $100,000
	Above $500,000,000	$125,000	$31,250	$93,750	$1,625,000 + 0.50% of the guaranteed amount	$50,000 to $100,000
Transmission, 7/29/09	N/A	$800,000	$200,000	$600,000	½ of 1% of the guaranteed portion of the guaranteed obligation	$200,000 to $400,000
Financial Institution Partnership (FIPP), 10/7/09	N/A	$50,000	$12,500	$37,500	½ of 1% of the guaranteed portion of the guaranteed obligation, payable by the lender-applicant as follows: (1) upon the signing of a term sheet: 20% and (2) at closing: 80%.	$10,000 to $25,000
Manufacturing, 8/10/10	N/A	$125,000	$31,250	$93,750	½ of 1% of the guaranteed portion of the guaranteed obligation, payable by the lender-applicant as follows: (1) upon the signing of a term sheet: 25%and (2) at closing: 75%.	$50,000 to $150,0000

Legend: N/A = not applicable

Source: GAO presentation of DOE data. | GAO-15-438

Table 11: Standardized Fees Associated with Obtaining a Loan Guarantee - Open Solicitations

		Application fee				
Solicitation/date	Loan guarantee amount	Total application fee amount	Part I	Part II	Facility fee	Maintenance fee per year
Advanced Fossil, 12/12/13	Less than or equal to $150,000,000	$150,000	$50,000	$100,000	1% for the portion of the principal amount of the guaranteed obligation	Up to $500,000
	Above $150,000,000	$400,000	$50,000	$350,000	Amount equal to 1% for the portion of the principal amount of the guaranteed obligation that does not exceed $150,000,000 plus, for the portion of the guaranteed obligation that exceeds $150,000,000, an additional .60%[a]	Up to $500,000
Energy Efficiency and Renewable Energy or EERE 14, 7/3/14	Less than or equal to $150,000,000	$150,000	$50,000	$100,000	1% for the portion of the principal amount of the guaranteed obligation	Up to $500,000
	Above $150,000,000	$400,000	$50,000	$350,000	Amount equal to 1% for the portion of the principal amount of the guaranteed obligation that does not exceed $150,000,000 plus, for the portion of the guaranteed obligation that exceeds $150,000,000, an additional .60%[a]	Up to $500,000

Solicitation/date	Loan guarantee amount	Application fee: Total application fee amount	Application fee: Part I	Application fee: Part II	Facility fee	Maintenance fee per year
Advanced Nuclear Energy, 12/10/14	Less than or equal to $150,000,000	$150,000	$50,000	$100,000	1% for the portion of the principal amount of the guaranteed obligation	Up to $500,000
	Above $150,000,000	$400,000	$50,000	$350,000	Amount equal to 1% for the portion of the principal amount of the guaranteed obligation that does not exceed $150,000,000 plus, for the portion of the guaranteed obligation that exceeds $150,000,000, an additional .60%[a]	Up to $500,000

Source: GAO presentation of DOE data. | GAO-15-438

[a]For example, an applicant for a guaranteed loan in the principal amount of $250,000,000 would pay $1,500,000 (1.0% of the first $150,000,000) plus $600,000 (.60% of the amount over $150,000,000) for a total facility fee of $2,100,000.

Appendix III: DOE Loan Guarantees and Loans as of November 2014

Program/borrower	Technology sector	Project status
LGP - Title XVII Section 1705		
1366 Technologies Inc.	Solar manufacturing	Not yet disbursed
Abengoa Bioenergy Biomass of Kansas, LLC	Biomass	Under construction, completion expected 2015
Abound Manufacturing Solar, LLC	Solar manufacturing	Defaulted/bankrupt
AES ES Westover, LLC	Transmission	Withdrew prior to drawing funds
Agua Caliente Solar, LLC	Solar generation	Operating
Arizona Solar One, LLC (aka Abengoa Solar, Inc; Solana)	Solar generation	Operating
AV Solar Ranch 1, LLC	Solar generation	Operating
Caithness Shepherds Flat	Wind generation	Operating
Cogentrix of Alamosa, LLC	Solar generation	Operating
Desert Sunlight 250, LLC	Solar generation	Operating
Desert Sunlight 300, LLC	Solar generation	Operating
Genesis Solar, LLC	Solar generation	Operating
Granite Reliable Power, LLC	Wind generation	Operating
Great Basin Transmission South, LLC (aka SWIP/On Line)	Transmission	Operating
High Plains Ranch II, LLC (aka Sunpower Corp CA Valley Solar Ranch)	Solar generation	Operating
Kahuku Wind Power, LLC	Wind generation	Operating
Mesquite Solar 1, LLC	Solar generation	Operating
Mojave Solar LLC (aka Abengoa Solar Mojave)	Solar generation	Under construction, completion expected by end of 2014
NGP Blue Mountain I LLC	Geothermal	Operating
OFC 2, LLC (aka Ormat)	Geothermal	Operating, one unit remains under construction
Poet Project Liberty, LLC	Biomass	Withdrew prior to drawing funds
Prosun Project Company, LLC (aka Project Amp/Photon)	Solar generation	Deobligated prior to drawing funds
Record Hill Wind LLC	Wind generation	Operating
Solar Partners I (aka Brightsource Ivanpah II)	Solar generation	Operating
Solar Partners II (aka Brightsource Ivanpah I)	Solar generation	Operating
Solar Partners VIII (aka Brightsource Ivanpah III)	Solar generation	Operating
Solopower, Inc.	Solar manufacturing	Deobligated prior to drawing funds
Solyndra, Inc.	Solar manufacturing	Defaulted/bankrupt

Program/borrower	Technology sector	Project status
Stephentown Regulation Services, LLC (aka Beacon Power Corporation)	Energy storage	Defaulted/restructured – Operating; under a restructured guarantee called Stephentown Spindle, LLC
Tonopah Solar Energy (aka Solar Reserve, LLC)	Solar generation	Under construction, completion expected 2015
USG Oregon, LLC	Geothermal	Operating
LGP - Title XVII Section 1703		
Georgia Power Company	Nuclear generation	Under construction, expected completion after 2018
Oglethorpe Power Corporation	Nuclear generation	Under construction, expected completion after 2018
Advanced Technology Vehicles Manufacturing (ATVM) loan program		
Fisker Automotive, Inc.	Automotive manufacturing	Defaulted/auctioned (subsequently bankrupt)
Ford Motor Company	Automotive manufacturing	Operating
Nissan North America, Inc.	Automotive manufacturing	Operating
Tesla Motors Inc.	Automotive manufacturing	Operating; repaid in full
The Vehicle Production Group, LLC	Automotive manufacturing	Defaulted/auctioned (subsequently restructured by the purchaser)

Source: GAO analysis of DOE data | GAO-15-438

Appendix IV: Comments from the Department of Energy

Department of Energy
Washington, DC 20585

April 15, 2015

Mr. Frank Rusco
Director, Natural Resources and Environment
U.S. Government Accountability Office
Washington, DC 20548

Dear Mr. Rusco,

Thank you for the opportunity to review the Government Accountability Office's (GAO) draft report entitled DOE Loan Programs: Current Estimated Net Costs Include $2.2 Billion in Credit Subsidy, Plus Administrative Expenses, GAO-15-438. We believe that the data presented in GAO's draft report demonstrates that the Department's Loan Programs Office (LPO) is achieving its statutory mission to accelerate the deployment of innovative clean energy projects and advanced vehicle manufacturing facilities in the U.S., while being a responsible steward of taxpayer dollars.

In its draft report, GAO recognizes that the performance of any financial portfolio is dynamic as outstanding loans are repaid and new loans are issued. LPO is pleased with the strong performance of its portfolio to date, which reflects the thorough due diligence, underwriting, and monitoring performed by LPO.

The report includes data showing that the initial credit subsidy cost of the portfolio—effectively the loan loss reserve—has declined by approximately $2.28 billion based on the latest annual credit subsidy re-estimate certified by the Office of Management and Budget. LPO anticipates that the credit subsidy cost for the current portfolio of loans and loan guarantees will continue to decline as loan principal and interest is repaid and more projects complete construction and reach commercial operations.

Further, LPO-supported project companies have already made approximately $4.4 billion in principal and interest payments to the U.S. Treasury, which funded the loans guaranteed by the Department through the Federal Financing Bank (as of December 31, 2014). These amounts will continue to increase as loans are repaid over the remaining tenor of the loans.

If you have any questions or would like to discuss these issues further, please contact me at 202-287-5854.

Sincerely,

Peter W. Davidson
Executive Director
Loan Programs Office

Printed with soy ink on recycled paper

Appendix V: GAO Contact and Staff Acknowledgments

GAO Contact

Frank Rusco, (202) 512-3841 or ruscof@gao.gov

Staff Acknowledgments

In addition to the individual named above, Karla Springer (Assistant Director), Saquib Ahsan, Marcia Carlsen, Greg Campbell, Cindy Gilbert, Ryan Gottschall, Cole Haase, Michael Krafve, Armetha Liles, Cynthia Norris, Barbara Timmerman, and Jack Wang made key contributions to this report.

Related GAO Products

DOE Loan Programs: DOE Has Made More Than $30 Billion in Loans and Guarantees and Needs to Fully Develop Its Loan Monitoring Function. GAO-14-645T. Washington, D.C.: May 30, 2014.

DOE Loan Programs: DOE Should Fully Develop Its Loan Monitoring Function and Evaluate Its Effectiveness. GAO-14-367. Washington, D.C.: May 1, 2014.

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Department of Energy: Status of Loan Programs. GAO-13-331R. Washington, D.C.: March 15, 2013.

DOE Loan Guarantees: Further Actions Are Needed to Improve Tracking and Review of Applications. GAO-12-157. Washington, D.C.: March 12, 2012.

Department of Energy: Advanced Technology Vehicle Loan Program Implementation Is Under Way, but Enhanced Technical Oversight and Performance Measures Are Needed. GAO-11-145. Washington, D.C.: February 28, 2011.

Department of Energy: Further Actions Are Needed to Improve DOE's Ability to Evaluate and Implement the Loan Guarantee Program. GAO-10-627. Washington, D.C.: July 12, 2010.

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Department of Energy: Observations on Actions to Implement the New Loan Guarantee Program for Innovative Technologies. GAO-07-798T. Washington, D.C.: April 24, 2007.

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