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The Advanced Technology Vehicles Manufacturing (ATVM) Loan Program: Status and Issues

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Summary

The Advanced Technology Vehicles Manufacturing (ATVM) Loan Program is a Department of Energy (DOE) program designed to reduce petroleum use in vehicles and promote domestic manufacturing. It was established in 2007, when the Detroit 3 automakers—General Motors, Ford, and Chrysler—faced declining sales in a weakening economy at the same time that U.S. fuel economy standards were raised. It provides direct loans to automakers and parts suppliers to construct new U.S. factories or retrofit existing factories to produce vehicles that achieve at least 25% higher fuel economy than model year 2005 vehicles of similar size and performance.

The ATVM program is authorized to award up to \$25 billion in loans; there is no deadline for completing such loan commitments. Congress funded the program in 2009, when it appropriated \$7.5 billion to cover the subsidy cost for the \$25 billion in loans, as well as \$10 million for program implementation. Since the start of the program, DOE has awarded \$8.4 billion in loans to five companies (Fisker, Ford, Nissan, Tesla, and the Vehicle Production Group). As of January 2015, ATVM has \$16.6 billion in remaining loan authority. No new loans have been made since 2011. Two companies—Fisker and the Vehicle Production Group—were unable to make payments on their loans, and DOE auctioned the loans off in the fall of 2013. Tesla paid off all of its loan in 2013, nine years ahead of schedule.

Of the final loan agreements, DOE has estimated that the projects would create or save 38,700 jobs at facilities in nine states. DOE estimated that annually the projects would displace 282 million gallons of gasoline (roughly 18,000 barrels per day, or about 0.2% of U.S. consumption) and would avoid about 2.4 million tons of carbon dioxide emissions (about 0.04% of total U.S. emissions).

In April 2014, DOE announced a number of changes that appear designed to refocus the program to assist vehicle component manufacturers, rather than the vehicle assemblers that have received prior ATVM loans. As of January 8, 2015, however, no new loans have been made.

Appropriations for the program do not cover the entire value of the loans but instead cover the “subsidy cost” (i.e., the risk of default). For the original appropriation, Congress assumed a subsidy rate of 30%, meaning that \$7.5 billion would be sufficient to fund \$25 billion in total loan value. A report by the Government Accountability Office (GAO) estimates that a total of \$3.3 billion in subsidy costs has been paid to date, with approximately \$4.2 billion unobligated.

The unobligated funds remaining for the program have been a point of contention in recent appropriations debates. The House has voted several times to transfer some of the unused appropriation for the ATVM subsidy costs to other purposes. None of these transfers were enacted. Other legislators have sought to expand the program. Two recent federal reports call for rescinding the program’s unobligated balance: the FY2015 budget resolution reported by the House Budget Committee calls for outright rescission, and an April 2014 GAO report recommends Congress consider taking the same step unless DOE can generate new demand for the program.

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Introduction

Congress established the Advanced Technology Vehicles Manufacturing (ATVM) program in 2007 as a way to help raise U.S. fuel economy standards for vehicles and to encourage domestic production of more fuel-efficient cars and light trucks. The legislation establishing the program, the Energy Independence and Security Act of 2007 (EISA),¹ was enacted as the domestic auto industry was experiencing declining sales in a weakening economy. According to a Government Accountability Office (GAO) report,

The Detroit 3 faced more difficulty in achieving substantial improvements in fuel economy than most foreign-based manufacturers, which historically had produced and sold more fuel-efficient vehicles. When proposing new, more stringent CAFE standards [in 2007], NHTSA estimated that the Detroit 3 would face significantly higher costs to meet revised standards than the major Japanese automakers.²

The ATVM program is neither unique nor without precedent. The federal government has supported a wide range of research, development, and production incentives for new domestic energy sources for several decades, as part of an overall commitment to reduce petroleum imports and, in the case of automobiles, raise fuel-efficiency levels. Efforts to spur energy innovation in vehicles go back at least to the Ford Administration, when the first efforts to promote research and development of electric vehicles were enacted. Since those initial efforts in the 1970s, the Department of Energy (DOE) has continuously supported research initiatives on new types of electric batteries, fuel cells, and other vehicles and technologies as possible alternatives to vehicles fueled by petroleum. During these years, federal support has also extended to various interagency initiatives such as the Partnership for a New Generation of Vehicles (PNGV) and the Freedom Cooperative Automotive Research (FreedomCAR) Initiative. In 2005, Congress enacted tax credits for the purchase of certain alternative fuel and advanced technology vehicles as a step to encourage buyers to purchase new types of cars and light trucks.

U.S. Motor Vehicle Industry and ATVM

Concerns over the longer-term competitive decline of the Detroit 3—General Motors (GM), Ford, and Chrysler³—provide the background to the ATVM program. As shown in **Figure 1**, the Detroit 3 saw the 66% market share they held in 2000 erode steadily, as American consumers turned increasingly to imports and vehicles produced by German, Japanese, and South Korean companies at plants located in the United States.⁴ Since a low point of 44% market share in 2009 during the recession, the Detroit 3 have gained some ground, as their sales accounted for nearly 47% of all U.S. sales in 2011 and about 45% each year since 2012.

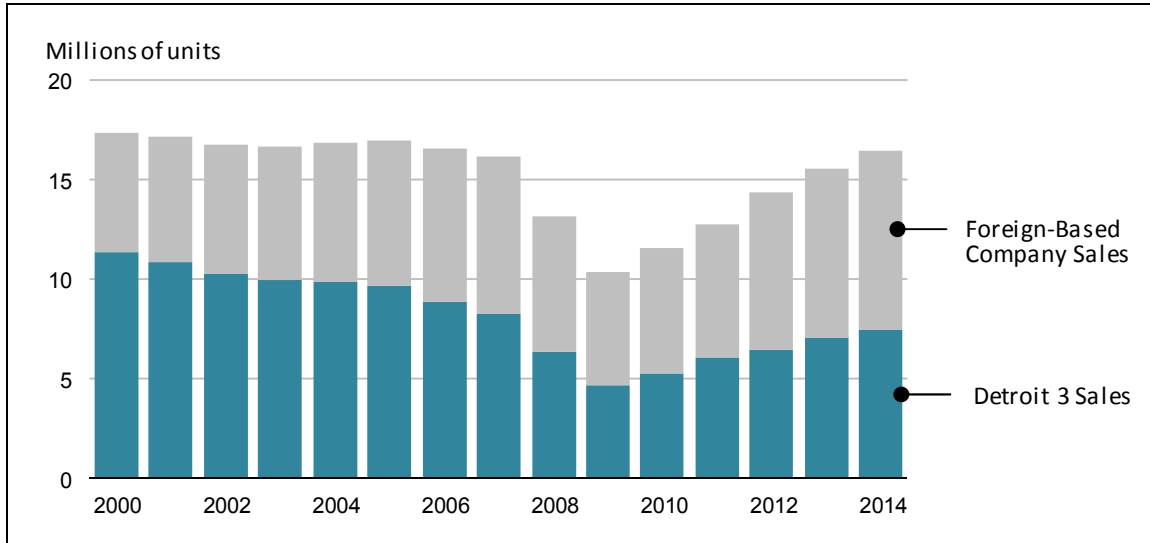
¹ P.L. 110-140 was signed by President George W. Bush on December 19, 2007.

² U.S. Government Accountability Office (GAO), *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, DC, February 2011, p. 4, <http://www.gao.gov/new.items/d11145.pdf>.

³ Chrysler is now owned by Fiat.

⁴ Imported light vehicles held 17% of the U.S. market in 2000, rising to 23% in 2010 and falling to just under 21% in 2012 and 2013. CRS calculations based on “U.S. Light Vehicle Sales,” *Automotive News Data Center*, <http://www.autonews.com/data/datacenter01archive/datacenter/1057>.

Figure 1. U.S. Light Vehicle Sales
2000-2014, in millions of units



Source: Automotive News Data Center and Ward's Auto Data.

Note: Light vehicles include passenger cars, pick-up trucks, vans, SUVs, and cross-over vehicles. Sales include imports manufactured by all automakers.

Recession Adversely Affects the U.S. Motor Vehicle Industry

At the time the ATVM program was enacted in late 2007, it was apparent that the U.S. economy and the domestic motor vehicle industry were slowing. Rising gasoline prices were one factor; by the summer of 2008, gasoline would reach a nationwide average price of \$4.17 per gallon.⁵ The U.S. unemployment rate doubled, from 4.6% in 2007 to 9.3% in 2009, causing consumers to pull back even more from major purchases like vehicles. Collapsing world credit markets and a slowing global economy combined to create the worst market in decades for production and sale of motor vehicles in the United States and other industrial countries. U.S. light vehicle *production* fell by more than 34% in 2009 compared to 2008 levels. A similar pattern was reflected in U.S. light vehicle *sales*, which fell from just over 16.5 million vehicles in 2007 to 13.5 million in 2008 and then to 10.6 million vehicles in 2009.⁶

The production and sales slides were serious business challenges for all automakers, and they rippled through the large and interconnected motor vehicle industry supply chain, touching suppliers, auto dealers, and the communities where auto-making is a major industry. GM and Chrysler were in especially precarious financial positions. The immediate crisis that brought these two companies to bankruptcy was a loss of financial liquidity as the banking system's credit sources froze and neither company had enough internal reserves to weather the economic storm. As a result, they turned to the U.S. government for assistance in November 2008.

⁵ U.S. Energy Information Administration, *U.S. Gasoline and Diesel Retail Prices*, Washington, DC, accessed October 25, 2011, http://www.eia.gov/dnav/pet/pet_pri_gnd_dcus_nus_w.htm. Prices reached as high as \$4.64 per gallon on average in California.

⁶ *Ward's Automotive Yearbook*, 2011, p. 213.

During this time, ATVM resurfaced as a possible source of federal bridge loans for GM and Chrysler. While Congress had passed the \$700 billion Emergency Economic Stabilization Act (EESA)⁷ in the fall of 2008 to shore up the U.S. financial system, the George W. Bush Administration initially indicated it would not use these funds for anything other than the rescue of financial institutions. Instead, it encouraged Congress to amend the already funded ATVM program so it could provide bridge loans to keep GM and Chrysler afloat. In light of the worsening economy and possible failure of both automakers, the House passed legislation that would have allowed ATVM funds to be used as bridge loans for GM and Chrysler,⁸ but the Senate did not bring it up for a vote.⁹

In light of congressional inaction on the reprogramming of ATVM funding, late in December 2008 and in the first days of 2009 the Bush Administration reversed course and provided Troubled Asset Relief Program (TARP) assistance to both automakers and two auto-financing companies.¹⁰ The incoming Obama Administration built on this commitment. That funding enabled GM and Chrysler to begin restructuring their operations, a process that was ultimately completed in bankruptcy court. The ATVM program remained unchanged from its original purpose.

Recent Developments in the U.S. Motor Vehicle Industry

Since 2010, U.S. light vehicle sales have grown by 42%,¹¹ and domestic production has grown by 50%.¹² There has been a significant improvement in the financial strength of the Detroit 3:¹³

- General Motors Corporation went through a dramatic restructuring and bankruptcy. The federal government owned as much as a 61% share of a successor company, General Motors Company, which was established through the bankruptcy process in 2009. By the end of 2013, the U.S. Treasury had sold off its holdings of the new company. General Motors Company is now owned by private investors. It generated \$3.8 billion in net income on \$155 billion in revenue in 2013.¹⁴
- Chrysler, which was also restructured and went through bankruptcy in 2009, is owned and managed by Fiat, and the merged company is now known as Fiat

⁷ P.L. 110-343. The Troubled Asset Relief Program (TARP) was authorized by this statute.

⁸ H.R. 7321 was passed by the House on December 10, 2008, by a vote of 237-170.

⁹ For a complete description of Congress's consideration of auto industry loan legislation in the fall of 2008, see CRS Report R40003, *U.S. Motor Vehicle Industry: Federal Financial Assistance and Restructuring*, coordinated by Bill Canis (available upon request).

¹⁰ For more information on TARP, see CRS Report R41427, *Troubled Asset Relief Program (TARP): Implementation and Status*, by Baird Webel.

¹¹ *Ward's Automotive Yearbook and Data Center*. U.S. light vehicle sales were 11.6 million units in 2010 and 16.4 million in 2014.

¹² *Ward's Automotive Yearbook and Data Center*. U.S. light vehicle production was 7.6 million units in 2010 and 11.4 million in 2014.

¹³ For a discussion of GM and Chrysler restructuring, see CRS Report R41978, *The Role of TARP Assistance in the Restructuring of General Motors*, by Bill Canis and Baird Webel, and CRS Report R41940, *TARP Assistance for Chrysler: Restructuring and Repayment Issues*, by Baird Webel and Bill Canis.

¹⁴ General Motors Company, Form 10-K for the year ended December 31, 2013, p. 64.

Chrysler Automobiles.¹⁵ It repaid its loan to the U.S. Treasury in 2011. In 2013, prior to its merger with Fiat, Chrysler had net income of \$2.8 billion on revenue of \$72 billion.¹⁶

- Ford is the only one of the Detroit 3 that did not receive TARP funds, and it did not file for bankruptcy. It accrued \$30 billion in losses from 2006 to 2008, but has been profitable since the summer of 2009. In 2013, Ford recorded \$7.2 billion in net income on \$147 billion of revenue.¹⁷

It was in the context of the unprecedented turmoil and change in the motor vehicle industry in the first decade of the 2000s that the ATVM program was established and funded.

Legislative History of the ATVM Program

The ATVM program was established in 2007 and funded in 2009. In the fall of 2011, it was discussed in Congress in the context of using a reduction in the program as an offset to proposed increased funding for disaster relief in the FY2012 Continuing Resolution. Ultimately, Congress did not reduce ATVM funding and the program remains as originally authorized and funded, although two recent reports have called for the unused funds to be rescinded.

The Energy Independence and Security Act of 2007

EISA raises fuel economy standards to new highs and provides incentives for the domestic production of fuel-efficient cars and light trucks. It requires the National Highway Traffic Safety Administration (NHTSA) to increase federal Corporate Average Fuel Economy (CAFE) standards so that the combined new passenger car and light truck fuel efficiency will reach at least 35 miles per gallon (mpg) by model year (MY) 2020, up from approximately 24 mpg in MY2007.¹⁸ Before the enactment of EISA, passenger car CAFE standards were held constant by statute at 27.5 mpg for nearly two decades.

Some Members of Congress reasoned that automakers should be given an incentive to apply new technologies that would speed the development of more fuel-efficient vehicles and thereby help achieve the new CAFE goals.¹⁹ Thus, along with the increase in CAFE standards, Section 136 of EISA established an incentive program of loans and grants to promote the domestic manufacture of fuel-efficient passenger vehicles and components. As enacted, the program authorized up to

¹⁵ Since 2009, Fiat has owned increasingly larger shares of Chrysler, reaching a 58% ownership stake by December 2013. On January 1, 2014, Fiat announced that it had reached an agreement to buy the remainder from the United Auto Workers' retiree health care trust, which owned the other 41.5% of Chrysler. "Fiat Reaches Deal with UAW Trust to Buy Rest of Chrysler," *Reuters*, January 1, 2014.

¹⁶ Chrysler Group LLC, Form 10-K for the year ended December 31, 2013, p. 53.

¹⁷ Ford Motor Company, Form 10-K for the year ended December 31, 2013, p. 31.

¹⁸ For more information on CAFE standards, see CRS Report R42721, *Automobile and Truck Fuel Economy (CAFE) and Greenhouse Gas Standards*, by Brent D. Yacobucci, Bill Canis, and Richard K. Lattanzio.

¹⁹ For example, S. 2747 in the 109th Congress provided the basis for the grant program in the Senate version of EISA. (The direct loan provision in §136 was added in the Conference Committee). In the report printed by the Senate Committee on Energy and Natural Resources on S. 2747 (Senate Hearing 109-666), several Senators spoke about promoting the domestic production of new vehicles with greatly improved fuel economy.

\$25 billion in direct loans to manufacturing facilities in the United States.²⁰ The loans and grants were authorized for

- (1) reequipping, expanding, or establishing a manufacturing facility in the United States to produce—
 - (A) qualifying advanced technology vehicles; or
 - (B) qualifying components; and
- (2) engineering integration performed in the United States for qualifying vehicles and qualifying components.²¹

One of the key requirements for a qualifying vehicle or component is that it achieves at least 25% higher fuel economy than a comparable MY2005 vehicle.²² EISA authorized but did not provide appropriations for the loan and grant programs.

The FY2009 Continuing Resolution

Because EISA did not fund the ATVM program, automakers in 2008 lobbied Congress not only to fund it, but also to double the authorization to \$50 billion.²³ Despite the efforts to increase the size of the program, Congress left it unchanged. In September 2008, however, Congress enacted the Consolidated Security, Disaster Assistance, and Continuing Appropriations Act.²⁴ Among other provisions, the act appropriated \$7.5 billion to cover the risk of default on up to \$25 billion in loans, and \$10 million was appropriated for administrative expenses.²⁵ During floor debate on this legislation, several Senators spoke about the original purpose of the ATVM program and the reasons for funding it in the fall of 2008. Senator Jeff Bingaman said,

As we conferred on the [ATVM] program almost a year ago, it was clear there were credit problems for both the large manufacturers and the small start-ups and component suppliers, particularly as it related to getting financing for the most cutting edge technologies such as batteries for electric-drive vehicles. Now that credit markets have tightened further, the need is even more acute.²⁶

During debate on the same continuing resolution, Senator Carl Levin noted, “Most of these technologies were invented by our companies here in the United States, and we need to keep manufacturing them here and continue to lead the world in automotive innovation. These loans will help our companies stay competitive in the global marketplace.”²⁷

²⁰ Section 136 of EISA also authorized a grants program for similar purposes, but it was never funded by Congress.

²¹ P.L. 110-140, §136(b).

²² P.L. 110-140, §136(a).

²³ “GM, Ford Seek \$50 Billion from U.S., Double Request,” Bloomberg, August 22, 2008.

²⁴ P.L. 110-329.

²⁵ P.L. 110-329, §129.

²⁶ Senator Jeff Bingaman, “Consolidated Security, Disaster Assistance and Continuing Appropriations Act, 2009,” remarks in the Senate, *Congressional Record*, September 27, 2008, p. S9958.

²⁷ Senator Carl Levin, “Consolidated Security, Disaster Assistance and Continuing Appropriation Act, 2009,” remarks in the Senate, *Congressional Record*, September 27, 2008, p. S9961.

FY2010 Energy and Water Development and Related Agencies Appropriations Act

In October 2009, Congress enacted the Energy and Water Development and Related Appropriations Act of 2010.²⁸ Section 312 amended the EISA definition of “advanced technology vehicle” to include “ultra efficient vehicles,” which achieve fuel economy (or gasoline-equivalent electricity consumption) of 75 mpg or higher. An ultra-efficient vehicle must have a “fully closed compartment” and be “designed to carry at least 2 adult passengers.” However, the emissions standards applicable to advanced technology vehicles do not apply to ultra-efficient vehicles.²⁹ This statutory change was made after DOE issued its interim final rule on the program, and the regulations have not been updated to reflect this change.³⁰

The FY2012 Continuing Resolution

In September 2011, the ATVM program was involved in the debate over legislation that funded the federal government through November 18, 2011. Among other provisions, the continuing resolution that was brought to the House floor³¹ contained \$1 billion in emergency FY2011 funding for the Federal Emergency Management Agency (FEMA). The House Appropriations Committee had proposed an offset for the FY2011 FEMA funding by cutting \$1 billion from the ATVM program and applying it to FEMA’s disaster relief program. The chairman of the House Appropriations Committee noted in a statement that the ATVM program “has more than \$4 billion in unspent funds in the pipeline.”³² A majority of the House did not agree to the legislation, in part because of opposition to the ATVM reduction.

Two days later the House voted again, passing the legislation with minor changes including the ATVM reduction. The Senate in turn added another amendment, deleting supplemental FY2011 FEMA funding and the ATVM offset. This bill was agreed to by the House of Representatives on October 4, 2011, and signed by the President the next day. The ATVM program thus remained intact.

²⁸ P.L. 111-85.

²⁹ The current emissions standards for passenger cars and light trucks do not apply to some smaller vehicles. These smaller vehicles—“low speed vehicles” or LSVs—are permitted on local streets but not highways, and are not subject to the same emissions or safety standards as passenger vehicles.

³⁰ Guidance on the ATVM website seems to indicate that loan applications for ultra-efficient vehicle projects would be accepted by DOE.

³¹ While the House Appropriations Committee reported H.J.Res. 79, to speed approval, it was attached to H.R. 2608, which had already passed the House and the Senate, and was sent back to the Senate as a House amendment. The amended H.R. 2608 failed to pass the House on September 21, 2011 (by a vote of 219-203), as some Members voted against it because of the reduction in the ATVM program. It was subsequently passed on September 23, 2011 (by a vote of 219 to 203). On September 26, 2011, the Senate added an additional amendment, removing the FY2011 FEMA funds and the ATVM offset and on October 4, 2011, the House adopted the revised bill. It was signed by the President on October 5, 2011, as P.L. 112-36.

³² Statement of Representative Harold Rogers, September 21, 2011, <http://appropriations.house.gov/News/DocumentSingle.aspx?DocumentID=261150>. The committee also included a rescission of \$500 million in ATVM spending authority, for a total program reduction of \$1.5 billion.

Recommendations to Rescind Unused ATVM Appropriations

Two reports in April 2014 called for the rescission of unobligated balances in the ATVM program. The House budget resolution for FY2015 recommended rescinding the unobligated balance because “funds have largely been unused, as production has not met current demand.”³³ Also in April 2014, GAO issued its annual report on improving the efficiency and effectiveness of government programs. In that report, GAO recommended that Congress may want to rescind all or part of the remaining ATVM credit subsidy appropriations “unless the Department of Energy (DOE) can demonstrate demand for new ATVM loans and viable applications.” GAO reported that “most applicants and manufacturers we had spoken to indicated that the costs of participating outweigh the benefits to their companies and that problems with other DOE programs have tarnished the ATVM loan program, which may have led to a deficit of applicants.”³⁴

Other Recent Legislation Regarding the ATVM Program

Several bills to expand or eliminate the ATVM program have been introduced recently, including the following:

- On July 9, 2013, Representative Broun offered a floor amendment (H.Amdt. 274) to H.R. 2609 (Energy and Water Development and Related Agencies Appropriations Act, 2014) to eliminate the remaining ATVM funding and apply the \$6 million in savings (for ATVM administration) to spending reduction. The amendment failed 165-252.
- The Alternative Fueled Vehicles Competitiveness and Energy Security Act (S. 1001, 112th Congress), by Senators Wyden and Stabenow, would have allowed manufacturers of heavy truck, bus, and rail vehicles and components to qualify for ATVM loans; permitted DOE to lower the minimum target for efficiency gains; and eliminated the cap of \$25 billion in total loan authority. The bill was reported out of the Senate Committee on Energy and Natural Resources in September 2011, but no action was taken in the Senate. The bill was reintroduced in 2013 (S. 1230, 113th Congress).
- In September 2013, Senator Thune filed amendment 1887 to S. 1392, the Energy Savings and Industrial Competitiveness Act of 2013, to eliminate the ATVM program. The amendment was not voted on. The Senate has not completed action on S. 1392. A new version of the bill, S. 2074, was introduced in February 2014.
- Representative Patrick Murphy introduced H.R. 1999, the Savings, Accountability, Value, and Efficiency Act, in May 2013. Section 201 would rescind unobligated budget authority for the ATVM program, effectively ending the program.

³³ U.S. Congress, House Committee on the Budget, *The Path to Prosperity: Fiscal 2015 Budget Resolution*, (H.Con.Res. 96), 113th Cong., 2nd sess., April 2014, H.Rept. 113-403, p. 31.

³⁴ GAO, 2014 Annual Report: Additional Opportunities to Reduce Fragmentation, Overlap, and Duplication and Achieve Other Financial Benefits, GAO-14-343SP, April 8, 2014, p. 7, <http://www.gao.gov/assets/670/662327.pdf>.

Structure of the ATVM Program

The ATVM program has three goals:

1. increase the fuel economy of U.S. passenger vehicles,
2. improve the use of advanced technologies in cars and components manufactured in the United States, and
3. protect the U.S. government's financial stake in these auto companies.³⁵

EISA Requirements

Direct Loan Program

Section 136 of EISA required DOE to establish a \$25 billion loan program and to set the specific standards for eligibility for ATVM loans. The subsection sets forth rules for labor compensation on construction projects, financial viability of loan recipients,³⁶ and repayment periods. It stipulates that initial repayment of a loan may be deferred up to five years after a project begins operation. Facilities, equipment, and “engineering integration” covered by these loans must be completed and placed in service no later than the end of 2020.

Priority for Older Plants and Definition of an Eligible Facility

EISA orders DOE to give “priority to those facilities that are oldest or have been in existence for at least 20 years. Such facilities can currently be sitting idle.” This provision³⁷ had been criticized as an indirect way of requiring that loans be reserved for union-organized U.S.-based automakers.³⁸

Subsequent loan awards show that DOE did not interpret this provision in that way, however, due to other qualifications in EISA. First, subsection (g) applies only to DOE “in making awards or loans to those manufacturers that have existing facilities....” This is an important qualification, because in subsection (b) (1), eligible activities are defined as including “reequipping, expanding, or *establishing* [emphasis added] a manufacturing facility....” A facility being established cannot, by definition, be 20 years old. Furthermore, subsection (g) establishes only a priority for factories at least 20 years old, and does not prohibit loans to newer facilities. In any event, several foreign-based automakers have U.S. plants that are more than 20 years old. One ATVM loan, to Ford Motor Company, has been made to a company with unionized plants.

³⁵ ATVM governing documents do not expressly spell out the program's goals, but in communications between DOE and GAO, the Loan Programs Office identified these three goals. GAO, *Department of Energy: Advanced Technology Vehicle Loan Program Implementation is Under Way, but Enhanced Technical Oversight and Performance Measures are Needed*, GAO-11-145, p. 5.

³⁶ This requirement would ultimately be an impediment to the approval of some loan applications, given the turmoil in the auto industry between 2008 and 2010.

³⁷ §136(g).

³⁸ “The Next Bailout: Detroit,” *Wall Street Journal*, August 21, 2008, p. A14.

Defining Advanced Technology Vehicles and Components

Vehicles eligible for a loan under the ATVM program must meet the definition of “advanced technology vehicle” set in EISA.³⁹ The definition does not reference a particular technology (e.g., electric motors) or fuel (e.g., natural gas). Rather, it places limitations on vehicle emissions and fuel consumption. First, unless the vehicle is an ultra-efficient vehicle (75 mpg or higher), a qualifying vehicle must meet current Clean Air Act Tier 2 emissions standards⁴⁰ and must also meet any additional fine particulate matter standards established under the Clean Air Act. Second, a vehicle must achieve 25% higher fuel economy than the average “base year combined fuel economy for vehicles with substantially similar attributes.” EISA did not define the base year, but in subsequent regulations DOE has defined the base year as MY2005.

DOE’s Implementation of the Program

Financial Viability

One of the key statutory provisions in EISA is that loan recipients must be “financially viable without the receipt of additional Federal funding associated with the proposed project.”⁴¹ In DOE’s interim final rule implementing the loan program,

The Department interprets the term “financially viable” to mean that an applicant must demonstrate a reasonable prospect that the Applicant will be able to make payments of principal and interest on the loan as and when such payments become due under the terms of the loan documents, and that the applicant has a net present value which is positive, taking all costs, existing and future, into account.⁴²

The stipulation that companies be financially viable and have a positive net present value led to some loans not being approved, especially during the low point of the crisis in the auto industry.

Vehicle Classifications

Another key provision in EISA is that qualifying vehicles must achieve at least 25% higher fuel economy than “vehicles with substantially similar attributes.” However, it was left to DOE to determine which vehicles are substantially similar. In the interim final rule, DOE chose to group vehicles of similar size and performance, ultimately settling on 13 classes of passenger cars (e.g., two-seater, subcompact performance sedan, small wagon) and four classes of light trucks (e.g., minivan, sport utility vehicle). For each class, DOE determined the MY2005 fuel economy

³⁹ §136(a).

⁴⁰ Under the Tier 2 standards, vehicles are assigned “bins” based on their emissions profiles. There are eight bins, and higher bins indicate higher emissions. Bin 1 vehicles have zero lifetime emissions (from the vehicle—lifetime emissions from upstream fuel generation are not counted), while Bin 8 vehicles emit the maximum allowed under the standards. To qualify for ATVM, vehicles must achieve Bin 5 (a “middle-of-the road” vehicle) or lower. For more information on Tier 2, see CRS Report RS20247, *EPA’s Tier 2 Emission Standards for New Motor Vehicles: A Fact Sheet*, by David M. Bearden.

⁴¹ EISA §136(d) (3) (A).

⁴² Department of Energy, “Advanced Technology Vehicles Manufacturing Incentive Program: Interim Final Rule,” 73 *Federal Register* 66721, November 12, 2008.

average and thus the benchmark fuel economy for vehicles of that class under the ATVM program.⁴³

Loan Terms

EISA and DOE's interim final rule spells out many of the terms of loans under the program. These include

- the duration of the loans—the life of the project or 25 years, whichever is shorter;
- the interest rate—the cost of funds to the Department of the Treasury for obligations of comparable maturity on the date of the loan;
- whether repayment may be deferred—principal payments (but not interest) may be deferred up to five years; and
- the lender is the Federal Financing Bank (FFB). See adjacent box for further information on the FFB.

What Is the Federal Financing Bank?

ATVM loans originate with the Federal Financing Bank (FFB), which establishes the terms and interest rate that loan recipients pay. FFB was established by Congress in 1973 (Federal Financing Bank Act of 1973 (12 U.S.C. §2281 et seq.)) to centralize and reduce the costs of federal borrowing. Supervised by the U.S. Treasury, the FFB is a government corporation. Loan principal and interest outstanding are generally backed by the full faith and credit of the U.S. Government. Interest rates are based on the U.S. Treasury yield curve. According to the FFB's FY2013 financial statement, during FY2013, the bank processed 1,410 new loan requests, set or reset interest rates on 3,989 loans, and processed 44,545 loan repayments. In FY2013, the FFB reported outstanding borrowings of over \$69 billion, with \$2.5 billion in revenue, mostly from interest paid on loans.

Selection Criteria

In evaluating applications for ATVM loans, DOE has set out several selection criteria:

- the technical merit of the project, including fuel savings above those required for eligibility, potential improvements to the fuel economy of the U.S. vehicle fleet, likely reductions in U.S. petroleum consumption, and promotion of advanced fuels;
- program factors including economic development, geographic location, and technological diversity;
- adequate provisions to protect the government; and
- priority for facilities that are 20 years old or older.⁴⁴

Loan Authority vs. Subsidy Cost

Appropriations for the program do not cover the entire value of the loans, but instead cover the “subsidy cost” (i.e., the risk of default). For the original appropriation, Congress assumed a subsidy rate of 30%, meaning that \$7.5 billion would be sufficient to fund \$25 billion in total loan

⁴³ Ibid., p. 66726.

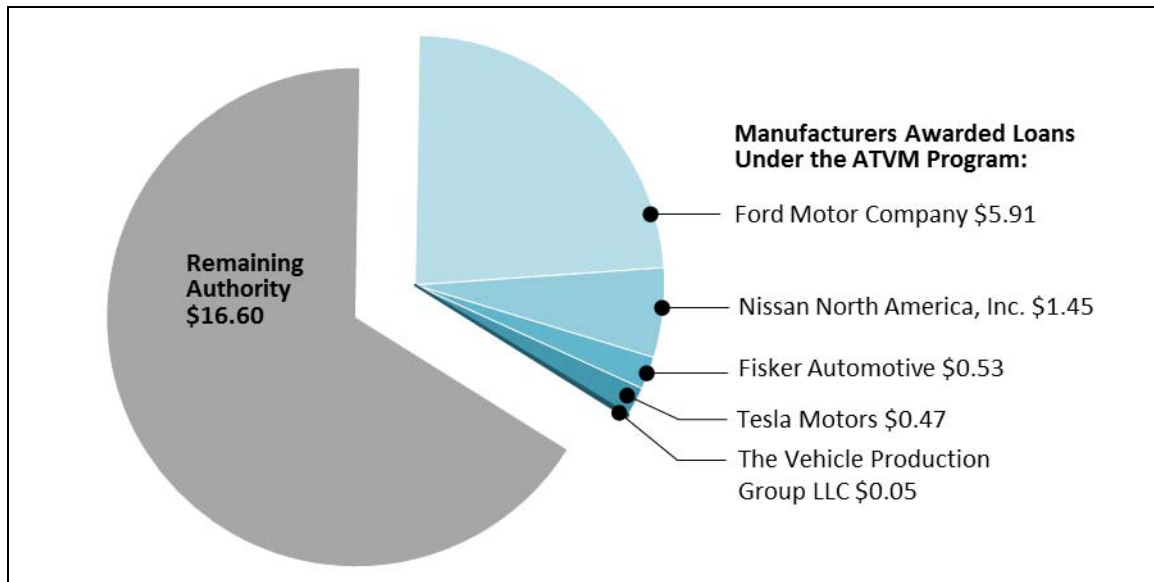
⁴⁴ 73 *Federal Register* 66734.

value. GAO estimates that a total of \$3.3 billion in subsidy costs has been obligated to date, leaving approximately \$4.2 billion of the appropriation unobligated.

To date, five vehicle manufacturers have been awarded loans under the ATVM program (see **Figure 2**). No component manufacturer has received an ATVM loan.

Figure 2. ATVM Loan Originations, by Manufacturer

Dollars in billions



Source: CRS analysis; DOE Loan Programs Office, *Our Projects*, accessed January 8, 2015, https://lpo.energy.gov/?page_id=45.

DOE's 2014 Revisions

To spur new interest, Secretary of Energy Ernest Moniz announced a number of changes in the ATVM program on April 2, 2014. In a letter to the Motor and Equipment Manufacturers Association, he said the program was being revised because of “capacity constraints and demand for expansion capital” in the auto sector. He noted that the new federal requirement to raise auto fuel economy to over 50 miles per gallon in 2025 establishes a “need for suppliers to accelerate investment in the manufacture of key fuel efficiency technologies.”⁴⁵ The letter emphasizes that ATVM loans are available for component manufacturers as well as vehicle assemblers; all loan recipients to date have been assemblers.

Since there have been no ATVM applications approved since 2011, it is not clear if these revisions will result in new loans for advanced technology vehicle production. While DOE's website indicates an active loan solicitation is under way, no new loans were announced in 2014.⁴⁶ An April 2014 GAO report questioned the effectiveness of DOE's revisions, noting,

⁴⁵ <http://www.energy.gov/sites/prod/files/2014/04/f14/ATVM%20Response%20to%20MEMA.pdf>.

⁴⁶ Department of Energy, Loan Programs Office, *Keeping America Informed About Open Loan Guarantee Solicitations*, November 20, 2014, [http://energy.gov/lpo/articles/keeping-america-informed-about-open-loan-guarantee-\(continued...\)](http://energy.gov/lpo/articles/keeping-america-informed-about-open-loan-guarantee-(continued...))

Since our March 2013 report, DOE has received one application seeking approximately \$200 million.... DOE recently stated that it has begun new outreach efforts to potential applicants that will increase awareness and interest in the program and lead to additional applications in 2014. DOE has not further demonstrated a demand for ATVM loans, such as new applications that meet all the program eligibility requirements and involve amounts sufficient to justify retaining the remaining credit subsidy appropriations, nor has it explained how it plans to address challenges cited by previous applicants including a burdensome review process. Determining whether program funds will be used is important, particularly in a constrained fiscal environment, as unused appropriations could be rescinded or directed toward other government priorities.⁴⁷

Currently Funded ATVM Projects

As of January 8, 2015, DOE had approved ATVM loans to five companies totaling \$8.4 billion. The last ATVM loan was made in 2011. The five companies, the loan amounts, and a short description of the covered projects are shown in **Table 1**, listed chronologically. Approved projects include parts production and assembly for all-electric and plug-in hybrid vehicles, assembly of natural gas vehicles, and production and installation of advanced components for conventional vehicles. All of the loans are to original equipment manufacturers (OEMs), which assemble vehicles, although some of the projects will develop components, most notably plug-in vehicle batteries.

(...continued)
solicitations.

⁴⁷ GAO, 2014 Annual Report: Additional Opportunities to Reduce Fragmentation, Overlap, and Duplication and Achieve Other Financial Benefits, GAO-14-343SP, April 8, 2014, p. 7, <http://www.gao.gov/assets/670/662327.pdf>.

Table I. Approved ATVM Loans
Finalized commitments as of January 8, 2015

Company	Loan Amount (\$ in millions)	Date Approved	Brief Description of Project(s)
Ford Motor Company	5,907	September 2009	Upgraded factories in Illinois, Kentucky, Michigan, Missouri, and Ohio to produce hybrid vehicles and new efficiency technologies for use in conventional vehicles.
Nissan North America, Inc.	1,448	January 2010	Retooled and expanded Smyrna, TN, plant to assemble all-electric vehicles and make advanced batteries.
Tesla Motors	465	January 2010	Reopened the former Toyota-GM (NUMMI) auto plant in Fremont, CA, to produce all-electric vehicles; developed a manufacturing facility to produce battery packs, motors, and other components for use in Tesla, Daimler, and Toyota electric vehicles.
Fisker Automotive	529	April 2010	The original loan was made to develop and produce two lines of plug-in hybrid vehicles at a plant in Wilmington, DE. Fisker's Karma vehicle was designed in the United States with ATVM backing, and produced in Finland with private financing. In 2011, DOE found that Fisker was not meeting its performance targets and suspended and capped the loan at \$192 million. DOE recouped \$28 million from an escrow account. Fisker suspended operations and filed for bankruptcy in November 2013. Its ATVM loan was sold at auction for \$25 million, resulting in a loss to DOE of \$139 million (including the earlier escrow). Its assets were auctioned to Chinese auto parts maker Wanxiang under bankruptcy proceedings in February 2014.
The Vehicle Production Group LLC	50	March 2011	Developed and produced a factory-built natural gas-powered wheelchair-accessible vehicle, with AM General, at a plant in Mishawaka, IN. VPG was unable to make loan payments and ceased operation in May 2013. It was sold to AM General in the fall of 2013. AM General bought the ATVM loan for \$3 million at a DOE auction. DOE recouped \$8 million (including a \$5 million escrow payment), leaving a loss of \$42 million.

Sources: Department of Energy Loan Programs Office, *Our Projects*, accessed January 8, 2015, https://lpo.energy.gov/?page_id=45, and press reports.

Note: Fisker auction information is from press reports and a briefing by the DOE Loan Programs Office on December 9, 2013.

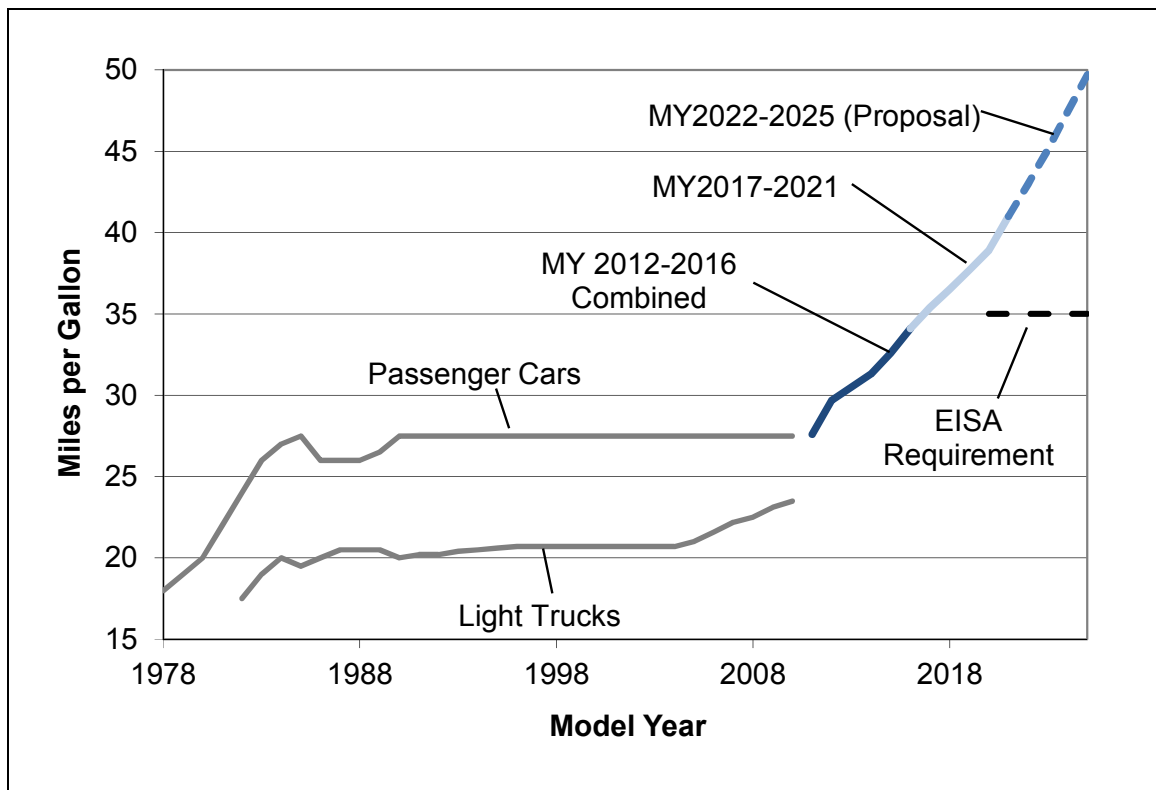
Current Issues and Critiques of the ATVM Program

ATVM and Fuel Efficiency

DOE estimated at the time of the loan announcements that, in aggregate, the vehicles produced from these projects would displace 282 million gallons of gasoline (roughly 18,000 barrels per day, or about 0.2% of U.S. consumption) and avoid 2.4 million tons of carbon dioxide emissions annually (about 0.04% of total U.S. emissions), compared to similar MY2005 vehicles.

However, DOE’s current performance measures estimate the savings relative to benchmark MY2005 vehicles, as opposed to estimating the *additional* effect of the vehicles attributable to the loan program given rapidly increasing CAFE standards (see **Figure 3**) that will raise the fuel economy of *all* new vehicles relative to MY2005. According to GAO, “ATVM borrowers might have acted to increase fuel economy and reduce the petroleum use of their vehicles in order to meet the more stringent CAFE standards—even without the ATVM funds. Without knowing the actions these companies might have taken in the absence of ATVM funding, the program will not be able to measure the extent to which the improvements in fuel economy and reductions in petroleum used by ATVM-funded vehicles resulted directly from the program.”⁴⁸ Thus DOE’s estimates of avoided gasoline consumption and carbon dioxide emissions may overstate the benefits of the program.

Figure 3. Established and Proposed CAFE Standards



Source: National Highway Traffic Safety Administration (NHTSA), *Summary of Fuel Economy Performance*, Washington, DC, March 30, 2009; CRS Analysis of P.L. 110-140; Environmental Protection Agency (EPA) and NHTSA, “Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards: Final Rule,” 75 *Federal Register* 25324-25728, May 7, 2010; EPA and NHTSA, “2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards; Final Rule,” 77 *Federal Register* 62624-63200, October 15, 2012.

Notes: Passenger car and light truck standards were separate before MY2011. From MY2011 onward, passenger car and light truck standards are still calculated separately but EISA directs NHTSA to set standards to reach a combined CAFE average of 35 mpg by MY2020.

⁴⁸ GAO, *Department of Energy: Advanced Technology Vehicle Loan Program Implementation is Under Way, but Enhanced Technical Oversight and Performance Measures are Needed*, GAO-11-145, p. 23.

DOE and GAO estimate that vehicles produced under the program will exceed CAFE targets.⁴⁹ However, it is unclear whether these improvements will lead to fleet averages that exceed the CAFE standards, or whether automakers will use these vehicles to balance out other vehicles that fall below their CAFE targets.⁵⁰

Although a broad range of technologies can be applied to increase the fuel economy of cars and trucks, the bulk of ATVM lending to date, in the form of the loan to Ford, has gone toward vehicles with gasoline-powered internal-combustion engines. Ford's share of projected gasoline savings from all approved loans is 81%. The ATVM program has also made loans for natural gas, hybrid, and all-electric vehicles, but those loans account for only 30% of total loan originations.

Job Creation and Preservation

DOE originally estimated that these loans will save or create about 38,700 jobs in the motor vehicle industry. See the **Appendix** for a breakdown of projected job savings/creation and summary of the business lines of the loan recipients. According to DOE, nearly all of the 38,700 saved or created jobs shown in its database would be at the loan recipients' facilities. These estimates reflect employment changes that in some cases could account for nearly half of the recipient's workforce, and in other cases, a doubling or tripling of their current employment base. If other jobs are expected to be created or saved among recipients' parts suppliers, the DOE data do not show it.

According to DOE, only in one case are the jobs cited in DOE calculations also at supplier firms. Of the more than 900 saved/created jobs at the Vehicle Production Group (VPG), 49 jobs were to have been at VPG, 613 at companies supplying parts and doing final assembly, and 267 at dealers and service organizations.

Issues with ATVM Lending

Neither GM nor Chrysler is in the current list of loan recipients. Chrysler had a loan request of \$3.5 billion pending with DOE, but withdrew it in 2012.⁵¹ General Motors applied for three ATVM loans totaling \$10.3 billion in July 2009, when it was operating under bankruptcy court protection, but according to a GM filing, DOE determined that the company did not meet the viability requirements for Section 136 loans. Several months later, the company submitted an application for \$14.4 billion of loans.⁵² DOE did not make a decision, and on January 27, 2011, GM withdrew its application. At that time, GM's then CFO Chris Liddell said, "withdrawing our DOE loan application is consistent with our goal to carry minimal debt on our balance sheet."⁵³

⁴⁹ Ibid., p. 14.

⁵⁰ Under the CAFE program, no specific vehicle needs to meet a specific fuel economy. Instead, each vehicle is assigned a "target" fuel economy based on its class (passenger car vs. light truck) and size ("footprint," or the vehicle's track width times its wheelbase). The sales-weighted average fuel economy of an automaker's fleet must meet or exceed the average of the targets. For more information, see CRS Report R42721, *Automobile and Truck Fuel Economy (CAFE) and Greenhouse Gas Standards*, by Brent D. Yacobucci, Bill Canis, and Richard K. Lattanzio.

⁵¹ Joseph Szczesny, "Chrysler Withdraws Federal Green Car Loan Request," *Detroit Bureau*, February 17, 2012, <http://www.thedetroitbureau.com/2012/02/chrysler-withdraws-federal-green-car-loan-request/>.

⁵² GM's S-1 Registration Statement, filed with the SEC on August 18, 2010. See "Risk Factors," p. 21.

⁵³ "GM Withdraws Federal Loan Application," GM press release, January 27, 2011.

Other applicants reportedly complained about the slow pace of consideration of loan applications, indicating that a lack of DOE action was undercutting their ability to compete with rivals in Asia and Europe. Others opted to use the commercial loan market for support with their business plans, as the costs of the current program may outweigh the benefits to their companies (according to a 2013 GAO report).⁵⁴

In its 2011 report, GAO found that the ATVM program could better meet its objectives if it would apply greater use of independent engineering analysis to improve program evaluation. Before additional loan disbursements are made, ATVM procedures require that its staff will ensure that borrowers have made significant technical progress. GAO's review of the program found that DOE's ATVM staff did not have sufficient engineering skills to effectively evaluate such progress. GAO noted that without such independent evaluations of the manufacturing processes, ATVM "cannot be adequately assured that the borrowers are delivering the vehicle and component projects as required by the loan agreements."⁵⁵ GAO cited instances in which borrowers had not spent funds as required and had spent loan funds outside the United States. In addition, GAO said that four ATVM projects (those of Nissan, Ford, Fisker, and Tesla) had reached critical stages where "heightened technical monitoring" was appropriate to avoid the "risk of not identifying critical deficiencies."⁵⁶

GAO also called upon DOE to use additional performance measures so it could better assess whether loan recipients were meeting the program goals. They noted that DOE has performance measures that will indicate how well ATVM-funded vehicles improve specific fuel efficiency, but it did not have measures showing whether DOE has "accomplished its overall goal of improving the fuel economy of all passenger vehicles used in the United States." Specifically, DOE may not be able to determine what automakers would have done in the absence of ATVM to meet new CAFE standards.

GAO also faulted DOE's inability to assess how its ATVM-supported technologies are being applied in the marketplace and its lack of performance standards to gauge the ongoing financial condition of the loan recipients.

⁵⁴ GAO, *Status of DOE Loan Programs*, GAO-13-331R, March 15, 2013, p. 24, <http://www.gao.gov/assets/660/653064.pdf>.

⁵⁵ GAO, *Department of Energy: Advanced Technology Vehicle Loan Program Implementation is Under Way, but Enhanced Technical Oversight and Performance Measures are Needed*, GAO-11-145, p. 25.

⁵⁶ *Ibid.*, p. 22.

Appendix. Profile of ATVM Loan Recipients

Table A-1. Summary of Companies Receiving ATVM Loans
As of January 8, 2015

Company	Business Line	Headquarters Location	Total Employment at Date of Loan	Estimated Jobs Created or Saved by Loans ^a
Fisker Automotive	Hybrid electric vehicle manufacturer founded in 2007	Anaheim, CA	750 ^b	2,000
Ford Motor Company	A motor vehicle manufacturer and distributor founded in 1903	Dearborn, MI	75,000 ^c	33,000
Nissan North America, Inc.	Produces and distributes vehicles; U.S. operations founded in 1958	Smyrna, TN	22,000 ^d	1,300
Tesla Motors	Electric vehicle manufacturer founded in 2003	Palo Alto, CA	1,400 ^e	1,500
The Vehicle Production Group, LLC	Produces wheelchair-accessible vehicles for the disabled and those who serve them	Miami, FL	49 ^f	900

Source: Company websites and sources. Figures for jobs created or saved are from the Department of Energy.

- a. U.S. Department of Energy, Loan Programs Office, ATVM Projects, https://lpo.energy.gov/?page_id=45. According to DOE, the jobs saved or created are all at the recipient company's facilities except in the case of The Vehicle Production Group, where suppliers' jobs are also included in the estimate.
- b. Projected employment at Fisker's Anaheim, CA, facility and Wilmington, DE, plant, from Fisker Automotive, October 21, 2011. In the fall of 2013, Fisker suspended operations and filed for bankruptcy. Its assets were sold to a new owner in February 2014.
- c. North American employment, Ford Motor Company 2010 *Annual Report*.
- d. North American employment, Nissan Company sources, October 19, 2011.
- e. U.S. operations, from Tesla Motors, October 19, 2011.
- f. U.S. operations of VPG in 2011. VPG manufactured its natural gas-powered vehicle with AM General in Mishawaka, IN. In 2013, VPG suspended operations, and its assets were sold to AM General, which is producing the wheelchair-accessible vehicles developed by VPG.

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