



U.S. DEPARTMENT OF ENERGY

LOAN PROGRAMS OFFICE

ARPA-E METALS WORKSHOP

August 24, 2016

INVESTING *in* AMERICAN ENERGY

energy.gov/lpo

LPO PROGRAMS

\$40 BILLION IN REMAINING LOAN AUTHORITY

LPO investments accelerate the deployment of innovative clean energy projects and advanced vehicle manufacturing facilities in the United States

TITLE XVII

INNOVATIVE CLEAN ENERGY PROJECTS

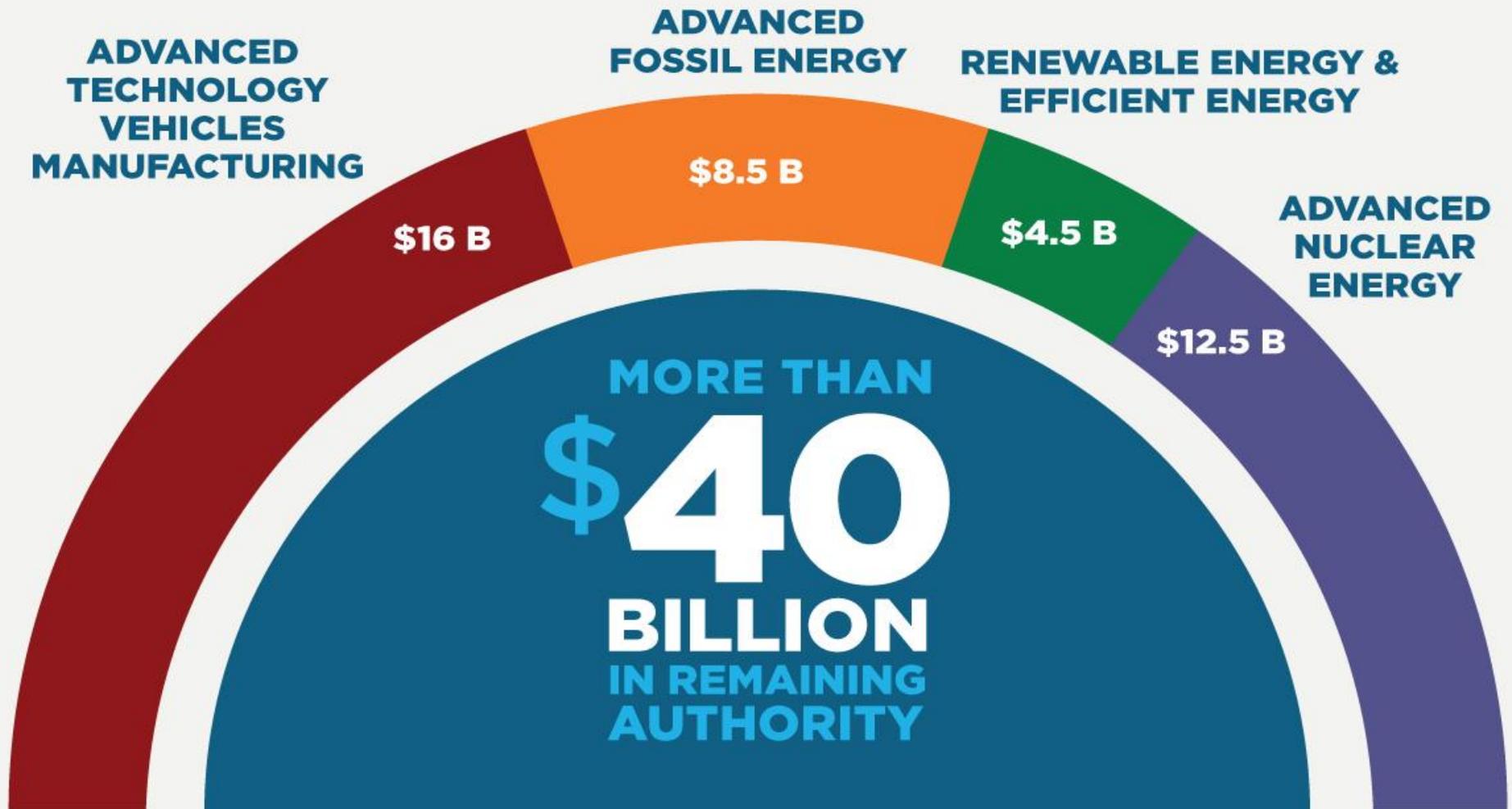
-  Loan guarantees
-  Applications accepted via scheduled solicitations

ATVM

ADVANCED TECHNOLOGY VEHICLES MANUFACTURING

-  Direct loans
-  Applications accepted on a rolling basis

INNOVATION CONTINUES



AS OF OCTOBER 2015

WHAT LPO CAN SUPPORT

ATVM

Original Equipment Manufacturing

- Electric Vehicles
- Batteries

Supply Chain Manufacturing

- Cost Efficiencies in the Supply Chain by Providing Low-Interest Debt for:
- Light-weighting
 - Power & Transmission
 - Electric Vehicle Components
 - Hybrid/EV Powertrain Integration
 - Advanced EV Controllers

TITLE XVII

Advanced Fossil Energy Projects SOLICITATION

- Efficiency Improvements

Renewable Energy & Efficient Energy Projects SOLICITATION

NEW SUPPLEMENT

- EV Charging Facilities
- Associated Hardware & Software

QUALIFYING PROJECTS ARE NOT LIMITED TO THESE TECHNOLOGIES



ATVM OVERVIEW

EXPANDING U.S. ADVANCED VEHICLE & COMPONENT MANUFACTURING

MORE THAN \$16 BILLION IN REMAINING LOAN AUTHORITY

Advanced Technology Vehicles Manufacturing (ATVM) loans can finance domestic manufacturing of advanced technology vehicles and associated components



Achieving Rising Fuel Economy Standards



Creating & Preserving American Manufacturing Jobs



Expanding Domestic Manufacturing



Deploying New Technology

WHERE WE ARE GOING: DEPLOYING REMAINING LOAN AUTHORITY



LOW INTEREST RATES

Interest rates on loans are set at U.S. Treasury rates.

LONG TENOR

Loans are set at the useful life of the asset, as determined by DOE, and can extend up to 25 years.

MINIMAL FEES

The program does not charge application or underwriting fees. At closing, applicant pays a closing fee of 0.1% of loan principal amount.

BROAD APPLICABILITY

Eligible projects can include vehicle and component manufacturing, as well as engineering integration.

WHERE WE HAVE BEEN:

\$8 BILLION INVESTED IN AMERICAN AUTO MANUFACTURING



TESLA

- \$465 million loan issued in 2010
- Financed the engineering and design of the all-electric Model S, battery manufacturing, and the renovation and modernization of a shuttered auto plant in California.



FORD

- \$5.9 billion loan issued in 2009
- Modernized 13 facilities in 6 states to manufacture fuel-efficient vehicles and components, including the EcoBoost™ engine.



NISSAN

- \$1.45 billion loan issued in 2010
- Financed the construction of Nissan's new all-electric Leaf vehicle assembly line, a battery facility, and electric motor manufacturing facility in Tennessee.



ELIGIBLE PROJECTS

ATVM can provide loans for eligible vehicle and component manufacturing projects in the U.S. that can include:

- ✓ Building new facilities in the U.S.
- ✓ Reequipping, modernizing, or expanding existing facilities in the U.S.
- ✓ Engineering integration

ADVANCED TECHNOLOGY VEHICLES ELIGIBLE LIGHT-DUTY VEHICLES

MY2005

MY2015+



LIGHT-DUTY

25%

MORE FUEL EFFICIENT

COMPARED TO MODEL YEAR
2005 BASELINE



ADVANCED TECHNOLOGY VEHICLES ELIGIBLE ULTRA-EFFICIENT VEHICLES



ULTRA-
EFFICIENT

75MPG

MINIMUM EQUIVALENT

AND CARRY AT LEAST
2 PASSENGERS



ELIGIBLE COMPONENTS INSTALLED IN ADVANCED TECHNOLOGY VEHICLES TO INCREASE FUEL ECONOMY PERFORMANCE

Advanced Engine Technologies

- Variable Valvetrain Control
- Direct Injection
- Turbocharging
- Start/Stop

Electronics

- Advanced EV Controllers
- Electric Power Steering
- Power Electronics
- Battery Systems

Fuel Efficient Tires

Advanced Powertrain Technologies

- Increased Number of Gear Ratios
- Hybrid / EV Powertrain Integration

Light-Weighting Technologies

- Advanced High Strength Steels
- Aluminum, Magnesium, or Other Alloys
- Plastics, Carbon Fiber, & Composite Materials

Improved Aerodynamics



Qualifying projects may include—but are not limited to—these technologies

APPLICATION PROCESS

01

PRE-APPLICATION CONSULTATIONS

- Non-Binding

02

SUBMIT APPLICATION

- Eligibility Determination
- Due Diligence & Underwriting

03

CONDITIONAL COMMITMENT

04

LOAN ISSUANCE

Apply *at*
energy.gov/lpo/apply



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