



U.S. DEPARTMENT OF ENERGY

LOAN PROGRAMS OFFICE

INVESTING *in*
AMERICAN ENERGY

energy.gov/lpo

AMERICAN ENERGY INNOVATION CONTINUES

CURRENT PROJECT APPLICATIONS

TITLE XVII LOAN GUARANTEES



OPEN SOLICITATIONS

- ✓ Advanced Fossil Energy Projects
- ✓ Advanced Nuclear Energy Projects
- ✓ Renewable Energy & Efficient Energy (REEE) Projects

ATVM DIRECT LOANS

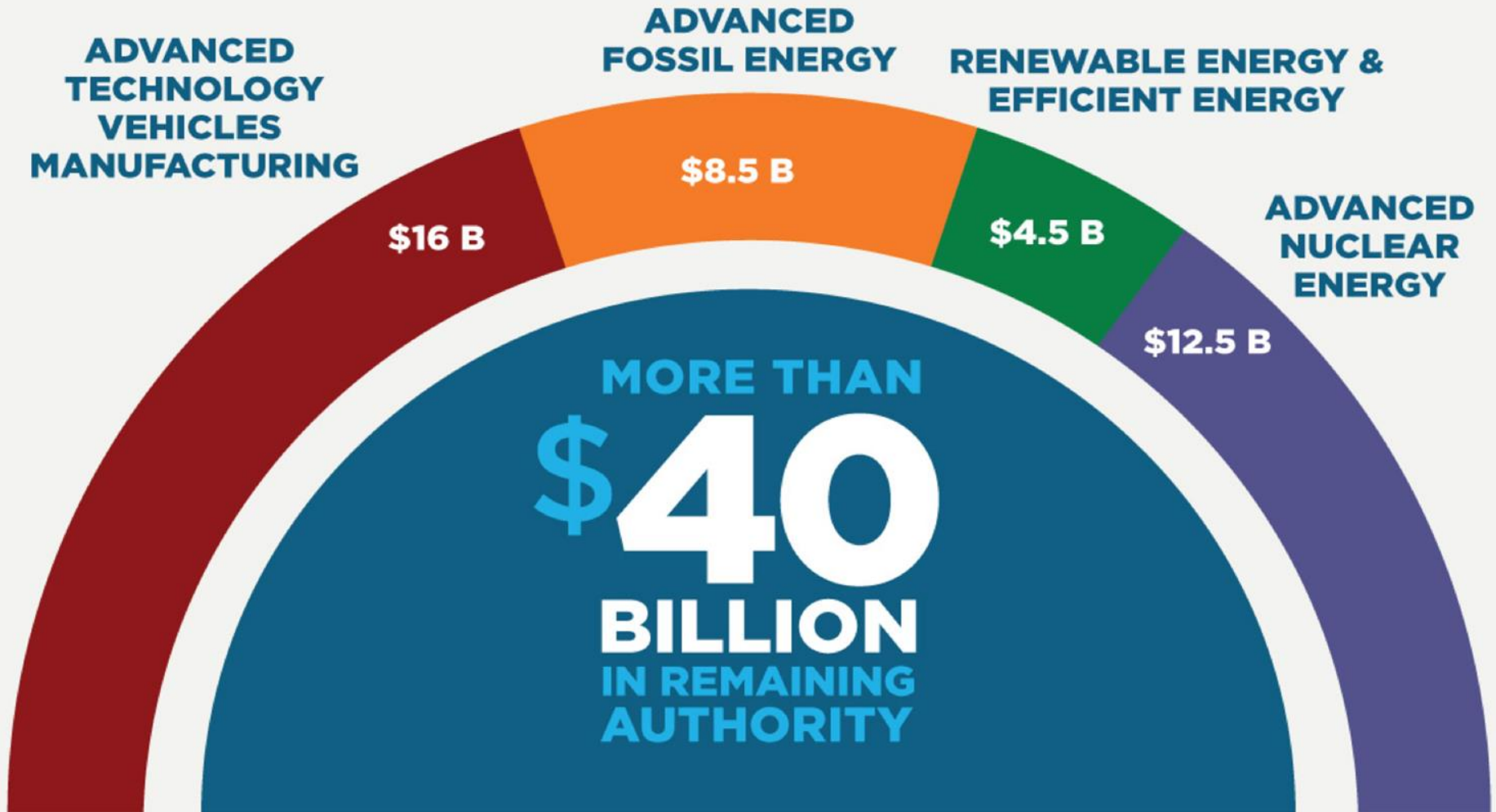


ROLLING APPLICATIONS

- ✓ Manufacturing of advanced technology vehicles and qualifying components

AMERICAN ENERGY INNOVATION CONTINUES

REMAINING LOAN AUTHORITY



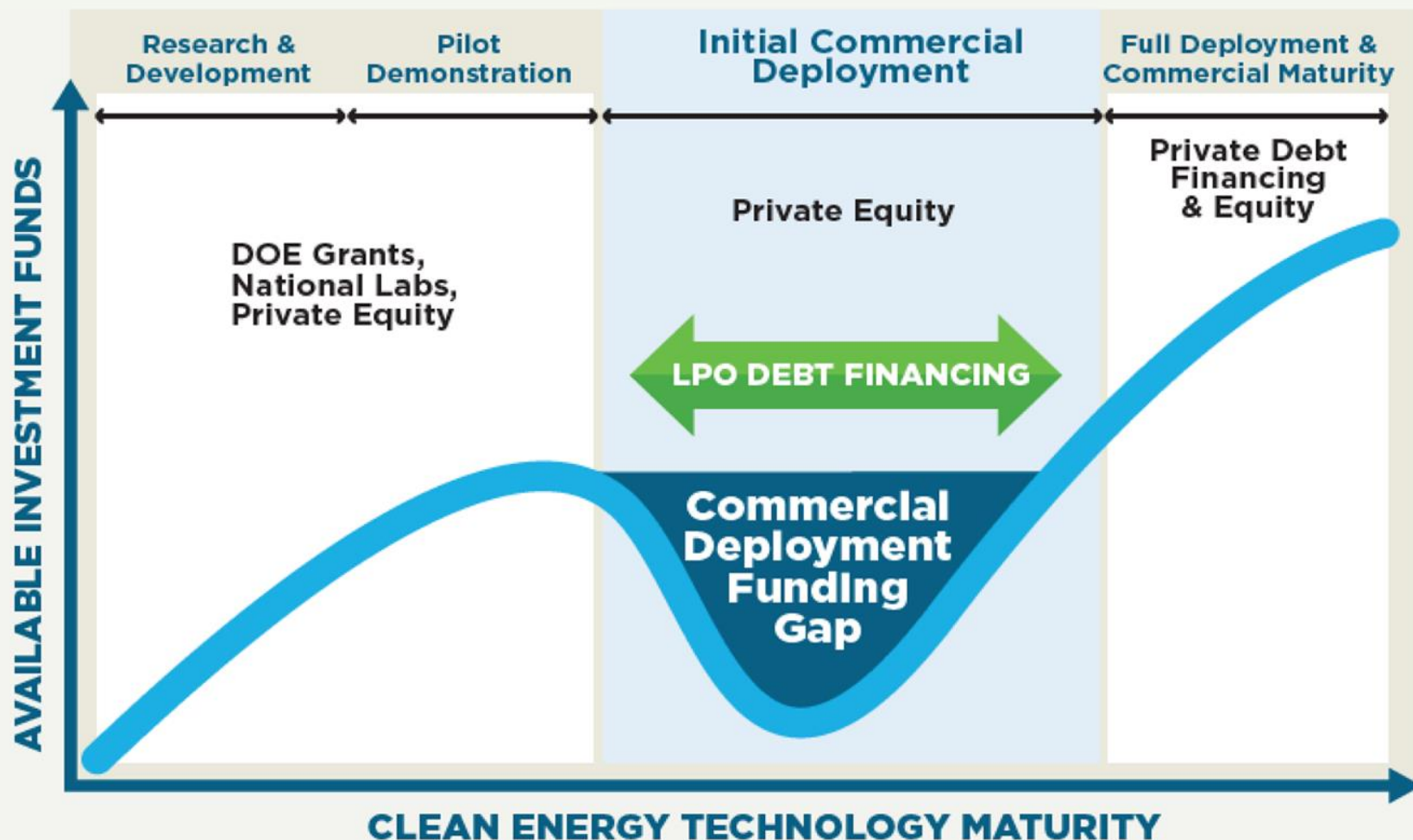
AS OF OCTOBER 2015

TITLE XVII OVERVIEW



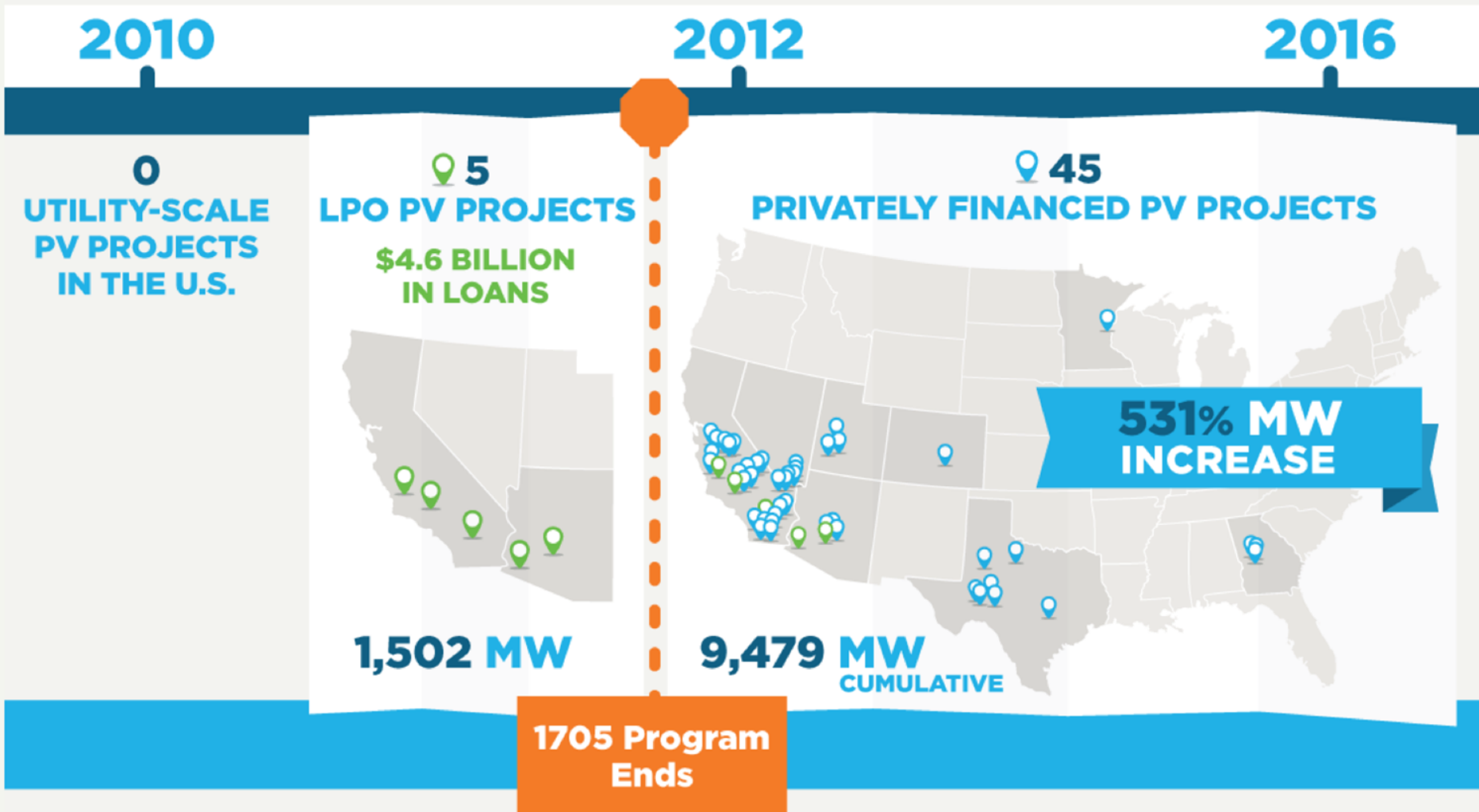
BRIDGING THE FINANCING GAP

PROVIDING CRUCIAL FINANCING FOR DEPLOYMENT OF FIRST-OF-ITS-KIND ENERGY TECHNOLOGIES



LAUNCHING NEW MARKETS

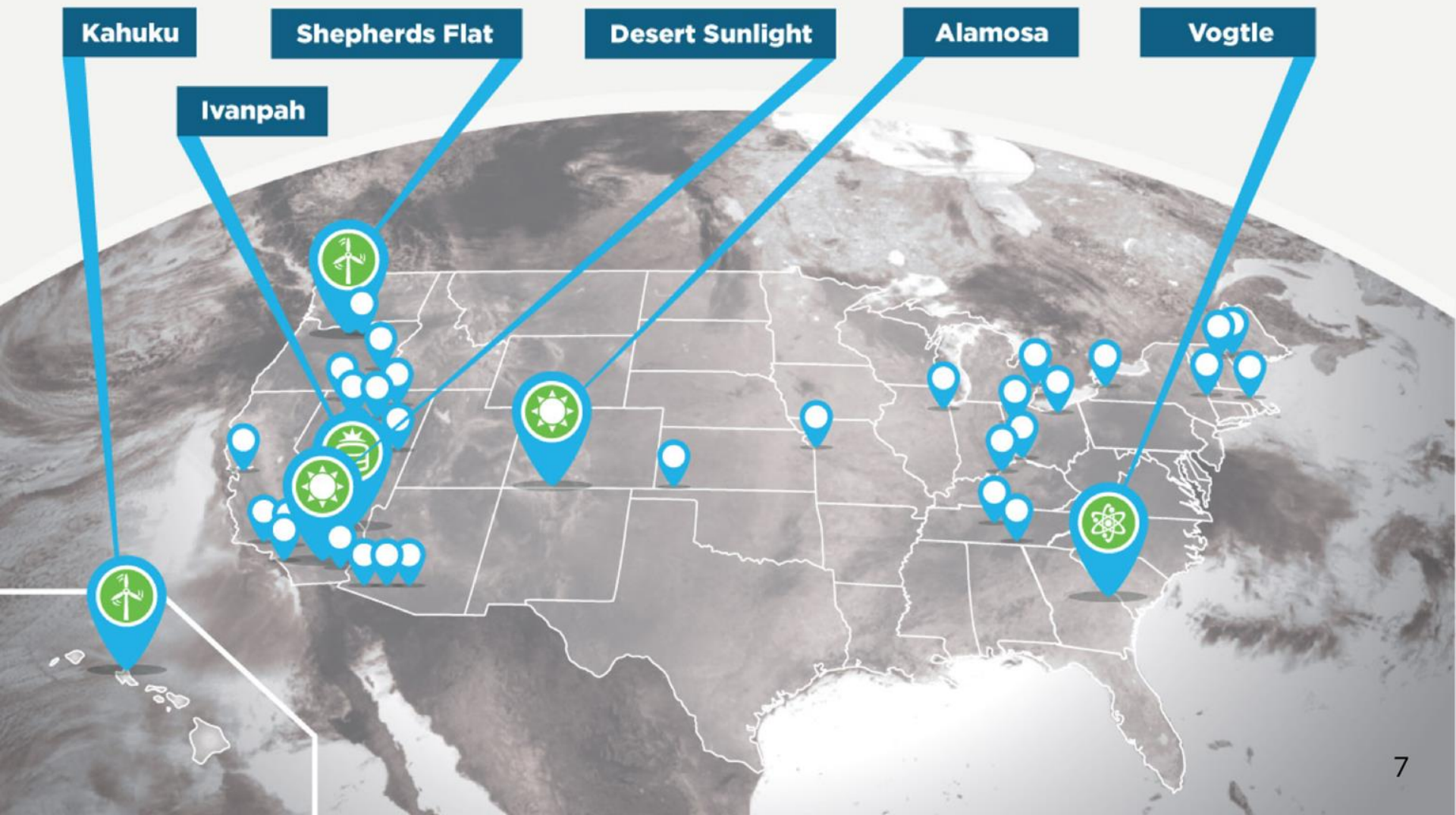
U.S. UTILITY-SCALE PHOTOVOLTAIC SOLAR (PV) PROJECTS >100MW



NOTE: MW totals include projects operating or that have obtained financing. All information as of September 2016.

DEPLOYING INNOVATION

\$30 BILLION INVESTED IN MORE THAN 30 DIVERSE PROJECTS NATIONWIDE



RENEWABLE ENERGY & EFFICIENCY

TECHNOLOGY AREAS OF INTEREST

Advanced Grid Integration & Storage

- ⚡ Renewable energy generation, including distributed generation, incorporating storage
- ⚡ Smart grid systems incorporating demand response

Drop-in Biofuels

- ⚡ New bio-refineries or bio-crude refining processes
- ⚡ Modifications to existing ethanol facilities to produce drop-in molecules

Waste-to-Energy

- ⚡ Methane from landfills or ranches via biodigesters
- ⚡ Utilizing municipal solid waste, crop waste, or forestry waste

Enhancement of Existing Facilities

- ⚡ Powering non-powered dams or upgrading existing hydro facilities
- ⚡ Retrofitting existing renewable facilities with innovative technology (e.g. wind turbine retrofits)

Efficiency Improvements

- ⚡ Improve or reduce energy usage in residential, institutional, and commercial facilities, buildings, and/or processes
- ⚡ Recover, store, or dispatch waste energy or underutilized renewable energy sources

QUALIFYING PROJECTS ARE NOT LIMITED TO THESE TECHNOLOGIES.

DISTRIBUTED ENERGY PROJECTS

SUPPLEMENTAL GUIDANCE FOR:

Advanced Fossil Energy Projects SOLICITATION

Renewable Energy & Efficient Energy Projects SOLICITATION

- Comprised of installations of facilities utilizing a single technology, or a defined suite of technologies, at multiple sites, deployed pursuant to a master business plan.
- Must satisfy criteria of Title XVII, LPO regulations, and applicable solicitation.
- Access to financing under a single arrangement for multiple installations.
- Structures other than illustrations in supplements may exist or be developed.
- Solicitations do not involve a re-lending program.

REEE SOLICITATION

ELECTRIC VEHICLE (EV) CHARGING SUPPLEMENT



EV charging infrastructure may be eligible as a Distributed Energy Project under the REEE Solicitation



Projects may include EV charging facilities, including associated hardware and software



Projects must satisfy all Title XVII program eligibility requirements

For more information, visit: www.energy.gov/lpo/ev



ADVANCED FOSSIL ENERGY TECHNOLOGY AREAS OF INTEREST

Efficiency Improvements

- ⚡ Combined heat and power (CHP) and industrial waste recovery
- ⚡ High-efficiency distributed fossil power systems and microgrids

Low Carbon Power Systems

- ⚡ Chemical looping or process that isolate fuel from air during combustion
- ⚡ Fuel cells which convert chemical energy into electricity without combustion

Carbon Capture

- ⚡ CO₂ capture from traditional coal or natural gas electricity generation
- ⚡ Permanent geologic storage or utilization in enhanced oil recovery (EOR)

Advanced Resource Development

- ⚡ Coal-bed methane recovery
- ⚡ Novel oil and gas drilling

QUALIFYING PROJECTS ARE NOT LIMITED TO THESE TECHNOLOGIES.

ADVANCED NUCLEAR ENERGY

TECHNOLOGY AREAS OF INTEREST

Advanced Nuclear Reactors

- ⚡ Projects with state-of-the-art design improvements in fuel technology, thermal efficiency, modularized construction, and safety systems

Small Modular Reactors (SMRs)

- ⚡ Utilize standardized design and are nominally 300 MW or smaller in size
- ⚡ Projects have state-of-the-art design improvements

Upgrades and Upgrades at Existing Facilities

- ⚡ Improvements to an existing reactor to increase efficiency
- ⚡ Critical improvements that are requisite to current or future facility operation

Front-End Nuclear

- ⚡ Uranium conversion or enrichment
- ⚡ Nuclear fuel fabrication

QUALIFYING PROJECTS ARE NOT LIMITED TO THESE TECHNOLOGIES.

ELIGIBILITY REQUIREMENTS

TITLE XVII CLEAN ENERGY PROJECTS



INNOVATIVE TECHNOLOGY

Eligible projects must utilize new or significantly improved technology or systems



GREENHOUSE GAS BENEFITS

Eligible projects must reduce, avoid, or sequester greenhouse gases



LOCATED IN THE U.S.

Eligible projects must be located in the United States but may be foreign-owned



REASONABLE PROSPECT OF REPAYMENT

Eligible projects must be able to repay loan principal and interest. LPO conducts due diligence and underwrites each loan similar to a commercial lender

APPLICATION PROCESS

TITLE XVII LOAN GUARANTEE PROGRAM

01

APPLICATION-PART I

- Determine basic eligibility
- \$50,000 fee (Fee does not apply to ATVM)

02

APPLICATION-PART II

- Confirmatory due diligence
- Balance of application fee (\$100,000/\$350,000)
(Fee does not apply to ATVM)

03

CONDITIONAL COMMITMENT

- Negotiate term sheet

04

LOAN GUARANTEE

- Negotiate final agreements
- Remaining fees

FINANCIAL TERMS

TITLE XVII CLEAN ENERGY PROJECTS

LOAN GUARANTEE: A loan guarantee can support debt from a commercial lender or the U.S. Treasury

LOAN TENOR: Long-term financing is available based on the useful life of the asset – up to 30 years

INTEREST RATES: Interest rates set based on equivalent U.S. Treasury rate plus a credit-based spread (~0.5-1.5%)

EQUITY: LPO can only guarantee up to 80% of the total project cost. Most projects have at least 35% equity

CO-LENDING: Co-lending with commercial lenders is encouraged but not required

The background is a monochromatic green illustration of an industrial setting. It features several workers in hard hats and safety vests, some standing and others in motion. Large, complex machinery with various pipes, valves, and cylindrical components is scattered throughout the scene. The style is reminiscent of a technical drawing or a stylized photograph, with strong geometric shapes and a sense of depth. The overall atmosphere is one of a busy, modern manufacturing environment.

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

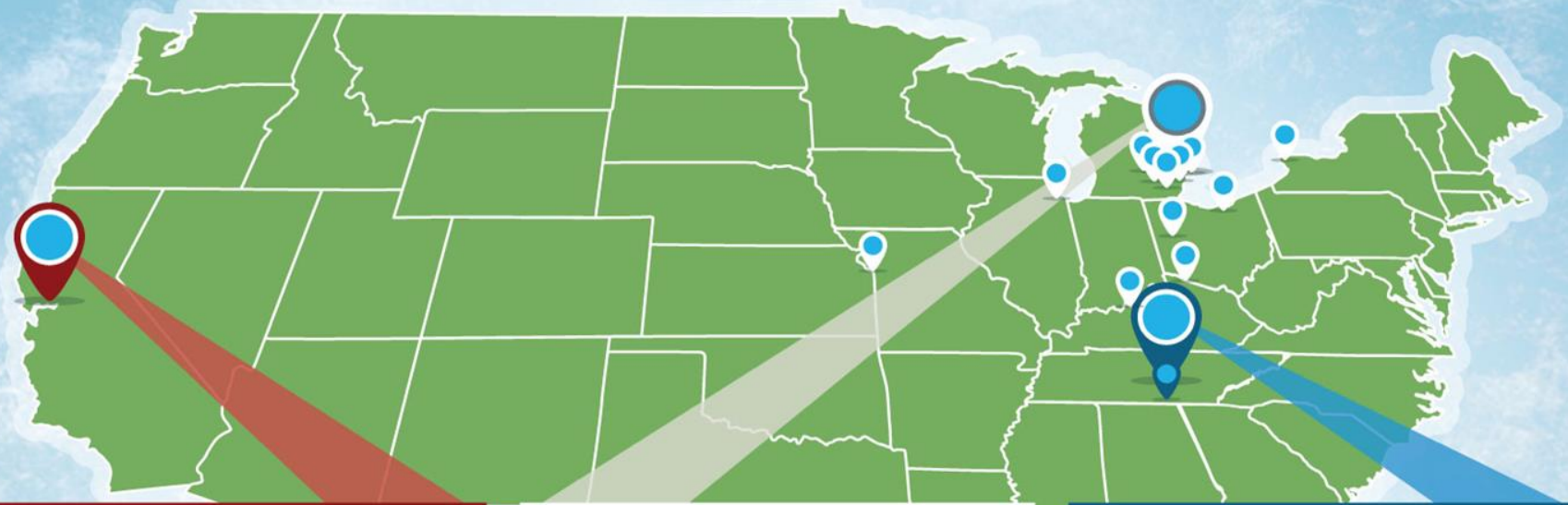
The program does not charge application or underwriting fees. At closing, applicant pays a closing fee of 0.1% of loan principal amount.

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.

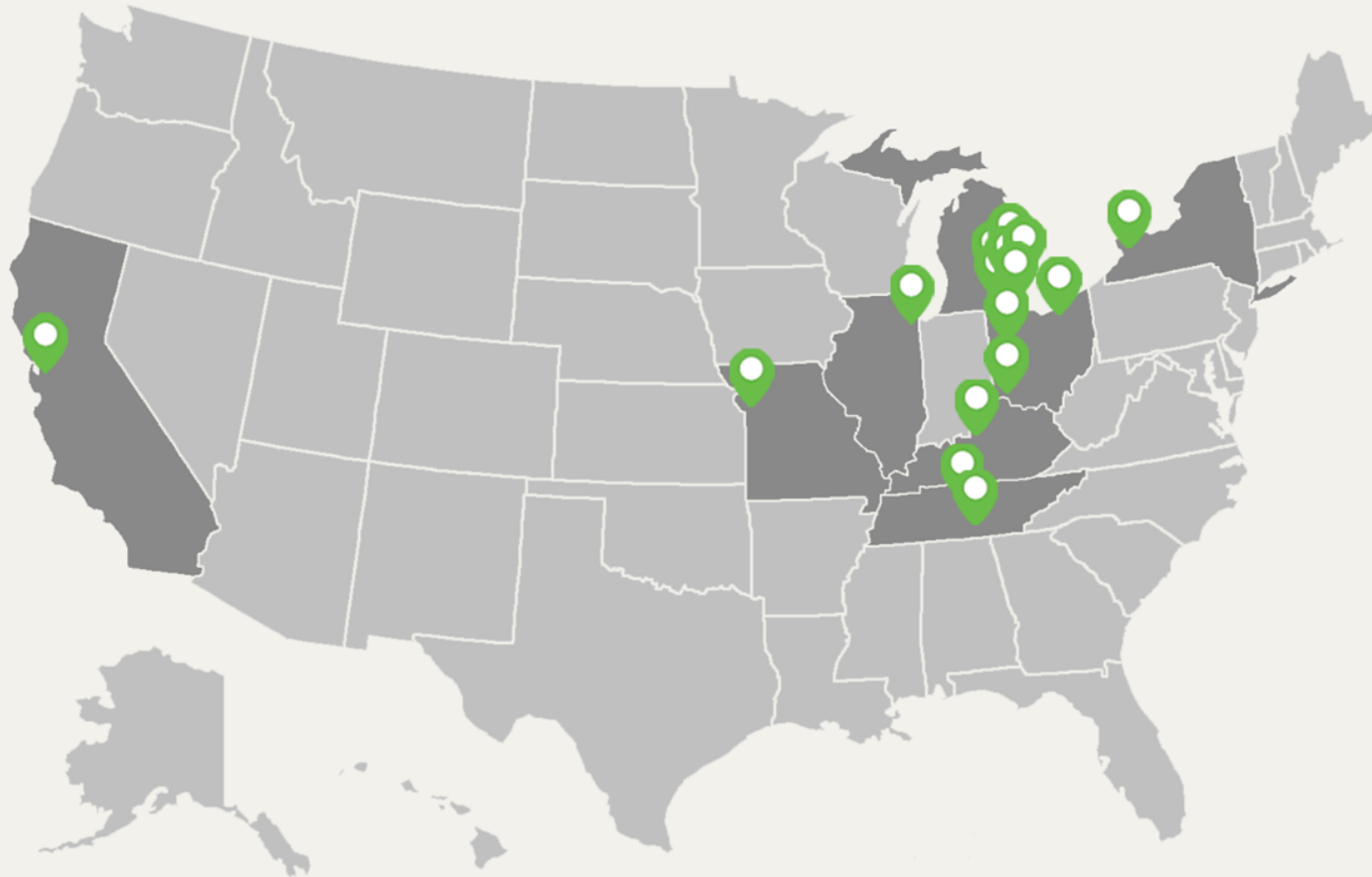


NISSAN

- \$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.

ADVANCED TECHNOLOGY VEHICLES MANUFACTURING (ATVM)

3 PROJECTS *in* **16** LOCATIONS *across* **8** STATES



35,800
PERMANENT U.S.
JOBS SUPPORTED

287,370,000
GALLONS OF GASOLINE
SAVED ANNUALLY

2,552,000
METRIC TONS OF CO₂
EMISSIONS PREVENTED



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

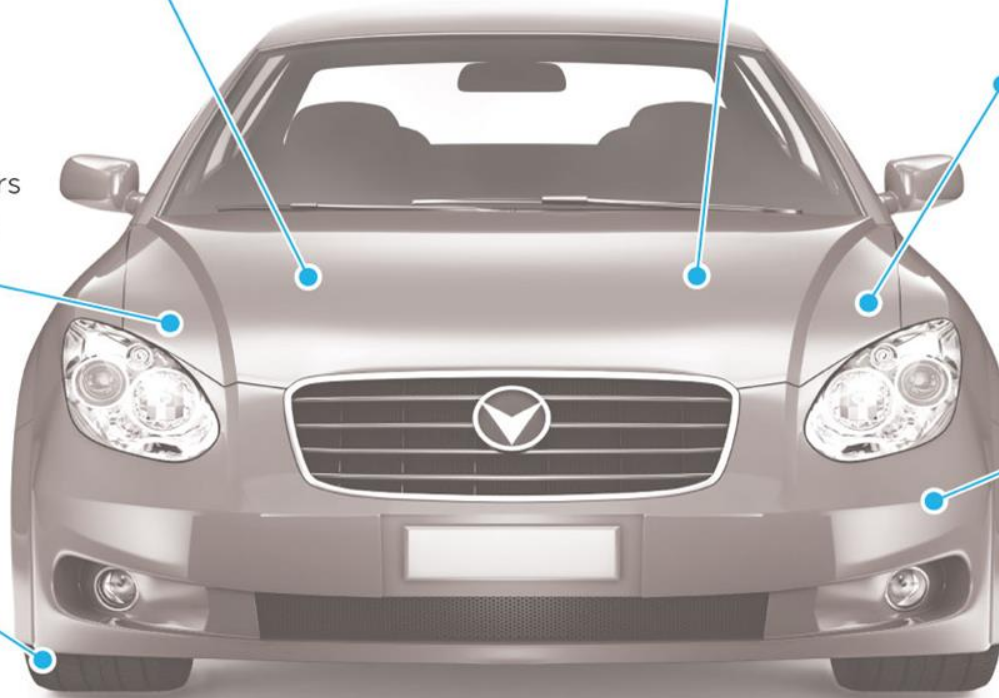
Advanced Powertrain Technologies

- 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

ATVM DIRECT LOAN PROGRAM

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



U.S. DEPARTMENT OF ENERGY

LOAN PROGRAMS OFFICE

Advanced Fossil Energy:

LPO.FossilSolicitation.Questions@hq.doe.gov

Renewable Energy & Efficient Energy:

LPO.REEESolicitation.Questions@hq.doe.gov

Advanced Nuclear Energy:

LPO.NuclearSolicitation.Questions@hq.doe.gov

Advanced Technology Vehicle Manufacturing:

atvmloan@hq.doe.gov

For more information,
and to apply online,
please visit:

PHONE 202-586-8336 | **FAX** 202-586-7366 | **EMAIL** lgprogram@hq.doe.gov

energy.gov/lpo