



U.S. DEPARTMENT OF ENERGY

# LOAN PROGRAMS OFFICE

INVESTING *in*  
AMERICAN ENERGY

[energy.gov/lpo](https://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

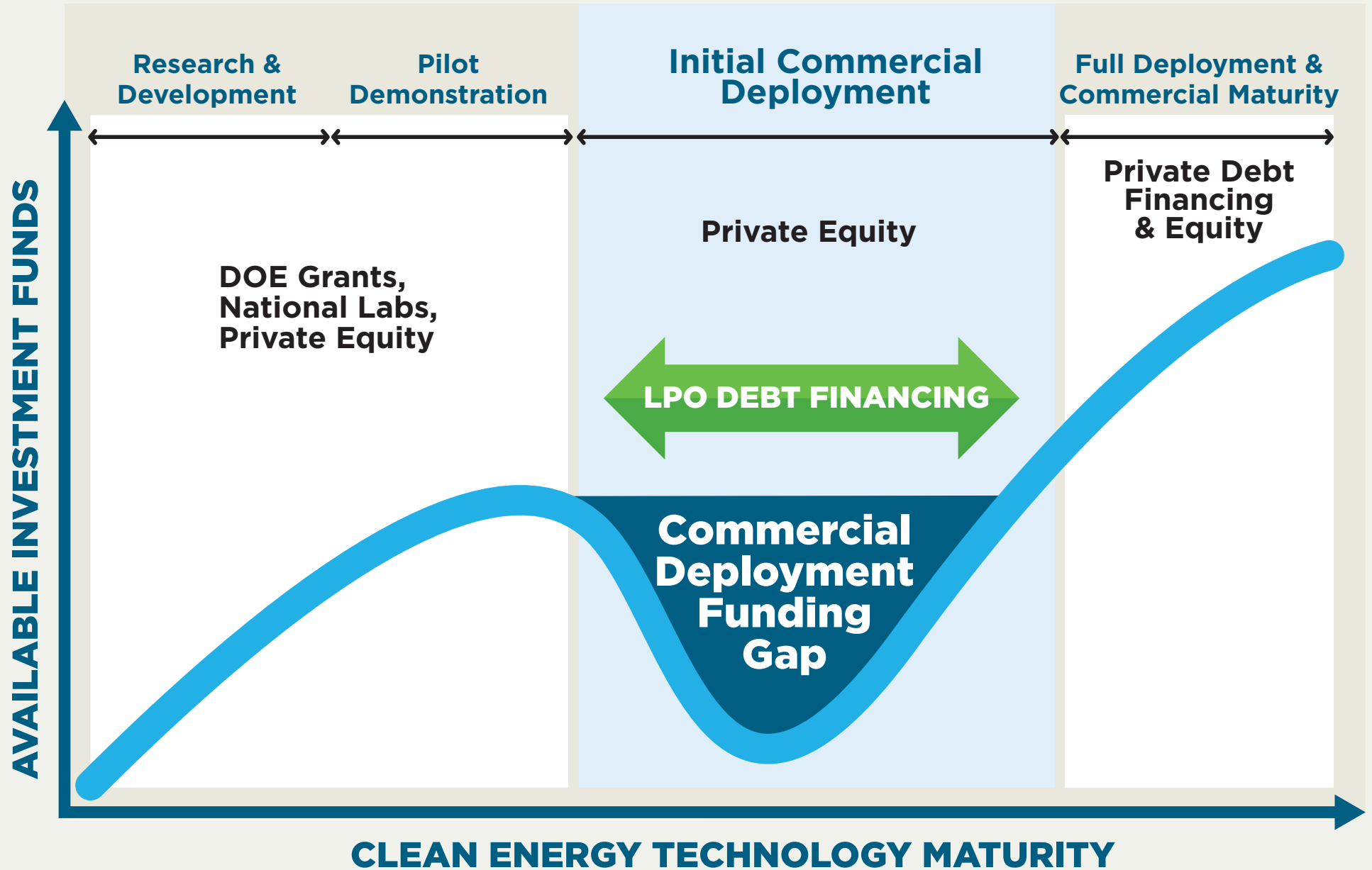
ATVM



### **ADVANCED TECHNOLOGY VEHICLES MANUFACTURING**

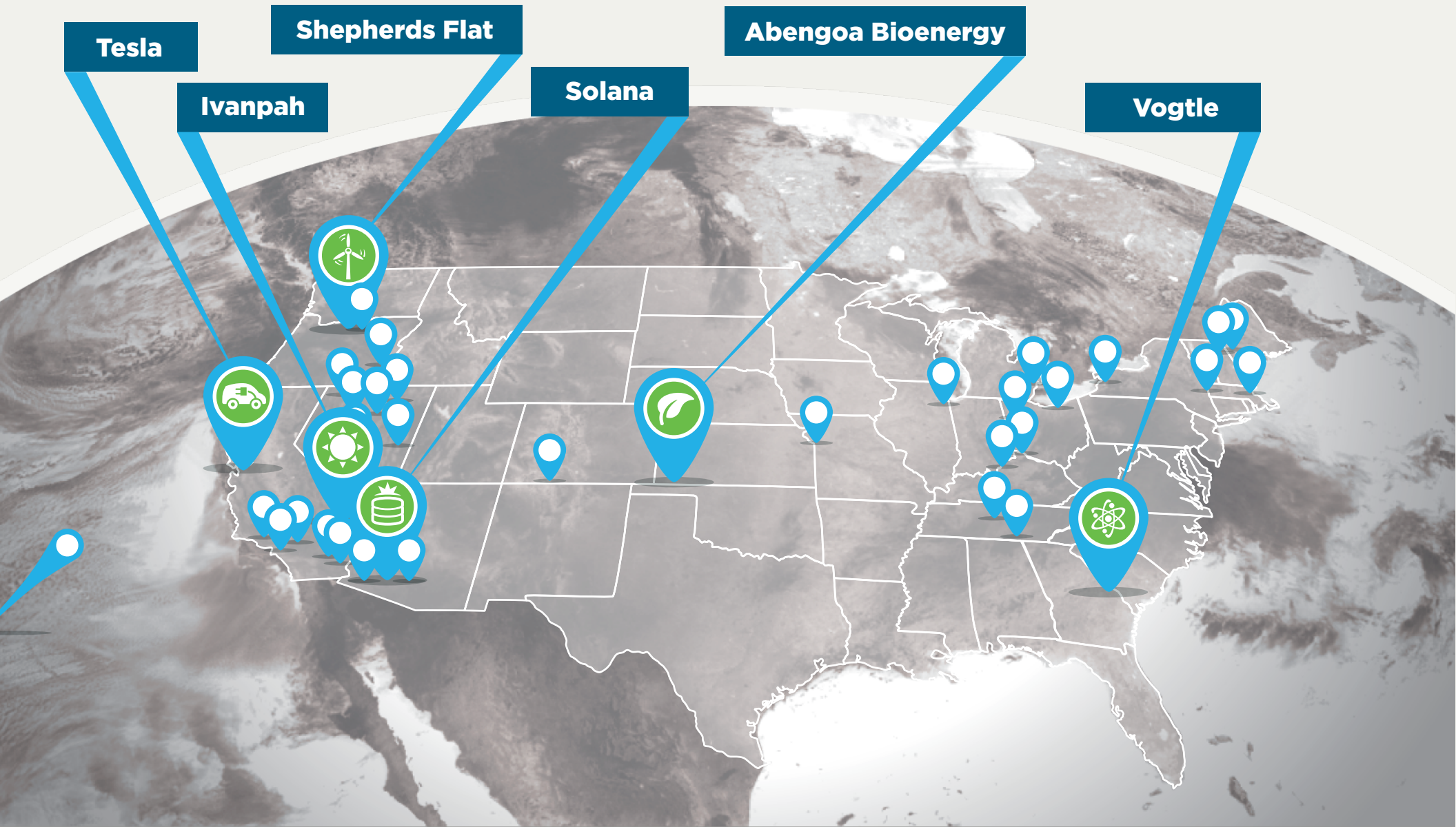
- ⚡ Direct loans
- ⚡ Applications accepted on a rolling basis

# BRIDGING THE GAP



# DEPLOYING INNOVATION

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



# LAUNCHING NEW MARKETS

## UTILITY-SCALE PHOTOVOLTAICS U.S. PROJECTS >100MW

2010

0  
PROJECTS

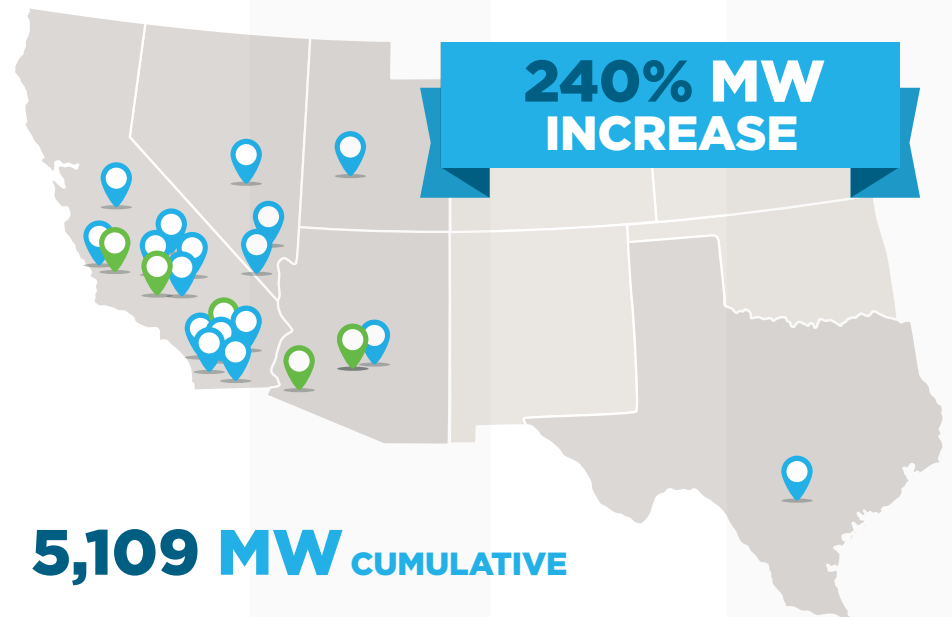
5  
LPO PROJECTS  
\$4.6 BILLION IN LOANS



1,502 MW

2012

17  
PRIVATELY FINANCED PROJECTS



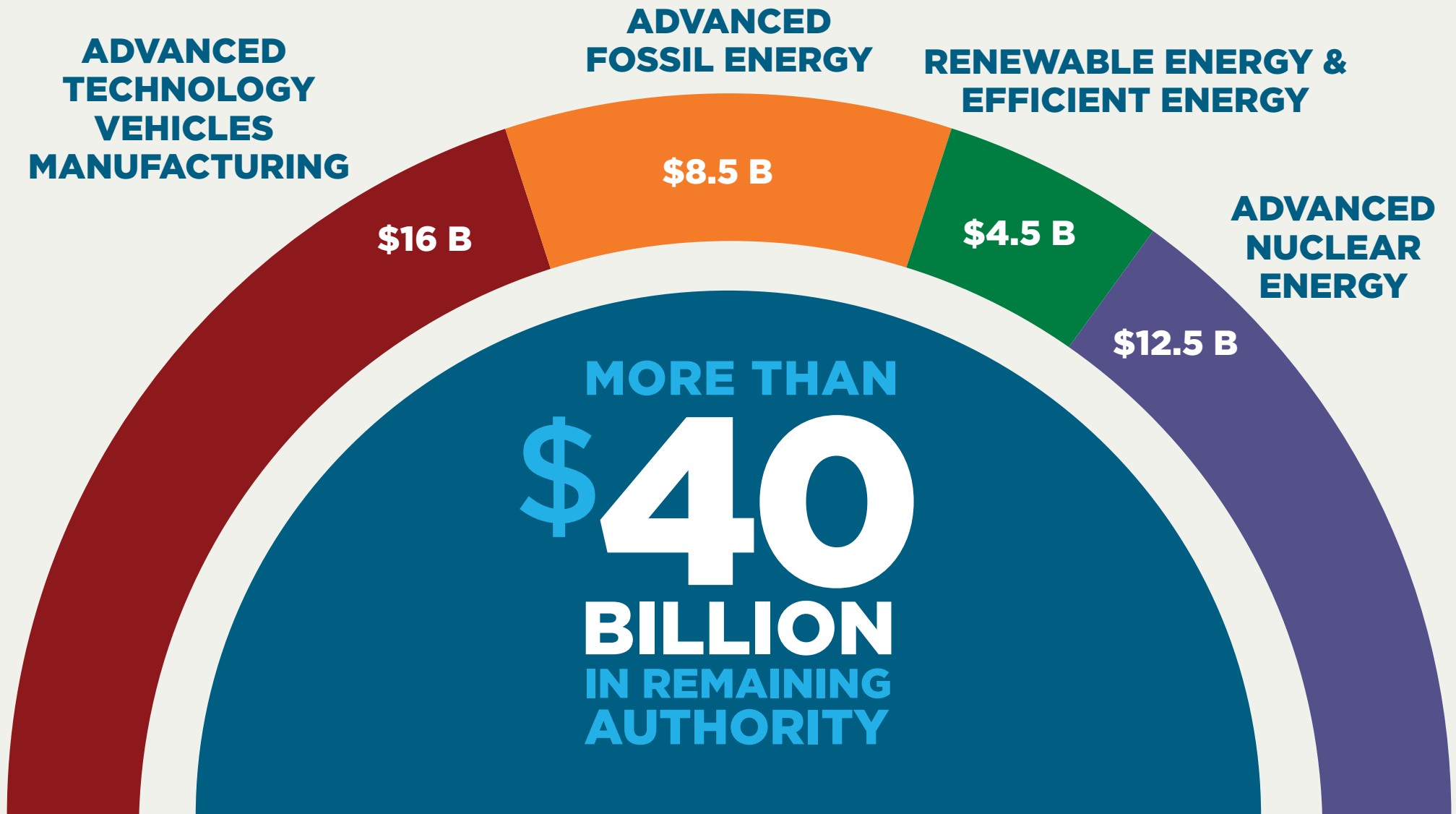
240% MW  
INCREASE

5,109 MW CUMULATIVE

1705 Program  
Ends

\*MW Totals include projects operating or under construction

# INNOVATION CONTINUES



AS OF OCTOBER 2015

# 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

# 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





# ADVANCED FOSSIL ENERGY

## TECHNOLOGY AREAS OF INTEREST

### Advanced Resource Development

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

### 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

- ⚡ CO<sub>2</sub> capture from traditional coal or natural gas electricity generation
- ⚡ Permanent geologic storage or utilization in enhanced oil recovery (EOR)

### Efficiency Improvements

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

QUALIFYING PROJECTS ARE NOT LIMITED TO THESE TECHNOLOGIES.

# 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.

# 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.

# ADVANCED VEHICLE MANUFACTURING

## TECHNOLOGY AREAS OF INTEREST

### **Advanced Technology Vehicles Manufacturing**

- ⚡ Building new facilities in U.S.
- ⚡ Reequipping, modernizing, or expanding existing facilities in U.S.

### **Qualified Component Manufacturing**

- ⚡ Building new facilities in U.S.
- ⚡ Reequipping, modernizing, or expanding existing facilities in U.S.

### **Engineering Integration**

- ⚡ Engineering integration performed in U.S. for ATVs or qualifying components

QUALIFYING PROJECTS ARE NOT LIMITED TO THESE TECHNOLOGIES.

# APPLICATION PROCESS

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

**Apply at**  
**[energy.gov/lpo/apply](https://energy.gov/lpo/apply)**



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# LOAN PROGRAMS OFFICE

**Advanced Fossil Energy:**

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**Renewable Energy & Efficient Energy:**

[LPO.REEESolicitation.Questions@hq.doe.gov](mailto:LPO.REEESolicitation.Questions@hq.doe.gov)

**Advanced Nuclear Energy:**

[LPO.NuclearSolicitation.Questions@hq.doe.gov](mailto:LPO.NuclearSolicitation.Questions@hq.doe.gov)

**Advanced Technology Vehicle Manufacturing:**

[atvmloan@hq.doe.gov](mailto: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](mailto:lgprogram@hq.doe.gov)

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