



LPO
Loan Programs Office

U.S. Department of Energy Clean Energy Financing

- **Innovative Energy & Innovative Supply Chain**
- **State Energy Financing Institution (SEFI)**
- **Energy Infrastructure Reinvestment (EIR)**
- **Tribal Energy Projects**
- **CO2 Transportation Infrastructure Projects**

TCBiomass Conference

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Senior Contract Consultant

September 12, 2024



LPO
Loan Programs Office

What Drives Us

Vision

A secure and clean energy economy that benefits all Americans

Mission

To be the premier public financing partner that accelerates high-impact energy and manufacturing investments to advance America's economic future

What LPO Does



There are many areas that are mature from a technology standpoint but not mature from an access to capital standpoint — **that's a nexus where there's a clear mandate for LPO to participate.**

LPO Director Jigar Shah



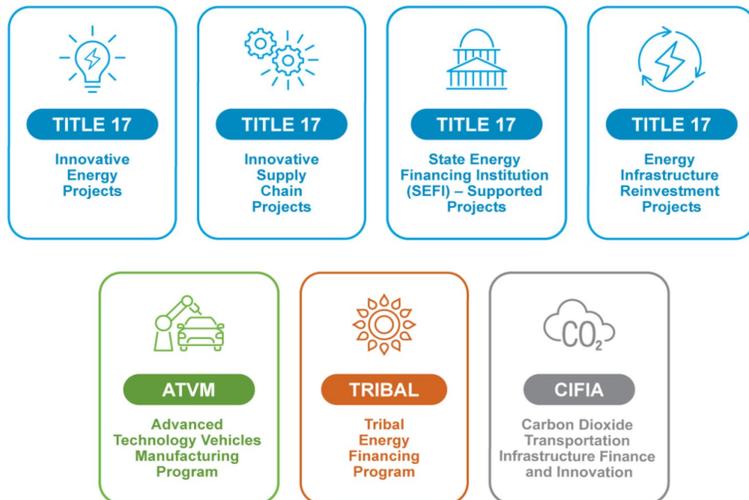
The **U.S. Department of Energy Loan Programs Office (LPO)** works with the private sector to finance the deployment and scale-up of innovative clean energy technologies, build energy infrastructure and domestic supply chains, create jobs, and reduce emissions in communities across the United States.

What is the Loan Programs Office (LPO)?

LPO is...

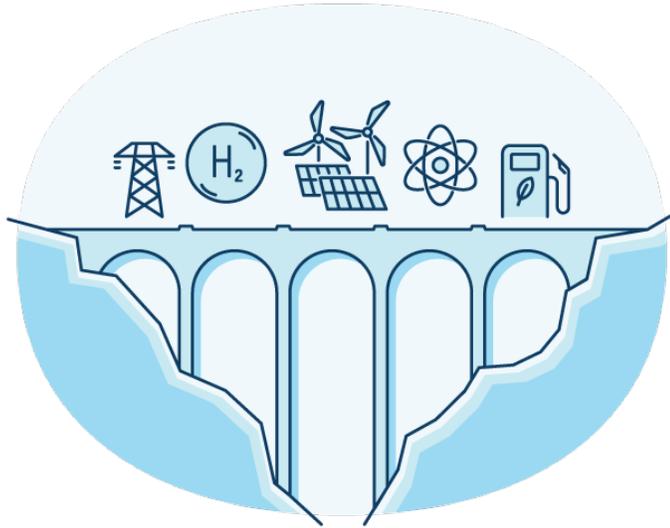
the **premier public financing partner** accelerating high-impact energy and manufacturing investments to advance America's economic future.

How do we do it?



- ✓ By **providing attractive debt financing** for high-impact, large-scale (\$100M+) energy infrastructure projects in the U.S.
- ✓ With **tens of billions of dollars** in available loan and loan guarantee authority.
- ✓ Via **seven loan programs & project categories** supporting both innovative and commercial technologies.

LPO Administers Loan Programs that:



Provide a bridge to bankability for emerging clean energy and decarbonization technologies on a path to commercial liftoff



Enable the expansion of domestic manufacturing and supply chains to support a cleaner and stronger energy economy



Make the clean energy transformation affordable and achievable for workers, consumers, and communities who stand to benefit from LPO support

What LPO Offers Borrowers

LPO loans and loan guarantees are differentiated in the clean energy debt capital marketplace in **three primary ways:**



Access to Patient Capital

that private lenders cannot or will not provide.



Flexible Financing

customized for the specific needs of individual borrowers.



Committed DOE Partnership

offering specialized expertise to borrowers for the lifetime of the project.

211

ACTIVE APPLICATIONS¹

\$295.8

BILLION IN LOANS REQUESTED²

1.2

NEW APPLICATIONS PER WEEK³

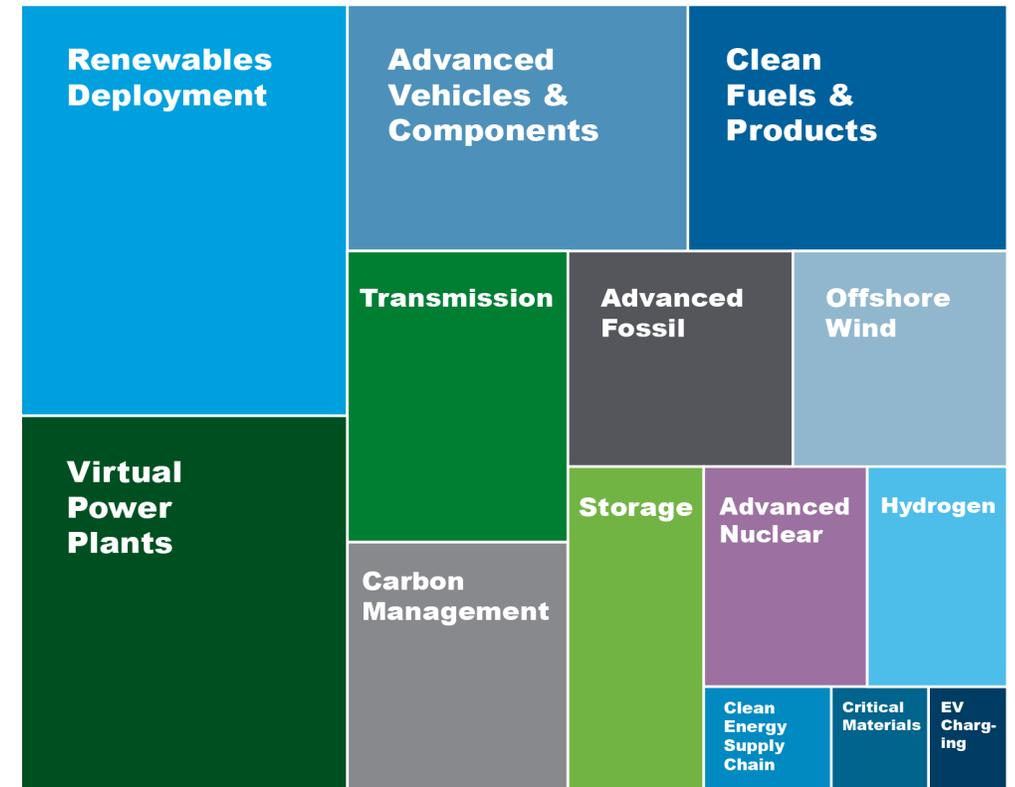
Notes

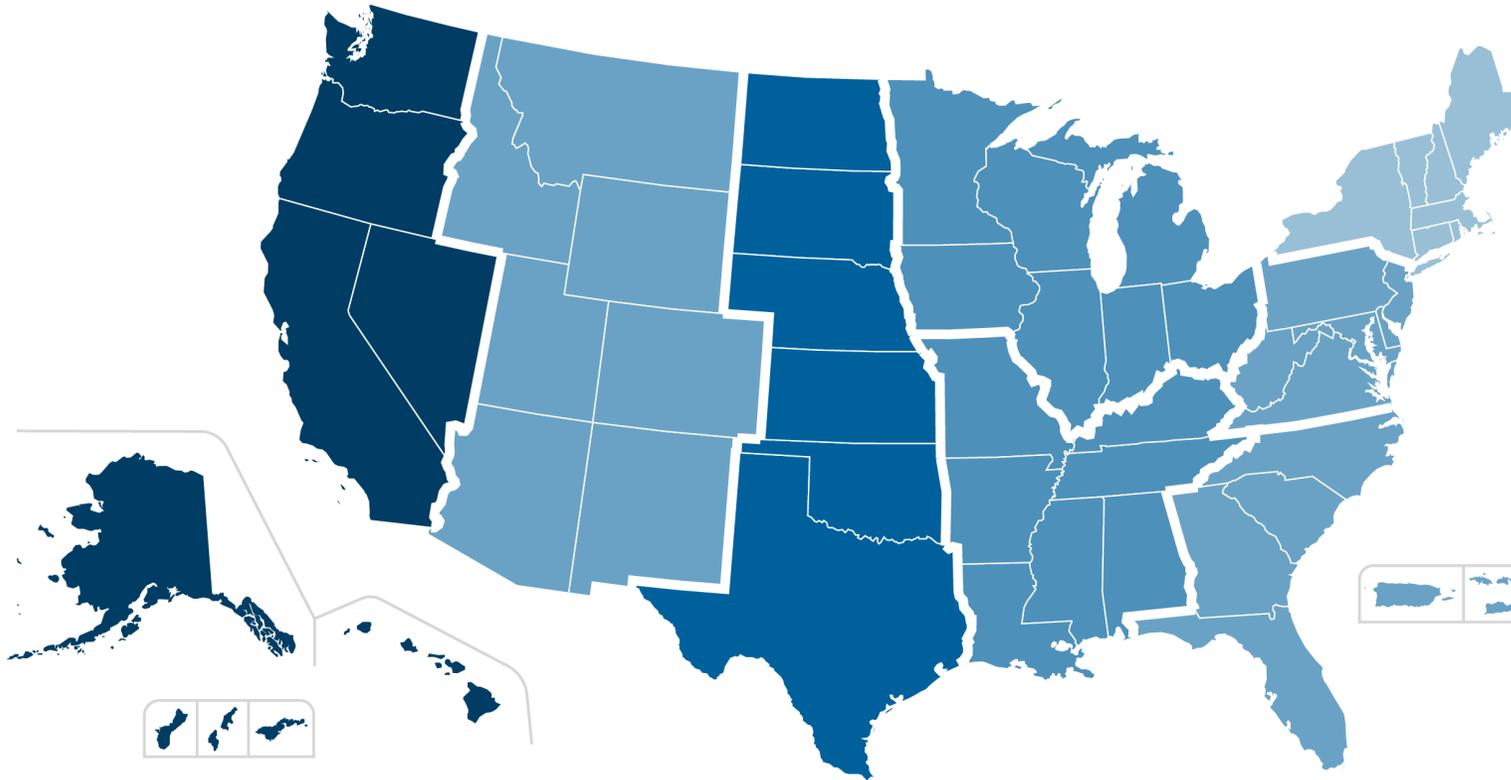
All data updated as of August 31, 2024. For more details and a list of technology areas of interest within each LPO tech sector, see: [Energy.gov/LPO/MAAR](https://www.energy.gov/LPO/MAAR)

- 1) Active applications include applications that have been submitted by the project sponsor(s) through LPO's online application portal and are in different stages of active review and engagement by LPO and the applicant. Active application count does not include publicly announced conditional commitments.
- 2) Individual requested loan amounts are estimated and potential, subject to change, and not necessarily representative of final financing terms. **Requested loan amounts in current active applications do not affect available LPO loan authority.** Figure rounded down to the nearest \$0.1 billion.
- 3) Current rolling average of new active applications per week over the previous 24 weeks. Figure rounded down to the nearest 0.1 application per week.

\$295.8 BILLION

CURRENT AMOUNT OF LOANS REQUESTED BROKEN DOWN BY PROJECT TECHNOLOGY SECTORS





211 ACTIVE APPLICATIONS¹ WITH
257 PROPOSED PROJECT LOCATIONS
 ACROSS ALL REGIONS OF THE U.S.²

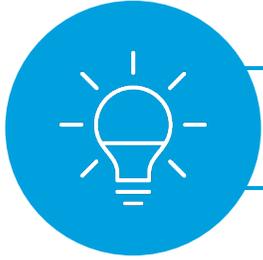
WEST	AK, CA, HI, NV, OR, WA (AS, GU, MP)	58
PLAINS	KS, ND, NE, OK, SD, TX	38
MIDWEST	IA, IL, IN, MI, MN, OH, WI	31
SOUTH	AL, AR, KY, LA, MO, MS, TN	29
MID-ATLANTIC	DE, MD, NJ, PA, VA, WV (DC)	27
MOUNTAIN	AZ, CO, ID, MT, NM, UT, WY	27
SOUTHEAST	FL, GA, NC, SC (PR, VI)	25
NORTHEAST	CT, MA, ME, NH, NY, RI, VT	22

Notes

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- Regions depicted are for representation purposes only and are not meant to denote LPO consideration of regional variation in project evaluation.

LPO Financing Programs



Title 17 Clean Energy (Title 17)

Financing for:

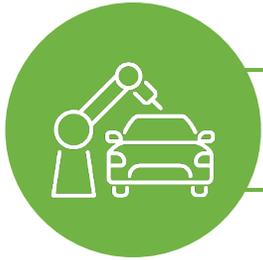
- Innovative Energy & Innovative Supply Chain (1703)
- State Energy Financing Institution (SEFI)-Supported (1703)
- Energy Infrastructure Reinvestment (EIR, 1706)



Tribal Energy (TELGP)

Financing for:

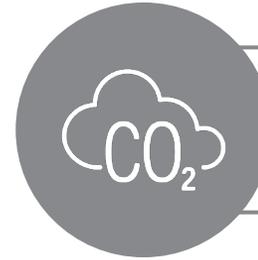
- Tribal energy development projects



Advanced Transportation (ATVM)

Financing for:

- Manufacturing of advanced technology vehicles, several modes of ATVs, components, and innovative EV charging infrastructure



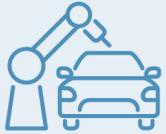
CO₂ Transportation Infrastructure (CIFIA)

Financing for:

- Large-capacity, common carrier CO₂ transportation projects

The Next Generation of LPO Financing

LPO is working with stakeholders across innovative clean energy & advanced transportation sectors



Advanced Vehicles & Components

- Vehicles • Components • Lightweighting • Manufacturing • Electric Vehicle (EV) Battery Manufacturing • Electrification •



Clean Energy Supply Chain

- Solar Manufacturing Supply Chain •



Clean Fuels & Products

- Advanced Biofuels • Biodiesel • Cellulosic Biofuels • Renewable Diesel • Renewable Natural Gas (RNG) • Sustainable Aviation Fuel (SAF) • Waste Conversion •



Critical Materials

- Extraction • Manufacturing • Mining • Processing • Recovery • Recycling •



EV Charging

- Deployment • Manufacturing •



Hydrogen

- Generation • Infrastructure • Transportation •



Offshore Wind

- Offshore Wind Generation • Offshore Wind Supply Chain & Vessels •



Renewables Deployment

- Geothermal • Hydrokinetics • Hydropower • Repowering Onshore Wind • Other Renewables Deployment •



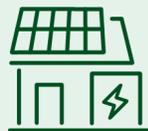
Storage

- EV Bidirectional Storage • Newer Battery Chemistries & Flow Batteries • Compressed Air Energy Storage • Pumped Storage Hydropower • Thermal Energy Storage •



Transmission

- Grid Efficiency • Grid Reliability • High-Voltage Direct Current (HVDC) Systems • Offshore Wind Transmission • Systems Sited Along Rail & Highway Routes •



Virtual Power Plants

- Connected Distributed Energy Resources (DERs) •



Advanced Fossil

- Carbon Feedstock Waste Conversion • Fossil Infrastructure Repurposing & Reinvestment • Hybrid Generation • Hydrogen Generated From Fossil Sources • Synfuel •



Carbon Management

- Carbon Capture & Storage (CCS) • Carbon Dioxide Removal (CDR) • Direct Air Capture (DAC) • Industrial Decarbonization • CO₂ Transportation Infrastructure •



Advanced Nuclear

- Advanced Nuclear Reactors • Micro Reactors • Nuclear Fuel Cycle • Nuclear Supply Chain • Nuclear Upgrades & Upgrades • Small Modular Reactors (SMRs) •

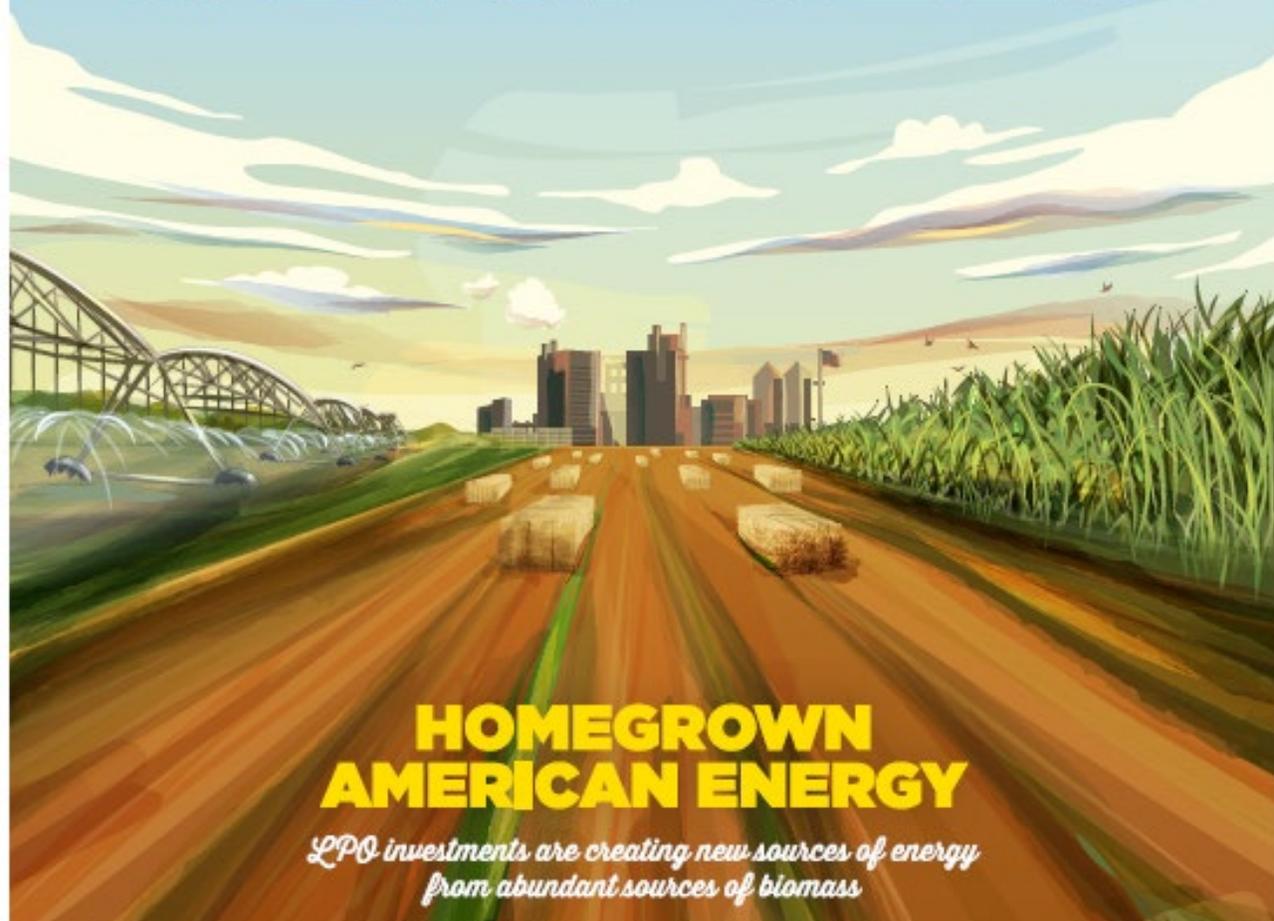


Tribal Energy

- Energy Development Projects • Energy Storage • Fossil Energy • Microgrids • Renewable Energy • Transmission Infrastructure • Transportation of Fuels •

INVESTING *in* AMERICAN ENERGY

BIOENERGY & BIOFUELS

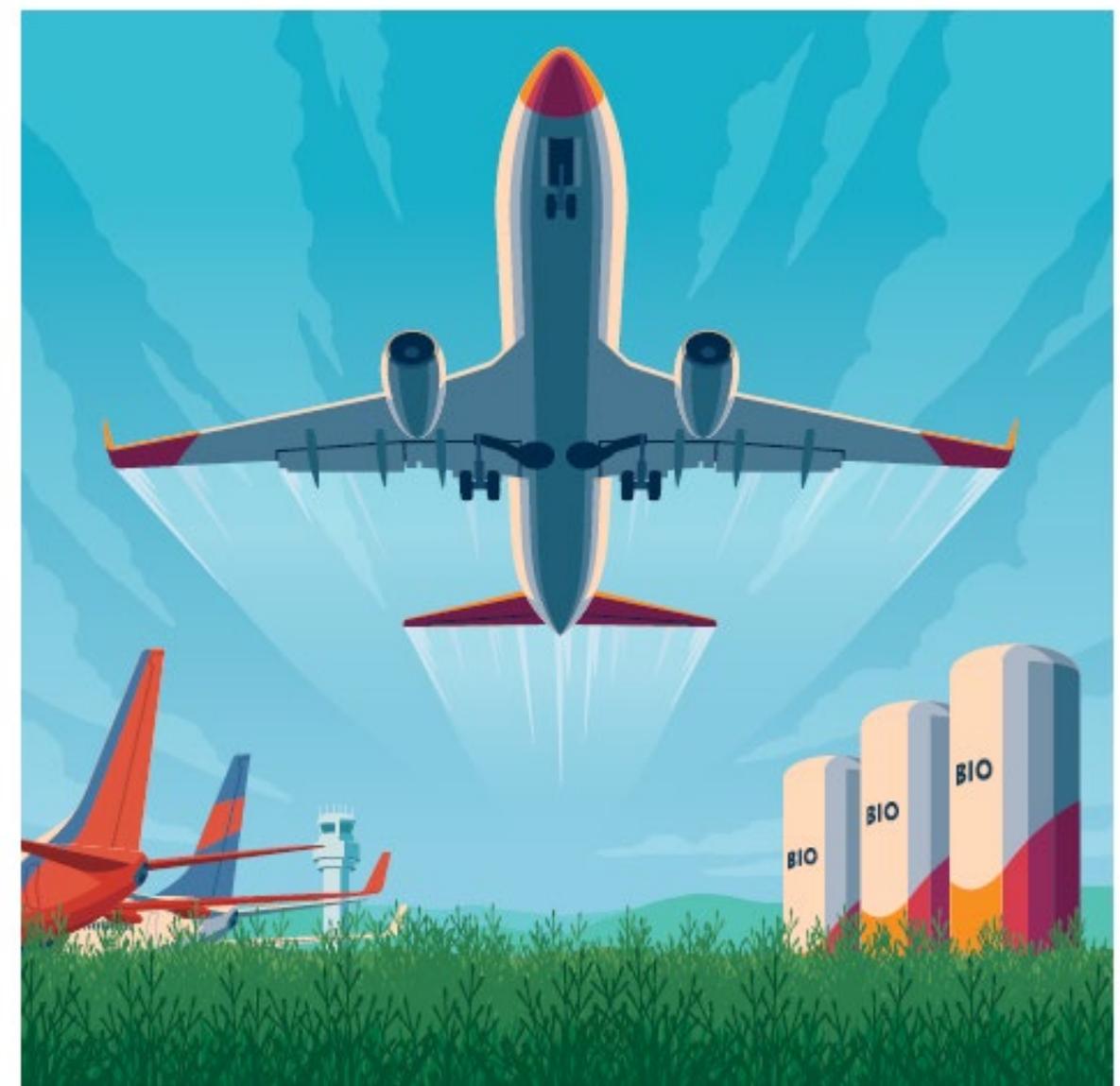


**HOMEGROWN
AMERICAN ENERGY**

*LPO investments are creating new sources of energy
from abundant sources of biomass*

BIOFUELS

Advanced Biofuels • Biodiesel • Cellulosic Biofuels • Renewable Diesel • Renewable Natural Gas (RNG) • Sustainable Aviation Fuel (SAF)





**TITLE 17
CLEAN ENERGY
FINANCING
(1703 & 1706)**

Title 17 Clean Energy Financing Program

- **Innovative Energy Projects**
- **Innovative Supply Chain Projects**
- **State Energy Financing Institution (SEFI)-Supported Projects**
- **Energy Infrastructure Reinvestment (EIR) Projects**



Title 17 Clean Energy Financing

(Title 17)

Loan guarantees for the deployment of energy projects at commercial scale

Four Project Categories

1. Innovative Energy (1703)
2. Innovative Supply Chain (1703)
3. State Energy Financing Institution (SEFI)-Supported (1703)
4. Energy Infrastructure Reinvestment (EIR) (1706)

Project Eligibility

1. Project located in the United States.
2. Be an energy project.
3. Achieve significant and credible GHG or air pollution reductions.
4. Have a reasonable prospect of repayment.
5. Involve technically viable and commercially ready technology.
6. Include a Community Benefits Plan.

Loan Guarantee Features

- LPO can offer 100% guarantee of U.S. Treasury's Federal Financing Bank (FFB) loans or partial guarantees of commercial loans.
- Senior secured debt priced competitively with commercial rates.
- DOE can serve as sole lender or as a co-lender.
- Structures may include project finance or structured corporate financing.

Title 17 Program Eligibility

All Projects Must:

1. Be located in the United States, territories, or possessions.
2. Be an energy-related project.
3. Achieve significant and credible GHG or air pollution reductions.
4. Have a reasonable prospect of repayment.
5. Involve technically viable and commercially ready technology.
6. Include a Community Benefits Plan.
7. Not benefit from prohibited federal support.

Category-Specific Requirements:

Projects must also meet additional requirements specific to their category:



Innovative Energy (1703)



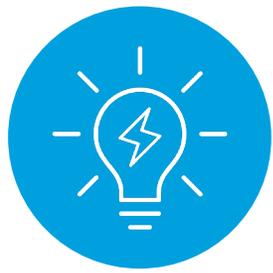
Innovative Supply Chain (1703)



State Energy Financing Institutions (1703)



Energy Infrastructure Reinvestment (1706)



Innovative Energy Projects

1703

Financing for commercial-scale deployment of innovative energy projects

Project Eligibility

In addition to meeting the common Title 17 eligibility requirements, Innovative Energy projects must:

1. Involve at least one 1703 **Eligible Technology**.
2. Meet the **innovation requirement** – projects must deploy a *new or significantly improved technology*:
 - Recently developed, discovered, or learned, OR
 - Involve one or more meaningful and important improvements in productivity or value.

Changes

Expanded eligibility for projects involving **storage** and **critical minerals processing, manufacturing, and recycling**.

Community Benefits Plans

The Four Priorities

1. Justice40

Contribute to the goal that 40 percent of the overall benefits of clean energy investment flow to disadvantaged communities.

2. Diversity, Equity, Inclusion, and Accessibility

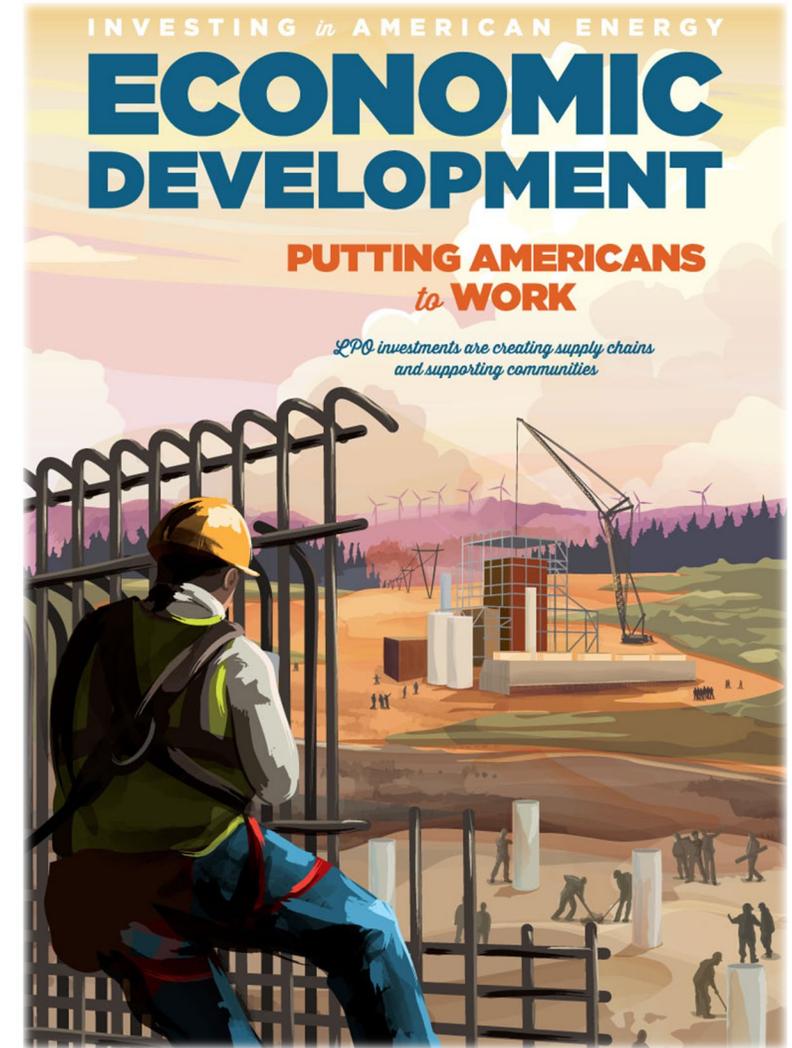
Equitable access to wealth building opportunities, strengthening ties with the community, diversifying supply chains, and contributing to the health and robustness of the surrounding community.

3. Quality Jobs

Ensuring jobs are of sufficient quality to attract and retain skilled workers in the industry with wages and benefits and worker supports, investing in workforce education and training, and supporting strong labor standards with the free and fair choice to join a union.

4. Community & Labor Engagement

Support meaningful engagement with labor unions and community stakeholders, such as local governments, Tribal governments, and community-based organizations, leading to formal agreements.



Title 17 Lending Overview

Loan Guarantee Features

- No minimum or maximum loan size
- Total loan amount up to 80% of eligible project costs.
- Loan guarantees (up to 100%) of U.S. Treasury's Federal Financing Bank (FFB) loans, or partial guarantees (up to 90%) of commercial loans
- Applicants **do not** apply directly to FFB; Title 17 loan applications are managed through LPO
- Typically structured as project financing, but LPO can accommodate other structures.

Loan Products

- Direct loan from FFB backed by 100% "full faith and credit" DOE guarantee
- DOE partial guarantee of commercial debt from Eligible Lenders

Interest Rates and Fees

Interest Rate (for FFB loans)

- Treasury + 3/8ths (0.375%) + risk-based charge
- Treasury rate is fixed according to loan tenor (maximum 30 years)

No Application Fees

Transaction Costs

- External advisor fees

Fees

- Facility fee (0.6% on first \$2.0bn, 0.1% for excess; required at financial close)
- Maintenance fee (required annually post-closing)



LPO Recent Loan Activity: Over \$31.1 Billion in Deals

Conditional Commitments & Financial Closings (1 Jan 2021 – 31 Aug 2024)

Since January 2021, 23 projects have reached financial close (solid banners) or conditional commitment.¹

Title 17 Clean Energy Financing

	Monolith	\$1,040 MM • Dec 2021 • (1703)
	ACES	\$504.4 MM • Jun 2022 • (1703)
	Eos	\$398.6 MM • Aug 2023 • (1703)
	Hestia	\$3,000 MM • Sep 2023 • (1703)
	LongPath	\$189 MM • Jan 2024 • (1703)
	Palisades	\$1,520 MM • Mar 2024 • (1706/EIR)
	Plug Power	\$1,660 MM • May 2024 • (1703)
	Bioforge	\$213.6 MM • Jun 2024 • (1703)
	Marahu	\$861.3 MM • Jul 2024 • (1706/EIR)
	IRG Erie	\$182.6 MM • Jul 2024 • (1703)
	Qcells	\$1,450 MM • Aug 2024 • (1703)

Over
\$11.0 Billion
in Committed
Title 17
Project
Financing²

Over
\$20.0 Billion
in Committed
ATVM Project
Financing²

Advanced Transportation Financing (ATVM)

	Syrah Vidalia	\$102.1 MM • Jul 2022
	Ultium Cells	\$2,500 MM • Dec 2022
	Rhyolite Ridge	\$700 MM • Jan 2023
	Redwood Materials	\$2,000 MM • Feb 2023
	Li-Cycle	\$375 MM • Feb 2023
	KORE Power	\$850 MM • Jun 2023
	BlueOval SK	\$9,200 MM • Jun 2023
	SK Siltron	\$544 MM • Feb 2024
	Thacker Pass	\$2,260 MM • Mar 2024
	CelLink	\$362 MM • Apr 2024
	ENTEK	\$1,200 MM • Jul 2024

Tribal Energy Financing

Viejas Microgrid \$72.8 MM • Mar 2024

\$72.8 MM
in Committed
Tribal Energy
Project
Financing²

Notes

All data updated as of August 31, 2024. For more details and a list of LPO's entire project portfolio, including conditional commitments, see: [Energy.gov/LPO/Projects](https://www.energy.gov/LPO/Projects)

- 1) All figures are exclusive of discontinued projects, inactive conditional commitments, and projects that closed on loans but received no disbursement.
- 2) Totals include capitalized interest where applicable. Note that in making an obligation of use of loan authority, DOE does not include capitalized interest in those amounts.

LPO Recent Loan Activity

Geographic Reach

Conditional Commitments & Financial Closings (1 Jan 2021 – 31 Aug 2024)

Since January 2021, 23 projects have reached financial close (5 across 8 sites) or conditional commitment (18 across 20 sites).¹

 Title 17 Conditional Commitment

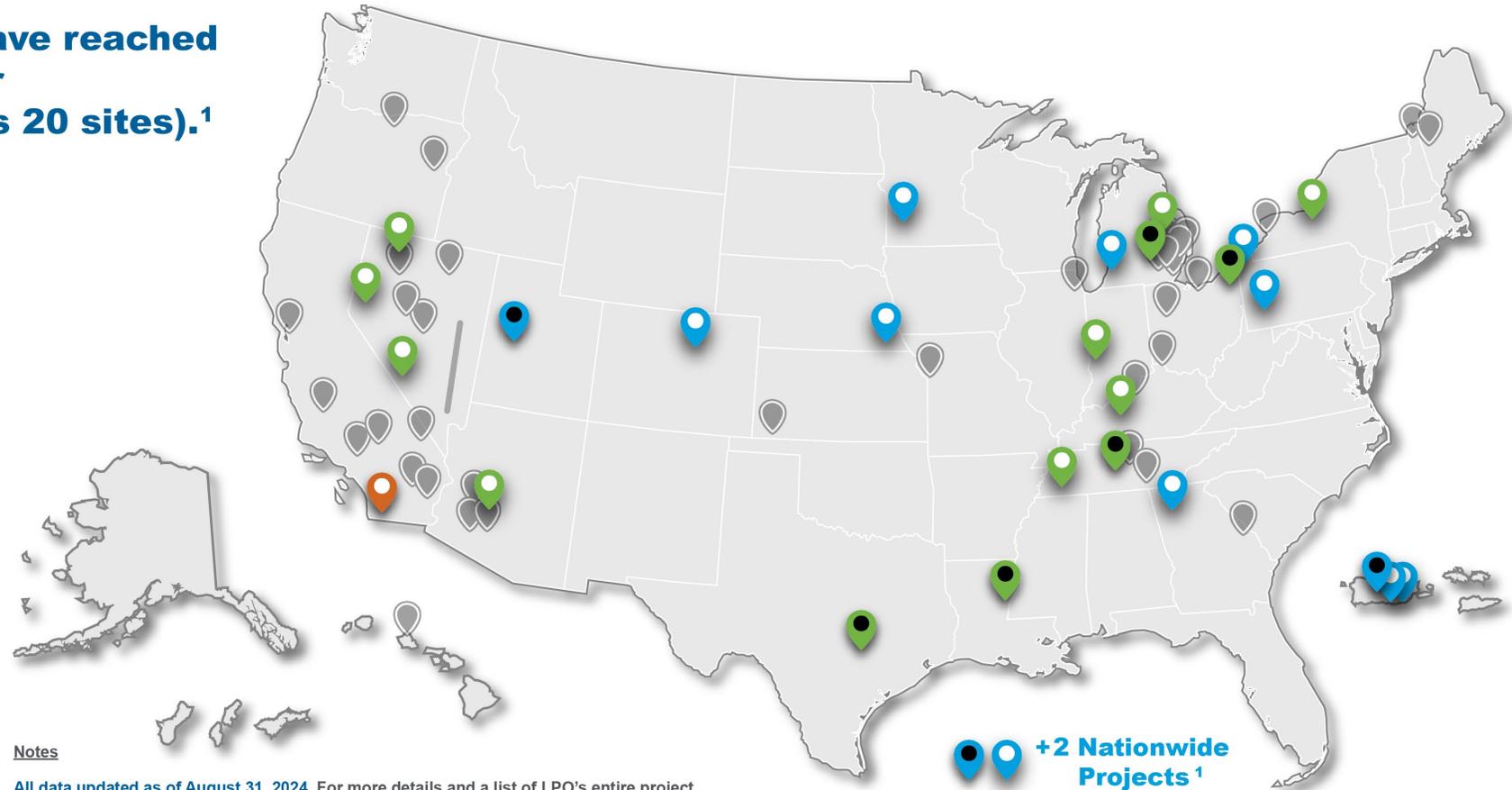
 Title 17 Financial Close

 ATVM Conditional Commitment

 ATVM Financial Close

 Tribal Energy Conditional Commitment

 Financial Close Prior to 2021 (Other Current LPO Portfolio Projects)²



Notes

All data updated as of August 31, 2024. For more details and a list of LPO's entire project portfolio, including conditional commitments, see: [Energy.gov/LPO/Projects](https://www.energy.gov/LPO/Projects)

- 1) Potential nationwide impact for Hestia with particular potential impact in Puerto Rico. Potential nationwide impact for Plug Power. LongPath based in Colorado with potential impact across six states.
- 2) Exclusive of discontinued projects, inactive conditional commitments, and projects that closed on loans but received no disbursement.

Portfolio Impact

Climate & Economy

LPO-supported projects reduce greenhouse gas emissions and create American jobs

over

104 million

MWh clean energy
produced



equivalent to...

over

9.8 million

homes powered



over

47 million

tons of CO₂ displaced



21.5 million

advanced technology
vehicles produced



equivalent to...

2.9 billion

gallons of gasoline saved



26 million

tons of CO₂ displaced



OVER

46,800

permanent jobs created



NOTE: Emissions and job impacts attributable to LPO-supported portfolio projects, cumulative through Q4 FY2023.

Before Applying for LPO Financing

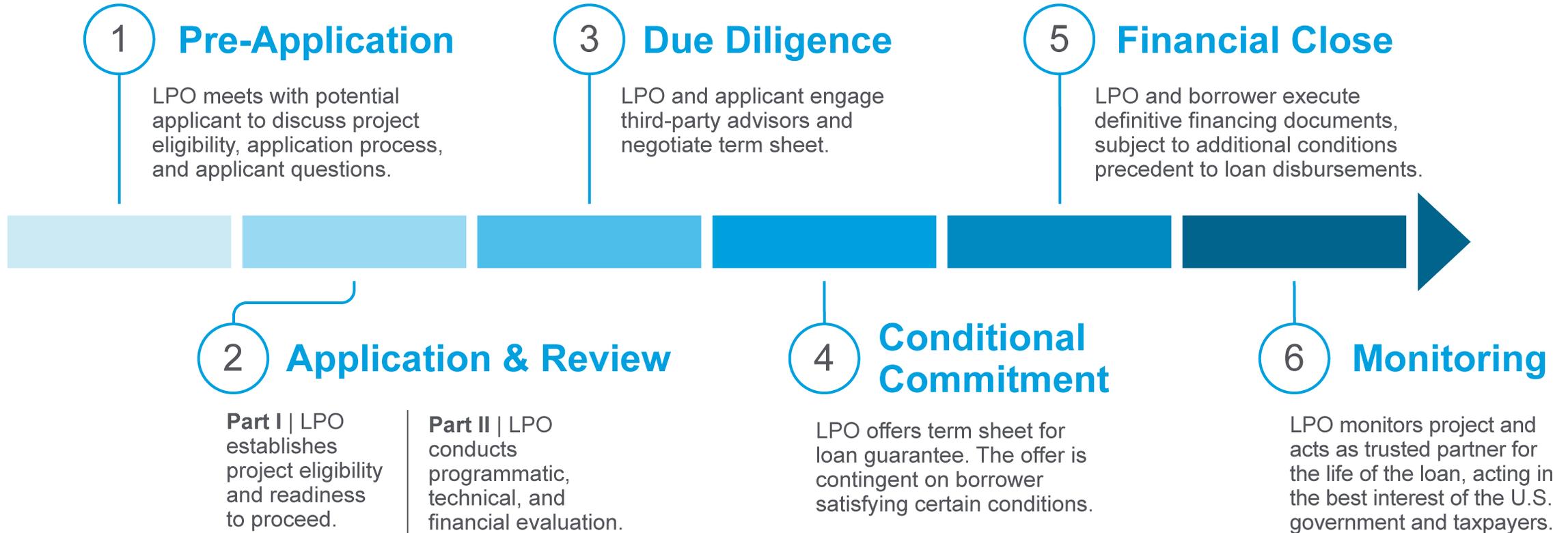
Top 10 Questions

All Applicants Should Ask Before Applying to LPO

- ✓ Adequate project size?
- ✓ Offtake commitments?
- ✓ Development capital & project equity?
- ✓ Technological readiness?
- ✓ Commercial readiness?
- ✓ Environmental review?
- ✓ Site control & regulatory approval?
- ✓ Experience level of management?
- ✓ Emissions analysis?
- ✓ Projected community benefits?

Title 17 Loan Transaction Process

LPO engages early with applicants and remains a partner for the lifetime of the loan



Frequently Asked Questions

1: Time

Q: How long does the application process take?

A: Anywhere from six months to over a year, depending on applicant preparedness and project complexity.

2: Fees & Costs

Q: I hear the fee structure is changing. What is happening?

A: There are no application fees. Applicants are responsible for third-party advisor costs, which begin in the due diligence phase. Applicants enter into sponsor payment letters with each third-party advisor and pays the third-party advisor costs as incurred. Additionally, applicants pay a facility fee at close and maintenance fees annually.

3: Tax Credits

Q: How does LPO financing interact with tax credits and other federal support?

A: LPO's loan guarantees **can be stacked with clean energy tax credits**. Projects repurposing fossil infrastructure with cleaner generation in IRS-designated Energy Communities are eligible for a 10% increase to the tax credit. **Please review the guidance for detailed information on federal support restrictions.**

Let's Talk About Your Project

Contact LPO to see what financing options may be available for your project

Questions?



To **schedule** a no-fee, pre-application consultation, go to:
[Energy.gov/LPO/Pre-App](https://www.energy.gov/LPO/Pre-App)

Call or **write** the LPO Team: **202-287-5900** | LPO@hq.doe.gov



Download the full Title 17 Guidance document at: [Energy.gov/LPO/Clean-Energy](https://www.energy.gov/LPO/Clean-Energy)

Learn more about LPO and all of its financing programs at: [Energy.gov/LPO](https://www.energy.gov/LPO)

Additional LPO Requirements

Please review the guidance for detailed information on federal requirements and restrictions, including:

- ❑ **Davis Bacon:** All construction (including installation) work must be paid weekly at prevailing wage. [Ensuring Prevailing Wages: A Closer Look at the Davis-Bacon Act | Department of Energy](#)
- ❑ **Build America Buy America (BABA):** Nonprofit and government borrowers must demonstrate domestic content or obtain a waiver.
- ❑ **Cargo Preference Act (CPA):** A sufficient portion of goods brought into the US by ship must be demonstrated to have arrived on US flag vessels, or non-availability must be demonstrated.
- ❑ **National Environmental Protection Act (NEPA):** The environmental impact of all projects will be reviewed. Projects that involve minor modifications on existing buildings may qualify for a categorical exclusion.
 - ✓ Building additions and new construction typically require at least an environmental assessment. However, LPO will review Part II applications submissions and work with the applicant to determine the level of NEPA review for each project before entering due diligence.
- ❑ **Federal Support restriction:** Projects generally cannot benefit (directly or indirectly) from other federal support.
 - ✓ Federal income tax benefits (including tax credits) generally do not constitute prohibited federal support.
 - ✓ Taking advantage of generally-available benefits is less likely to be problematic than use of a federally provided project-specific grant or loan.

