

Building a Bridge to Bankability



**How the Offshore Wind Industry Can Work with
DOE's Loan Programs Office**

NC TOWERS

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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)** finances innovative clean energy, advanced transportation, tribal energy, energy infrastructure reinvestment, and CO₂ transportation infrastructure projects, **serving as a bridge to bankability for breakthrough projects and technologies**, derisking them at early stages of commercialization so they can reach full market acceptance.

LPO's Portfolio

Derisking Across Sectors

Over \$36.5 billion in innovative clean energy & advanced transportation commitments and loans

Advanced Nuclear Energy

\$12 Billion

First AP1000 reactor in the U.S. (Vogtle)

Advanced Fossil Energy

\$3 Billion

Two CCUS conditional commitments. (Lake Charles Methanol, Monolith)

Wind Energy

\$1.7 Billion

Four onshore farms, including one of the world's largest. (Shepherds Flat)

Transmission

\$343 Million

Advanced transmission lines for improved grid reliability. (One Nevada Line)

Hydrogen

\$504 Million

Innovative clean hydrogen storage facility. (Advanced Clean Energy Storage)

Advanced Vehicles & Components

\$10.52 Billion

Accelerated domestic electric vehicles manufacturing. (Nissan, Syrah, Tesla, Ultium)

Concentrating Solar Power

\$5.8 Billion

Five CSP plants utilizing diverse technologies.

Geothermal Energy

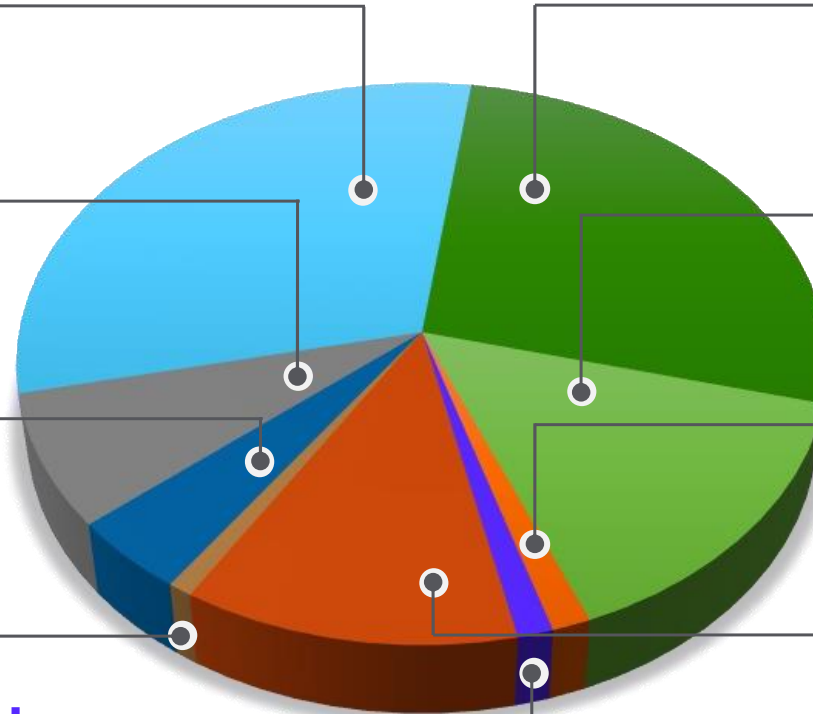
\$546 Million

State-of-the-art thermal extraction, revitalizing the sector.

Photovoltaic Solar

\$4.7 Billion

First five utility-scale PV solar projects larger than 100 MW in the U.S.



135 ACTIVE APPLICATIONS¹

\$124.1 BILLION IN LOANS REQUESTED²

1.6 NEW APPLICATIONS PER WEEK³

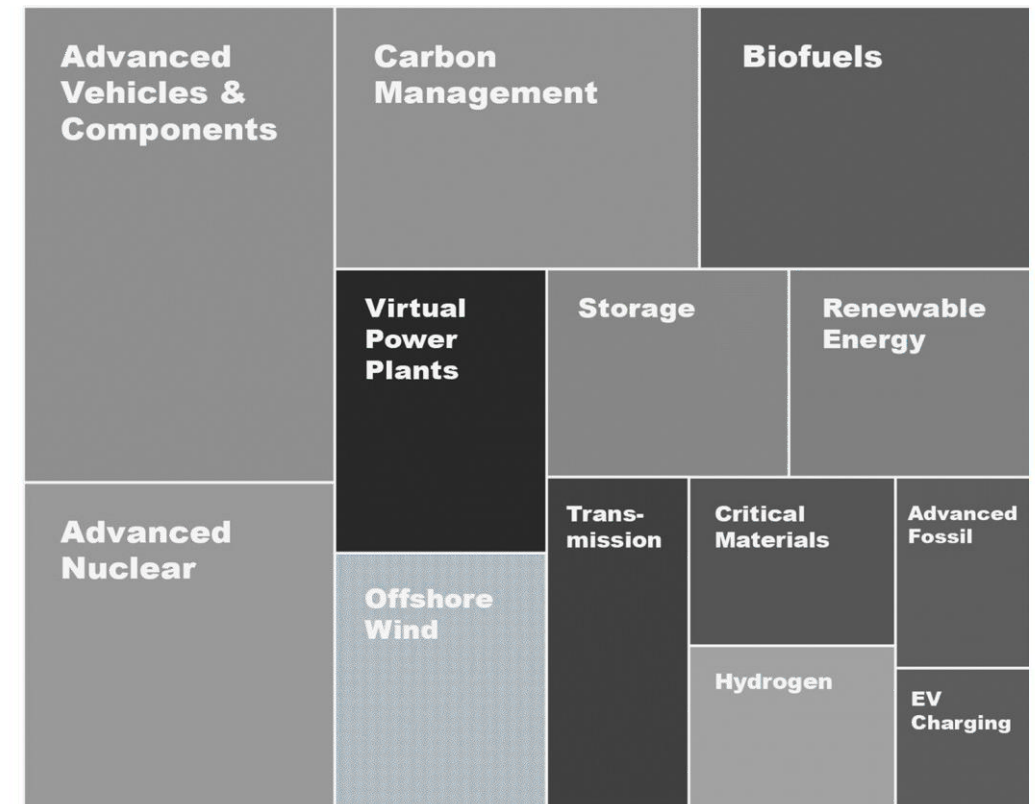
Notes

All data updated through February 28, 2023. 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.
- 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.

\$124.1 BILLION

CURRENT AMOUNT OF LOANS REQUESTED BROKEN DOWN BY PROJECT TECHNOLOGY SECTOR



Potential OSW Supply Chain Projects

Under Title 17 Clean Energy Loan Guarantee Program

- Manufacturing of turbines, monopiles, towers, nacelles, blades, foundations, and subsea cables;
- Deployment of fixed-bottom and floating offshore wind farms; and
- Transmission upgrades, including HVDC deployment, required upgrades to the point of interconnection (POI) at land-based substations and transformer and conductor manufacturing.



Under Advanced Technology Vehicles Manufacturing Loan Program

- Manufacturing of maritime vessels and associated components as long as the project meets all other eligibility criteria under the ATVM program.



Let's Talk About Your Project

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



Call or write to schedule a no-fee, pre-application consultation: **202-287-5900** | LPO@hq.doe.gov



Learn more about LPO and all of its financing programs at: Energy.gov/LPO

Energy.gov/LPO

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Appendix



The Bridge to Bankability

Providing financing for technologies to go the last mile to reach full market acceptance

DEPLOYMENT MILESTONES

**Demonstrated
Innovative
Technology**

**1 | First
Commercial
Deployments**

**2 | Follow-On
Commercial
Deployments**

**3 | Commercial
Scale-Up**

**4 | Commercial
Debt Market
Education**

**Full
Market
Acceptance**

*Applied
Engineering*

*Construction
Risks*

*Establishing
Demand*

*Achieving
Securitization*

CHALLENGES ALONG THE LAST MILE
TO COMMERCIALIZATION



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General Loan Terms

Interest Rate and Costs

Interest rate

- Treasury rate, fixed according to loan tenor
- Additional spread and risk-based charge could be added depending on loan program

Third-party expenses

- Advisor fees for costs of outside experts during due diligence

Other fees

- Facility fee and maintenance fee
- No upfront application fees

Loan Structure and Other Terms

Loan structure

- LPO loan must be senior secured debt or *pari passu* with existing obligations

Loan size

- No minimum or maximum, but loans smaller than \$100 million are uncommon
- DOE financing typically up to 80% of project costs (commonly less), while significant financial interests required of project sponsor

Eligible lenders

- Direct loans or loan guarantees available, depending on loan program
- Federal Financing Bank (US Treasury) – up to 100% DOE loan guarantee
- Commercial lender – up to 90% DOE loan guarantee

LPO Financing Programs

Project Types	Loan Program	Loan Types
Innovative Clean Energy	Title 17 (1703)	Loan Guarantees
State Energy Financing Institutions	Title 17 (1703)	Loan Guarantees
Energy Infrastructure Reinvestment	Title 17 (1706)	Loan Guarantees
Advanced Transportation	Title 17 & ATVM	Loan Guarantees (Deployment) Direct Loans (Manufacturing)
Tribal Energy	TELGP	Direct Loans & Partial Loan Guarantees
CO₂ Transportation Infrastructure	CIFIA	Direct Loans



The Next Generation of LPO Financing

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



Major Technology Sectors

Technology Areas of Interest

Include, but are not limited to, the following:

Advanced Vehicles & Components	• Vehicles • Components • Lightweighting • Manufacturing
Biofuels	• Advanced Biofuels • Biodiesel • Cellulosic Biofuels • Renewable Diesel • Sustainable Aviation Fuel (SAF)
Critical Materials	• Extraction • Manufacturing • Mining • Processing • Recovery • Recycling
EV Charging	• Electric Vehicle (EV) Charging Infrastructure Manufacturing & Deployment
Hydrogen	• Generation • Infrastructure • Transportation
Offshore Wind	• Offshore Wind Generation • Offshore Wind Supply Chain & Vessels
Renewable Energy	• Electrification • Geothermal • Hydrokinetics • Hydropower • Repowering Onshore Wind • Solar • Waste Conversion
Storage	• Electric Vehicle (EV) Battery Manufacturing • 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	• Grid Connected Distributed Energy Resources (DERs)
Advanced Fossil	• Carbon Feedstock Waste Conversion • Fossil Infrastructure Repurposing & Reinvestment • Hybrid Generation Hydrogen Generated From Fossil Sources • Industrial Decarbonization • Synfuel
Carbon Management	• Carbon Capture, Utilization & Storage (CCUS) • Carbon Dioxide Removal (CDR)
Advanced Nuclear	• Small Modular Reactors • Micro Reactors • Nuclear Supply Chain • Nuclear Front-End
Tribal Energy	• Energy Storage • Fossil Energy • Renewable Energy • Transmission Infrastructure • Transportation of Fuels



The LPO Loan Transaction Process

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



1 Pre-Application Consultations

Meet with LPO for no-fee, pre-application consultations, including discussions on the application process and the proposed project.

2 Formal Application Submission

ICE 1703: Submit Part I application to determine technical eligibility (innovation and greenhouse gas emissions calculation). There is no review of business plan or financial structure in Part I. If invited, submit more thorough Part II application to determine project viability and ability to move into due diligence.

ATVM: Submit single application to determine basic eligibility and project viability.

TELGP: For direct loans, tribal borrower submits application directly to LPO. For loan guarantees, tribal borrower engages with a commercial lender. Lender applies for a loan guarantee on behalf of Borrower and project.

3 Due Diligence & Term Sheet Negotiation

Enter confirmatory due diligence and negotiate term sheet. Any third-party advisor costs are paid for by the applicant.

4 Credit Approval Process

Formal approval process of the term sheet, including interagency consultations.

5 Conditional Commitment

An offer by DOE of a term sheet to the borrower for a loan or loan guarantee subject to the satisfaction of certain conditions.

6 Loan Closing & Project Monitoring

Negotiate and execute loan documents using the approved term sheet. Loan closing and funding are subject to conditions precedent in the executed loan documents.

Applicant pays applicable costs and fees. After loan closing, LPO monitors the loan.



More Variable Timing

Lengths of these stages vary greatly, depending on project complexity and readiness.



Less Variable Timing

Timing for these stages is largely fixed, with targeted timelines.

Innovative Clean Energy

Loan guarantees for the deployment of innovative energy projects at commercial scale

Eligibility

The Title 17 program can consider innovative clean energy projects that:

1. Use innovative technology.
2. Reduce, avoid, or sequester greenhouse gas emissions or air pollutants.
3. Are located in the U.S.
4. Provide reasonable prospect of repayment.

* **NOTE:** Updated guidance expected in the coming months, implementing eligibility criteria amended by the Inflation Reduction Act

Loan Guarantee Features

- LPO can offer 100% guarantee of U.S. Treasury's Federal Finance 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, structured corporate, corporate or warehousing lines.



State Energy Financing Institutions

Loan guarantees for the deployment of State-supported energy projects

Eligibility

The Title 17 program can support projects that receive meaningful financial support or credit enhancements from a State Energy Financing Institution.

1. Projects must reduce, avoid, or sequester greenhouse gas emissions or air pollutants.
2. The innovation requirement is waived.

*** NOTE:** Updated guidance expected in the coming months, implementing eligibility criteria amended by the Inflation Reduction Act

What is a SEFI?

- A SEFI is a quasi-independent entity or an entity within a state agency or financing authority established by a State to:
 - Provide financing support or credit enhancements, including loan guarantees and loan loss reserves, for eligible projects under Title 17.
 - Create liquid markets for eligible projects, including warehousing, or take other steps to reduce financial barriers to the deployment of existing and new eligible projects.



Energy Infrastructure Reinvestment

A new Inflation Reduction Act (IRA) program that leverages existing energy infrastructure

Eligibility

EIR guarantees loans to energy infrastructure reinvestment projects that:

1. Retool, repower, repurpose, or replace energy infrastructure that has ceased operations, or
2. Enable operating energy infrastructure to avoid, reduce, utilize, or sequester air pollutants or anthropogenic emissions of greenhouse gases.
3. No innovation requirement.
4. Projects replacing fossil electricity generation infrastructure require controls or technologies to avoid, reduce, utilize, or sequester air pollutants and anthropogenic emissions of greenhouse gases.

Example Projects

- Repurposing shuttered fossil energy facilities for clean energy production.
- Retooling power plants that have ceased operations for new clean energy uses.
- Updating operating energy infrastructure with emissions control technologies, including carbon capture, utilization, and storage (CCUS).

*** NOTE:** IRA appropriates \$5 billion through Sep 30, 2026 to carry out EIR, with a total cap on loans of up to \$250 billion.



Advanced Transportation

Manufacturing and deployment of advanced vehicles, components, and infrastructure

Manufacturing (ATVM)

Access to affordable capital via Advanced Technology Vehicles Manufacturing (ATVM) program loans to build:

- New facilities or reequip/modernize/expand existing facilities in the U.S. and/or related engineering integration for eligible vehicles
- Light, medium, and heavy-duty vehicles that meet specified fuel economy requirements or ultra-efficient vehicles.*
- Applicable across the value chain including materials, components, suppliers, OEMs, EV charging or alternative fueling infrastructure.

Deployment (Innovative Clean Energy)

Access to capital for projects using innovative technology:

- Must meet all eligibility requirements of Title 17 Innovative Clean Energy Projects.
- Examples may include:
 - Deploying EV charging or alternative fueling infrastructure.
 - Deploying fleets of innovative vehicles.

*** NOTE:** Manufacturing lending authority has been expanded to the manufacturing of aviation, marine vessels, and hyperloop, with lending guidance forthcoming.



Tribal Energy

Energy development projects via the Tribal Energy Loan Guarantee Program (TELGP)

Eligibility

LPO can consider tribal energy projects that:

1. Are owned by a tribe or entity that is majority tribally owned and controlled.
2. Are seeking direct loans or partial guarantees of commercial loans.
3. Are located in the U.S. (Tribal or non-tribal land, single site or distributed).
4. Are financially viable.
5. No innovation requirement.

Technologies

Projects employing commercial technology are preferred.

Technology areas of interest include, but are not limited to:

- Renewable Energy
- Transmission Infrastructure & Energy Storage
- Fossil Energy
- Transportation of Fuels



CO₂ Transportation Infrastructure (CIFIA)

The Carbon Dioxide Transportation Infrastructure Finance & Innovation Program

Summary

Enacted under the Bipartisan Infrastructure Law (BIL), the CIFIA program offers access to capital for large-capacity, common-carrier carbon dioxide (CO₂) transport projects, such as pipelines, rail, shipping, and other transport methods.

- Administered in partnership with DOE's Office of Fossil Energy and Carbon Management (FECM).
- Builds on other CCUS provisions of the BIL with up to \$2.1 billion to support loans, loan guarantees, grants, and administrative expenses to enable deployment of common carrier CO₂ transportation infrastructure.

Eligible Projects

- Common carrier transportation infrastructure for anthropogenic and ambient CO₂.
- Total project costs of at least \$100MM.
- Maximum U.S. produced iron, steel, and manufactured goods.

* **NOTE:** CIFIA program guidance is forthcoming.

