

CATALYST 

The Federal Government's Commitment to Energy and Sustainability



Gretchen Kittel

Acting Director, Outreach and Business Development,
Department of Energy's Loan Programs Office



An Introduction to the Loan Programs Office: Financing Your Part in the Energy Transition

Working with the private sector to finance the deployment of innovative clean energy technologies, build energy infrastructure, create jobs, and reduce emissions in communities across the United States.

EnergyCAP Catalyst 2023

Gretchen Kittel
Acting Director, Outreach and
Business Development

April 25, 2023

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

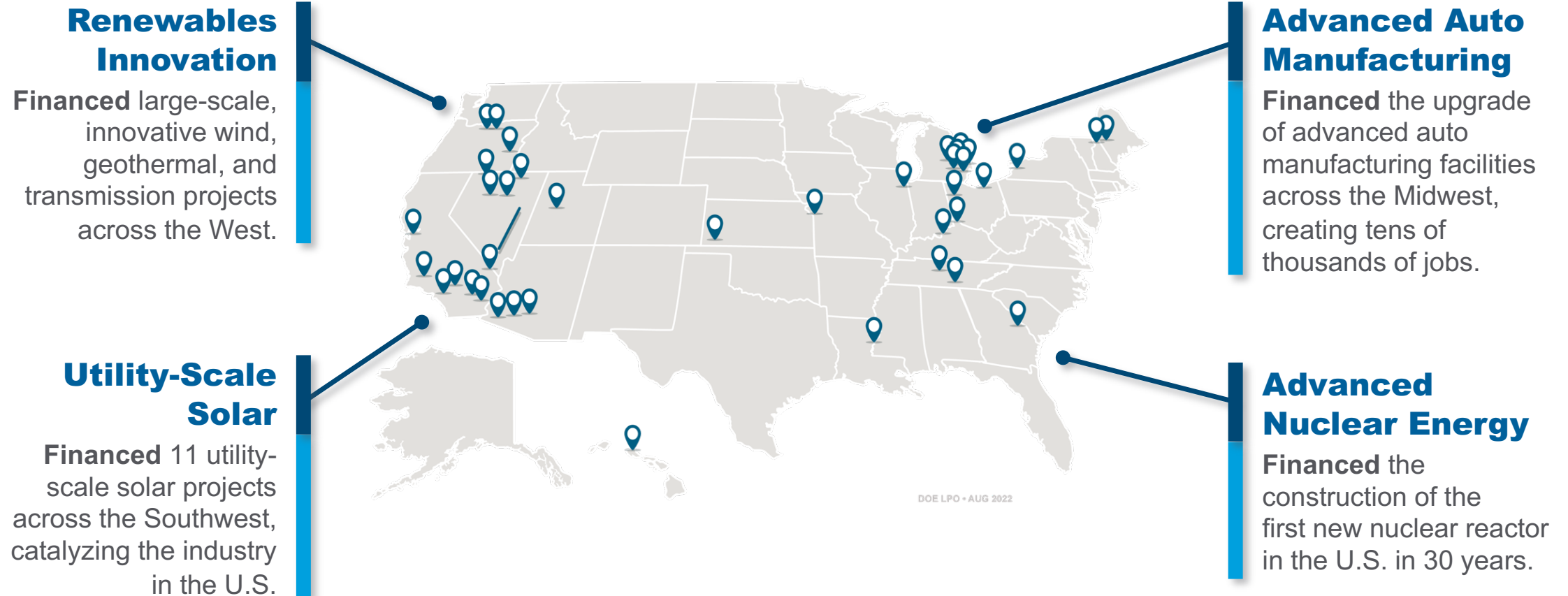


The **U.S. Department of Energy Loan Programs Office (LPO)** finances innovative clean energy, advanced transportation, tribal energy, energy infrastructure reinvestment, and CO₂ transportation infrastructure projects, **serving as a bridge to bankability for breakthrough projects and technologies**, derisking them at early stages of commercialization so they can reach full market acceptance.

LPO's Impact

Catalyzing U.S. Markets

Over a decade of success in building a bridge to clean energy commercialization



The Bridge to Bankability

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

DEPLOYMENT MILESTONES



What LPO Offers Borrowers

The unique value of working with LPO for clean energy technology project financing

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.

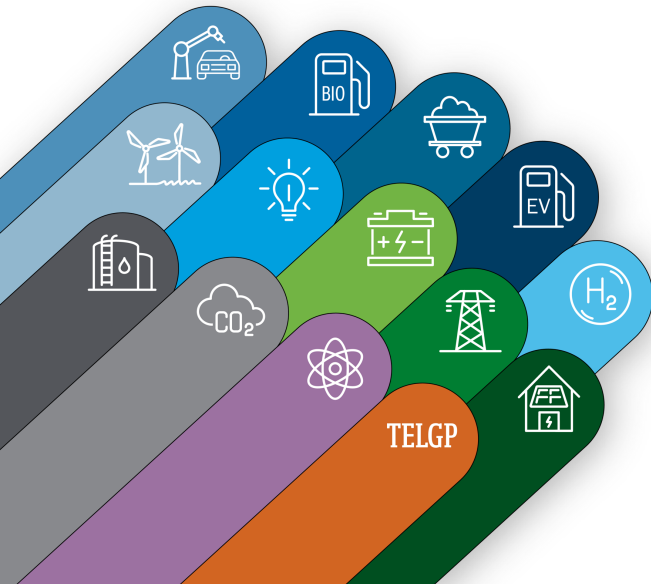


Committed DOE Partnership

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

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

Monthly Application Activity Report

March 2023

130

**ACTIVE
APPLICATIONS**¹

\$117.9

**BILLION
IN LOANS REQUESTED**²

1.6

**NEW
APPLICATIONS PER WEEK**³

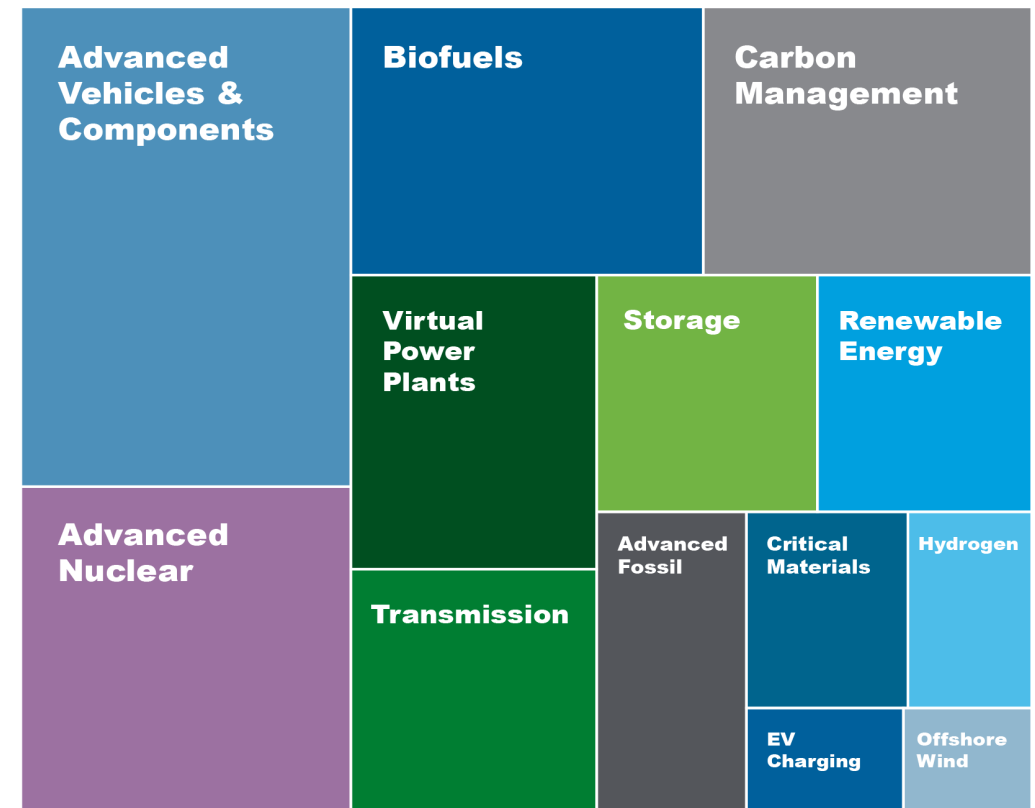
Notes

All data updated through March 31, 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.

\$117.9 BILLION

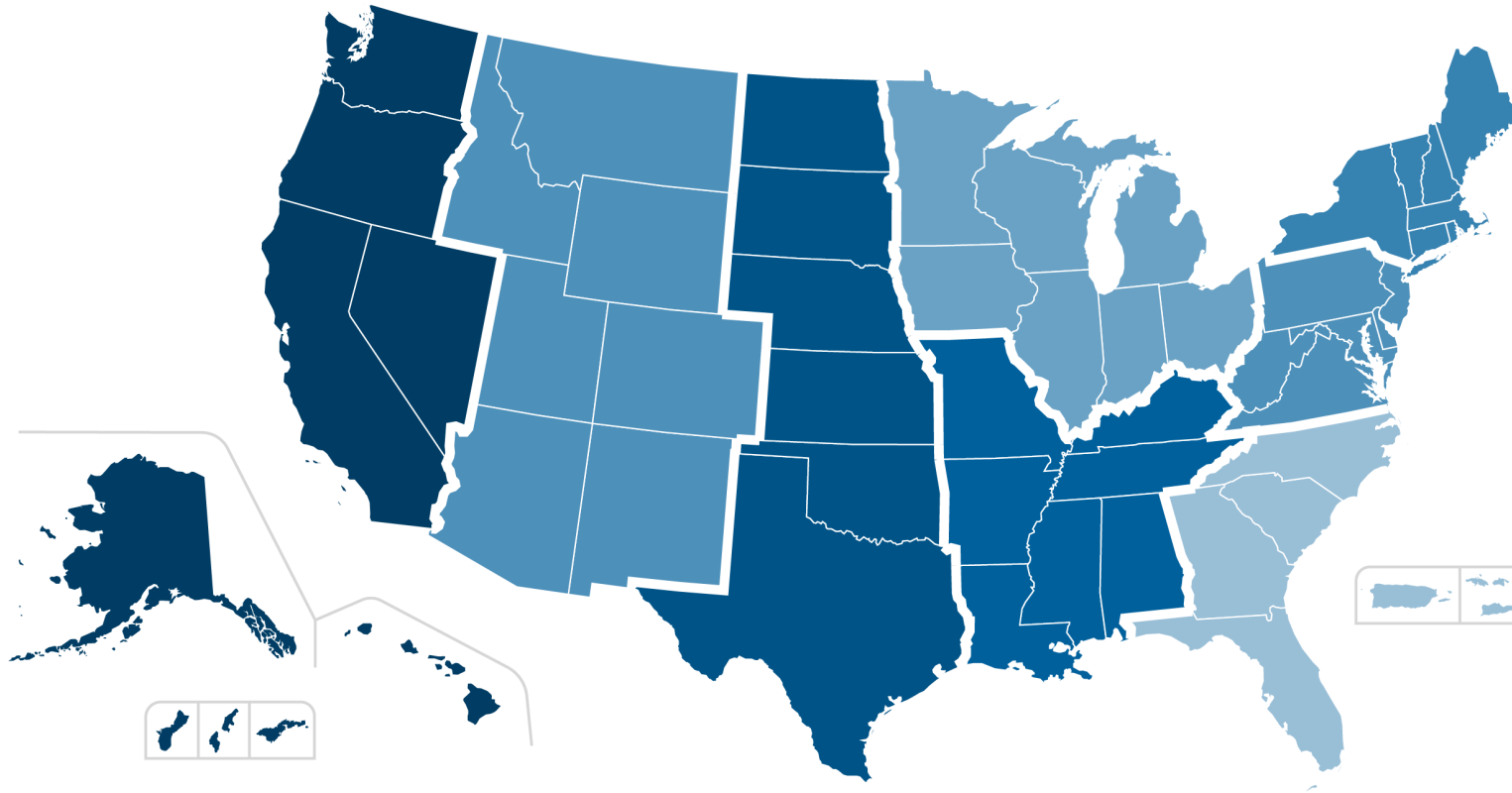
CURRENT AMOUNT OF LOANS REQUESTED BROKEN
DOWN BY PROJECT TECHNOLOGY SECTOR



LPO Overview
November 2022
DOE/LPO22-PPTv03

Monthly Application Activity Report

March 2023



130 ACTIVE APPLICATIONS¹ WITH
154 PROPOSED PROJECT LOCATIONS
ACROSS ALL REGIONS OF THE U.S.²

WEST	AK, CA, HI, NV, OR, WA (AS, GU, MP)	42
PLAINS	KS, ND, NE, OK, SD, TX	26
SOUTH	AL, AR, KY, LA, MO, MS, TN	18
NORTHEAST	CT, MA, ME, NH, NY, RI, VT	17
MID-ATLANTIC	DE, MD, NJ, PA, VA, WV (DC)	14
MOUNTAIN	AZ, CO, ID, MT, NM, UT, WY	14
MIDWEST	IA, IL, IN, MI, MN, OH, WI	12
SOUTHEAST	FL, GA, NC, SC (PR, VI)	11

Notes

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



LPO Overview
November 2022
DOE/LPO22-PPTv03

Official Use Only • Contains Business Confidential Information • Pre-Decisional and Deliberative Process

LPO Financing Programs

Project Types	Loan Program	Loan Types
Innovative Clean Energy	1703 ICE	Loan Guarantees
Advanced Transportation	ICE & ATVM	Loan Guarantees (Deployment) Direct Loans (Manufacturing)
Tribal Energy	TELGP	Direct Loans & Partial Loan Guarantees
Energy Infrastructure Reinvestment	1706 EIR	Loan Guarantees
CO₂ Transportation Infrastructure	CIFIA	Direct Loans



The Inflation Reduction Act & LPO

- ✓ Appropriates \$11.7 billion for LPO to support issuing new loans
- ✓ Increases existing loan program authority by approximately \$100 billion
- ✓ Appropriates \$5 billion for a new loan program—the Energy Infrastructure Reinvestment (EIR) Program—for up to \$250 billion in loans



Energy Infrastructure Reinvestment 1706 EIR

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.

Energy Infrastructure Reinvestment Continued

1706 EIR financing has the potential to support many transformative projects

How to Apply

- Rules and implementing guidance are forthcoming.
- In the interim, preliminary guidance regarding the EIR Program application process is available here:
<https://www.energy.gov/lpo/energy-infrastructure-reinvestment>
- Potential applicants with projects that could be eligible for the EIR program and are currently further along in development should become familiar with certain requirements applicable to all loans and loan guarantees issued under Title 17 Innovative Clean Energy solicitation:
<https://www.energy.gov/lpo/articles/innovative-clean-energy-loan-guarantee-solicitation-current>

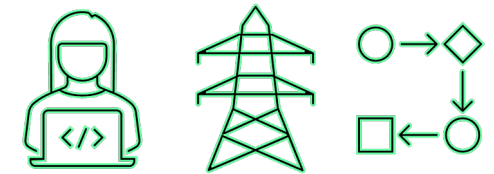
State Energy Financing Institution (SEFI) Projects



SEFI projects support deployment of a qualifying clean energy technology and receive meaningful financial support or credit enhancements from an entity within a state agency or financing authority. SEFI projects are not required to employ innovative technology.

The Future Of The Grid: Virtual Power Plants

- Large-scale aggregation of DERs
- At-Scale, aggregation of distributed energy generation, storage, and responsive loads for the purpose of a more efficient, clean, cost-effective, and resilient energy system.
 - Characterized by:
 - Grid Services
 - Aggregation
 - Distributed Energy Resources
- Learn more at: www.energy.gov/lpo/articles/sector-spotlight-virtual-power-plants



VIRTUAL POWER PLANTS

HESTIA

NATIONWIDE



Scaling up virtual power plants nationwide, Hestia expands access to rooftop solar, battery storage, and VPP-ready software.

**LOAN GUARANTEE:
CONDITIONAL
COMMITMENT**

FINANCED BY
U.S. DEPARTMENT OF
ENERGY



LPO
Loan Programs Office



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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Acting Director, Outreach and Business Development

gretchen.kittel@hq.doe.gov

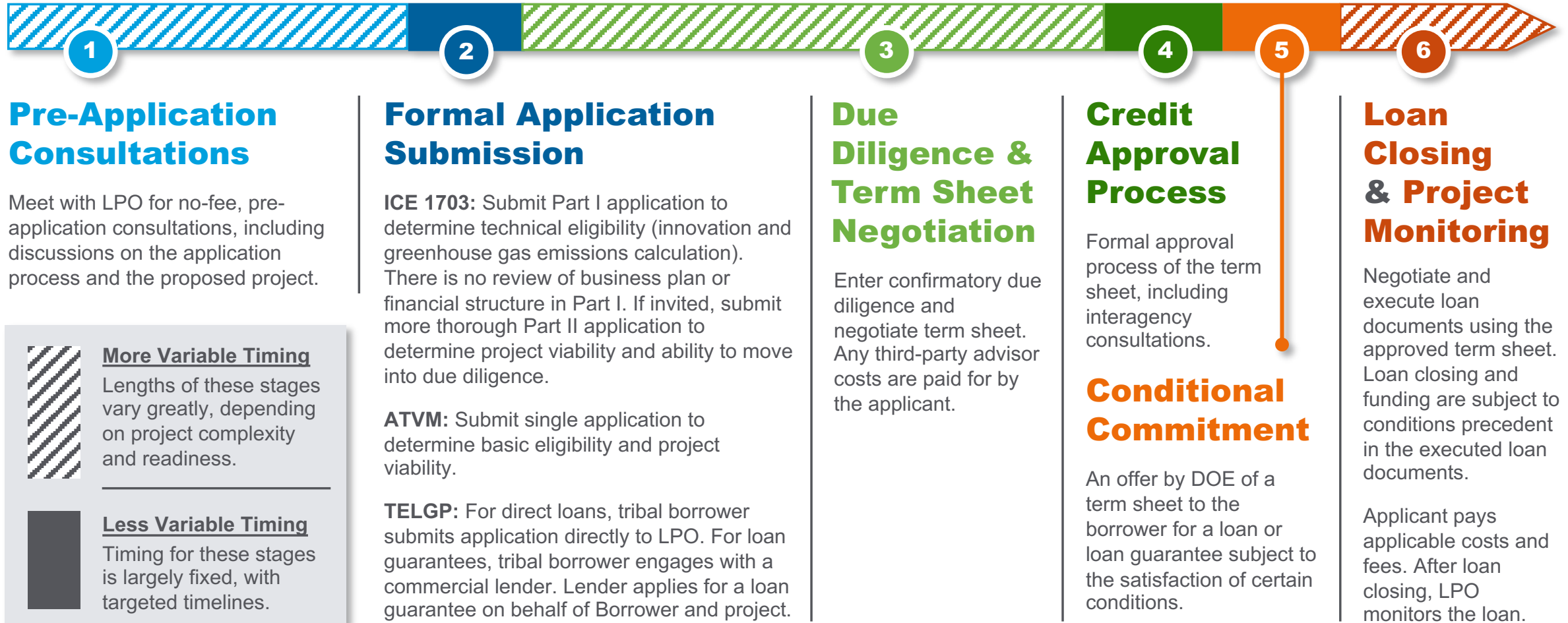


Additional Slides



The LPO Loan Transaction Process

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



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

CLIMATE & JOB IMPACTS

Attributable to LPO-Supported Projects*

OVER
9 MILLION MWh
OF CLEAN ENERGY PRODUCED

EQUIVALENT TO:

OVER
1 MILLION
HOMES POWERED

4 MILLION
TONS CO₂ DISPLACED

562,500
ADVANCED TECHNOLOGY
VEHICLES PRODUCED

EQUIVALENT TO:

8.5 MILLION
GALLONS GASOLINE DISPLACED

11.2 MILLION
TONS CO₂ DISPLACED



37,000
PERMANENT JOBS
CREATED



* Realized through FY2021

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

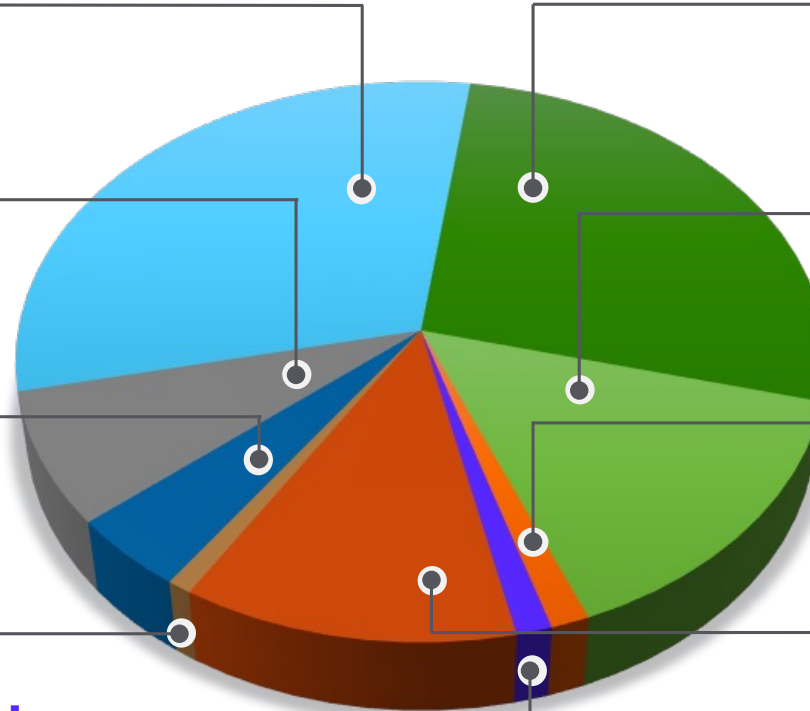
\$546 Million

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.



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.

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.

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-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 (1703 ICE)

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.

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

Eligibility

TELGP 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. TELGP is not a grant program and the borrower will be required to invest equity in the project.
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

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.

Session Survey

conferences.energycap.com/surveys

