

Vehicle Technologies Office (VTO): Implementing Solutions



Building an Equitable Clean Energy Future



Decreasing Transportation Emissions



Improving Transportation Affordability

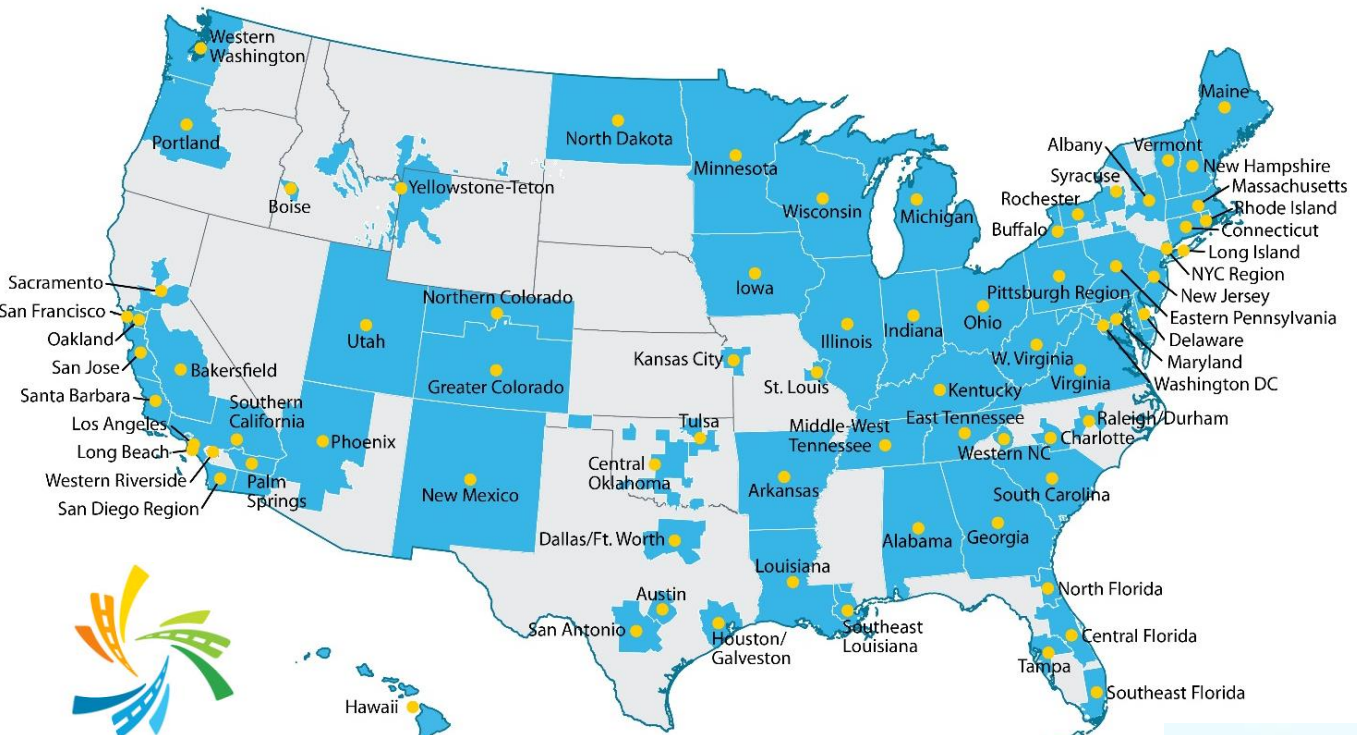


Promoting American-Made Energy Solutions



Creating Jobs and Economic Growth

Clean Cities and Communities, a U.S. Department of Energy partnership to advance clean transportation nationwide



Clean Cities and Communities

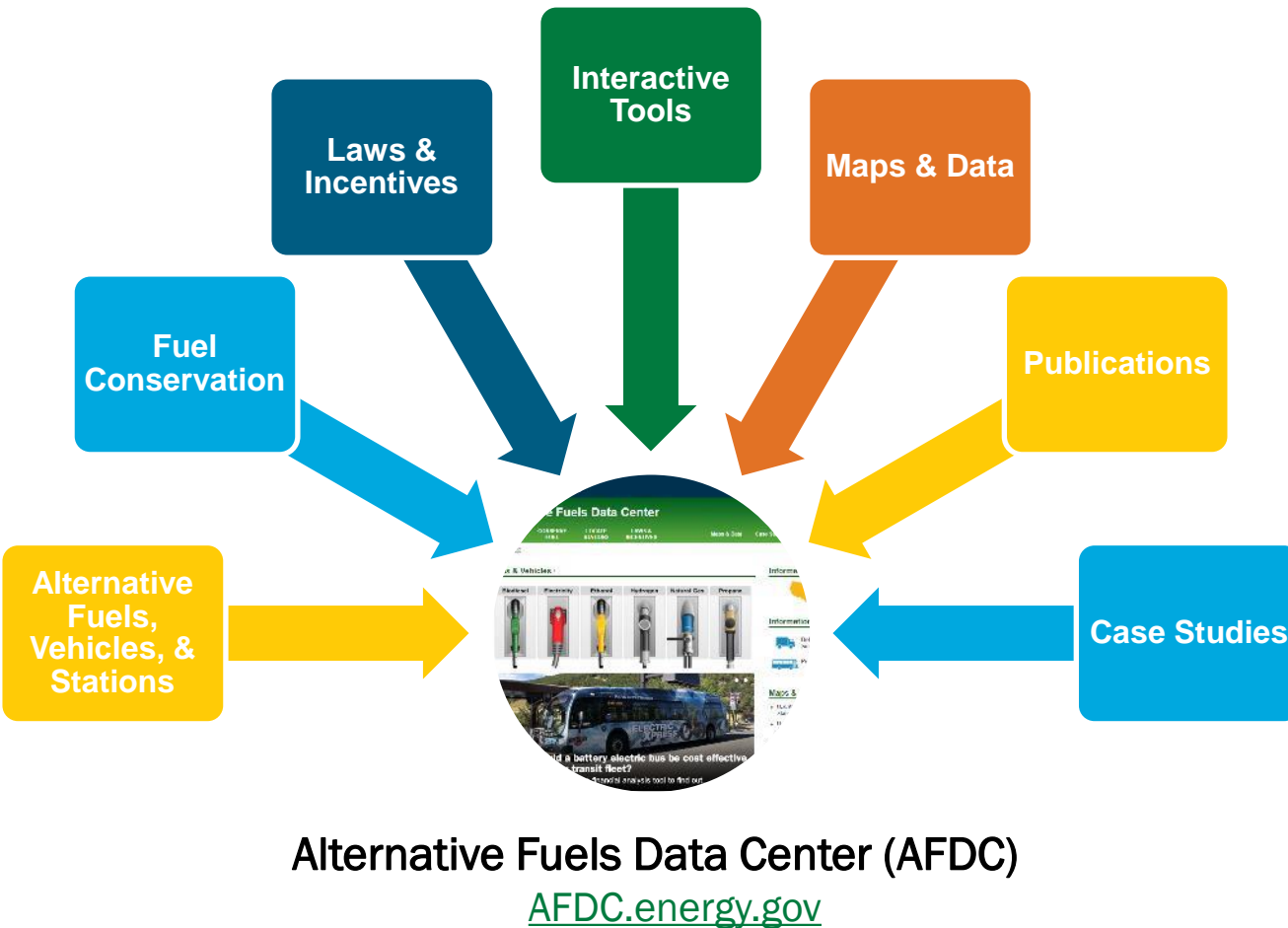
cleancities.energy.gov

Coalitions tailor projects to unique needs through partnerships with **20,000 stakeholders.**



Clean Cities coalitions act locally in **urban, suburban, and rural communities** to foster the nation's economic, environmental, and energy security and move our transportation systems into the clean energy future.

Technical Assistance from DOE Vehicle Technologies Office



FuelEconomy.gov

- Fuel Economy Guide
- Federal Tax Credits
- Find and Compare Cars
- Trip Calculator
- Fuel Cost Saving Calculator



TechnicalResponse@icf.com

Leveraging LPO To Supercharge Clean Tech Investments

LPO helps finance clean transportation and energy projects to commercial scale...

Wayne Killen & Tom Hucker

Senior Consultants

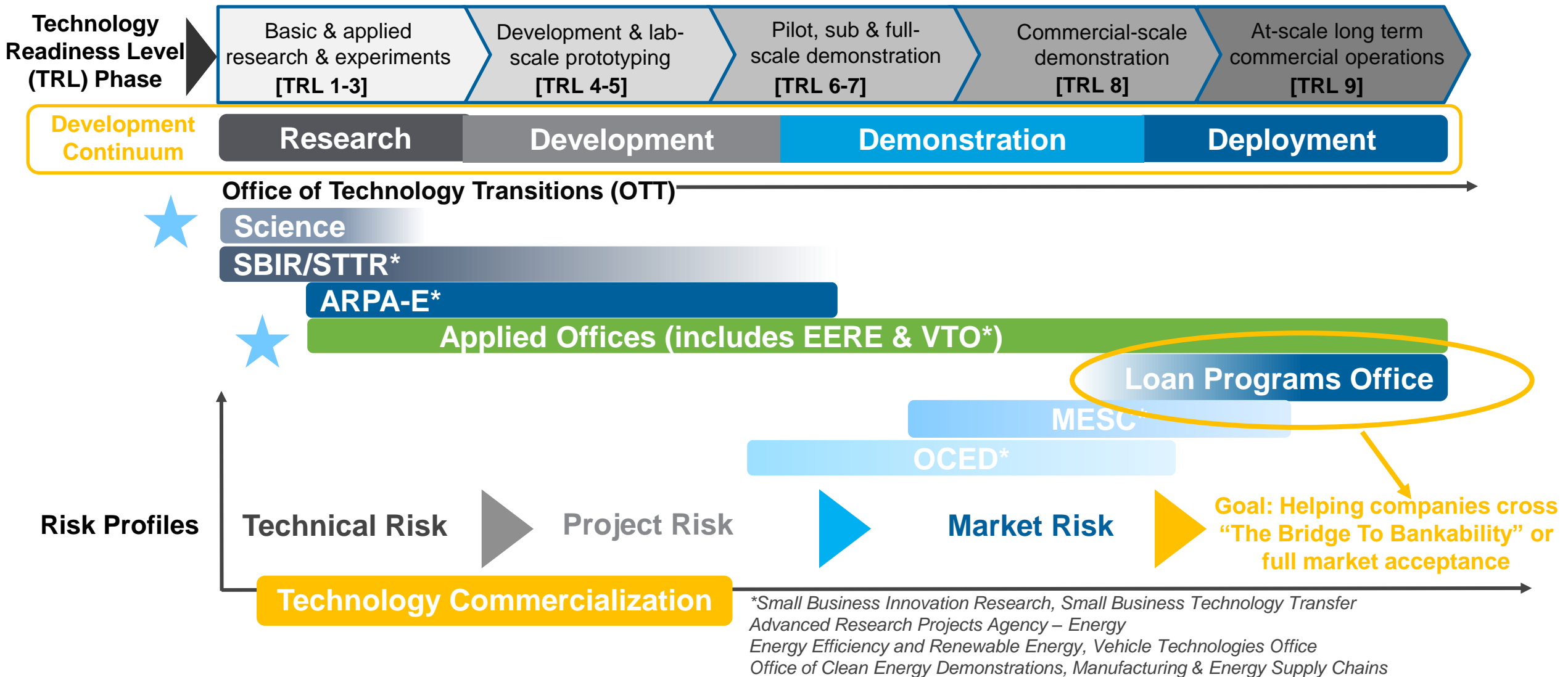
Outreach & Business Development

March 13, 2024

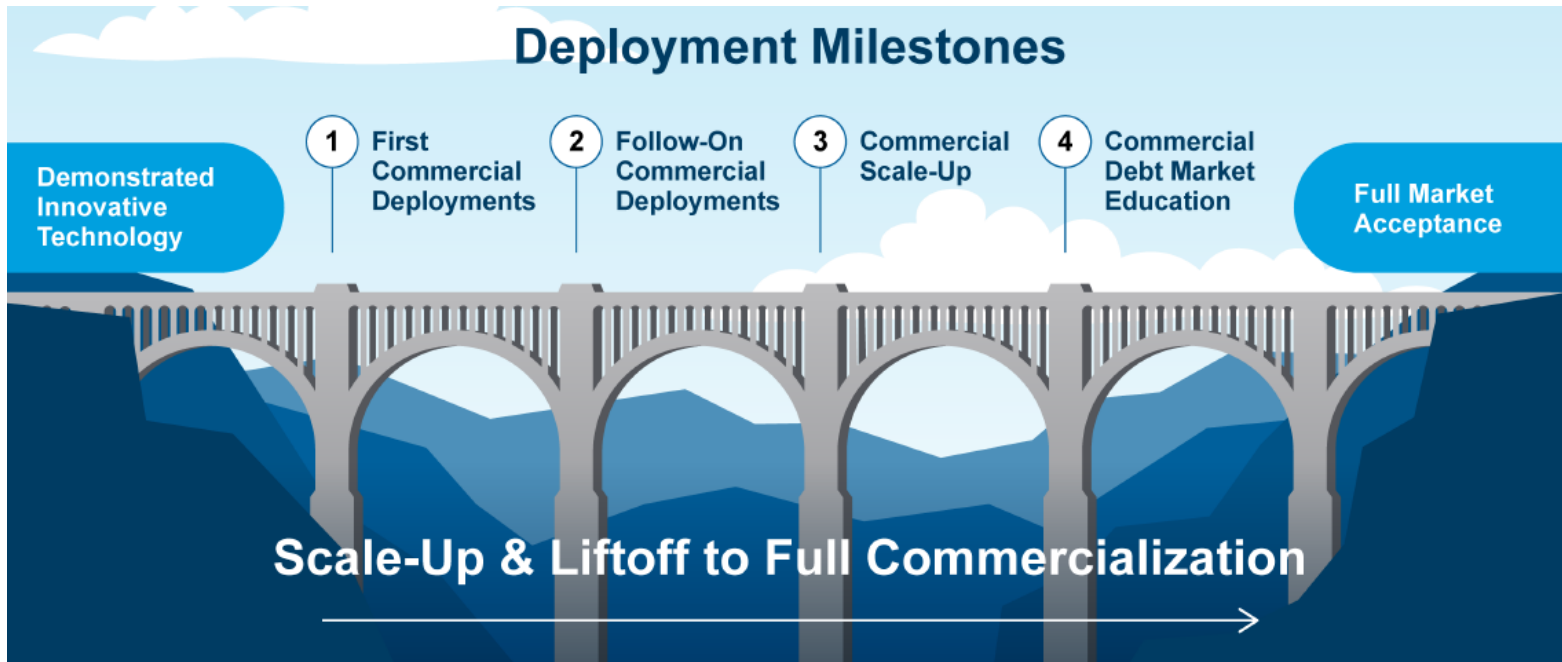
Clean Cities and Communities
Webinar



The DOE can support a variety of technology projects across development continuum – from research through deployment



The LPO Is A “Bridge to Bankability”



“ 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

LPO is a policy-driven bank offering differentiated financing



Access to Low-Cost 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.

Loan Activity Highlights, February 2024

203

ACTIVE APPLICATIONS ¹

\$261.8

BILLION IN LOANS REQUESTED ²

1.8

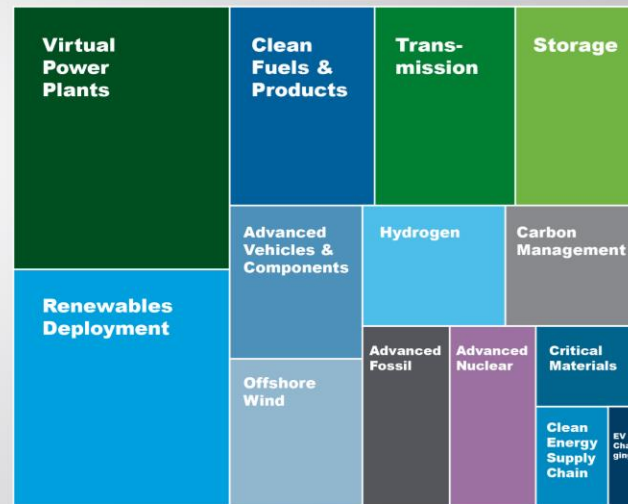
NEW APPLICATIONS PER WEEK ³

Notes
All data updated through February 29, 2024. For more details and a list of technology areas of interest within each LPO tech sector, see: [Energy.gov/LPO/MAAR](https://energy.gov/LPO/MAAR)

- 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.
- 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.
- 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.

\$261.8 BILLION

CURRENT AMOUNT OF LOANS REQUESTED BROKEN DOWN BY PROJECT TECHNOLOGY SECTORS



\$72.0 B

Remaining Loan Authority (Statutory)

\$60.0 B

Approximate Loan Authority Available ¹

\$49.3 B

Approximate Loan Authority Available ²

Estimated Remaining Loan Authority, as of February 29, 2024

Title 17 Clean Energy

- via the Title 17 Clean Energy Financing Program (1703)
 - Innovative Energy
 - Innovative Supply Chain
 - State Energy Financing Institution (SEFI)-Supported

Title 17 Energy Infrastructure Reinvestment

- via the Title 17 Energy Infrastructure Reinvestment (EIR) Program (1706)

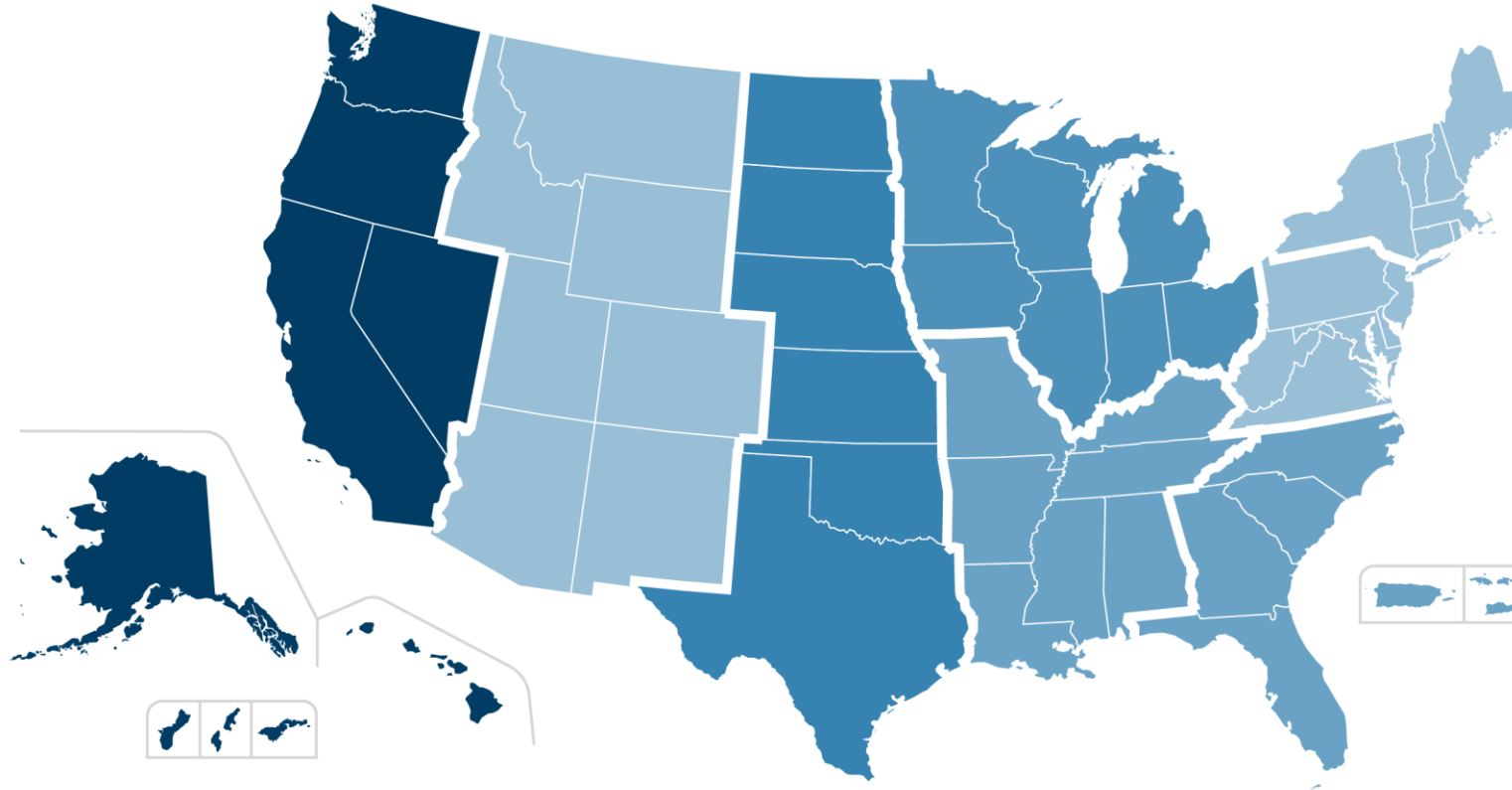
Advanced Transportation Financing

- via the Advanced Technology Vehicles Manufacturing Program (ATVM)



Monthly Application Activity Report

February 2024



203 ACTIVE APPLICATIONS¹ WITH
249 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	36
MIDWEST	IA, IL, IN, MI, MN, OH, WI	30
SOUTH	AL, AR, KY, LA, MO, MS, TN	27
SOUTHEAST	FL, GA, NC, SC (PR, VI)	26
MID-ATLANTIC	DE, MD, NJ, PA, VA, WV (DC)	24
MOUNTAIN	AZ, CO, ID, MT, NM, UT, WY	24
NORTHEAST	CT, MA, ME, NH, NY, RI, VT	24

Notes

All data updated through February 29, 2024. For more details and a list of technology areas of interest within each LPO tech sector, see: [Energy.gov/LPO/MAAR](https://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) Regions depicted are for representation purposes only and are not meant to denote LPO consideration of regional variation in project evaluation.



LPO supports manufacturing and/or deployment projects in a variety of clean energy/transportation sectors

	Title 17 Innovative Energy (Deployment or Manufacturing)	ATVM Advanced Transportation Vehicle Manufacturing
Scope & Requirements	<ul style="list-style-type: none"> Projects that bring technical innovation and GHG reductions versus “business as usual” in the U.S. (State Energy Finance Institution, SEFI, version of Title 17 waives innovation requirement) Commercial readiness, TRL8+ 	<ul style="list-style-type: none"> Light duty cars through on-road heavy duty trucks (vehicles, components, refueling hardware) Marine, rail, aircraft sectors for 2024 Fuel economy improvement or lower GHG <
Eligible loan expenses	<ul style="list-style-type: none"> Land, vehicles, equipment Construction and engineering costs Other set up and commissioning expenses As a service (i.e. asset purchase and construction costs billed to offtakers monthly) 	<ul style="list-style-type: none"> < < < NA

LPO Deployment Examples (not exhaustive)

Charging Infrastructure

- Equipment procurement (L2 through DC fast charging)
- Construction, installation, interconnect
- Site design, permits, etc. on-site storage



Microgrids and Virtual Power Plants @ charging site or building, behind or in front of meter

- Battery storage and renewable power generation
- Software
- Construction and installation costs



City Fleets

- Zero emission cars through heavy duty trucks (school, transit, refuse and other use cases)
- Charging infrastructure
- + Microgrids and VPPs, inc. V2G



Other examples

- Regional airport hydrogen production for aircraft
- Heavy duty EV trucks with DC charging hubs AAS
- Mobile high-capacity storage on a trailer for film production, construction and events (replaces diesel gensets)
- 100% SAF for net-zero aircraft

SEFI Opportunity – What is a SEFI?

“State Energy Financing Institution,” or “SEFI,” is an LPO designation for a State entity that provides financial support (grants or other types of support) to energy projects.

Potential SEFIs with Examples of recognized SEFIs



State Energy Offices

Ex. Pennsylvania Energy Development Authority



Housing Finance Agencies

Ex. Washington State Housing Finance Commission



Green Banks

Ex. Connecticut Green Bank



Economic Development Authorities

Ex. Alaska Industrial Development and Export Authority



Energy Funds/Lending Centers

Ex. Maryland Clean Energy Center



Other State Agencies

Ex. Ohio Air Quality Development Authority

Note: A local government or independent non-profit (non-quasi government) is generally not a SEFI.

What state agencies or quasi-public entities fund energy-related projects in your state?

SEFI Opportunity – Pathways to SEFI & Examples

For Companies and Project Developers: Potential applicants with a nexus to a state agency should talk to state officials about providing SEFI support so the project can apply to LPO through the SEFI project category.

For State Agencies: State officials who want to leverage LPO financing for energy projects should talk to LPO about SEFI status and consider how to RFP the private sector.

Project Examples

- Govt (State including airports, ports) (muni-incl. schools) --> solar, storage, EV infrastructure
- Commercial buildings: BEPS compliance
- Industrial decarbonization: e.g. cement
- Fleet Electrification: commercial or commuter, airport, municipal or school buses
- Multifamily housing including LMI – solar, storage, EV, Virtual Power Plants

Other LPO Financing Programs



Energy Infrastructure Reinvestment (EIR, 1706)

Projects that retool, repower, repurpose or replace energy infrastructure that has ceased operations or enable operating energy infrastructure to avoid, reduce, utilize or sequester air pollutants or GHG emissions



Tribal Energy (TELGP)

Financing for tribal energy projects



Transportation Infrastructure (CIFIA)

Large-capacity, common carrier CO2 transportation projects

Application process & other considerations

Application Phases

1. Pre-Application Consultation
2. Application Review
3. Due Diligence
4. Conditional Commitment
5. Financial Close
6. Monitoring

- **Application process timing (from Phase 2 onwards)**
 - ✓ ATVM, approximately 12+ months
 - ✓ Title 17, approximately 18+ months (2-part application process)
- **Suggested borrowing amounts: >\$100M+**
- **Typical debt to equity ratio: 50% to 70%**
- **Typical loan tenor: 5 – 10 years**
- **Terms and costs: No application fees**
 - ✓ Flexible amortization, multiple draws possible
 - ✓ ATVM - prevailing treasury note with 10 bp closing costs
 - ✓ Title 17 – Treasury rate plus 37.5 to 200 basis points (except EIR) plus facility fee of 0.6% up to \$2B
 - ✓ Both loans typically involve \$3M - \$5M in 3rd party advisor fees in due diligence











LPO can accommodate corporate or project finance applications as well as various applicant/sponsor types

Applicant type examples

1. Single Company
2. Multiple Companies inc. JV
3. Gov't with private entity
4. Multiple States or Cities with or without private entity
5. Others: School Districts, Ports, etc.



Title 17* Project Readiness Checklist

Part 1 focus	1) Technical Innovation, GHG Improvement	<i>Does the project include a key technical innovation(s) that also meaningfully reduces, avoids or sequesters GHG?</i>	
	2) Product	<i>Is the component and/or software at a TRL8 level of readiness (beyond prototype and demonstration samples or ready for commercial scale)</i>	
Part 2 focus, but status is important for Part I	3) Facility or Deployment	<i>Is the facility or deployment location(s) near complete and are contractors and engineers preparing project plans?</i>	
	4) Suppliers	<i>Are all key suppliers identified with contracts underway?</i>	
	5) Offtake	<i>Is there strong evidence of product sales?</i>	
	6) Equity	<i>Will cash or equity be available to complement the loan at closing?</i>	
	7) Financial Plan	<i>Is a viable financial plan in place that shows a clear path to cash flow positivity (and a reasonable prospect of loan repayment)</i>	
	8) Personnel	<i>Is the executive team in place and is there sufficient experience and staff to develop, launch and manage the project?</i>	

* For Title 17 Clean Energy Part I application: SEFI and EIR programs waive innovation requirement

The Next Generation of LPO Financing

Advanced Vehicles & Components	<ul style="list-style-type: none"> • Vehicles • Components • Lightweighting • Manufacturing
Biofuels	<ul style="list-style-type: none"> • Advanced Biofuels • Biodiesel • Cellulosic Biofuels • Renewable Diesel • Sustainable Aviation Fuel (SAF)
Critical Materials	<ul style="list-style-type: none"> • Extraction • Manufacturing • Mining • Processing • Recovery • Recycling
EV Charging	<ul style="list-style-type: none"> • Electric Vehicle (EV) Charging Infrastructure Manufacturing & Deployment
Hydrogen	<ul style="list-style-type: none"> • Generation • Infrastructure • Transportation
Onshore & Offshore Wind	<ul style="list-style-type: none"> • Offshore Wind • Onshore Wind Infrastructure
Renewable Energy	<ul style="list-style-type: none"> • Electrification • Geothermal • Hydrokinetics • Hydropower • Solar • Waste Conversion
Storage	<ul style="list-style-type: none"> • Electric Vehicle (EV) Battery Manufacturing • EV Bidirectional Storage • Newer Battery Chemistries & Flow Batteries • Compressed Air Energy Storage • Pumped Storage Hydropower • Thermal Energy Storage
Transmission	<ul style="list-style-type: none"> • Grid Efficiency • Grid Reliability • High Voltage Direct Current (HVDC) Systems • Offshore Wind Transmission • Systems Sited Along Rail & Highway Routes
Virtual Power Plants	<ul style="list-style-type: none"> • Grid Connected Distributed Energy Resources (DERs)
Advanced Fossil	<ul style="list-style-type: none"> • Carbon Feedstock Waste Conversion • Fossil Infrastructure Repurposed/Hybrid • Hydrogen Generated From Fossil Sources • Industrial Decarbonization • Synfuel
CCUS	<ul style="list-style-type: none"> • Carbon Capture, Utilization & Storage (CCUS) • Carbon Dioxide Removal (CDR)
Advanced Nuclear	<ul style="list-style-type: none"> • Small Modular Reactors • Micro Reactors • Nuclear Supply Chain • Nuclear Front-End





Let's Talk About Your Project...

Energy.gov/LPO

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