Investing with LPO

Introduction to DOE's Loan Programs Office

Introduction to LPO

The central challenge the United States faces in reaching its climate goals is a deployment challenge – not an invention challenge.

LPO provides a bridge to bankability for those technologies to cross the final milestones to commercialization:

- The first commercial-scale deployment, to address the engineering scale-up challenges and demonstrate technology effectiveness at scale;
- The next few commercial-scale deployments, to demonstrate the ability to mitigate construction risks and address engineering optimization;
- Commercial scale-up, to progress along the learning curve, lower costs, and establish customer demand;
- Commercial debt market education, to overcome private debt market misunderstanding and gain commercial debt access.

Introduction to LPO

LPO administers five major programs

- **Advanced Technology Vehicles Manufacturing** Loans and loan guarantees to support the manufacture of eligible vehicles and qualifying components
- **Innovative Clean Energy Loan Guarantee Program** Loan guarantees to accelerate the commercial deployment of innovative energy technology
- **Tribal Energy Loan Guarantee Program** Direct loans or partial loan guarantees to support tribal investment in energy-related projects
- **Carbon Dioxide Transportation Infrastructure Finance and Innovation (CIFIA) Program** *(New!)*
- **Energy Infrastructure Reinvestment (EIR) Program** *(New!)*

The value of working with LPO

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

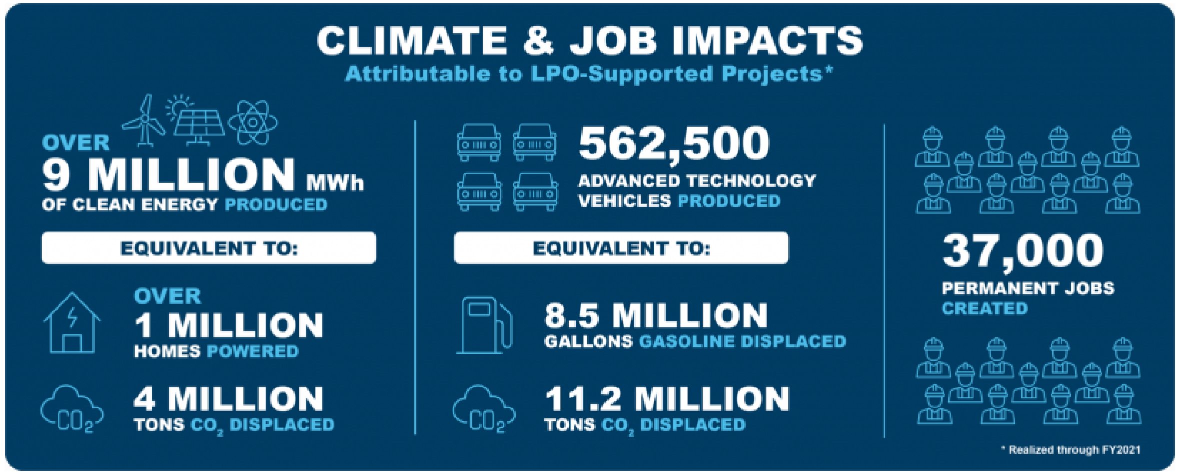
LPO is working with industry, communities, capital markets, and government entities to strengthen the ecosystem for clean energy deployment projects and yield actionable insights to inform DOE investments

Introduction to LPO

LPO Portfolio Performance Summary as of End of FY 2021

Loan & Loan Guarantees Issued	$35.69 billion
Conditional Commitments	$2.00 billion
Amount Disbursed	$31.17 billion
Principal Repaid	$12.08 billion
Interest Paid*	$3.80 billion
Actual and Estimated Losses	$1.02 billion
Losses as % of Total Disbursement	3.3 %

* Calculated without respect to Treasury's borrowing cost.



The LPO approach has been successful: achieving project milestones and overall project success while protecting taxpayer interests,

- Of the nearly $32 billion that has been disbursed to date, $13.61 billion in principal has been repaid, along with $4.21 billion in interest, versus losses of only $1.02 billion.
- These projects have created 37,000 permanent jobs.
- LPO electricity generation projects have combined to generate over 84 million MWh cumulatively, which is equivalent to displacing nearly 40 million tonnes of CO2 emissions.
- ATVM-supported projects have cumulatively displaced 19.2 billion gallons of gasoline, or the equivalent of 25 million tonnes of CO2.

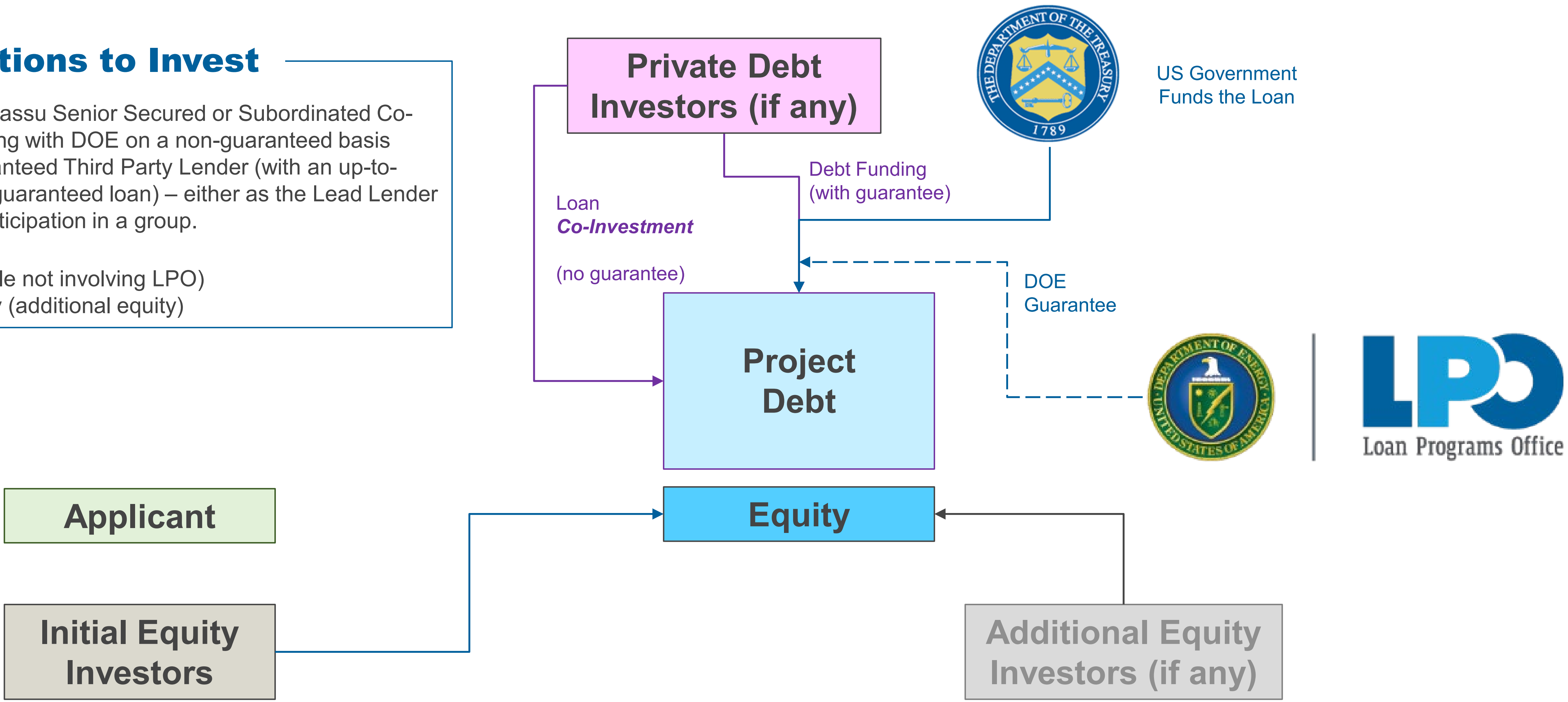
Opportunities to Invest with LPO

Investing with LPO

Options to Invest

- Pari-passu Senior Secured or Subordinated Co-Lending with DOE on a non-guaranteed basis
- Guaranteed Third Party Lender (with an up-to-90% guaranteed loan) – either as the Lead Lender or participation in a group.

(and while not involving LPO)
- Equity (additional equity)



How would this work?

Pre-Application

LPO Application / Investment Process

Post-Application

(6-18 months, on average)

(1-3 months, on average)

Investors need to contact applicants without LPO coordination.

LPO Conditional Commitment Announced

- LPO will work with potential co-investors (and, if appropriate, funders) to discuss options for syndication of loans. Applicants may also be open to bilateral discussions of additional equity or debt as well.

LPO Closes Loan

- After close, syndication stops, but LPO will work with potential co-investors (and, if appropriate, funders) to discuss options for secondary sales of loans. Applicants may also be open to bilateral discussions of additional equity or debt as well.

Questions LPO is currently considering

- Information
  - What info can LPO share? (and how – NDA? via the applicant? Etc.)
  - How will LPO inform capital markets participants of opportunities?
- Documents:
  - Co-lending agreements / standardized intercreditor agreements
  - NDAs – is it programmatic or deal-by-deal?
  - Constraints on 3rd party (unguaranteed) lenders (i.e., can they give longer tenors than the LPO? Different refinance dates, etc.)
- Staffing Considerations:
  - Who is the right LPO contact person?
  - How much staff time would this take?

- Catalyzation of future deals without USG involvement
  - Design of a program which will allow for capital markets "lift-off"

LPO Team and Investment Process

LPO Mandate and Objectives

LPO's Mandate

1. Support the Administration's objectives and other Federal government goals, particularly those involving national security and supply chain security by lending senior debt to the energy sector. As of June 2022, DOE has disbursed $32bn in loans and loan guarantees.
2. Ensure loans meet eligibility requirements of one of the lending programs
3. As a condition of loan approval, assure that each project proposed to be financed has a *reasonable prospect of repayment*, taking into account the risks inherent in the mandate to finance first-of-a-kind manufacturing and energy technologies as well as other risks associated with the project.
4. Responsibly facilitate the utilization of loan and loan guarantee authorities we have or will get to maximum taxpayer benefit through prudent and well-managed deployments and post-issue portfolio management vigilance

Administrative Objectives

1. Carbon free electricity by 2035
2. Net-zero carbon emissions by 2050
3. Environmental Justice 40
4. Build Back Better

LPO's Programs

Title 17 (1703)
Loan or Partial Guarantee

Innovative; and reduces, avoids, utilizes, or sequesters GHG emissions or air pollutants

Title 17 (1706)
Loan or Partial Guarantee

Energy Infrastructure Reinvestment Program, investments for operating and non-operating infrastructure

ATVM
Direct Loan

Reequip, expand, or establish manufacturing facility for eligible advanced technology vehicles (ATVs) or qualified ATV components; supporting OEMs, component suppliers, and materials

TELGP
Loan or Partial Guarantee

Support energy-related projects that are owned by a federally recognized tribe

CIFIA
Loan or Partial Guarantee

Offers access to capital for large-capacity common-carrier carbon dioxide transportation projects.

LPO Investment Principals

Leveraging the DOE Advantages

- There are valuable projects and/or transactions in the energy sector that the private capital markets cannot or will not invest in that are beneficial to the American economy.

- Through a robust investment process that includes significant due diligence and active portfolio management, LPO can underwrite a portfolio of below-investment grade loans to innovative energy companies and projects that are expected to experience defaults and loss rates appropriate to their rating.

LPO Investment Team

Organized in Functional Teams

Front Office

- Jigar Shah – Director
- Bob Marcum – Deputy Director
- Sheila Moynihan – Chief of Staff

+ 14 other employees and contractors

Origination

- Hernan Cortes – Director
- Dinesh Mehta – Deputy Director

+ 21 other employees and contractors

Outreach and Business Development

- Gretchen Kittel – Director

+ 17 other employees and contractors

Legal

- Becky Limmer – Chief Counsel

+10 other employees and contractors

Technical & Project Management

- Mike Reed – Director, Chief Engineer
- Mark Higgins – Deputy Director

+ 35 other employees and contractors

Risk Management

- Andrew McCabe – Director

+ 10 other employees and contractors

Portfolio Management

- Rupinder Kaur – Deputy Director

+ 30 other employees and contractors

Management and Operations

- John Lushetsky

+ 20 other employees and contractors

As of August 2022; represents actual staff not hiring authority

LPO Investment Team

… but assigned to cross-functional "pods"

Front Office
- Jigar Shah – Director
- Bob Marcum – Deputy Director
- Sheila Moynihan – Chief of Staff

+ 14 other employees and contractors

Origination
- Hernan Cortes – Director
- Dinesh Mehta – Deputy Director

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Outreach and Business Development
- Gretchen Kittel – Director

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Legal
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Technical & Project Management
- Mike Reed – Director, Chief Engineer
- Mark Higgins – Deputy Director

+ 35 other employees and contractors

Risk Management
- Andrew McCabe – Director

+ 10 other employees and contractors

Portfolio Management
- Doug Schultz – Acting Director
- Rupinder Kaur – Deputy Director

+ 30 other employees and contractors

Management and Operations
- John Lushetsky

+ 20 other employees and contractors

- Create cross-disciplinary teams based on application characteristics (technology, market, offtake risk, etc.)
- Have these teams (or "pods") work on similar transactions over time; goal 4+ pods
- Goal will be expedited decisions and problem resolutions; more clearly defined team-level goals and alignment of interest with the broad LPO objectives.

Example #1 – Mobility
- Grouping Characteristic: Manufacturing projects; Automotive Sector (including battery/charging; excluding fuel/bio-fuels); and Nuclear
- Pod members drawn from all major investment teams

Example #2 – VPP
- Grouping Characteristic: Distributed assets; co-lending / loan guarantee features; long-nominal but short expected tenors
- Pod members drawn from all major investment teams

Note: This is for illustration purposes only; and team members and pod-assignments may change over time

LPO Investment Process

High-Level Summary

Source a Proposed Transaction	Underwrite the Transaction	Approve the Transaction	Fund the Transaction	Manage the Transaction

There are 5 steps to our process

1. **Source the Transaction** – Meet with applicants, help them with process, industry engagement
2. **Underwrite the Transaction** – Does it meet the guidelines? Significant due diligence detailed in papers and presentations; risk and credit reviews; environmental reviews
3. **Approve the Transaction** – Intergovernmental consultations, oversight by DOE leadership
4. **Fund the Transaction** – Can be either direct (via the U.S. Treasury) or a loan guarantee to a third-party lender
5. **Manage the Transaction** – Liaison with the project; collaborate, surveil, and act as needed in the best interest of the U.S. Government

Pre-application consultations

- Meet with LPO for no-fee, pre-application consultations. This includes discussions on the application process and proposed project.
- Help the applicant figure out which LPO program (if any) their project could be eligible for:
  - T17 – loans and loan guarantees, currently requires an innovation and GHG reduction requirement
  - ATVM – direct loans to automotive manufacturers or component manufacturers
  - TELGP – loans and loan guarantee, requires the borrower be a federally recognized Indian tribe or Alaska Native Corporation, or Tribal Energy Development Organization
- Begin to categorize the potential project for determining which deal team will work on it based on:
  - Technology vertical (SMR Nuclear, CCUS, VPP, EV Supply Chain, etc.)
  - Project Characteristics (single-site manufacturing, distributed resources, etc.)
  - Project Risks (off-taker versus merchant risk, maturity risks, etc.)

Transaction Sourcing should also help the underwriting of the transaction if the applicants are well informed of how to engage the office

Deep Due Diligence and Utilization of that Diligence in Credit Decisions:

- LPO splits this up into 3 stages:
  - Part 1: Does this application meet the statutory requirements of the program?
  - Part 2: How well does this application meet the objectives? (Helps with prioritization)
  - Due Diligence: Significant credit underwriting of the transaction; environmental review; etc.
- With a robust Risk Management Processes throughout (credit determination; etc.)

This culminates in analyses which tends to include:

- Project summary
- Discussion of policy considerations;
- Project summary sheet;
- Discussion of the technology;
- Market assessment;
- Detailed description of project
- Participants, including the sponsor financing plan and financial assessment;
- Summary of the draft term sheet;
- Discussion of risks and mitigants

In addition, third-party advisors are engaged to aid in the underwriting and their reports are also utilized.

Interagency and Senior DOE Review

- LPO submits to the Office of Management and Budget (OMB) and the U.S. Department of the Treasury (U.S. Treasury) detailed information about the project.
- OMB reviews the transaction to support the estimation of the credit subsidy cost (present value of expected losses) of the loans and loan guarantees.
- U.S. Treasury also reviews transactions (and through the Federal Financing Bank as the funding arm)
- Project materials are also sent to the DOE Credit Review Board (CRB) composed of senior DOE officials
- The CRB will have previously been briefed on the transaction at various stages in the past; but at this stage they will then recommend the transaction for conditional commitment.
- After CRB approval, it goes to the Secretary of Energy for approval
- Letter offering Conditional Commitment (term-sheet) is issued to the applicant

DOE Credit Review Board

Secretary of Energy

Closing and Funding

To go from a term-sheet to a final transaction requires:

1. That the legal documentation for the loan and loan guarantees be drafted and approved by both DOE and the lender (U.S. Treasury if the U.S. Government, or the 3rd party lender)
2. Confirmation that all Conditions Precedent (CPs) to closing/funding are satisfied
3. That any changes in the deal be reflected in the LPO internal due diligence, interagency briefings, and postings to the DOE Credit Review Board
4. All required governmental accounting procedures have been followed
5. Approval by the Secretary of Energy to close the transaction
6. Closing – execution of all required documents
7. Coordination of any external affairs / media with the applicant, and Congressional notification
8. Funding the transaction (and LPO allows transactions to draw monies immediately or at a later time; and allows for multiple draws)

Robust Portfolio Management

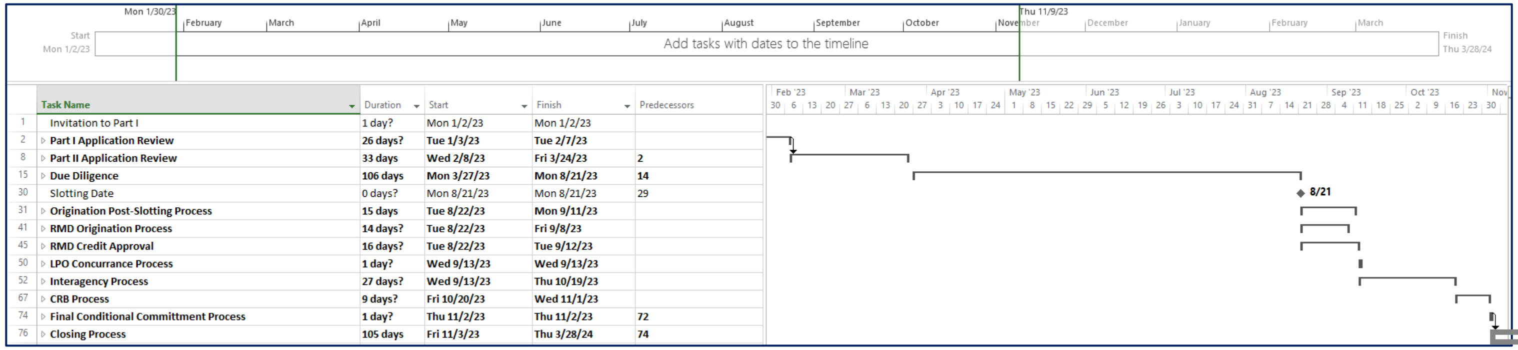
The Portfolio Management Division (PMD) leads LPO's loan monitoring process from hand-off from Origination after closing through the end of a loan term.

- PMD serves as the principal liaison between the borrower and LPO post-close; manages approval of disbursements, modifications, amendments, and other action requests; and monitors project cash flows to ensure debt repayment.
- PMD collaborates with in-house technical, environmental, risk management, and legal experts as well as outside advisors with the goal of ensuring project success throughout its operating life.
- PMD conducts proactive surveillance on the loan portfolio and routinely assesses the credit risk of its borrowers; and continues to update LPO's internal risk rating, which indicates the expected probability of default and loss.
- When borrowers present warning signs of distress, PMD acts by leading workout and remediation efforts to maximize recoveries. In some cases, additional recoveries were realized years after a defaulted loan exited the portfolio.
- Since LPO is making investments that support policy goals, LPO's position in the market is unique, as a public policy bank/investor. LPO has made the ongoing portfolio management more robust to ensure these projects, which may include lower credit and/or higher technology risks, succeed.

LPO Investment Process

Project Time-lines*

Source a proposed transaction | Underwrite the Transaction | Approve the Transaction | Fund the Transaction | Manage the Transaction



	Task Name	Duration	Start	Finish	Predecessors
1	Invitation to Part I	1 day?	Mon 1/2/23	Mon 1/2/23	
2	Part I Application Review	26 days?	Tue 1/3/23	Tue 2/7/23	
8	Part II Application Review	33 days	Wed 2/8/23	Fri 3/24/23	2
15	Due Diligence	106 days	Mon 3/27/23	Mon 8/21/23	14
30	Slotting Date	0 days?	Mon 8/21/23	Mon 8/21/23	29
31	Origination Post-Slotting Process	15 days	Tue 8/22/23	Mon 9/11/23	
41	RMD Origination Process	14 days?	Tue 8/22/23	Fri 9/8/23	
45	RMD Credit Approval	16 days?	Tue 8/22/23	Tue 9/12/23	
50	LPO Concurrance Process	1 day?	Wed 9/13/23	Wed 9/13/23	
52	Interagency Process	27 days?	Wed 9/13/23	Thu 10/19/23	
67	CRB Process	9 days?	Fri 10/20/23	Wed 11/1/23	
74	Final Conditional Committment Process	1 day?	Thu 11/2/23	Thu 11/2/23	72
76	Closing Process	105 days	Fri 11/3/23	Thu 3/28/24	74

Portfolio Surveillance and Management

*estimate only; actual time from Part I to financial close is highly dependent on project complexity and availability of information required from applicant.

Source Transaction
Part I Review
Part II Review
Due Diligence
Final LPO Approval Processes
Interagency Process
CRB Approval
Conditional Commitment
Closing Process
Post-Close Management

- Business Development / Outreach
- Origination
- Risk Management
- Technical & Project Management
- Portfolio Management
- Legal

"Deal/Pod Team"

Discussion of Credit Quality

Existing portfolio has an average rating of BBB-

- The bulk of the existing portfolio was originated prior to the end of the American Recovery and Reinvestment Act (ARRA) on September 30, 2011.
- At that time the weighted average credit rating of LPO's portfolio was BB-
- Based on Moody's default rates, the underwritten ratings of the projects implied a 15.5% default rate since 2011.
- However, LPO's portfolio performance has in fact recorded only a 7.1% cumulative default (which has netted to a 3.3% cumulative rate after recoveries) despite the inherent risks associated with manufacturing and new technology deployment.
- **Overall, the portfolio has realized nearly $3.2bn[1] more in interest paid than actual and estimated losses, and the portfolio has improved two notches from origination to FYE 2021 of BB- to BB+.**

This performance is likely indicative of a combination of the robustness of LPO's underwriting and oversight capabilities, and the conservative approach LPO has taken to selecting and modeling projects and approving financing.

1- As of June 30, 2022. Calculated without respect to Treasury's borrowing cost.

Portfolio Composition & Exposures

Historical Disbursement through FY21

- LPO has disbursed $31.2bn cumulatively through FY21
- LPO has received a cumulative $12.1bn in principal repayments plus an additional $3.8bn in interest payments
- Expected repayments on the existing portfolio will continue through FY44