DOE’s Loan Programs Office
Presentation to the
United States Energy Association
December 2013
Loan Programs Office Has a Strong Portfolio of Projects

Mission: Accelerate the U.S. commercial deployment of clean energy and advanced vehicle technology

Strong Portfolio: More than 30 projects with committed loan value of ~$32 billion

Diverse Portfolio: Loan authority for fossil energy, renewable energy, nuclear, and advanced vehicles

Solid Performance: Losses represent ~2% of total loans, loan guarantees, and commitments.

*The current portfolio includes loans, loan guarantees, and commitments.*
LPO Supports Commercialization of Innovative Technologies

Technology Maturity

Most

Technology Risk

Commercial Maturity

Least

LPO

Demonstration: DOE Applied Science Programs; Other USG Program Financing

Initial Commercial Deployment: LPO

Private Financing: Banks

R&D: DOE Labs

Fusion

Grid Storage

Fuel Cells

CCS

Biomass

Chemical Looping

Adv. Biofuels

Geothermal

2nd Gen Nuclear

CSP Solar

PV Solar

Wind

Conventional Fossil
The LPO Portfolio Has Strong Financial Performance

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Projects</td>
<td>More than 30</td>
</tr>
<tr>
<td>Total Loan / Loan Guarantee Amount Committed</td>
<td>More than $32 billion</td>
</tr>
<tr>
<td>Disbursed</td>
<td>$18.5 billion</td>
</tr>
<tr>
<td>Loan Loss Reserve Established by Congress</td>
<td>$10 billion</td>
</tr>
<tr>
<td>Losses As % of Total Loan Amount</td>
<td>Approximately 2%</td>
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<tr>
<td>Total Economic Investment Leveraged</td>
<td>More than $50 billion</td>
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LPO is one of the largest project finance team in the world supporting:

- One of the world’s largest wind farms: Shepherds Flat
- Several of the world’s largest solar generation facilities and nighttime solar storage systems:
  - Photovoltaic generation: Agua Caliente, Desert Sunlight
  - Large concentrating solar power plants with innovative thermal energy storage: Solana, Solar Reserve Tonopah
  - Largest solar thermal plant: Ivanpah
- Retooled three all-electric vehicle manufacturing facilities: Tesla, Nissan, and Ford
- One of the country’s first commercial-scale cellulosic ethanol plants: Abengoa Biomass
- First nuclear power plant to begin construction in the US in the last 30 years: Vogtle
LPO Launched Utility-Scale Photovoltaic Market in the U.S.

Five LPO Projects
- 1,510 MW
- $4.6 Billion in Loans

2010

2011

2012

2013

Ten Privately Financed Projects
- 2,488 MW

1705 Program Ends

Zero Projects

U.S. Projects > 100MW
LPO Has More than $40 Billion in Remaining Loan Authority

*Includes nuclear generation and front-end nuclear projects.
**Imputed loan authority. Actual loan volume will depend on actual credit subsidy rates for projects.
Next Steps: Advanced Fossil Energy Projects Solicitation

LPO Provides Project Finance Debt Capital
- $8 Billion in Loan Guarantee Authority for Fossil Energy
- Long-Term Financing Available

What is an Advanced Fossil Energy Project?
- Projects Must Be Innovative, Utilize Fossil Energy
- Reduce Greenhouse Gas Emissions
- Located in U.S. with Reasonable Prospect of Repayment

Timeline for Accepting Applications
- Draft Solicitation Published in June 2013
- Final Solicitation Expected Winter 2013
- Applications Accepted When Final Solicitation is Published
The Advanced Fossil Solicitation Has Broad Applicability

- **Projects May Utilize any Fossil Fuel**
  - Including, but not limited to, coal, oil, natural gas, shale gas, coal bed methane, and methane hydrates

- **Covers the Full Fossil Fuel Value Chain**
  - Projects can include, but are not limited to, extraction, generation, greenhouse gas removal, and efficiency improvements

- **Solicitation is Open to a Wide Variety of Applicants**
  - Power plants, mines, refineries, utilities, project developers, and factories
  - Public and Private Sector infrastructure, such as universities, airports, and hospitals
  - Others
The Advanced Fossil Solicitation Covers Four Technology Areas*

**Advanced Resource Development**
- Coal-bed methane recovery
- Novel oil and gas drilling

**Low Carbon Power Systems**
- Chemical looping or process that isolate fuel from air during combustion
- Fuel cells which convert chemical energy into electricity without combustion

**Carbon Capture**
- CO$_2$ capture from traditional coal or natural gas electricity generation
- Permanent geologic storage or utilization in enhanced oil recovery (EOR)

**Efficiency Improvements**
- Combined heat and power (CHP) and waste recovery
- High-efficiency distributed fossil power systems, and microgrids

*Qualifying projects may include but are not limited to the technologies within.
Final Thought: LPO Can Provide a Bridge for U.S. Energy Innovation

For further information on LPO, please visit: [www.lpo.energy.gov](http://www.lpo.energy.gov)