National Laboratory of the Rockies

Strategies for Successful Energy Project Financing

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April 29, 2026

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Agenda

1. Project Financing Overview
2. Ownership Models
3. Funding and Financing Sources
4. Braiding and Stacking Considerations
5. Conclusion

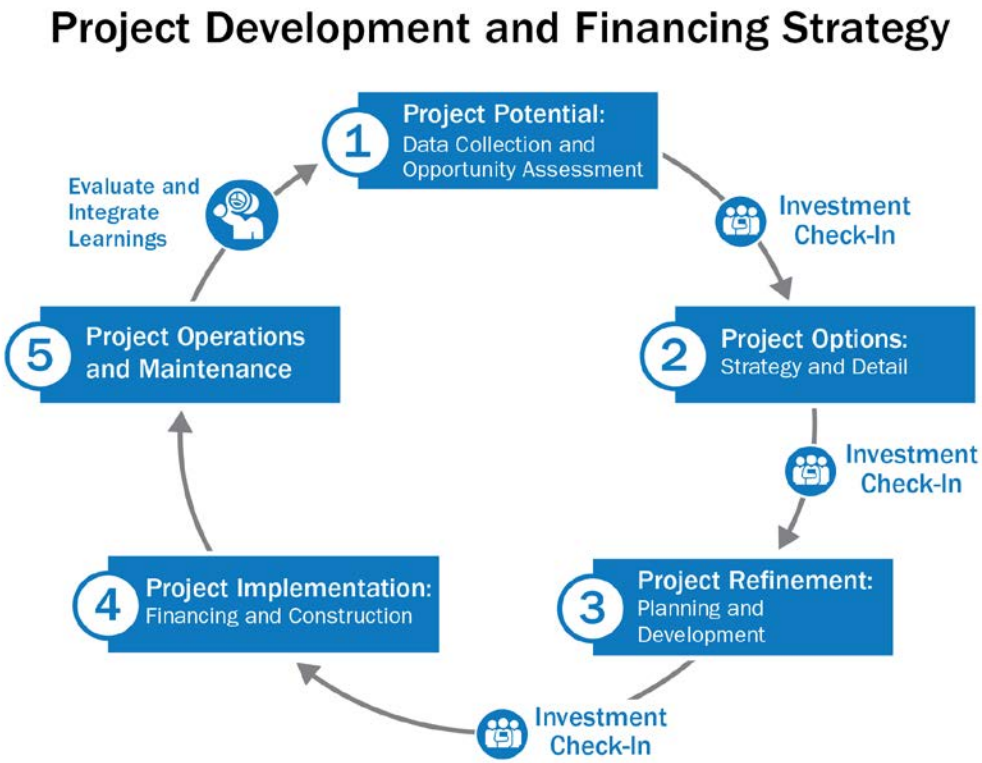
Today's Objectives

- **We aim to equip you with an understanding of:**
  1) How financing fits into the project development timeline/cycle
  2) Key characteristics of different ownership models and how they impact project economics and community impact
  3) Different private capital provider types and their main objectives
  4) Compliance considerations for braiding and stacking capital sources
- **Key Takeaway:** Achieving affordable, timely financing for projects requires a comprehensive understanding of (1) project objectives, (2) capital needs and constraints, (3) timeline goals and constraints, and (4) internal capacity.

Project Financing Overview

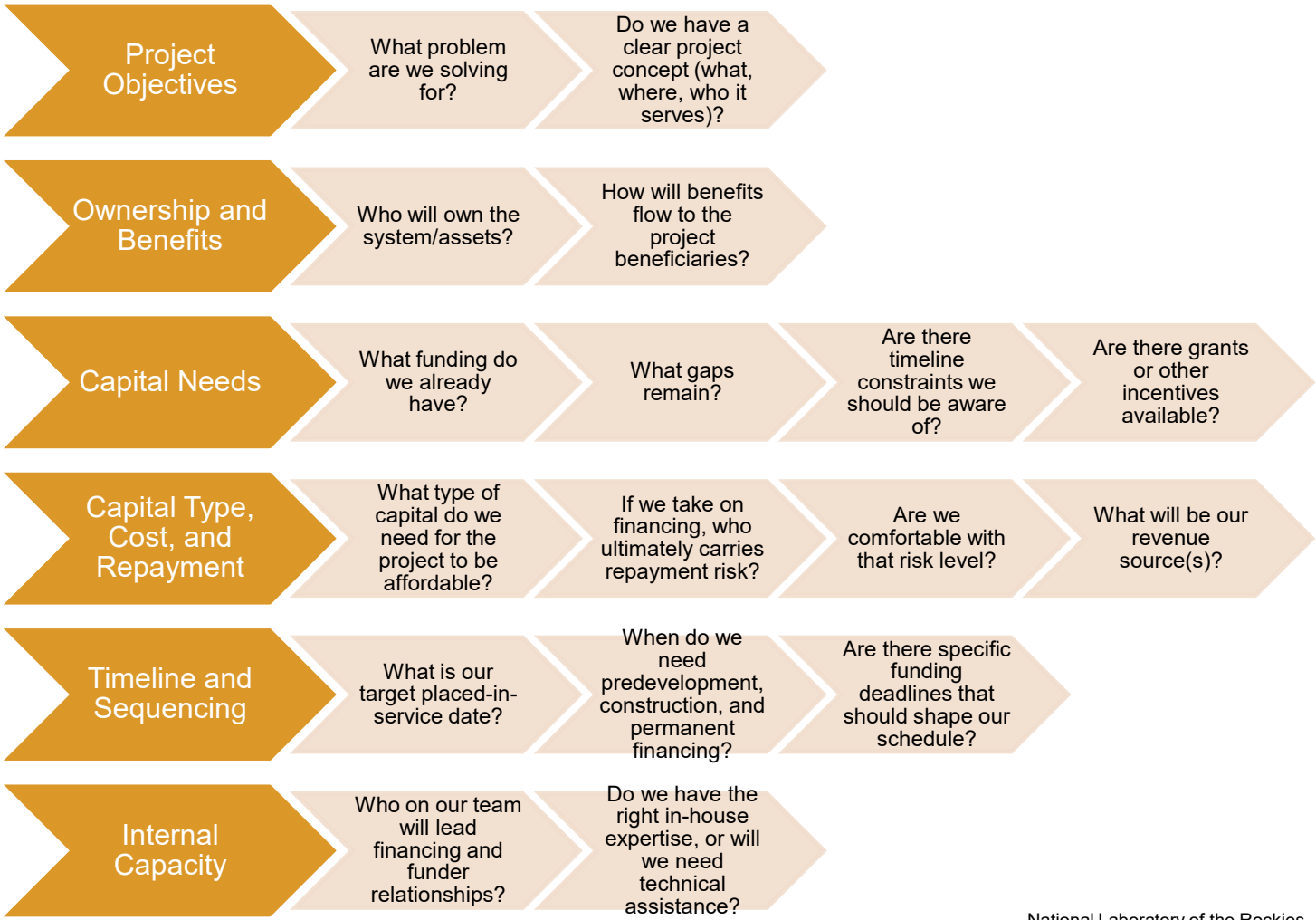
Project Development Cycle

- Process of realizing a **specific, actionable solution** from **multiple options**
- Project development is **iterative**
- **Focuses** on **incremental investments** to progressively resolve **key risks**
- Having a **project champion** ensures **effective, collaborative engagement** with key project stakeholders



Source: NLR

Guiding Questions



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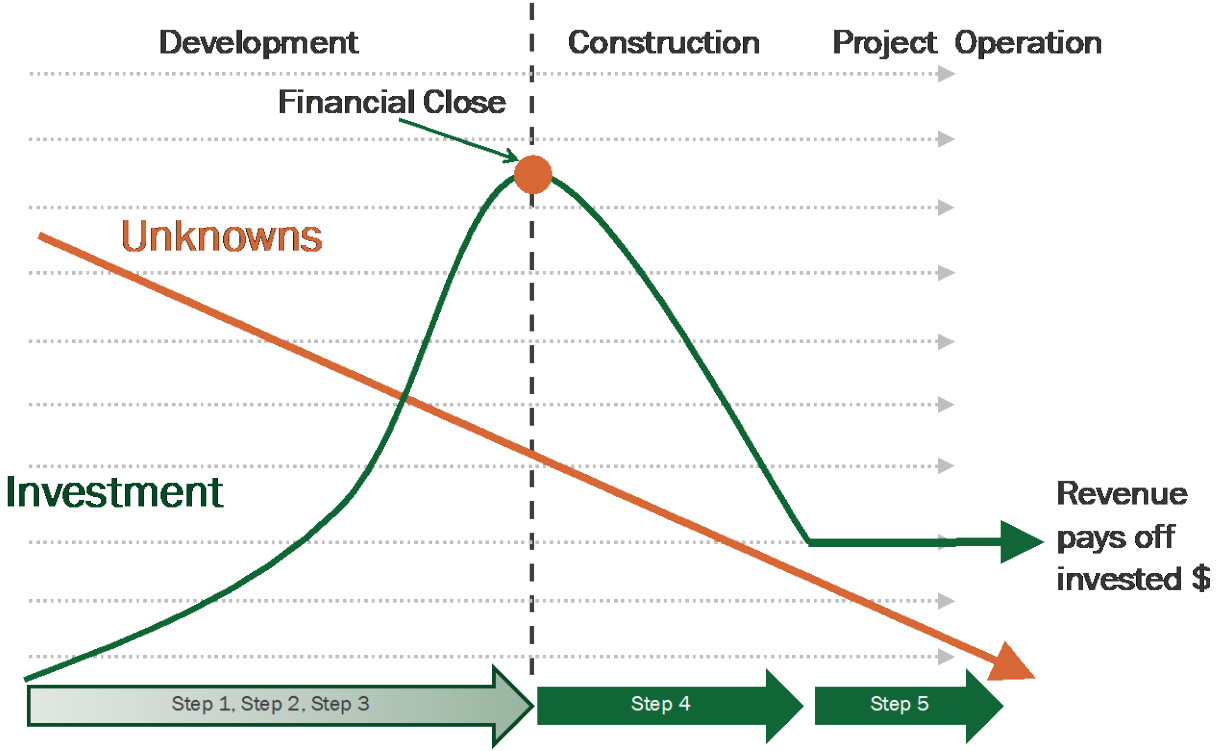
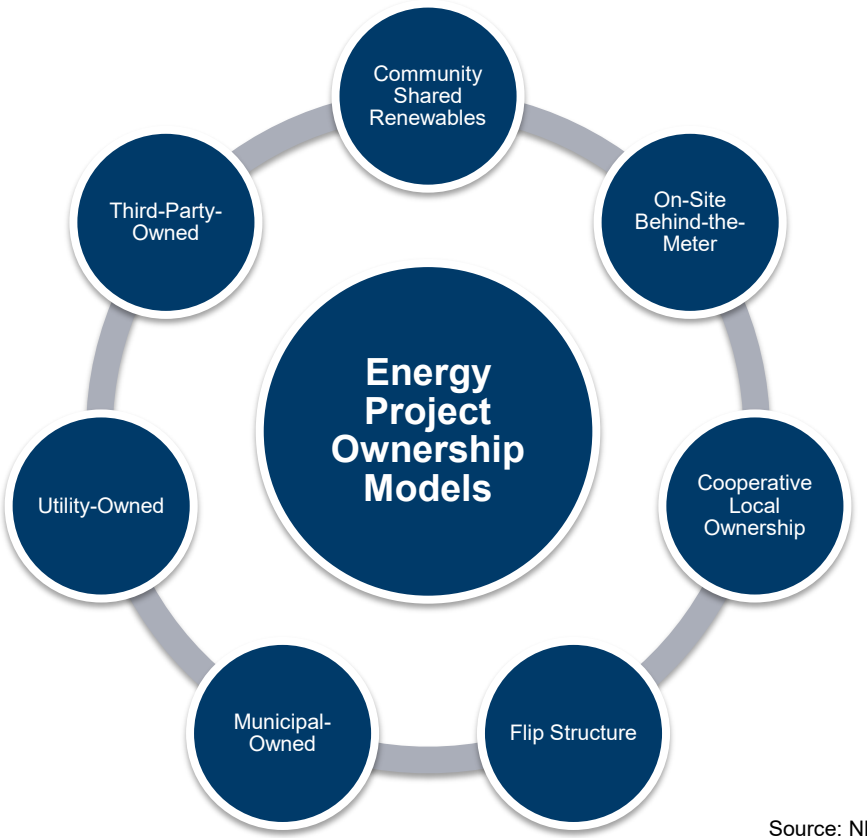
Incremental Project De-Risking Helps Attract Additional Capital



Source: NLR

Ownership Models

Overview of Ownership Models



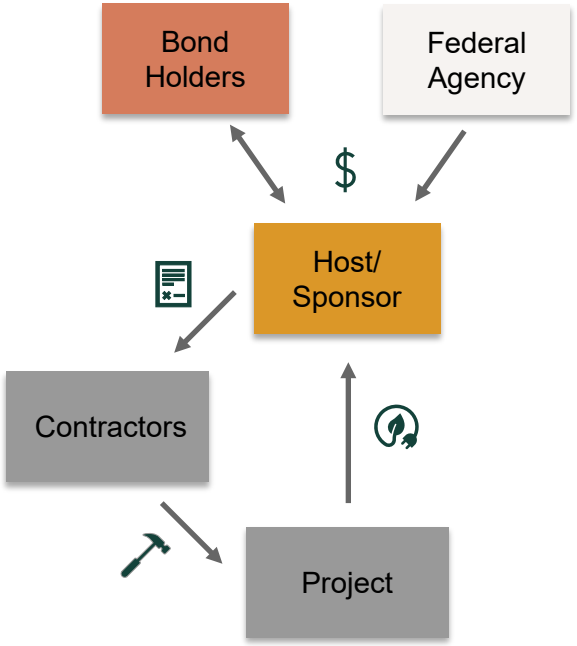
Source: NLR

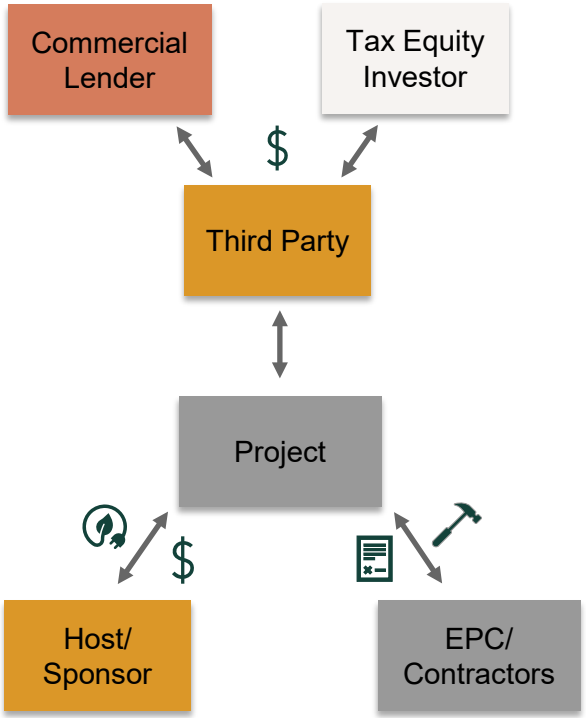
Elements to consider when choosing an ownership model:

- Community characteristics
- Budget and financial capacity
- Technical expertise
- Risk tolerance
- Timeline and scale
- Flexibility and control
- Legal/regulatory landscape which impacts project economics, technology selection, siting, etc.

Example: Microgrid

	Sponsor/Host	Third Party
Ownership:		
Governing Contract(s):	Financing and Construction Agreements	Power Purchase Agreement / Lease





Example: Microgrid

	Sponsor/Host	Third Party
Ownership:		
Governing Contract(s):	Financing and Construction Agreements	Power Purchase Agreement / Lease
Capital Stack	Debt (e.g., municipal bonds) Sponsor equity Tax credit direct pay	Commercial loan Third-party equity Tax equity investor
Cost of Capital	$	$$$
Revenue Streams	• Tax credits • Operational savings • Resilience benefits	• Tax credits • Power purchase agreement or lease payments • Grid services

Funding and Financing Sources

IRA Tax Credit Update

Policy Changes

- **Accelerated Rollbacks**
  - Early phase-out of IRA tax credits
  - EV and residential energy incentives ending 2025-2026
- **Stricter Project Eligibility Rules**
  - New FEOC restrictions
  - “Material assistance” thresholds
- **Compressed Timelines**
  - Some projects must begin construction before July 2026
  - Faster qualification deadlines across credits

Project Implications

- **Increased Financing Complexity**
  - More diligence on ownership and supply chains
  - Potentially higher transaction and compliance costs
- **Shift in Investable Technologies**
  - Reduced support for certain energy types (wind, solar)
- **Domestic Supply Chain Emphasis**
  - Stronger U.S. content requirements
  - Manufacturing strategy more critical

Disclaimer: This summary is provided for informational purposes only and does not constitute legal, tax, or financial advice. Please consult qualified advisors regarding your specific circumstances.

Capital Provider Types

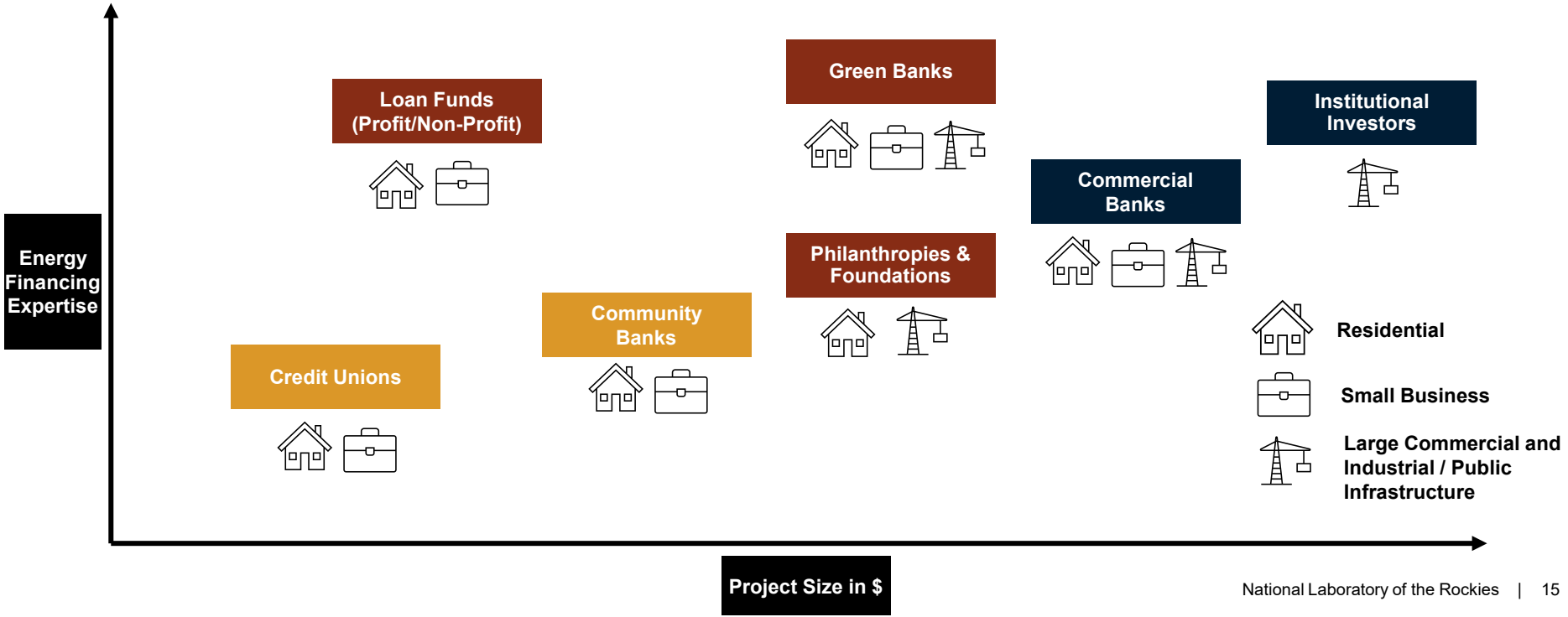
There are three key categories of capital providers to be aware of. Note:

- Community Development Financial Institutions (CDFIs) can include credit unions, community banks, loan funds, and venture capital funds.
- Similarly, Impact Investors are categorized by their “impact-first” approach and can include foundations, institutional investors, and more.

Local Financial Institutions	*Mission-Driven Capital*	*Market-Scale Institutional Capital*
Credit Unions	**Philanthropies & Foundations**	**Commercial Banks**
Community Banks	**Green Banks**	**Institutional Investors**
	Loan Funds (Profit/Non-Profit)	

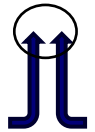
Matching Typical Expertise With Project Scale

Understanding Provider Sector Expertise and Typical Project Size Is Critical for Finding the Most Appropriate Source of Financing



Braiding and Stacking Considerations

KEY TERMS



	Blending	Commingling	Braiding	Stacking / Sequencing	Co-funding
Funding sources federal non-federal			or		
Timing	Simultaneous	N/A (not allowed)	Simultaneous	Sequential	Simultaneous
Measure vs. project	Project or Measure		Project	Project	Measure
Other funds included in budget grantees submit to DOE	Yes		No	No	No
Spending / outcomes reported separately	No	No	Yes	Yes	Yes
Federal requirements	All funds must meet federal requirements.	N/A (not allowed)	Federal funds subject to most stringent federal fund requirements associated with the project; non-federal funds subject to their own requirements.	It depends. Generally, funds are subject to their own requirements but there may be some crossover of federal requirements.	Generally, all funds must meet the most stringent requirements associated with the measure.

Source: SEO Guide to Braiding and Stacking

Considerations for Combining Capital with Federal Sources

General Compliance Requirements

- Federal funding streams must always be applied & tracked separately
- Different requirements exist across programs for compliance with laws and regulations (e.g., National Environmental Policy Act (NEPA), Davis-Bacon Act (DBA))
- Recipients cannot intentionally segment projects to avoid compliance requirements

Timing and Recipient Eligibility

- Different programs have different deadlines for applications, reporting, and allowable uses of funds
- Eligibility and recipient requirements differ across programs

Administrative and Financial Management Best Practices

- Track and develop a plan to meet the requirements of each funding source
- Maintain open channels of communication
- Ensure administrative costs are fully covered by the dedicated funds associated with each program

Conclusion

Takeaways

- A “project champion” spearheads project stakeholder engagement and applies expertise to seek incremental investment that progressively resolves key risks.
- Ownership model decisions are driven by a variety of factors ranging from community characteristics to technical expertise to regulatory influence.
- Understanding the characteristics and objectives of different private capital provider types is essential for efficiently seeking the appropriate funding/financing.
- When applying federal funding a project, it must always be applied and tracked separately from other sources.
- Successful financing for energy projects requires a strong understanding of (1) project objectives, (2) capital needs and constraints, (3) timeline goals and constraints, and (4) internal capacity.

Questions?

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NLR/PR-7A40-100034

This work was authored by the National Laboratory of the Rockies for the U.S. Department of Energy (DOE), operated under Contract No. DE-AC36-08GO28308. Funding provided by the DOE's Office of Energy Efficiency and Renewable Energy, Energy Grid Integration Office. The views expressed in the article do not necessarily represent the views of the DOE or the U.S. Government. The U.S. Government retains and the publisher, by accepting the article for publication, acknowledges that the U.S. Government retains a nonexclusive, paid-up, irrevocable, worldwide license to publish or reproduce the published form of this work, or allow others to do so, for U.S. Government purposes.

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Appendix Slides

Sources for Finding Funding and Financing

- DSIRE: Database of State Incentives for Renewables and Efficiency. Example: Energy Efficiency Revolving Loan Fund (EE RLF) program
- Community Power Accelerator: An online platform developed by DOE and NLR, now managed by the Milken Institute, for distributed PV, storage, and microgrid projects to connect with capital
- DOE Better Buildings Financing Navigator: The Navigator is an online tool that helps public and private sector organizations find financing solutions for energy reduction and onsite generation projects.
- AFFORD Tool: A tool designed to identify, compare, and prioritize federal funding, tax credits, and other incentives.
- USDA Energy Programs: Our programs, authorized by the Agricultural Act of 2014, offer funding to complete energy audits, provide renewable energy development assistance, make energy efficiency improvements and install renewable energy systems.
- EPA Energy Financing Toolkit for Decisionmakers: This toolkit provides profiles of energy financing programs that state and local governments are pursuing to catalyze investment in energy. This introductory information is intended to help decisionmakers understand the basics of a range of financing programs across multiple sectors, view examples from state and local jurisdictions, and access additional resources to learn more.

Overview of Financing Mechanisms

	Availability	Complexity	Providers	Potential Instruments
1. Grants	Low	Low - Medium	Governments, Private Entities, Development Banks	Grants, contingent grants, loan forgiveness • Often require matching funds and/or have restricted uses • Good in early stage or limited scope applications (i.e. feasibility study, pilot)
2. Equity	Varies	Medium - High	Project Sponsor, Private Investors	Ordinary or preferred shares, Tax equity • Private investors may purchase stakes in projects or assets • Sponsor equity often finances early development activities
3. Debt	High	High	Governments, Capital Markets, Commercial Lenders	*Public*: Municipal & Green Bonds, CDFIs , DOE Loan Programs, Property Assessed Clean Energy *Private*: Loans, private placement, on-bill financing • Generally available from financial close through project lifetime
4. Credit Enhancement	Medium	High	Governments, Development Banks	Loan Loss Reserves, Loan Guarantees, Debt Service Reserves, Interest Rate Buy-down • Reduces risk for traditional lenders • Use public funds to mobilize larger amounts of private capital
5. 3rd Party Ownership	Medium	Varies	Energy Service Providers	Energy as a Service, Equipment Leases, Privatization • Shifts upfront cost to 3rd party provider • Can also shift operating responsibility to 3rd party • Provides long term predictability to sponsor/host

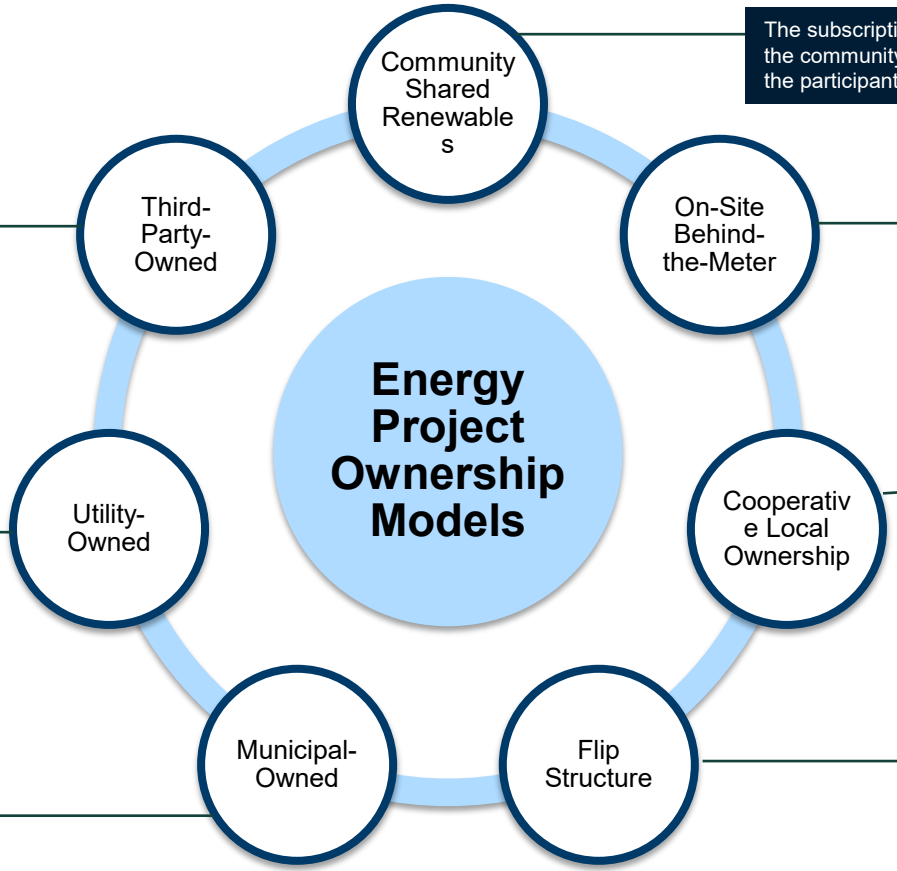
Sources: EPA Clean Energy Finance Tools, DOE Office of Indian Energy, State & Local Energy Efficiency Action Network, Green Rhino Energy Instruments & Sources for Renewable Energy Projects

Project Value Streams

	Availability	Complexity	Potential Formats
1. Contracted Revenue	High	Medium	Power Purchase Agreements, Energy Services Contracts, Lease, Subscription • Provide longer term income security • Often necessary for debt financing
2. Incentives	Medium	Low	Federal & State Tax Incentives (ITC, PTC); Utility Programs (Demand Response, Rebates) • Improves project economics but likely will not cover full cost
3. Energy Markets	High	High	Real Time & Day Ahead Energy, Grid Services, Capacity Market • Available revenue depends on geography and associated system operator • Often requires sophisticated hardware and/or operations staff
4. Ratepayer Bills	High	Medium - High	Monthly customer utility bills • Likely regulated by state utility commission • Effective for capital-intensive projects with distributed benefits
5. Carbon/RE Credits	Low	Medium	Carbon credits associated with project activities • Dependent on state policies on renewable portfolio standards • Improves project economics but sponsor can't claim environmental attributes
6. Resilience Benefits	Varies	Low - Medium	Avoided losses, Improved quality of life • Ability to provide critical services, respond quickly, and suffer less negative impacts during increasingly prevalent extreme events

Sources: EPA Clean Energy Finance Tools, DOE Office of Indian Energy, UNEP Public Finance Mechanisms to Catalyze Sustainable Energy Sector Growth

Ownership Model Deep Dive



The subscription represents a portion of the generation from the community solar project and often translates to savings on the participant's electric bill.

An electricity customer installs and owns a renewable project on the customer side of the meter to supply on-site power and thereby displace power purchased from the utility.

Local participants pool their resources into an LLC to own and operate the project while selling output to the local utility to incorporate into its grid mix to serve all customers.

Investors without tax liability bring in a tax-motivated corporate equity partner to own most of the project for the period of tax credits (6-10 years) and then "flip" project ownership to the local investor thereafter.

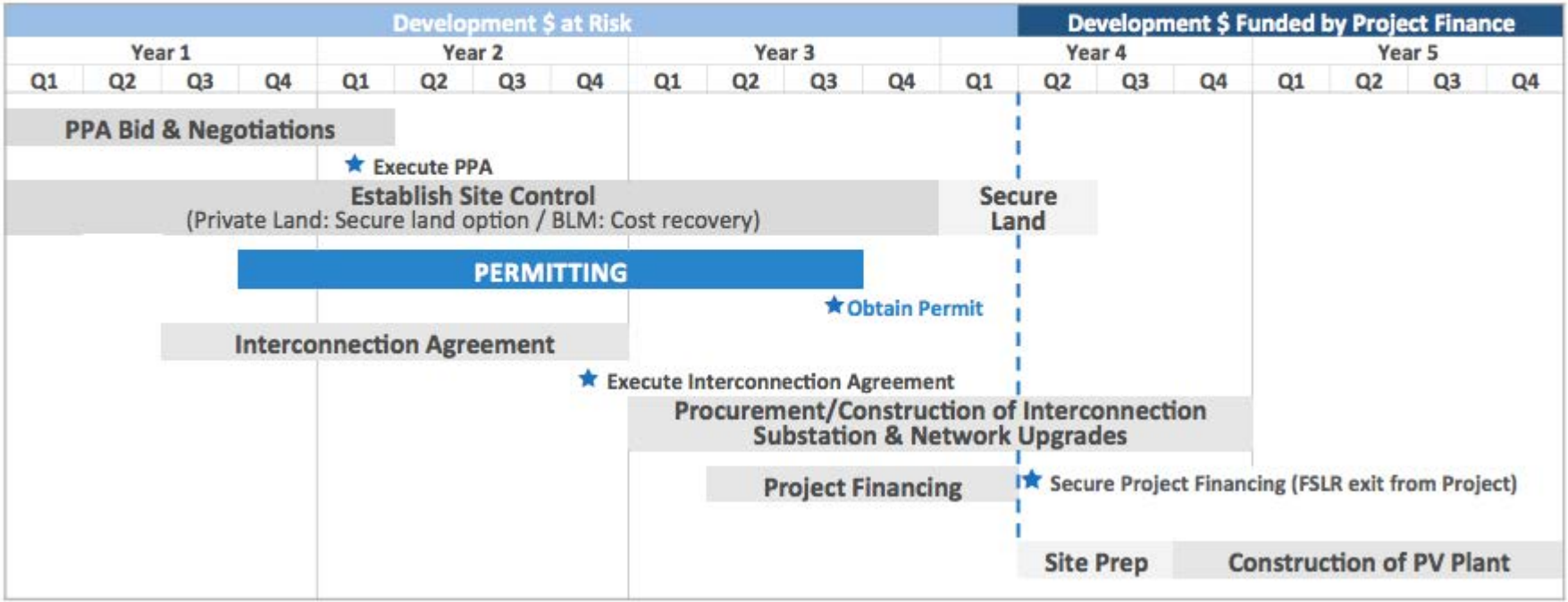
A municipality develops and owns a front-of-the-meter project, potentially financed with tax-exempt municipal bonds, and sells the power to the utility to incorporate into its grid mix to serve all customers.

A utility provides investment capital to build the project in accordance with utility regulations or board oversight. The utility may be the host or have an agreement with another party that hosts the project on their site.

A third-party investor provides investment capital and owns all assets under an agreement with the site host. The investor receives a rate of return to cover their upfront investment through financial incentives and subscription payments.

Source: NLR

Active Federal Funding Opportunities

Source	Eligible Project Types	Description
Energy Dominance Financing Program (EDFP)	• Energy generation and grid reliability projects • Innovative energy technology projects • Manufacturing and advanced transportation projects • Tribal investment in energy-related projects • CO2 transportation infrastructure projects	EDFP guarantees loans to projects that add energy to the grid or enhance reliability. The program finances projects that: • Retool, repower, repurpose, or replace energy infrastructure that have ceased operations; • Enable operating infrastructure to increase capacity and output; or • Support or enable the provision of known or forecastable electric supply at time intervals necessary to maintain or enhance grid reliability or other system adequacy needs.
Community Microgrid Assistance Partnership (C-MAP)	C-MAP supports communities or groups of communities that are either developing or have developed microgrid energy systems. Funds can be used to identify technical needs for improving or expanding an existing microgrid system and support the repairs or improved integration of failed equipment.	Provides funding and technical support for microgrid systems that enhance electricity reliability and security, particularly in remote areas of the United States.
Unleashing Tribal Energy Development	Topic Area 1: Tribal community energy deployment projects Topic Area 2: Tribal community energy project planning, assessment, and feasibility Topic Area 3: Large-scale planning, assessment, and feasibility for Tribal energy projects	This NOFO seeks applications to advance affordable, reliable, and secure energy development of Tribal energy resources for the benefit of Tribes and their members. The projects funded under the NOFO will lead to energy projects that are intended to lower or stabilize Tribal energy costs, expand energy access, and advance development of energy projects for Tribal economic development.

Project Development Timeline