



NY Prize

Community Grid Competition

Introduction to Financing Webinar

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NYSERDA

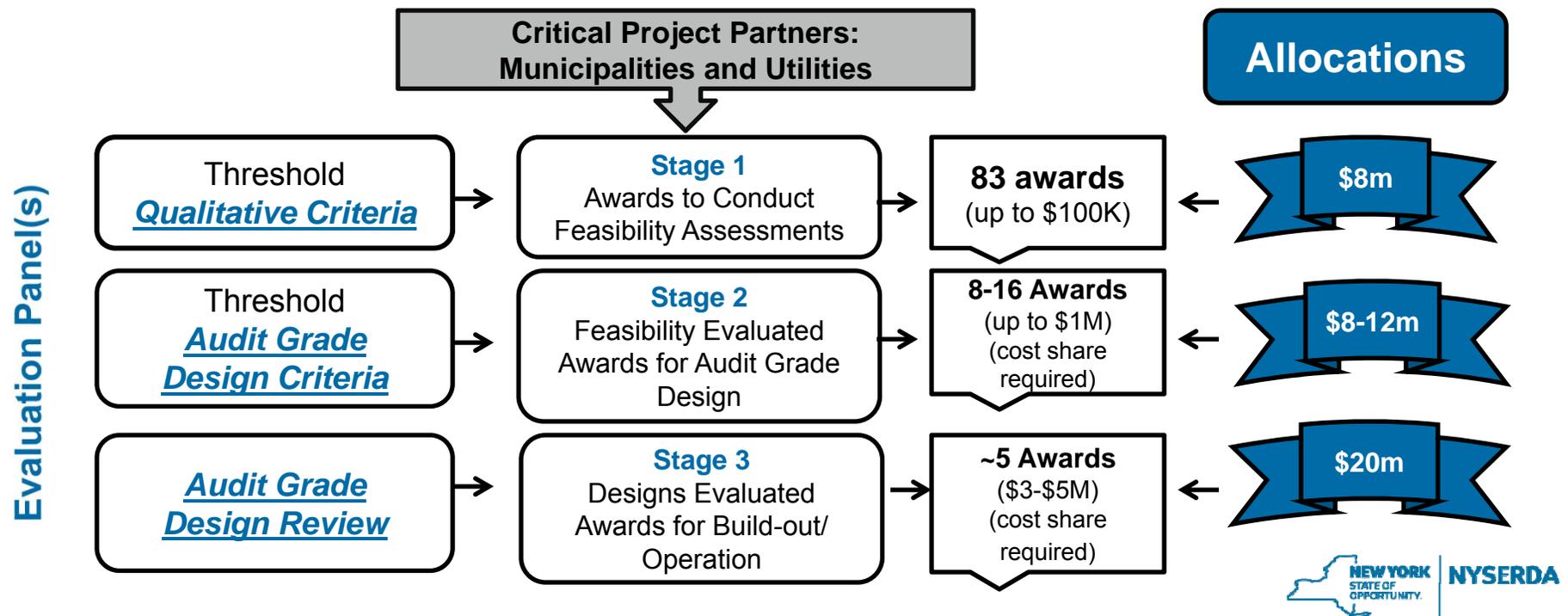
NY Prize

Cultivating Community Microgrid Prospects

- Community teaming arrangements
 - *Partnering with industry experts; leverage state/federal funding*
 - *Embedded utility/community-municipal partnership*
- Targeting utility “opportunity zones”
- Energy Efficiency, Co-Gen, Solar, other resources part of resource portfolio (leverage portfolio of current incentive programs)
- Mix of customer types (at least one critical public facility must be included)
- Federal Disaster Recovery objectives considered (impacted population involved – weather and/or income)
- Consider REV demonstrations

NY Prize Award Process

Communities enter competition and are evaluated at each stage by selection panel



Why consider financing now?

- Cost share at Stage 2 of competition
- Complex financing landscape with multiple ownership options / structures
- Issues such as technology risk/performance guarantees; counter-party risks; regulatory/rate recovery risks and permitting risks are essential parts of due diligence
- Your BCA is necessary but not sufficient
- Financing relationships take time



What do project financiers/developers need to know?

- **Technology Type(s)** [More specific the better by manufacturer, model type, capacity/size]
- **Technology Provider**
- **Equipment Supply/Construction Contracts Status** – i.e., no discussions, preliminary discussions, term sheets?
- **Total Project Cost**
- **Project Life** (i.e., 15, 20, 25 years?)
- **Key Schedule Items:**
 - Total Period from Development to Commissioning
 - Construction Period Duration [include separately for major components, if more than one]

What do project financiers/developers need to know?

- **Existing Equity Commitments** (\$)
- **Existing Debt Commitments** (\$)
- **Expected Leverage Ratio** (D:E)
- **Projected Financial Need** – consider slicing and dicing in a couple of key ways:
 - As to character of funds: Equity(\$)¹ and Debt(\$)
 - As to period of time: During Development, Construction, and Term
- **Key members** of the project team (names of organizations and individuals)
- **Current ownership** of the project entity



Potential Successful Outcomes

- Scalable, replicable, financeable business models
- Projects may not need additional NYSERDA funds to progress
- ‘Standalone’ clean energy interventions may be suitable for traditional project finance, potentially with NY Green Bank support
- Additional NYSERDA market development programs may be available via Clean Energy Fund
- Support from New York Power Authority or Investor Owned Utilities may be available where demonstrated need exists



NYSERDA

Project Finance 101

Introduction to Financing Webinar

Disclaimer: This material is for information only and not legal or accounting advice. Participants should rely on their lawyers, tax accountants, bond council etc. for advice on their projects and this webinar.

John Joshi,
Director Financing Solutions
NYSERDA
March 3, 2016

Basics

- Lenders loan money for the project development solely based on the project's risk and future cash flows

Key Point: Limited or no recourse to development/sponsor

- For project equity investors this maximizes equity returns, moves significant liabilities off-balance sheet

Key Point: Protects key assets and can also potentially help monetize tax financing

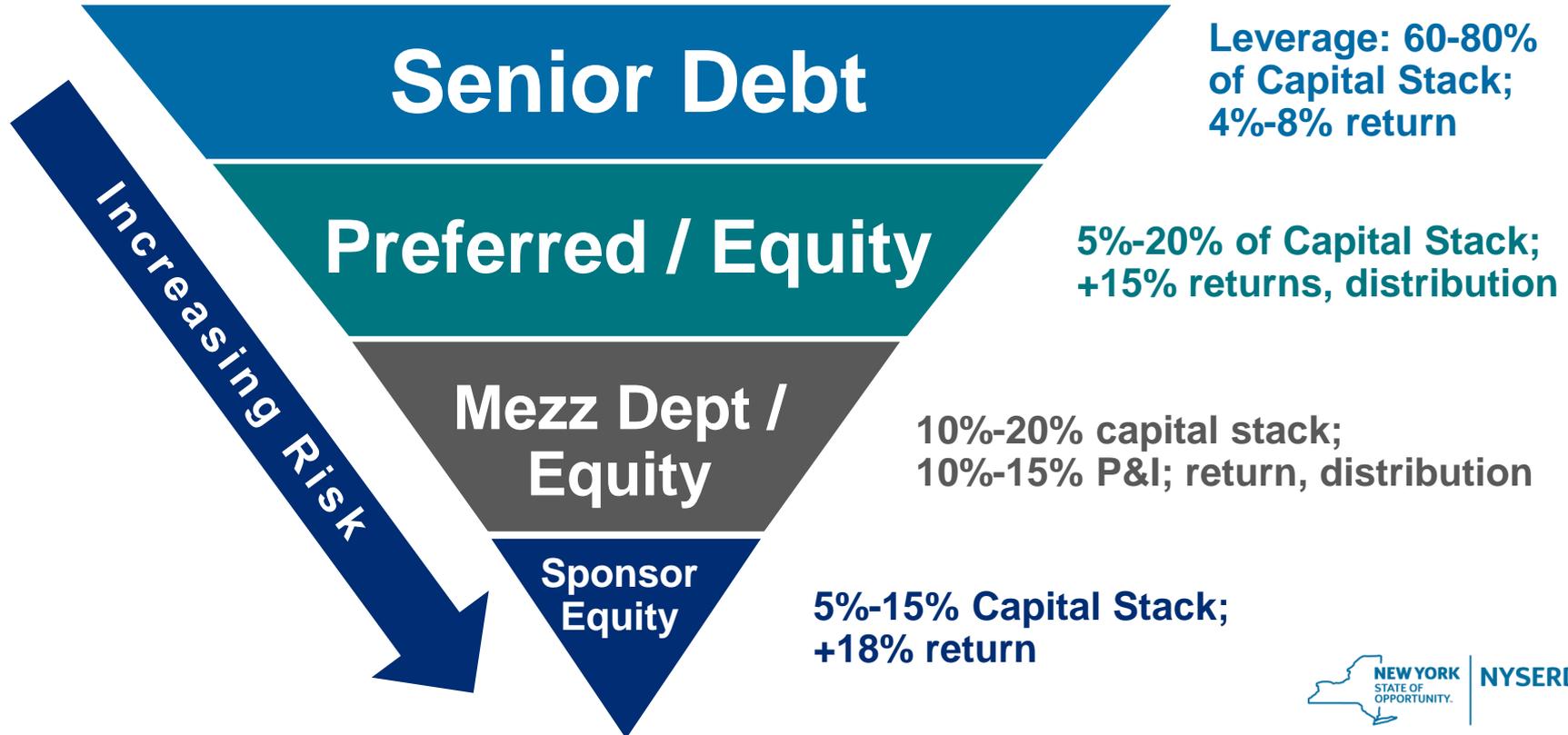
- Project Finance can help investors de-risk higher-risk new technologies

Key point: Legal and commercial rights protect sponsors and investors. Commercial contractual agreements help to ensure the long-term viability of individual projects

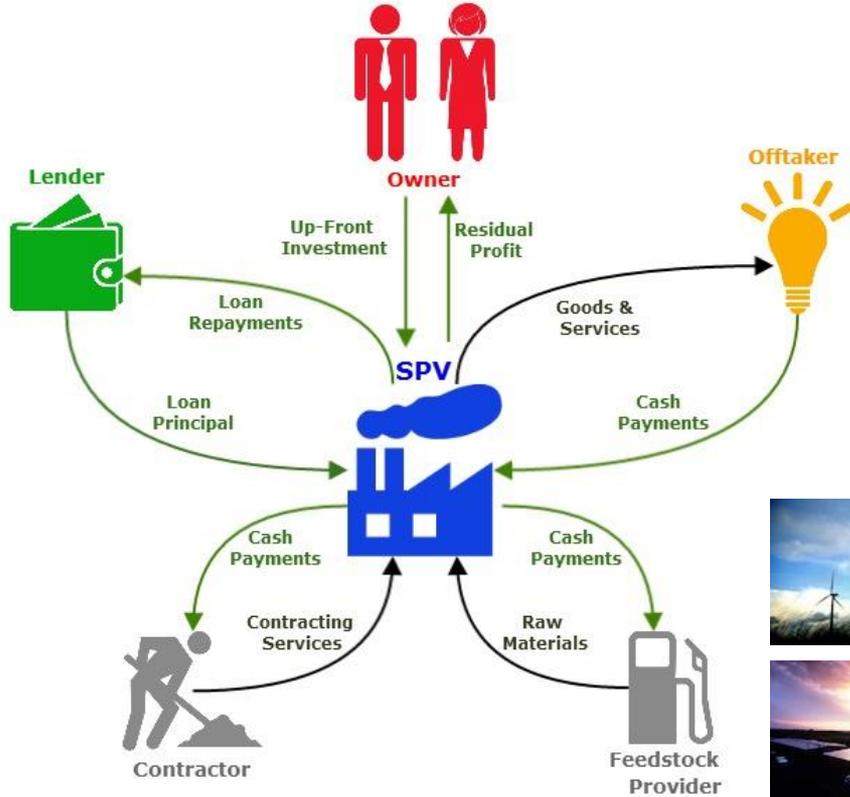
Basics: Understanding the Risks

- **Building and testing risk:** This includes property damage or third-party liability during building or testing of a new plant
- **Business / strategic risk:** Impact on the business – risk of technological obsolescence
- **Environmental risk:** Liability arising from environmental impact
- **Financial risk:** Insufficient capital / timeline to fund the project
- **Market risk:** Merchant risk – for non-hedged off-taker / commodity price
- **Operational risk:** Plant damage, plant closing, resource unavailable, lack of proper resource modeling
- **Public Policy risk:** Change in policy. Reduction in subsidies
- **Weather / Resource risk:** Lack of sunshine / lack of wind / feedstock etc

Basic Structures



Basic Flowchart



Banking your Project

Things to bring to your banker

- Track record of the team working together
- Experience with technology deployed
- Successful placement / construction of projects

Things to bring to your banker (continued)

- Financial Data
 - *Debt leverage of capital stack*
 - *Capital needs – initial*
 - *Capital needs – future, recurring*
 - *Operations and maintenance of capital needs*
 - Annual operations and maintenance costs
 - O&M costs inflation expected
 - Energy costs pre-implementation
 - Energy costs (savings) – post-implementation
 - *Sponsor balance sheet – audited*
 - *Project proforma projections*
 - *Risk modeling (P50, P90, P95) based on standard data from verifiable sources (wind study, solar irradiance, weather data, equipment data, contract terms, signed contracts)*
 - *Does the project face policy risk? Does it face Economic Curtailment Risk?*

Things to bring to your banker (continued)

- Equipment Data / Other
 - *Measurement and verification data*
 - *Warranty contracts*
 - *Resources analysis*
 - *Appraisals*
 - *Environmental reports completed*
- Contracts
 - *Are you using industry standard contracts?*
 - *Off-taker contract and terms negotiated and signed (lease, PPA, etc.)*
 - *Performance guarantee contracts*
 - *Operations and maintenance contracts*
 - *Insurance contracts in place?*
 - *Is Power Purchase Agreement subject to regulatory review?*

Resources for Municipal Development

QECCBs – Qualified Energy Conservation Bonds may be used by state, local, and tribal governments to finance qualified energy conservation projects. Examples include energy efficiency capital projects in public buildings, green communities, renewable energy production

CREBs – New Clean Renewable Energy Bonds (New CREBs) may be issued by electric cooperatives, government entities (states, cities, counties). Qualifying technologies are the same as those eligible for federal renewable energy tax credits (i.e., solar, wind, biomass, hydro, solid waste, etc)*

* Note: [IRS Notice 2015-12](#) announced the availability of close to \$1.4 billion in remaining volume cap for New CREBs. On March 5, 2015, the IRS opened the rolling volume-cap application window for governmental bodies and cooperative utilities, as well as a closed-end application period for public power providers. New CREB allocation expires 3 years after the allocation date. Participation in the program is limited by the volume of bonds allocated by Congress for the program. Participants must first apply to the Internal Revenue Service (IRS) for a CREBs allocation, and then issue the bonds within a specified time period. <http://energy.gov/savings/clean-renewable-energy-bonds-crebs>

Resources for Commercial Development

	Regional Banks	Money Center Banks	Insurance Companies	Infra Funds	Corporate Investor	Developer / Sponsor	ABS Market	NY Green Bank / DOE LPO
Project Debt	Conversion to Term Loan		Conversion to Term Loan		Corporate Debt			Provider
Back Leverage				Provider up to 50%			Securitization	Provider
Tax-Equity		\$50mm or higher			\$50mm or higher			Can credit enhance
Mezz Debt			Provider	Provider up to 25%				Provider
Bridge Loan				Provider				Provider
Mezz Equity			Provider	Provider up to 50%				Provider
Construction Loan	Mini-Perm		Construction Loans / Mini-Perm					Provider
Sponsor Equity					May Participate	5% floor equity		

Increasing the Probability of Financing and Reducing the Risks

- **Time:** Manage the timeline for the project to fund you capital stack
- **Insurance:** Manage project risk with third-party coverage with a strong balance sheet to back the insurance
- **Hedging Contracts:** Payments in the event of certain changes, such as weather measurement (rain, wind) or energy policy
- **Technology / Technical:** Have a clear understanding of engineering and construction risks and how to protect against it

Resources

DOE: <http://energy.gov/public-services/funding-financing>

DOE: <http://energy.gov/technologytransitions/us-department-energys-clean-energy-investment-center>

Milbank presentation to FUPWG* – 4/12/12

Lots of details on taxes, incentives, and project structures

http://www1.eere.energy.gov/femp/pdfs/fupwg_spring12_regante.pdf

NREL's Renewable Energy Finance portal

Sources information from a number of public and private sources

<https://financere.nrel.gov/finance/>

<http://programs.dsireusa.org/system/program/detail/2510>





U.S. DEPARTMENT OF
ENERGY

Financing Community Microgrids

Kenneth Alston

Special Advisor for Finance

U.S. Department of Energy

March 3, 2016

Overview: U.S. Department of Energy



Dr. Ernest Moniz, U.S. Secretary of Energy

Department of Energy at a Glance:

- Mission: To ensure America's security and prosperity by addressing its energy, environmental and nuclear challenges through transformative science and technology solutions.
- Budget: \$32.5 billion (FY 2017 Request)



President's Climate Action Plan

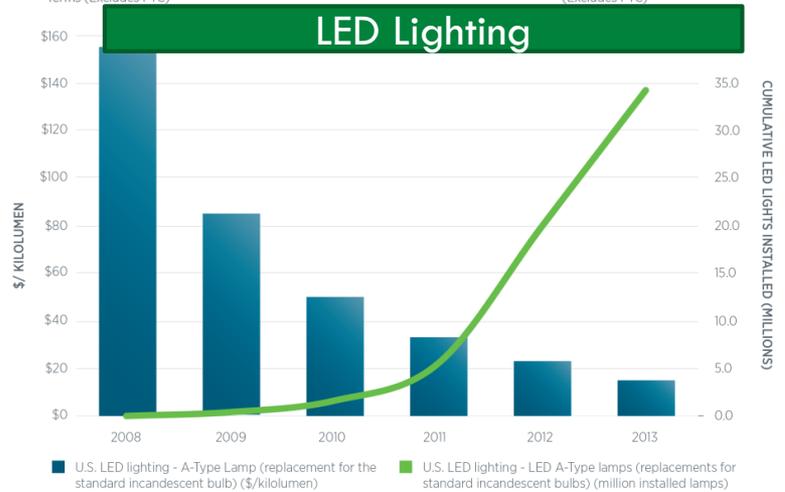
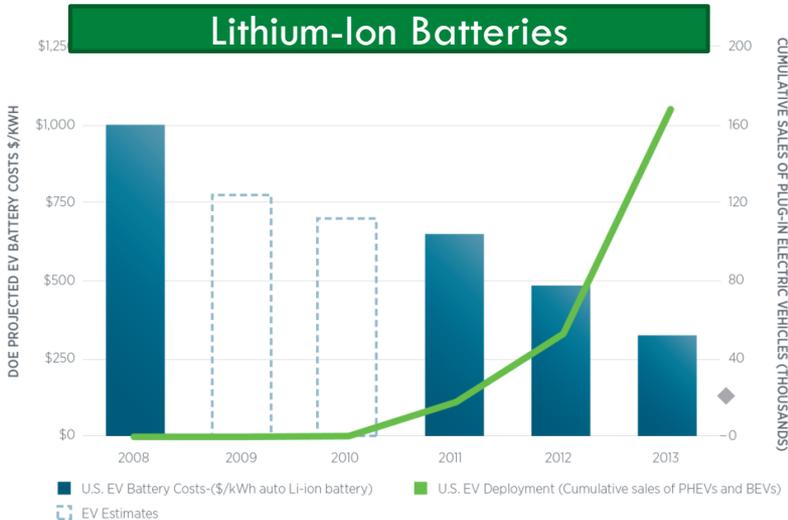
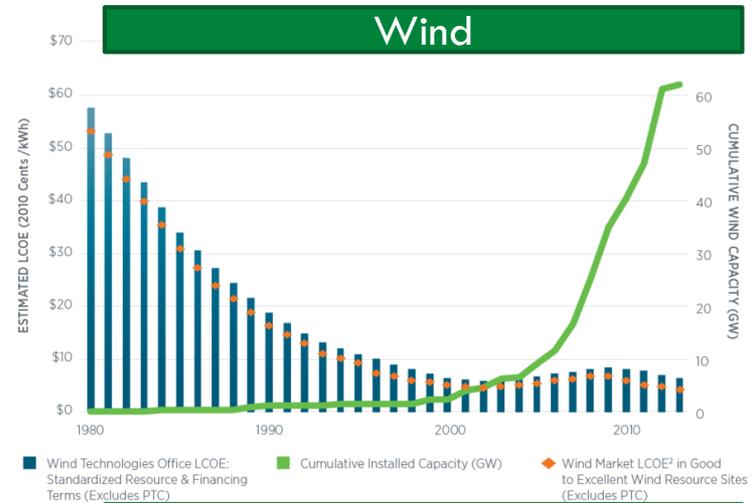
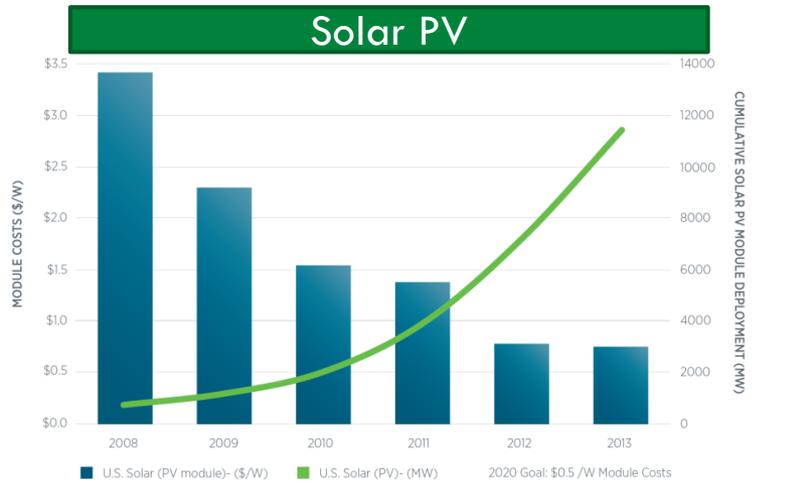


In the United States:

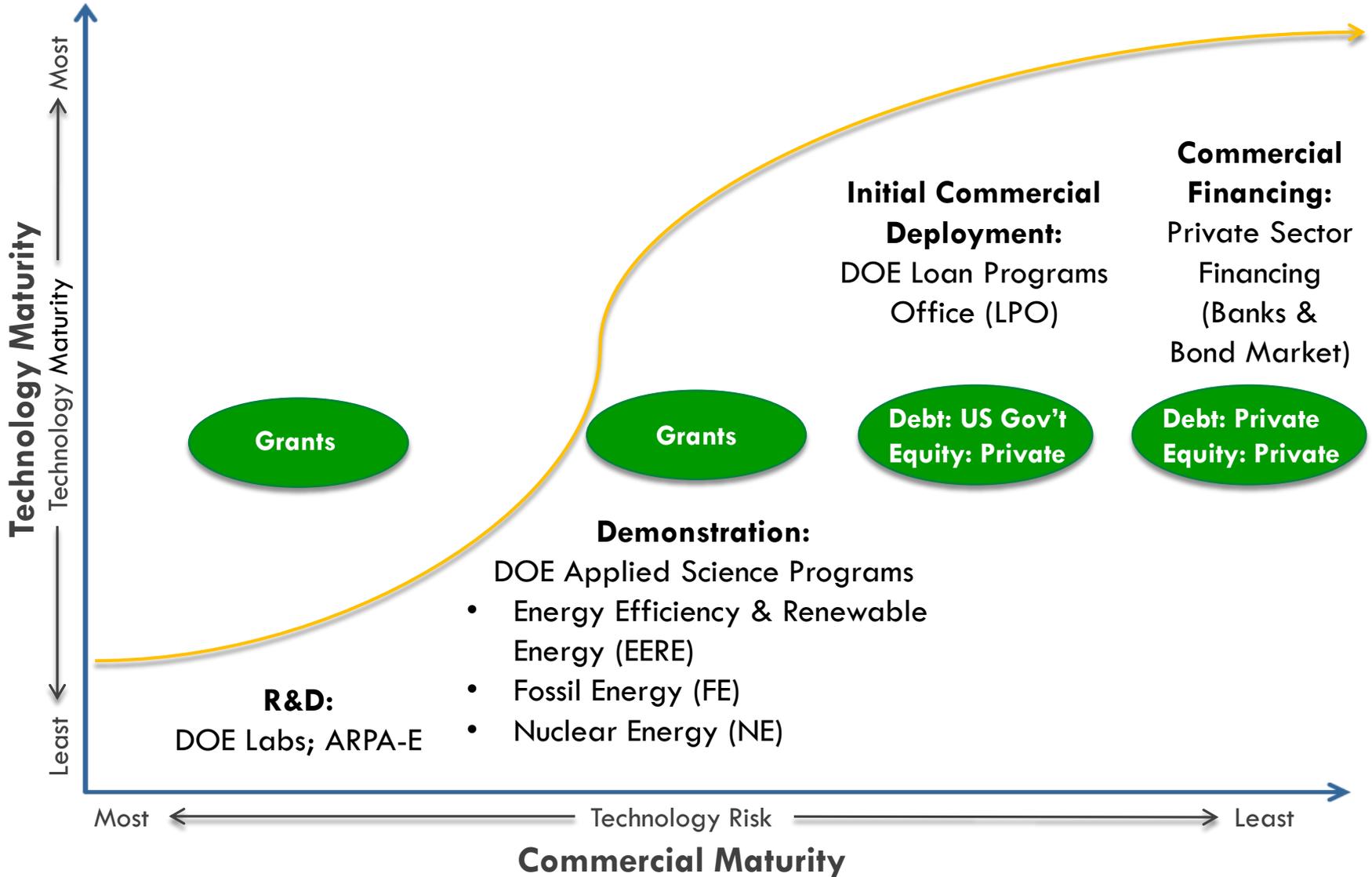
- Reduce GHG emissions in the United States by 17% by 2020, 26-28% by 2025 from 2005 baseline
- Double renewable energy by 2020
- Double energy productivity by 2030
- Reduce CO₂ emissions by 3 billion metric tons cumulatively by 2030 through efficiency standards set between 2009 and 2016



Revolution Now Report: Exciting Future from Economies of Scale



DOE Programs Support the Full Arc of Commercialization



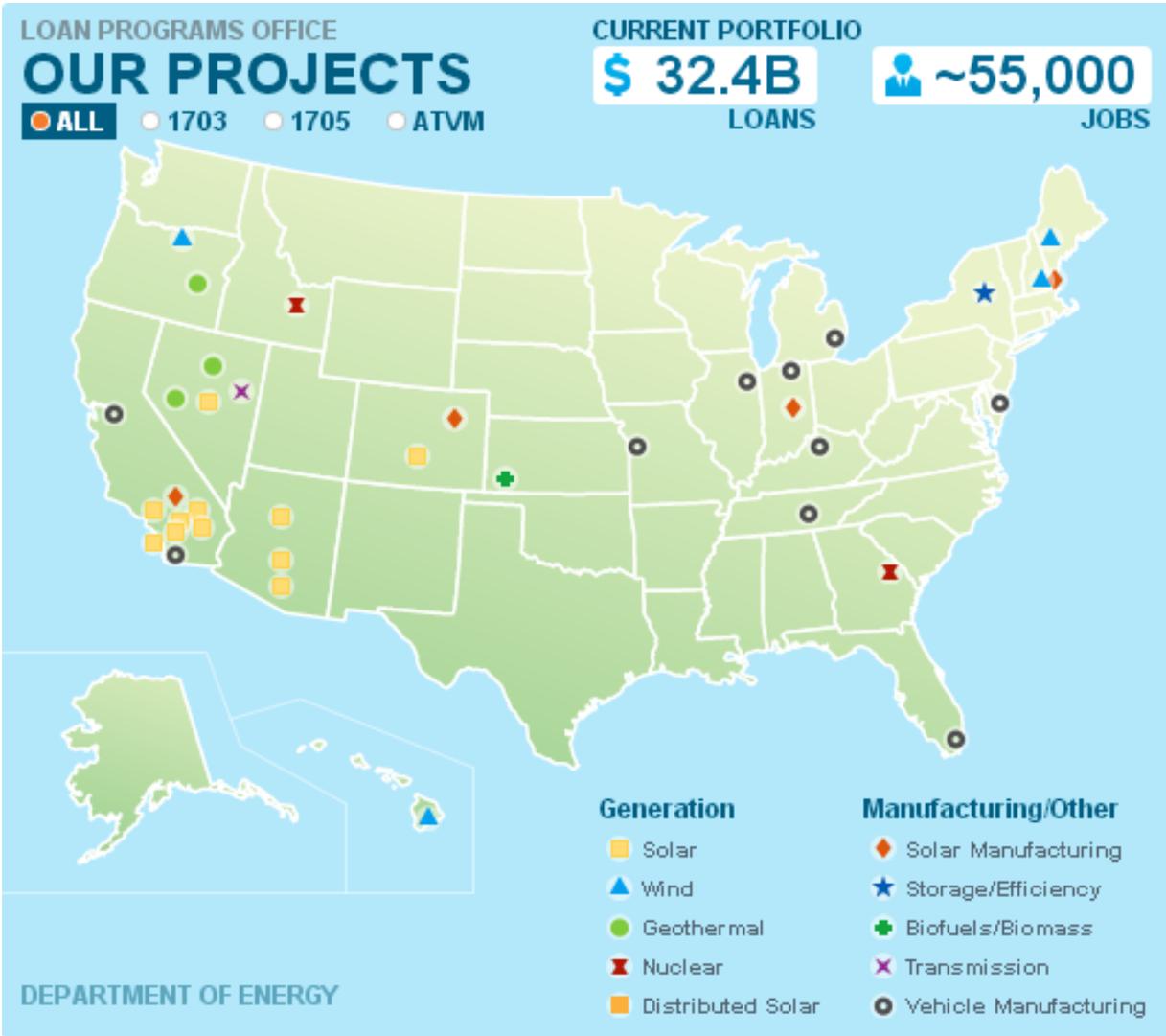
Examples of DOE Financing Activity

- **Grants and Cooperative Agreements**
 - \$35 billion assigned to DOE through Recovery Act (2009) that supported more than \$80 billion in capital investment
 - Support to technologies including:
 - Energy Efficiency upgrades
 - Grid Technology (including Smart Meters)
 - Renewable Energy (Solar Photovoltaic, Solar Thermal, Wind, Geothermal, Biofuels)
 - Coal Carbon Capture and Storage

- **Loan/Loan Guarantee Solicitations (Active)**
 - Advanced Fossil Energy Open Solicitation (\$8 billion)
 - Renewable Energy and Energy Efficiency Draft Solicitation (\$4 billion)
 - Advanced Technology Vehicle Manufacturing Loans (\$16 billion in available authority)
 - Nuclear Energy Technology (\$12 billion)



DOE Office: Loan Programs Office



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

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

160-person finance, engineering, and legal team
Portfolio of more than \$30 billion
More than \$40 billion in remaining loan authority

Note: The current portfolio includes loans, loan guarantees, and commitments.



For more information:

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an asset management firm making profitable
and strategic investments that solve critical
social and environmental problems

Financing Microgrids with Pay for Success March 2016

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WHO WE ARE AND HOW WE INVEST



Encourage Capital is an investment firm that focuses on profitable investments to solve critical social and environmental problems

We are building a community of investors, foundations, market leading companies and non-profits to catalyze and deploy private capital into systemic solutions to global challenges like poverty, water scarcity, food security and environmental degradation

WOLFENSOHN FUND MANAGEMENT

Invested \$250M PE fund with strong focus on emerging markets inclusive financial services

Strength in financial inclusion and development finance

Global investment knowledge and networks



Pioneering advisory work using systems analysis to develop private capital solutions to complex social and environmental problems

Environmental markets and conservation finance experts

Reputation and networks in asset owner community



PROJECT FINANCE & PAY FOR SUCCESS

Pay for success models to de-risk innovative projects and retain community equity

“Pay for success uses evaluation to build evidence about what works and ensure that taxpayer dollars support success.” – The White House

- Funds innovation with the objective of maximizing the value of each public dollar spent
- Investor returns based on observed outcomes, not underwritten to expected savings
- Preserves ownership and long-term benefit for communities
- **Encourage Capital is adapting this structure to finance environmental projects**

Value for Environmental Projects:

- Leverages available funding
- Recognizes non-financial (or long-term) benefits such as enhanced resiliency and sustainability

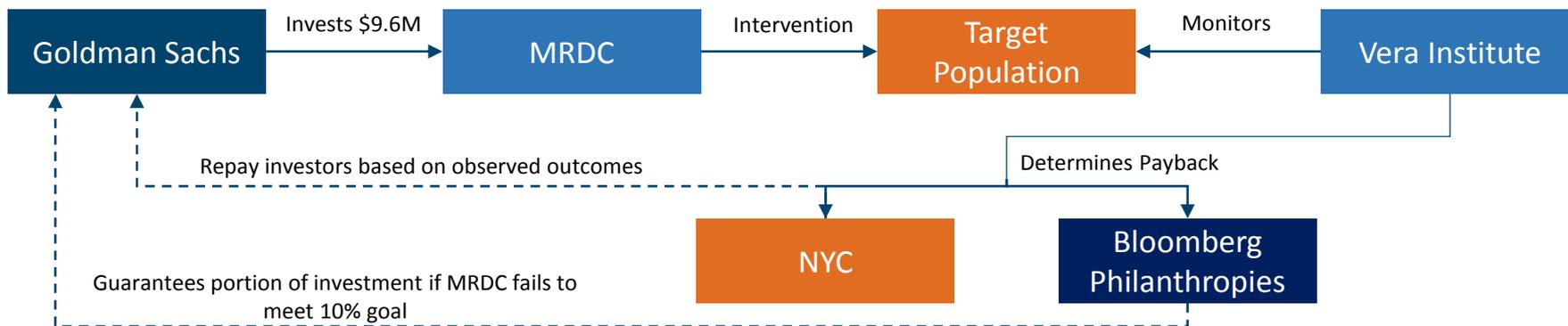


SOCIAL IMPACT BONDS: CASE STUDY

Pay for success application for prison recidivism reduction in New York State

Rikers Island: the first U.S. SIB

- City of New York pioneered SIBs to test innovative methods of reducing prisoner recidivism at Rikers Island's juvenile prison in New York.
- Funded \$9.6 million to implement innovative social programming
- The City of New York was only required to repay investors if the project achieved a minimum of 10% reduction in recidivism



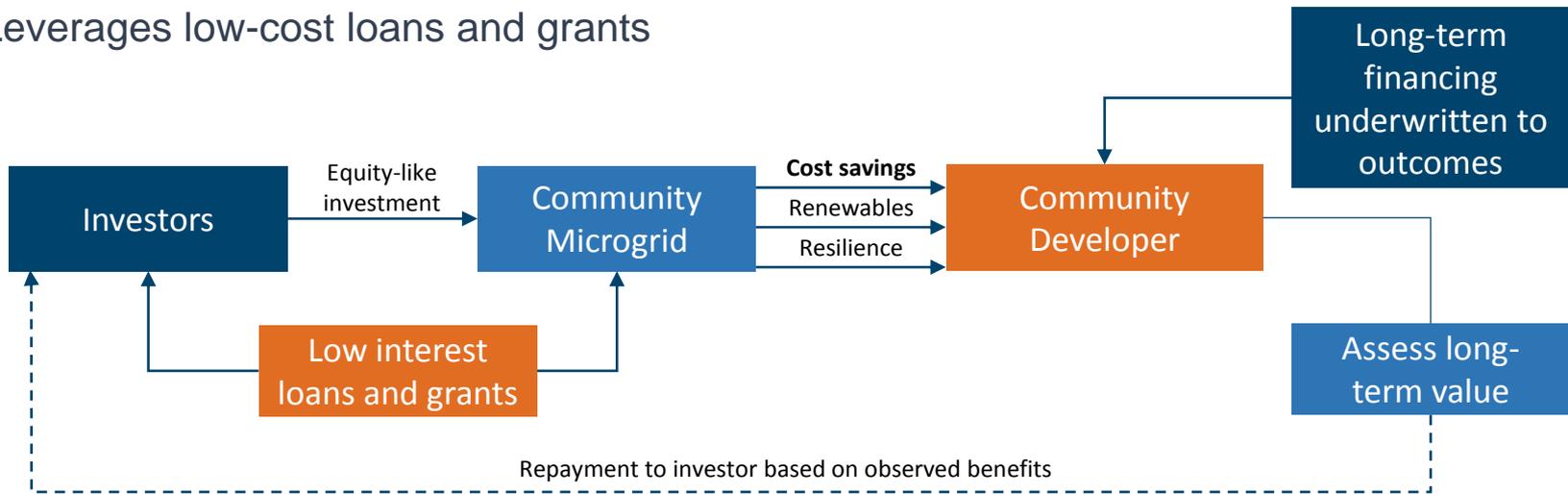


MICROGRID APPLICATION

Impact bonds for discovering microgrid value

Pay for success to fund innovative and sustainable infrastructure projects

- Cost to public sector is a function of observed value
- Retains long-term ownership and financing flexibility
- Leverages low-cost loans and grants





NEXT STEPS

Pay for Success and your project:

- Concept development – Who will own the project?
 - *Pay for success targets municipal and community-owned projects*
 - **Business Plan** – What are expected revenues or cost savings?
 - *Pay for success typically targets projects expected to produce cost savings*
 - *Pay for success can also be used to value non-financial outcomes*
 - What we need to know
-

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NY Green Bank
A Division of NYSERDA



An Introduction to Financing Community Microgrids

Alfred Griffin | March 3, 2016

1. Reforming the Energy Vision & NY Green Bank

- Pillars of REV
- NY Green Bank Overview

2. Partnering with Us

- Market-Responsive Solutions
- Investment Criteria
- Elements of a Strong Microgrid Proposal
- Potential Microgrid Ownership Models
- Open Solicitation

3. NY Green Bank Current and Potential Roles

- Recently Announced Transactions
- Examples of What's to Come
- Contact Us

Reforming the Energy Vision & NY Green Bank

REV is comprised of three main pillars

1. Groundbreaking Regulatory Reform

- REV Regulatory Proceeding

2. Evolution of State Programs

- Clean Energy Fund: NY-Sun, NY Green Bank, NY Prize

3. Leading by Example

- Using the State's Energy Assets

NY Green Bank Overview

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\$1.0 billion State-sponsored specialized financial entity working with the private sector to alleviate financing gaps in New York's clean energy markets

Key Elements and Objectives

Market focused, responsive and transformative. Capital provided at market, rather than subsidized rates

Reduce greenhouse gas (GHG) emissions

Mobilize greater private sector capital in New York's clean energy markets

Partnering with Us

Market-Responsive Solutions

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Private sector project developers and financiers propose creditworthy clean energy transactions through open solicitation

Broad Categories of Capital Solutions

- Credit Enhancement
- Warehousing/Aggregation
- Asset Loans & Investments
- Composite Products

Product Pricing

- Rates reflect risk, comparables, and commercial expectations
- Demonstrate NY Green Bank is prudent steward of ratepayer funds
- Serve as agent for greater private investment

Credit quality is paramount in the evaluation, structuring and negotiation of NY Green Bank's investments

Minimum Investment Requirements

- Capital will be repaid and will earn appropriate market rate
- Project will result in reduced GHG emissions
- Transaction involves one or more private sector financial parties

Additional Considerations

- **Market transformation:** Operate in wholesale (not retail) markets
- **Additionality:** Unique NY Green Bank role in addressing a specific market barrier
- **Scalability:** Transaction can be replicated in the private market

Elements of a Strong Microgrid Proposal

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- Traditional project finance / 'bankability' concerns have been evaluated
 - Construction Risk
 - Technology Risk
 - Operating Risk
 - Offtaker / Demand Risk
 - Feedstock Risk
 - Regulatory Risk
 - Commodity & Rate Risk
 - Refinancing Risk
- A financial model with realistic assumptions
- Capable experienced management team
- Quality counterparties
- Interested and engaged private sector capital providers if scale and precedent created
- Identified and well articulated role for NY Green Bank in bridging financing gaps

Potential Microgrid Ownership Models

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NY Green Bank is open to consider any way in which we can provide financing support. Some examples include:

- Municipal Owned
 - Construction debt
- Community Owned
 - Post-construction debt
 - Construction debt
- Third Party Owned
 - Tax equity credit enhancement
 - Post-construction debt
 - Construction debt

Open Solicitation

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Visit www.greenbank.ny.gov for open solicitation and instructions for online submission

- Open solicitation seeks financing arrangements meeting the NY Green Bank mandate and investment criteria
- Proposals evaluated on a rolling basis
- NY Green Bank team is available to discuss potential investment ideas

NY Green Bank Current and Potential Roles

Recently Announced Transactions

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NY Green Bank's recently announced deals will allow its private sector partners to provide and improve access to cleaner and more affordable energy for their residential, commercial and agricultural customers

- \$25.0 Million Warehouse Credit Facility for Level Solar
- \$4.0 Million Revolving Construction Loan for United Wind
- \$20.0 Million Subordinated Capital for Renew Financial
- \$5.5 Million Letters of Credit for Energy Improvement Corporation

Examples of Projects in Pipeline

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