



Financing Energy Efficiency and Clean Energy

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DOE's Deployment Programs & ARRA`

Overview

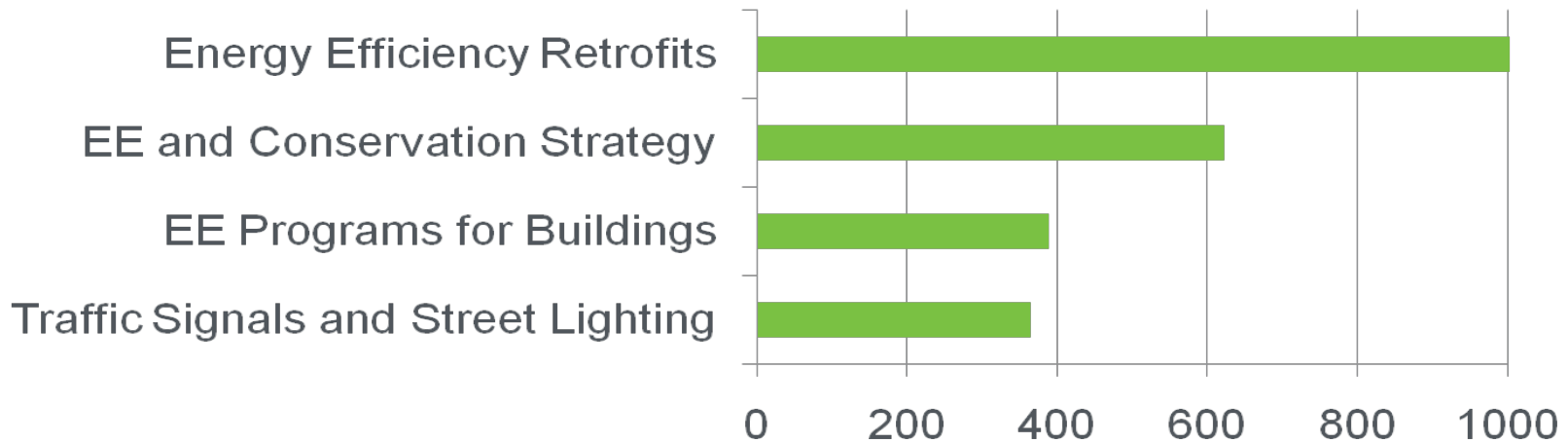
- Energy Efficiency Conservation Block Grant (EECBG) funds \$3.2 billion through ARRA (newly created program under ARRA)
 - \$390 million – Better Buildings Neighborhood Program (BBNP) supports innovative models of whole-neighborhood retrofits
 - \$64 million additional competitive awards for non-formula entities
- State Energy Program (SEP) funds \$3.1 billion through ARRA - has supported 30 years of state capacity, project, and policy development with modest investments before ARRA
 - **FY 2010 appropriation: \$50 million**
 - **Appropriation history 1996-2009: \$25 to \$45 million**
 - Produced measurable benefits with highly leveraged investments
- Program Goals:
 - Increase the energy efficiency of the U.S. economy.
 - Reduce energy costs.
 - Improve the reliability of electricity, fuel, and energy services delivery.
 - Develop alternative and renewable energy resources.
 - Promote economic growth with improved environmental quality.
 - Reduce our reliance on imported oil.
- Formula grants have allowed states and local governments to tailor solutions to their unique needs.
- Encouraged significant private and state investment, with a recent focus on competition, policy assistance, and market transformation through financing



Energy Efficiency Conservation Block Grant (EECBG)

Recovery Act Overview — **\$3.1 billion** (excludes BBNP and competitive)

Top 4 EECBG Activity Types



Examples of Additional Activities

- Energy Audits
- Building Codes and Inspections
- Renewable Energy Technologies on Government Buildings
- Development and Implementation of Transportation Programs
- Energy Distribution Technologies

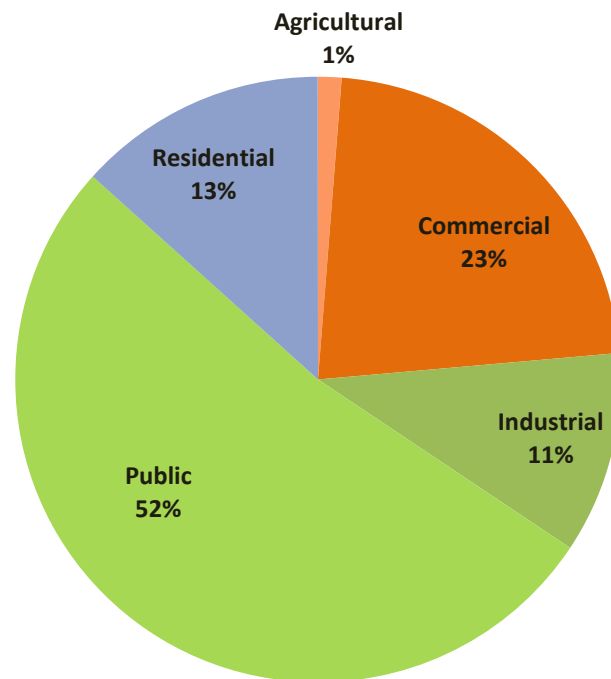
State Energy Program (SEP)

Recovery Act Overview — \$3.1 billion

Program Impacts

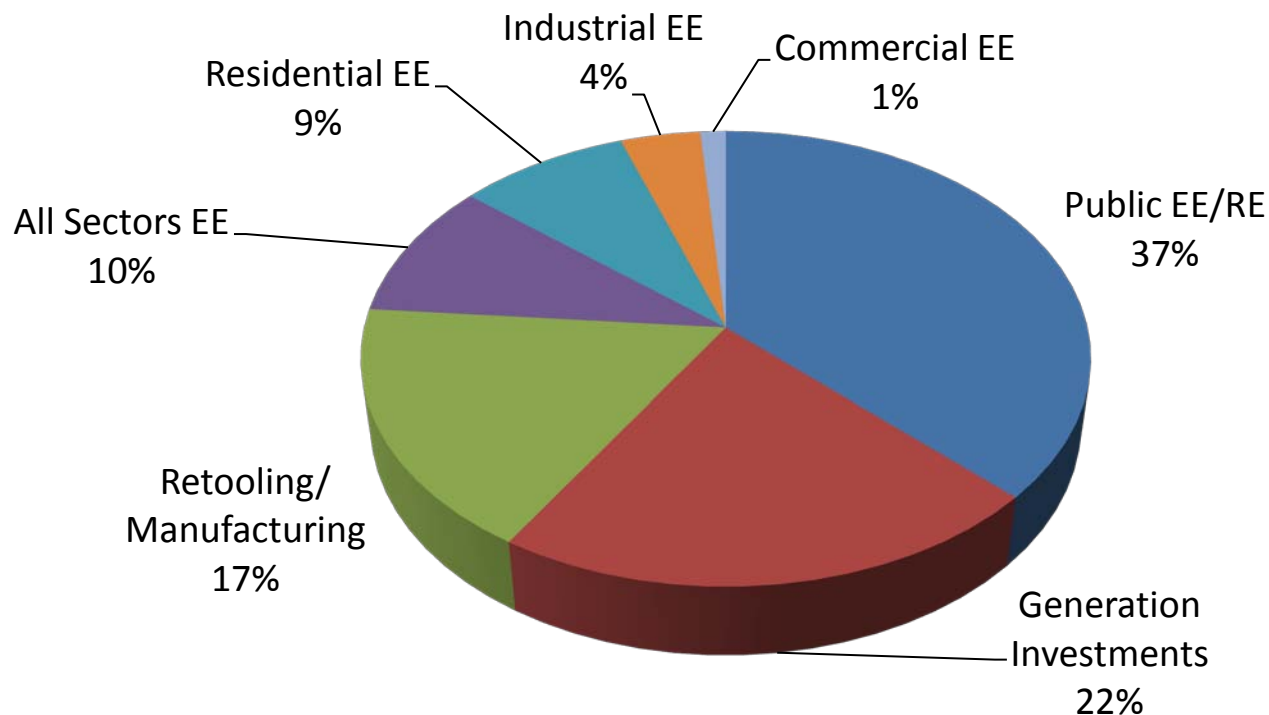
- **Creating Clean Energy Manufacturing Jobs**
- **Innovative Financing = Future Dividends**
 - Revolving Loan Funds (RLFs)
 - Loan Loss Reserves (LLRs)
 - On Bill Financing
 - Energy Savings Performance Contracting
- **Creating a Residential Retrofit Industry**
- **Public Sector Building Upgrades are Making Government More Efficient**
- **Growing Renewable Generating Capacity**

Grants by economic sector



SEP Revolving Loan Funds

\$590M Allocation, Over 70% Expended, 35 States



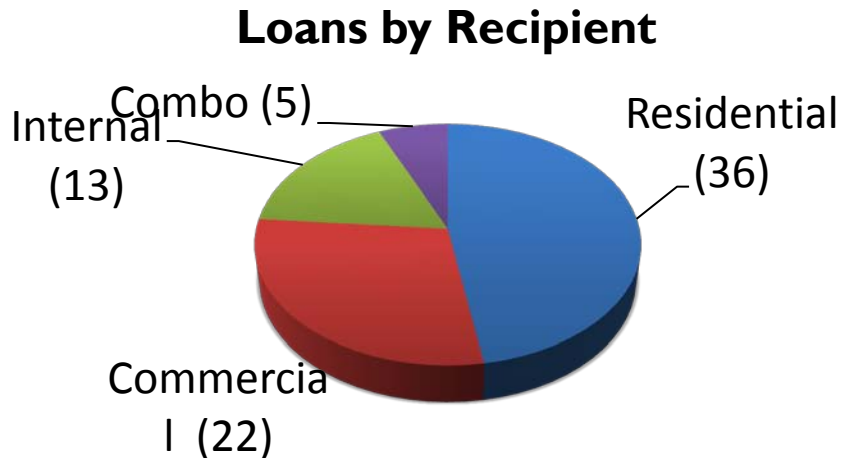
Another \$25M deployed in Loan Loss Reserves, Over 88% Expended

Sectors Defined

- Generation Investments – power plants and new companies that create EE and RE components and products
- Re-Tooling/Manufacturing – manufacturing companies and factories updating or replacing equipment for the production of EE and RE components and products
- Public – government buildings, schools, universities, etc.
- Commercial – multifamily buildings of greater than 6 units, office buildings, warehouses, large multi-use buildings, retail space and businesses
- Residential – single family homes and residential buildings with 6 or fewer units
- Industrial – agriculture and manufacturing facilities and industrial production improvements
- All Sectors – programs that serve a combination of Generation Investments Public, Commercial, Industrial, and/or Residential sectors

EECBG Loan Programs

- **Total Loan Programs:** 76
- **Total Loan Program Budgets:** \$77 Million
- **Loans Made to Date:** 3,794
- **Total Value of Loans Made to Date:** \$32 Million
- **Private Capital Enhancing EECBG Funds:** \$64 Million



SEP Finance Activity Drivers and Opportunities

Primary Financing Activity Drivers

- States are facing funding shortfalls and they are eager to recycle as much funding as possible
- RLFs are familiar and easier to administer (e.g. LLRs require raising additional capital)
- States chose market segments that had immediate demand rather than growing demand to meet ARRA deadlines
- Public building Loan Programs have the easiest time identifying high-certainty demand
- ARRA administrative requirements limit the cost-effectiveness of small scale commercial projects

RLF Opportunities

- As SEP RLFs recycle, they can be pooled and transitioned into LLRs to raise private capital a seed public private partnerships investment authorities
- Performance contracting makes RLFs for public buildings less onerous and easier
- Potential liquidity via private placement offerings for RLFs guaranteed by the issuing state ; performance contracting makes these pool of loans more attractive to investors
- Standardization is key to providing liquidity and scale – we need to access capital markets
- States have the power to aggregate demand for financing to lower transaction costs

Growing Access to Financing

DOE providing TA :

- Transitioning RLFs to investment authorities
- Design public private partnerships
- Attract institutional investors
- Standardize financing products and develop secondary markets

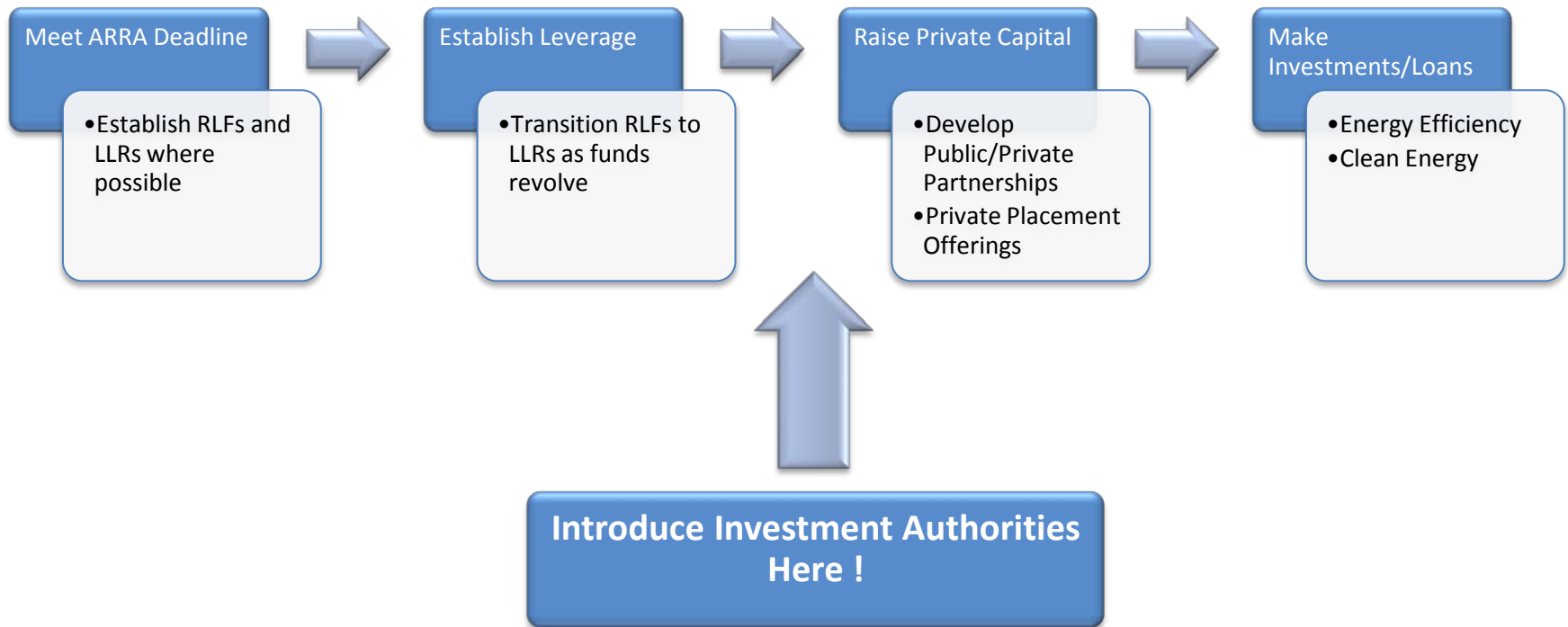
Examples

- **On-Bill Finance** (utility bill/utility capital): Utility lends capital, originates and services all loans.
- **On-Bill Invoice:** (private capital, bonding) Utility invoices, provides no capital and may not originate loan
- **3rd Party Bill** (utility, private capital): Third party originates and services loans.
- **Investment Authority/State Agency** (bonding, QECB, ARRA, state, rate payer capital): Originates and services loans directly or through 3rd Party Bill

Credit enhancements can be applied to any of the above examples (rate payer, ARRA, state, QECB)

Lower cost of capital for energy efficiency and clean energy customers

SEP RLF Lifecycle



Priorities

- Meet the ARRA expenditure deadline either through direct loans made, partnering with third-party administrators, or by establishing LLRs (may also involve third-party administrators)
- Maximize leverage by pooling revolving funds and transitioning to LLRs
- Raise private capital
 - Through public private partnerships that leverage state funds that can be invested via direct loan, bond or equity placements to fund either projects, specific ventures, funds, and/or investment authorities
 - Through private placement offerings (e.g. via investment authorities)

Transition RLFs to Clean Energy Development Entities

Why Clean Energy Development Entities (CEDEs)?

CEDEs are a means to achieve private investment across multiple market sectors – a reasonable potential for \$20 billion of actual investments in the next 5 years.

Energy efficiency and clean energy will need to maximize limited resources through public/private partnerships that will create economical and self-sustaining markets to continue momentum

- Leverage ARRA funding as initial “seed” capital and evolve to self sustaining private markets that invest in energy efficiency and clean energy
 - Over \$700m in ARRA funds that will revolve in perpetuity
- Obtain authority to leverage private capital using public funds (e.g. state credit, bonding, QECBs)
- Develop secondary market offerings (e.g. private placement offerings of public building retrofit loans)
 - Package and layer returns across capital structure (e.g. venture debt, equity, long-term debt)
 - Need to determine standardization for securitization of financing products
- Overcome high costs of capital through the alignment of interests and risk-sharing with private partners

*Federal clean energy funding will decline 75% by 2014 from 2009 levels **

* Source: Beyond Boom or Bust: Putting Clean Tech on a Path to Independence

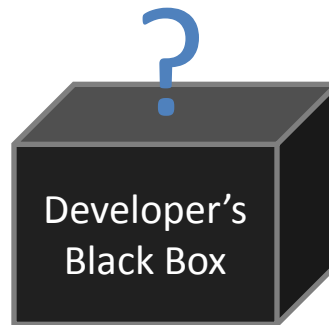
Transition RLFs to Clean Energy Development Entities

- Aggregate, Broker, and/or Provide
 - Demand-side Financing – lower cost to consumers by packaging smaller loans (e.g. public, residential, and commercial energy efficiency and clean energy investments)
 - Examples include Connecticut and New York (replicable and DOE will showcase)
 - Supply-side Financing – lower transaction costs and costs of capital for investment across the supply-chain spectrum for energy efficiency and clean energy technologies and services
 - Examples include Michigan and Florida (replicable and DOE will showcase)
- Tailor financing programs to meet local needs and provide better insight into local markets
- Provide flexibility to focus on social return measures such as carbon emission reduction, renewable generation capacity, and job creation (e.g. credit unions are mission driven)

Barriers to Financing Energy Efficiency and Clean Energy

Current Problems to Financing Renewable Energy Projects Include:

- All financing comes from non-capital market sources
 - Results in high borrowing costs for energy efficiency and clean energy customers, and high costs of capital for project developers
 - Lack of standardization
 - Lack of data
- Lack of deal structuring and execution experience
- Funding gaps in the commercialization supply chain due to risk and changing government regulation (e.g. expiring 1603 and production tax credits)
- Project Developer analysis:
 - Tax equity
 - Construction debt
 - Long term debt
 - “Cash” or “sponsor” equity
- Because projects rely on non-capital markets, current approach to financing is expensive, opaque, and cumbersome.



Currently developers secure all the financing components and bake the capital costs into the PPA

As a one stop shop for financing there is no transparency to the cost of capital obtained by developers

State and Local Energy Efficiency Action Network

Goal: achieve all cost-effective energy efficiency by 2020

- State- and local-government led initiative to take energy efficiency to scale, facilitated by U.S. DOE and U.S. EPA
- Network of 200+ professionals from state/local governments, business, industry, NGOs and others
- Best practice guides and technical assistance on EE policy and program design and implementation for:
 - State utility regulators and utilities
 - State and local policymakers



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SEE Action

STATE & LOCAL ENERGY EFFICIENCY ACTION NETWORK

The State and Local Energy Efficiency Action Network (SEE Action) is a state- and local-led effort facilitated by the U.S. Department of Energy and the U.S. Environmental Protection Agency to take energy efficiency to scale and achieve all cost-effective energy efficiency by 2020. SEE Action offers [information resources](#) and [technical assistance](#) to state and local decision makers as they provide low-cost, reliable energy to their communities through energy efficiency.

SEE Action Working Groups »

- Existing Commercial Buildings
- Customer Information and Behavior
- Building Energy Codes
- Financing Solutions

- Industrial Energy Efficiency and Combined Heat and Power
- Evaluation, Measurement and Verification
- Driving Ratepayer-Funded Efficiency through Regulatory Policies
- Residential Retrofit

News »

- » [New SEE Action Resource: Evaluation, Measurement, and Verification \(EM&V\) of Residential Behavior-Based Energy Efficiency Programs](#)
May 22, 2012
- » [New SEE Action Resource: Benchmarking and Disclosure: State and Local Policy Design Guide and Sample Policy Language](#)
May 22, 2012

Events »

- » [EM&V Webinar: Documenting Avoided Emissions from Energy Efficiency Programs](#)
August 8, 2012

Stay Updated »

- » Receive the newsletter and announcements of upcoming events and new publications from the SEE Action Network

SIGN UP

Finance Solutions Working Group Goals and Strategy

Key Barrier

Investors have been unwilling to put up capital for energy efficiency investments because (1) deal sizes are often too small to be attractive; and (2) efficiency finance products have a limited history, meaning credit quality is not well understood and deal volume is uncertain.

Working Group Strategy

Remove financing barriers to energy efficiency in the United States through improved financing tools and mechanisms (loans, leases, service agreements) that will scale and leverage secondary markets that reflect true assessment of risk, provide more liquidity, and reduce borrowing costs.

Year 1 Goal

Determine specific data, information, and structures that capital providers, loan originators, and service providers need to participate in energy efficiency lending.

Mid/Long Term Goals

Increase energy efficiency retrofits in both depth and scale where financial institutions, institutional investors, and capital markets fully engage in energy efficiency investments. Facilitate market conditions under which:

- Financial institutions provide standardized energy efficiency loans in res/small commercial sector at competitive rates that can transition away from subsidies over time by properly assessing the true risk of these products – **creating a new asset class**
- Increase capital provided through institutional investors and secondary markets to provide liquidity and scale
- As part of transition away from subsidies, state regulators and agencies allocate sufficient ratepayer funds to finance energy efficiency through credit enhancement and other mechanisms as well as implement programs such as on-bill to reduce the cost of capital and improve financial product uptake.

Initial Findings – Big Picture

- Low-cost capital is generally available to fund efficiency for good credits through regional banks, national/multi-national banks, and other investors
 - However, deal size matters
- Deal flow exists in certain market sub-segments (strong credit res/small commercial especially) but uncertainty about deal flow still keeps cost of funds high.
- Key barriers:
 1. Uncertainty about financial regulator treatment of large portfolios of residential or commercial unsecured loans (NCUA, OCC, CFPB and others)
 2. High set-up cost for a new finance program (esp. for unsecured consumer loans) with uncertain loan volume
 - One lender reported spending 1,000-1,200 person hours to set up a new lending program.
 3. High transaction cost compared to low loan sizes (most efficiency loans fall in to the micro-loan category)
 4. Continuing concerns about taking on debt - and doubts that some new financial structures will address that concern.

Investors – Big Picture Conclusions

Investor	Good News	Concerns	Capital
Banks	<ul style="list-style-type: none"> •Banks need loans on their books & are seeking to deploy capital •Community Reinvestment Act credit is desirable 	<ul style="list-style-type: none"> •Prefer already aggregated pools of loans •Few banks want to originate & service a large number of small loans 	<ul style="list-style-type: none"> •Regional - Willing to commit \$2-10M in individual states •National/multi-national – willing to commit \$30-100M
Credit Unions	<ul style="list-style-type: none"> •Need loans on their books and are seeking to deploy capital •Very focused on member services and customer relationships 	<ul style="list-style-type: none"> •Challenging to scale at very high levels •Not a capital market solution 	<ul style="list-style-type: none"> •Estimated deployment at \$10M for a single mid-sized credit union is reasonable goal
Foundations	<ul style="list-style-type: none"> •Clean energy investments are a growing interest for Program Related Investments (PRI) •Large amounts of capital •Will invest at below market rate or subordinated capital 	<ul style="list-style-type: none"> •Few accustomed to investing through PRI •Limited to “charitable purpose” •Prefer to invest in structures 	<ul style="list-style-type: none"> •Investments of \$2M or more are beginning
Utilities	<ul style="list-style-type: none"> • Rate-payer funds can be allocated •Lower costs of capital through utility • Transitioning to Loan Loss Reserves •On-bill an attractive mechanism for external capital 	<ul style="list-style-type: none"> •Regulators are often uncomfortable if utility is taking on role of financial institution •Attribution of savings from financing program critical •Integration with contractor management/education essential 	<ul style="list-style-type: none"> •Varies

Originators – Big Picture Conclusions

- Originators will typically originate but not hold a loan or lease.
- Originators understand (1) credit enhancements (2) how to increase uptake.
- Credit Enhancements:
 - Cash credit enhancements are the strongest from the investor point of view. Other credit enhancement structures are also valuable to examine.
 - Credit enhancements are going to be critical to development of investor interest in loan products.
 - Credit enhancements will typically be based on well-founded projections of actual losses. Cash credit enhancements can produce leverage of 5x to 20x in most cases.
 - Eg. Michigan Saves provided a loss reserve of \$3 million to produce total credit union commitment of \$60 million.

Commercial Property Owners

- Few commercial property owners are willing to take on debt for non-core activity.
- Off-balance sheet treatment of a financial obligation (meaning that the obligation is not treated as debt) is often, but not always, important to property owners.
- Accounting treatment is highly likely to make off balance sheet treatment of these financial obligations unlikely.
- Commercial PACE is beginning to show some promise.

Putting it all together

The EE Financing Market is still new and needs attention. Some conclusions and thoughts:

Financial Institutions:

1. Financial institutions are far from uniform -- different approaches are necessary to engage credit unions, institutional investors, banks, originators and others.
2. Financial institutions are VERY driven by their regulators and concern about regulations (NCUA, OCC and FDIC), yet some regulatory uncertainty remains and will stand in the way of market development
3. We have focused a great deal on credit quality, which is important, but set-up and transaction costs are a huge barrier to financial institution participation in efficiency programs.
4. Many utilities are comfortable with establishing certain partnerships (e.g. marketing) with financial institutions that have capital on their own, however, attribution of savings is critical
 - division between what IOUs and non-IOUs willing to do

Putting it all together

- Property owners vary in their interest in financing.
 - Efficiency is rarely a top priority for commercial property owners.
 - Specific measures are treated differently. Many large developers deliver a “cool, dark building” to tenants. Lighting measures are treated differently from HVAC or shell.
 - Off-balance sheet financing is important to large commercial property owners, and critical to some. However off balance sheet structures are very difficult to achieve.
 - Off balance sheet financing is not critical for smaller businesses.
 - On-bill financing may be attractive to some, especially small commercial customers.

Accelerating Energy Efficiency and Clean Energy

Good News

- Energy efficiency and clean energy are here
 - \$260B world wide investment
 - ~8 Million Smart Meters
 - 1705 kick started utility scale solar
 - New programs are being created at the state and local level
- Learning curves are evolving

Bad News

- Difficult to access capital
- Existing structures are archaic and illiquid
- US / European government programs expiring
- Private funds struggling

Enabling Markets through Existing Authority

- Government as a customer
 - Huge opportunity through state and local governments
 - DOE / GSA
 - Uptick in LED Sales with ARRA funds
 - Department of Defense
 - Navy procuring biofuels
 - Army/Navy/AF commitment of 3GW of Renewables
 - FEMP
 - ESPC Executive Order 12/2011, \$2.4 Billion, 24 months
- Address issues
 - Standardize processes
 - Collect, aggregate and disseminate performance data
 - Explore new structures

Convening Power and Engagement

- Better Buildings Summit June 2012 in Denver - state and local governments
 - Workshop on CEDEs
- Next up
 - Seed Capital / Foundations
 - Regional Banks / Credit Unions
 - State Authorities

CEDEs

Results of the Denver Workshop on CEDEs

- We confirmed our primary assumption
 - State and Local Investment Entities are very energized to dialogue and collaborate with each other, financial institutions, foundations, and other partners
- Goals
 - Expand the community as broadly as possible to include finance, foundation, insurance and NGO members
 - Create momentum
 - Make progress on high-priority topics
 - Institutional Capacity
 - Financial Structures
 - Legislative & Legal Structures

Going Forward

- Collect samples and studies from the community - potentially create clearinghouse
- Initiate dialogue through webinars, conference calls, online forum, other mediums
- October Summit
 - Highlight CEDE activities and showcase successful models
 - Accessing capital markets
 - Revolving Loan Funds and Loan Loss Reserves
 - Commercial PACE
 - ESPC & Tax Exempt Leasing
 - Residential EE Lending
 - Utility On-Bill Repayment
 - Power Purchase Agreements
 - Bridge Financing and Factoring
 - Venture equity and debt

Thank you

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