Policies and Roles in Developing Energy Efficiency Finance Programs

Recommendations for RE-AMP

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RE-AMP Energy Efficiency Finance Subgroup

Policies and Roles in Developing Energy Efficiency Programs

Improving building energy efficiency holds tremendous potential for CO_2 reductions, with the built environment responsible for as much as 40% of US emissions. Meeting the RE-AMP energy efficiency goal of reducing electricity use by 2% and natural gas use by 1.5% annually will take extensive retrofits to existing buildings, in addition to more efficient new buildings, and improvements in the efficiency of industrial processes. Many of these reductions require no new technology, no investment in R&D, no complicated multi-state agreements. Investing in energy efficiency is exactly that – an investment that can save money and be a vehicle for economic growth. And yet the gulf between potential and practice in this sector remains vast. Why is the Midwest, which stands to reap tremendous gains from this investment, failing to achieve the CO_2 reductions inherent in retrofit programs?

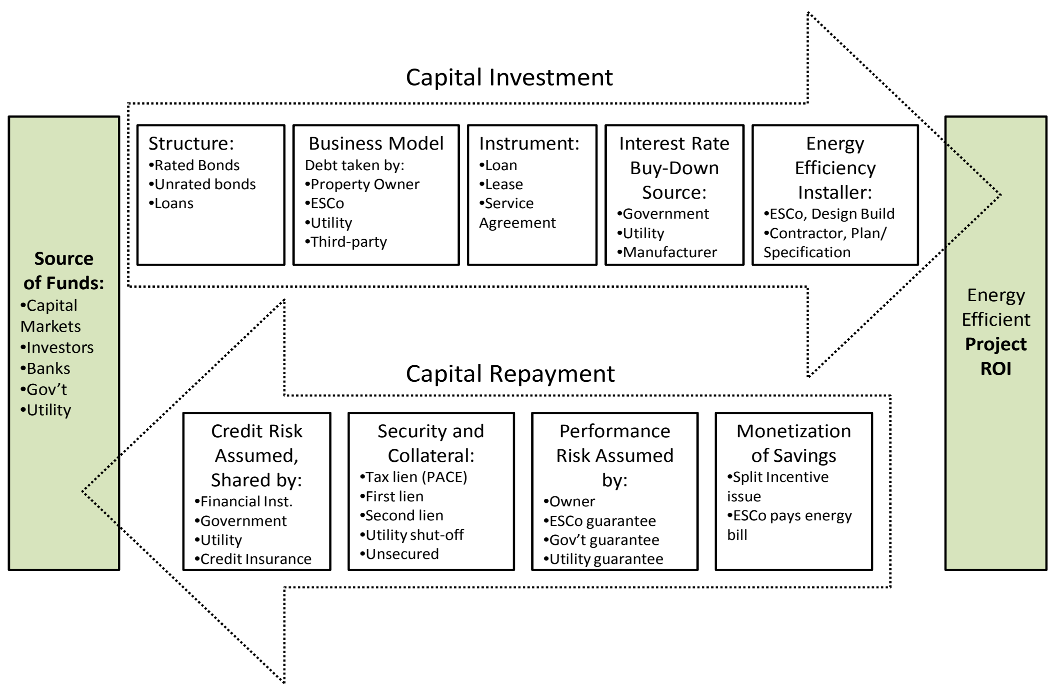
One reason for this lack of uptake of energy efficiency retrofit programs is the availability and structure of financing. Existing programs will never touch the majority of buildings without an unrealistic and unsustainable amount of government funding, and so alternative sources are needed. Reaching the EE Working Group goals will require literally billions of dollars of investment in addition to utility programs and rebates. Expecting government funding to fill the gap is unrealistic and unsustainable. Substantial private capital will be needed. Some will come from customer pockets, but many improvements will be financed by building owners, business and industry. Adequate financing that is appropriately structured to the target customer base is one of the essential elements of all successful energy efficiency programs. Financing tools that are attractive to private investors and tied to comprehensive, well marketed, energy efficiency programs are imperative.

Numerous barriers restrict the market for energy efficiency financing. The recommendations in this document suggest ways to reduce or eliminate these barriers in order to improve the function of this market. Each recommendation also includes a preliminary analysis of how RE-AMP member groups and foundations might help effectuate these changes. Many of these proposed initiatives are interconnected and should be implemented as a suite of policies and/or interventions. Some initiatives will have limited application in segments of the RE-AMP geography. Other initiatives may be difficult to implement in the current political climate and some may be feasible but will be challenging for RE-AMP's member organizations to implement. The following list errs on the side of inclusion.

The objective of the recommended policies and programs in this report is to remove barriers along the steps in the diagram below that prevent private capital from flowing to energy efficiency investments.

A note regarding RE-AMP member groups' capabilities: implementation of some of these recommendations will require significantly more commitment to this sector than has occurred in the past, will involve working with new partners and may require significant political commitment. However, with commitment and cooperation from RE-AMP member groups and capital providers, many of these recommendations are achievable in the short term, and all are possible with a sustained commitment of effort and resources.

Maximizing Capital Flows to Energy Efficiency Investments



For the purpose of evaluating financing, there are four key market sectors (three types of property owners, plus utility companies), each with unique challenges and opportunities. This report treats each market sector separately, with policy and program recommendations for the various market participants. A summary of opportunities for market facilitation follows:

Market Sectors	**Non-Financial Initiatives**			**Financial Initiatives**			
	Designing and Marketing Effective EE Programs	**Facilitating EE Project Procurement**	**Insuring Project Performance (Energy Saving Risk)**	**Providing Cost-Effective Financing Products**	**Providing Credit Enhancements**	**Accessing Capital**	**Enhancing the Primary and Secondary Markets**
Single Family Residential	• Increase availability of EE loans *** • Develop on-bill structures			• Evaluate, promote PowerSaver • Evaluate, promote EEMs • Enhance unsecured loans	• Establish and increase loan loss reserves	• Support PACE • Increase credit union participation in EE lending***	• Create a secondary market (WHEEL) to purchase loans, to aggregate loan loss reserves •
Gov't and Institutional (MUSH)	• Work w partners to design, promote and aggregate EE loan programs***	• Promote performance contracting legislation, technical assistance including owner's agent*** • Use Plan and Spec procurement	• Use Design Build procurement (including savings performance guarantee)			• Advocate MUSH to use bonding authority to finance EE programs • Advocate use of tax-exempt municipal leases for EE retrofits	• Assess MUSH energy efficiency programs for the secondary market

Comm. and Industrial				• Promote the use of service agreements rather than debt *** • Promote on-bill financing *** • Promote off-balance sheet financing		• Use Commercial PACE • Replicate Alabama Saves model • Work w CDFIs	
Utility Intervention	• Promote decoupling for utilities ***			• Evaluate Master Lease financing *** • Evaluate on-bill financing ***	• Use utility balance sheet *** • Create security w/ shut off		
All Sectors	• Coordinate w/ other EE programs • Involve nonprofits, foundations, and other partners • Legislation to promote on-bill financing *** • Create building labeling program***	• Create a public purpose ESCo	• Create standards for audits and M&V		• Repurpose Public Benefit Funds for LLR	• Establish a Green Bank • Repurpose public benefit funds • Create state RLF • Create state facility RLF	• Create standards for underwriting to promote uniform lending

***Most promising initiatives

Residential Sector (Single Family: one to four unit properties)

Introduction. There are two key market opportunities in the existing home residential sector: 1) replacement of failed HVAC equipment and 2) whole house improvements.

The HVAC replacement market consists of approximately 4% of homeowners (HVAC equipment has a service life of approximately 25 years) that replace failed equipment each year. HVAC is the single greatest energy consumer in the home and ideally homeowners would acquire an appropriately sized unit with the highest level of cost effective efficiency possible. The entire system replacement may not provide a positive cash flow investment but the incremental cost of the highest level of efficiency, generally will do so. To drive energy efficiency in this market requires a "point-of-sale" dealer loan (retail installment contract). Contractors control the sale (the homeowner calls the contractor first) and they will not offer financing products that slow down the process or that they do not control.

The second opportunity in this market is whole house installations. While there has been uptake for this service, the volumes are too small to support attractive financing. Therefore, the key to this market it is to generate enough volume to stimulate a "secondary" market of investors, which will lower rates and improve terms.

The following are policies that can support one or the other of these two markets.

Develop On-Bill Structures. On-utility bill repayment programs surmount many of the barriers to implementation of residential energy efficiency programs. They have the potential to overcome the landlord-tenant split incentive, and depending on the collateralization of the program, to reach many residences where low FICO scores would preclude participation in a traditional energy efficiency loan program. Such programs require the participation of the utility, which can be sought through building partnerships (Midwest Energy in Kansas), incentivizing the utility (Duke Energy NC program) or mandate (NYSERDA Good Jobs Green NY program). RE-AMP member groups could work with supportive utilities to develop programs, find sources of capital, and establish the legal authority to operate on-bill programs, especially in regions with co-operative or municipal utilities. RE-AMP groups could work to establish utility incentives to participate in such programs. RE-AMP groups could work with stakeholders, the relevant PUC, any public benefit fund administrators, and the legislature, to implement a mandated on-utility bill program similar to the Good Jobs Green NY program under NYSERDA.

Increase uptake of PowerSaver Loans. PowerSaver Loans are a reworking of the HUD Title 1 Loan program. They are designed for homeowners with good credit, but for those that qualify, they provide below-market rates, few restrictions on possible improvements, and the ability to deduct the interest. However, the program is still new and relatively few homeowners are aware of the program. Because it is a new initiative, there is little data on program participation or the difficulties of applying. RE-AMP groups could work with the FHA-approved PowerSaver lenders to increase uptake of this product by promoting its availability and by simplifying the origination process.

Increase uptake of Energy Efficient Mortgages. Energy Efficient Mortgages (EEM) allow home buyers to borrow more to finance the purchase of an energy efficient home, or to finance improvements to the home's efficiency upon point of sale or refinance. EEM activity varies significantly across RE-AMP states. Over 2,000 active Federal Housing Administration EEMs exist in OH; over 1,000 in IL; almost 400 in MI; but under 100 in the states of IA, MN, ND, SD and WI. RE-AMP groups could work to increase uptake by promoting models that are beginning to work (origination facilitators, Michigan Saves, etc.), by finding ways to reduce hassles. Few borrowers are aware of this financing option, so increasing awareness – especially as part of a residential energy efficiency program – could result in better use of this resource.

Enhance Unsecured Loans. Unsecured loans are offered by several energy efficiency programs. They work particularly well with programs that are driven by contractors such as the HVAC replacement market, though access to them is generally restricted to those with good FICO scores. RE-AMP groups could work to convene Fannie Mae lenders, WHEEL, and other parties to make unsecured loans more available and affordable, potentially through helping to establish Loan Loss Reserves.

Establish or increase the size of Loan Loss Reserves. A loan loss reserve (LLR) incentivizes investment of private capital in the residential energy efficiency market by reducing the risk of lending money in this segment. The loan loss reserve, established to support a particular energy efficiency program, would cover a certain percentage of possible losses to a private investor. This usually results in a lower cost of capital (loans with lower interest rates) and larger amounts invested, as well as the potential to lend to "riskier" participants with lower rankings under traditional underwriting criteria. For example, the Green Madison program has a 5% loan loss reserve, resulting in a 20x multiplier for their investment, and is accessible to homeowners with relatively low FICO scores. RE-AMP groups could work with program administrators to find and capitalize loan loss reserves from a variety of sources – including public and private grants, foundation Program Related Investments (PRIs), or local or state funding sources. RE-AMP groups could help structure these deals, provide information about the relative risks of lending into the energy efficiency market, work to secure sufficient capital, and educate program administrators about the benefits of LLRs.

Support efforts to resurrect PACE. Property Assessed Clean Energy financing has been sidelined by the FHFA decision earlier this year that PACE loans pose risk to lenders. RE-AMP should track the status of current bipartisan legislation to reintroduce it, and if appropriate, work to secure support with various state delegations. Should it be successfully reintroduced, RE-AMP members should determine where its application would be appropriate and then work to implement it – possibly including working to pass enabling legislation in those states lacking such statues.

Increase Credit Union Participation in Energy Efficiency Finance. Credit Unions are natural partners for energy efficiency programs – they have more of a community focus, are interested in deals featuring lower capital volume, and are in many cases aggressively seeking new members. RE-AMP groups could work with Credit Unions to develop energy efficiency loan programs, with them originating and servicing the loans, and investing in the product.

Participate in the WHEEL (Warehouse for Efficiency Loans). The Warehouse for Energy Efficiency Loans is an initiative of the Pennsylvania Treasury Department to pool and securitize energy efficiency loans on the secondary market. States with approved lenders can sell their energy efficiency loans to the PA Treasury. This frees up capital to reinvest in energy efficiency programs. RE-AMP states could participate in the WHEEL effort or choose to develop a similar program. RE-AMP groups could work with existing energy efficiency programs to determine if participation would be of interest and if so, to facilitate that participation.

Government and Institutional Sector (Municipal, University, School and Hospital or "MUSH" market)

Introduction. The government sector is not lacking effective financing options as most governments can access very low cost (2 - 5%) bonds or tax-exempt municipal leases. The shortfall in this market is primarily procurement. Most government property owners can use either conventional "plan and spec" design and bidding procurement or the "design-build" ESCo/performance contracting model (acknowledging that many facility managers think that they can out-perform the turnkey installation and energy savings guarantee of an ESCo). Both approaches can work but the majority of institutions commit to neither. States should follow the lead of PA, KS and MA and put in place a comprehensive procurement process and get all state and municipal properties retrofit with all life-cycle cost effective energy improvements.

The non-profit, institutional market can piggy-back on conduit-issued, tax-exempt municipal lease money or various bonds such as Qualified Energy Conservation Bonds (QECBs) and each state should put in place a source of funds along with a detailed procurement process for this sector.

Use Plan and Spec Procurement to implement MUSH retrofits. In instances where a governmental or institutional actor chooses not to pursue an ESCO deal with performance contracting, well-implemented plan and spec procurement can be an effective method of performing energy efficiency retrofits – providing that an entity is in charge of ensuring project cohesiveness and the long-term performance of the buildings. RE-AMP groups could educate building owners about the process and conceivably assist in ensuring that these types of deals result in maximal efficiency gains.

Use Design Build Procurement (including savings performance guarantee) to implement MUSH retrofits. Under this mechanism building owners would issue an RFP delineating the scope of the project they wish to implement, and contractors and ESCos would respond with proposals for how to complete the work – sometimes including financing options. Many deals of this type include Energy Savings Performance Contracts (ESPC), whereby the ESCO guarantees a certain level of savings over time, and will refund the difference should the project not perform. RE-AMP groups could work with governments to increase understanding of ESPC, assist with bidding, selection, negotiation and management process (typical of assistance provided in PA, KS, MA, etc.). Finding a way for a state to employ an owner's agent to facilitate the ESCO process for smaller municipalities or departments and aggregate deals would increase the number of projects and could lead to motivators such as job creation or energy savings being prioritized in the process. In RE-AMP states where there are barriers to ESCO activity, RE-AMP groups could work on enabling legislation (working to ensure that it's good, allows performance contracting, but potentially protects state and local government from bad deals. This could be achieved by requiring or providing an owner's agent).

Use bonding authority including QECBs to finance energy efficiency retrofit programs. Governments have the ability to access low-cost tax-exempt financing that can be used to fund energy efficiency programs. In the case of QECBs (Qualified Energy Conservation Bonds), these are energy specific bonding authorities, the rate on which is bought down by the Treasury department. This low-cost capital can make program participation far more attractive, and can be used to support retrofit activity across market segments. However, it is especially compelling in service of retrofitting the state or municipality's own buildings. In addition to advocating for government entities to use their bonding authority to fund retrofits programs and retrofits of their own buildings, RE-AMP groups could help to advocate for continued federal funding of tax credit bond programs available for GHG emission reduction programs in public buildings.

Use Tax-Exempt Municipal Leases to fund energy efficiency retrofits. Tax-exempt municipal leases allow energy efficiency programs to be funded without adding debt to a governmental entity's balance sheet. Government entities essentially lease energy efficiency investments in their physical facilities and pay a fee to use them. This is especially helpful in jurisdictions that are unable to bond for energy efficiency upgrades or do not possess the necessary bonding authority. States such as PA, KS, and MA are doing an excellent job of advocating for units of government to do this. RE-AMP groups could assist in raising awareness of this financing option and advocating for governmental entities to implement this strategy.

Assess MUSH energy efficiency programs for the secondary market. Selling MUSH loans to the secondary market would free up capital for reinvestment in further projects. RE-AMP groups could evaluate MUSH loan programs that incorporate secondary market execution (funds would be provided by private investors in the secondary market and the government entity would issue the debt).

Commercial and Industrial Sector (Including market-rate Multifamily Properties)

Introduction. The commercial and industrial sector can be subdivided into two segments: 1) corporate owner-occupied property (20% of the total) and 2) real estate investment property (80% of the total) which is leased space. The corporate-owned segment can be financed with numerous instruments from loans to leases to service agreements. The interest rates and terms will reflect the creditworthiness of the entity. Generally, financing is available to this segment although many entities will insist on two year paybacks if the financing is a loan (representing debt on the balance sheet). Service agreements, which would not be limited by the host's payback criteria and that do not represent debt, could be very effective in this market.

However, financing energy efficiency for real estate investment properties is very problematic. The owners of these properties have already maximized financial leverage and generally cannot take on more debt. If they would accept additional debt, their mortgage covenants probably prohibit doing so. Even if these problems could be overcome, as the tenant pays the energy bill and will benefit from the savings, he owner must be able to “pass-through” these costs to the tenant. However, typical leases will not allow debt incurred by the property owner to be passed through to a tenant. The answer to this dilemma is to offer energy efficiency as a service (not debt), which can be passed through to the tenant.

Use Off-Balance Sheet Financing. Off-balance sheet financing is a method of funding energy efficiency retrofits that provides energy efficiency investments as a service, or some other non-debt expense. It works to eliminate the two main barriers in the commercial market: 1) borrowers that are unwilling or unable to put energy efficiency projects on their balance sheets; and 2) the split incentive associated with tenants paying the energy bill. RE-AMP could work with state and municipal property owners and encourage them to procure energy efficiency via off-balance sheet financing. This will grow the market for projects such as Transcend, Metrus and others, which in turn will create investor interest in this opportunity. RE-AMP groups could work with ESCos to determine which forms of off-balance sheet financing they will support.

Promote the Use of On-Bill Financing for C&I Retrofits. On-bill programs for the commercial market have proven to be successful, and have potential to overcome the landlord-tenant split incentive. Repaying the efficiency investment as a service rather than a loan, circumvents many businesses reluctance to acquire debt to finance energy efficiency retrofits. RE-AMP should support efforts to create on-bill programs for this sector, including pushing for possible NY-style mandates.

Use Commercial PACE Mechanism for Retrofit Programs. Commercial PACE allows businesses to invest in energy efficiency retrofits without acquiring traditional debt. RE-AMP should work for passage of enabling legislation in states that lack it. In areas where the authorization exists, RE-AMP groups could work to catalyze dealmaking in this space. A recent deal in Miami and Sacramento connected local government, contractors, financiers, and building owners to spark project investment worth up to a potential $650 million. RE-AMP could identify guidelines and best practices for all nonprofits across the region to use when implementing/advising local projects.

Provide Energy Efficiency as a Service. Work with state and municipal property owners and encourage them to consider procuring energy efficiency as a service, rather than as a capital expense (debt). This will grow the market for projects such as Transcend, Metrus and others, which in turn will create investor interest in this opportunity. RE-AMP groups could organize meetings with the real estate management and investor community and have the ESCo service providers present the business model.

Replicate the Alabama Saves Program. Evaluate the applicability of using the Alabama Saves model to create funding for commercial financing. The program increased total available capital from $25 million to approximately $60 million while maintaining 2% fixed interest rate. One half of the funds were allocated to the State for a direct revolving loan fund. The other half was contributed to an escrow account for debt service reserves and interest buy-down funds. The funds attracted three lender partners that committed to lend against the debt service reserve at a ratio of 10:1. The balance of the funds is being used to reduce the rate to the target 2%. RE-AMP groups could meet with the administrators of the Alabama program and evaluate feasibility

Work with Community Development Financial Institutions. Evaluate the use of CDFIs as a source of funds for commercial programs, focusing on the benefits of job creation and economic development for the community. RE-AMP could convene an advisory group to explore options and to find candidates.

Utility Sector

Introduction. Thomas Edison's initial business model for the electric supply industry focused on building generating stations for their customers in individual buildings. Overtime, for a number of reasons the model changed to building central generating stations and selling kWhs (Edison initially intended to sell "light hours" knowing that customers would never comprehend the concept of kWhs and expecting that in the future he would be able to improve the efficiency of the light bulb and wanted to capture that profit opportunity as well). To fight the growing competition (supposedly one street corner in Chicago was served by seven individual utilities) Edison and his associate Samuel Insul, began convincing elected officials that the free market would never provide the optimal mix of cost and reliability and that only a monopoly franchise could do so, and utility regulation was born. While there may be no great economies of installing energy efficiency measure, there are certainly economies of evaluating ("seal of approval"), promoting, deploying (demand response deployment), financing, billing (on-bill) and measuring energy savings (M&V).

Promote Decoupling. Utilities are in the business of selling electrons. Unless they see a way of making money on energy efficiency, they tend to oppose energy efficiency programs as they are in fundamental opposition to their business model. RE-AMP groups could promote decoupling or other ways of removing disincentives and creating incentives for utilities to promote energy efficiency.

Promote On-Bill Financing. Although investor-owned utilities have not supported on-bill, some co-op and municipal utilities should be amenable to these programs. RE-AMP could support or lobby for a bill similar to New York state's Good Jobs Green Jobs program that mandates on-bill programs.

Master Lease Financing. Evaluate master lease financing programs under which a utility would provide credit enhanced sub-leases for energy projects for its customers. Under this arrangement, individual utilities would select a commercial lease provider and sign a master lease agreement and stand behind (credit enhancement) a portfolio of sub leases. The lease company would work with the utility to establish an underwriting standard and pricing for various credit "buckets" (e.g., small commercial sole proprietorships, companies with three years audited financials, companies traded on exchanges and rated companies). The utility outreach would identify property owners and projects, which would be underwritten by the lease company. Owners/projects that met the underwriting requirements would be originated and funded from the master lease funds as a sub-lease from the utility to the property owner. The utility could collect payments "on-bill" or have the lease company service the loans. The lease company would include a percentage in the interest rate to fund a loan loss reserve. When losses occur, the utility would use the proceeds of the loan loss reserve to cover the losses. Losses that exceed the loan loss reserve will be assumed by the utility. This type of program provides low rates, a simple and quick origination process, an adjustable loan loss reserve and essentially unlimited funds. RE-AMP could work to educate stakeholders about this model.

All Sectors

Create a Green Bank. A Green Bank can help to bridge the capital availability gap between the scale of most energy efficiency projects and the level at which most private capital becomes interested. It could lend to public and private entities at attractive rates specifically for energy efficiency projects. It could be capitalized from a variety of sources, including public benefit funds or QECBs. A Green Bank was recently created in Connecticut for this purpose. RE-AMP groups could work with partners to create and capitalize programs similar to the new Connecticut Clean Energy Finance Investment Agency, and work with government, the relevant PUC, and others to promote it.

Repurpose Public Benefit Fund Investments. Most states have a public benefit fund or systems benefit charge – a small surcharge on utility bills that is to be spent on promoting energy efficiency. In most instances, these funds are used to provide rebates for installing energy efficiency measures. These funds could be used to leverage private investment, by being structured into a loan loss reserve, green bank, revolving loan fund, or some other form of leverage. RE-AMP groups could analyze current use of Public Benefit Fund dollars, and propose and promote alternatives that have higher ROI.

Coordinate Energy Efficiency Programs. Many investment opportunities in energy efficiency go untapped because no one organizes and promotes them. Smaller municipalities lack the resources to create their own programs or navigate the ESCO bidding process. RE-AMP groups could work with states or other entities to coordinate and aggregate local energy efficiency programs, potentially in a fashion similar to the Massachusetts Green Communities program.

Involve the Nonprofit Sector. Through RE-AMP and allied organizations, work with nonprofits to design new programs (including for their own owned or leased buildings), reach out to potential participants such as cities and businesses, and work to administer programs.

Create Revolving Loan Funds. State, local, or regional revolving loan funds can support energy efficiency programs across all sectors. This could possibly be structured as a green bank. The capital could come from a variety of sources, including bonding. RE-AMP groups could assist in structuring the program, advocating for it, and once in existence, marketing and outreach to potential participants. Some states, such as Oregon, have established such funds specifically to target a sector, such as schools.

Involve Philanthropic Organizations. Foundations, including RE-AMP funders, could consider making Program Related Investments in energy efficiency programs, helping to capitalize them.

Establish a Public-Purpose Energy Services Corporation. A public purpose ESCO could be created to find energy efficiency opportunities, coordinate the work, and ensure continuing performance, while seeking to maximize public goods. RE-AMP could advocate for the creation of such an entity.

Establish Building Labeling Policies. By labeling the energy efficiency of buildings and disclosing that information at point of sale, the market will begin to reflect the value of energy efficiency in higher sales and occupancy rates. It also creates an incentive to invest in energy efficiency improvements, and a strong disincentive to be among the worst-performing tier of buildings. Energy labeling policies have been successfully implemented across the country. RE-AMP could advocate for energy labeling laws.

Standardize Energy Audit Data. Without an easy way to compare various energy efficiency programs and investment opportunities, large-scale private capital is unlikely to begin to view energy efficiency as a safe long-term investment opportunity. By standardizing investment-grade audits in energy efficiency programs in partnership with others across the country, the certainty that large investors seek can be provided. RE-AMP can advocate for energy efficiency programs to standardize their audit and reporting requirements to allow for underwriting loan performance measurement, evaluation, measurement and verification of energy savings.