

Looks Like Finance, but It's All About Solutions: The Public-Purpose ESCO Enterprise Model

*Elizabeth Chant, Peter Adamczyk, David Barash, Beth Sachs
Vermont Energy Investment Corporation*

ABSTRACT

The public-purpose energy services company (PPESCO) is grounded in neither a government mandate nor a public subsidy model. Instead, it is built on a sustainable earned revenue model with a mission to achieve deep energy savings in buildings that serve public purposes while providing returns to private investors.

Multiple barriers to comprehensive energy improvements have left large and important segments of our nation's building stock unserved, including smaller buildings serving public purposes such as affordable housing, education, health care, and municipal and community functions. PPESCO's comprehensive services—technical assistance, financing, installation oversight, and energy performance contracting—result in building owners achieving cash-flow positive results. The client relationship requires transparency about services and costs, and enables energy savings of 30% or more, savings that can go toward the building owner's public-serving mission.

PPESCO offers an innovative and practical way for building owners to address barriers related to access to capital, technical staff capacity, and trust in service providers. More important, it is a model designed to go to full-scale commercialization. This paper provides the blueprint of the PPESCO business model that will: (1) attract investors who wish to reduce carbon emissions, support local economies, and invest in mission-related organizations; (2) appeal to owners of buildings that serve public purposes; and (3) be sustainable as a business. Creating entrepreneurial PPESCOs nationwide will preserve and fortify public buildings, provide substantial reductions in greenhouse gas emissions, and strengthen local communities.

Background

Two very different business models that have matured over very different tracks in the last three decades have combined in the past year to yield a new business model that has key relevance for the building retrofit market. That new model, the public-purpose energy services company, is the marriage between the energy services company (ESCO) model and the social enterprise model.

Traditional ESCOs provide comprehensive energy services and annually bring billions of dollars of private-sector capital to energy efficiency projects in the United States. ESCOs provide the full complement of energy services, including technical analysis, project management, construction services, and access to financing, with a performance guarantee that offers surety to both the client and the capital source that the energy savings will be sufficient to repay the capital used to finance the project. The client acquires a project that has guaranteed savings, no upfront cost, and few headaches.

The ESCO model operates in a narrow part of the market. The vast majority of ESCO work is in the federal sector and the municipal, university, state, and hospital (MUSH) markets.

Energy improvement projects generally are at a scale of \$1 million or more, and they involve energy conservation measures for which baselines are relatively easy to establish, and the project results relatively easy to measure, monitor, and verify.

The ESCO implementation model leaves too many markets underserved and too many buildings unserved, at a time when the imperatives of climate disruption and energy price volatility drive the need for deep energy reductions in buildings.

Overlaying the social enterprise model—using commercial strategies to achieve economic, social, and environmental objectives—onto the ESCO model is the first step in establishing this new model and putting it to work. The roots of the social enterprise model are in the alleviation of poverty through the commercial vending of appropriate technology and process. A good example of this is the manufacture and sale of pumping equipment to increase yields and incomes for subsistence farmers. Recently, entrepreneurs have begun to use the model to achieve goals in environmental sustainability. In fact, it is not unusual for social enterprises today to judge their success to the triple bottom lines of profit, people, and planet.

PPESCO has been designed to be such an enterprise, with a triple bottom line of (1) economic profit to the PPESCO; (2) public benefit through increased efficiencies resulting from the project; and (3) environmental benefits of reduced carbon emissions. Three private funders have supported the development of this model: the High Meadows Fund, the Kresge Foundation, and the MacArthur Foundation.

Meeting Challenges with PPESCO

PPESCO reaches buildings not served by traditional ESCOs. It is an innovative and practical business model made possible by, and explicitly intended to solve, existing market failures, including the principal-agent problem and information asymmetry. With one PPESCO already established and as more come onto the market, PPESCOs will make possible comprehensive energy improvements in a subset of buildings that are of great value to our communities and society. If buildings serving public purposes have lower operating costs because they are more energy efficient, their owners can re-allocate funds normally spent on paying energy bills to those agencies' missions. The missions might be education, public safety, shelter, or any other critically important elements to a well-functioning society. And because PPESCOs will make it possible for project debt to be paid from energy savings, efficiency projects can be structured so that the building owners are saving actual dollars (making their bottom lines cash flow positive) as soon as the energy improvements are completed, as shown in Figure 1.

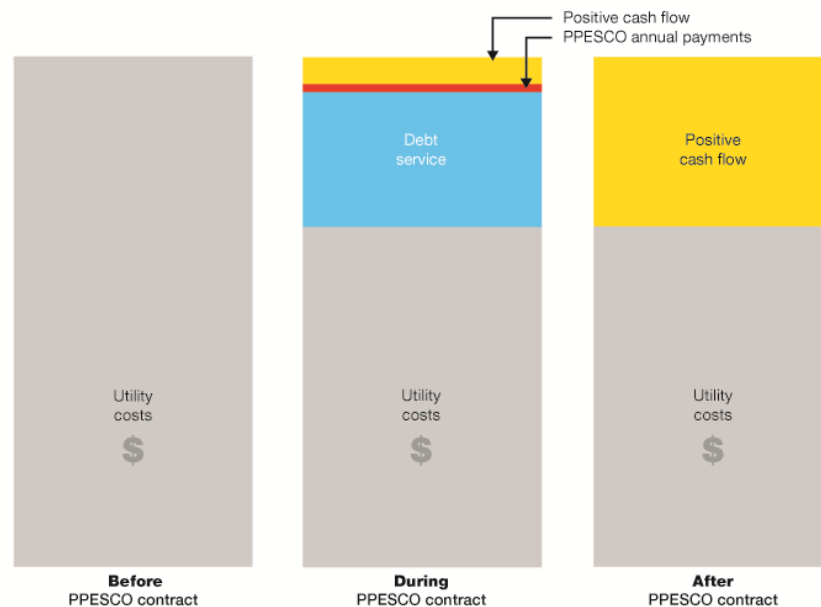


Figure 1. How a PPESCO provides positive cash flow for the client.

The PPESCO model is for owners of public-purpose buildings in the affordable housing, education, health care, and municipal government markets. Working with owners, PPESCO makes major energy improvements to buildings—at very low financial risk, and with no up-front cost. When energy use is reduced, building owners save money that can then be used to fund more of the owners’ public- purpose missions. PPESCO customizes technical assistance and financing for each project, and achieves net savings for the owner from the start.

PPESCO investors who provide capital for these projects receive a reasonable, though not maximized, return on investment.

There are two foundational elements of the business proposition—one for investors and one for clients; each has its own essential features:

- Investors can achieve reasonable return at reasonable risk and provide social benefit through:
 - The aggregation of projects into portfolios to reduce investor risk, by combining multiple capital sources investing in multiple projects
 - Smart partnerships with non-traditional capital sources, such as program- or mission-related investment from foundations
 - Solid technical experience and organizational credibility
- Clients gain access to technical expertise and financing from a trusted source through:
 - A PPESCO that meets clients where they start—technologically, economically, and managerially
 - The necessity of transparency and a practice of open books
 - The risks of a project’s ability to meet its energy savings goals, and the size of those risks
 - The effect of taking advantage of all available supplemental resources

These elements over time will create a record of performance, first by one PPESCO, but then later, through a network of PPESCOs. Once the record of performance is in place, PPESCOs will be able to attract more traditional capital, close the gap between perceived risk and measured risk, and in turn catalyze more PPESCO activity.

A PPESCO can be established as a social enterprise with an earned-income business structure. That enterprise would have a mission of helping owners of public-purpose buildings reduce energy consumption, save on energy costs, reduce their vulnerability to energy price volatility, improve the performance of buildings that serve the public, and reduce pressures on often-declining operating budgets.

Barriers to Building Energy Improvements in Public-Purpose Buildings

As discussed above, the PPESCO concept was designed to address market failures that present barriers to public-purpose building owners. Many of these barriers are well known:

- Building owners often lack access to valid and reliable information from service providers that have no stake in a specific technology or equipment brand.
- The project costs are up-front and prohibitive, and the owner might not have access to traditional credit.
- The owners lack the organizational capacity and / or capability to tackle energy improvement projects.
- Split incentives often exist—the phenomenon of neither owner nor occupant having an interest in improving a building, because:
 - Building owners do not reap the benefits of reduced energy costs from an investment in building improvements if occupants pay the utility bills, and
 - Tenant occupants who are uncertain if they will be in the building for the entire payback period tend not to invest in improvements because they perceive their planned occupancy to be sufficiently short that they will not fully benefit from their investment in such improvements.
- Laws and regulations unique to the funding sources of the public-purpose building can present obstacles to specific energy improvements or to types of financing to make such improvements.

The barriers to making significant energy improvements to buildings in the underserved markets identified in the public-purpose sector involve all of the above. Some of these affect one subsector more than another: split incentives are often a barrier in multifamily affordable housing, but rarely a barrier for a library or fire station, for example. Because these barriers exist, no one to date has taken action in a coordinated, systemic manner to serve these markets.

Addressing Barriers: Traditional ESCO and PPESCO

ESCOs reduce or eliminate some barriers, but the necessary returns on capital often constrain an ESCO's ability to deliver deep energy savings. As shown in Figure 2, an ESCO will stop at the maximum ROI or at the point at which its ROI needs are met. PPESCO can deliver more investment in the building systems and produce deeper savings (including both the grey

and yellow areas) because it only requires a sustainable investment return, not a profit-maximizing one.

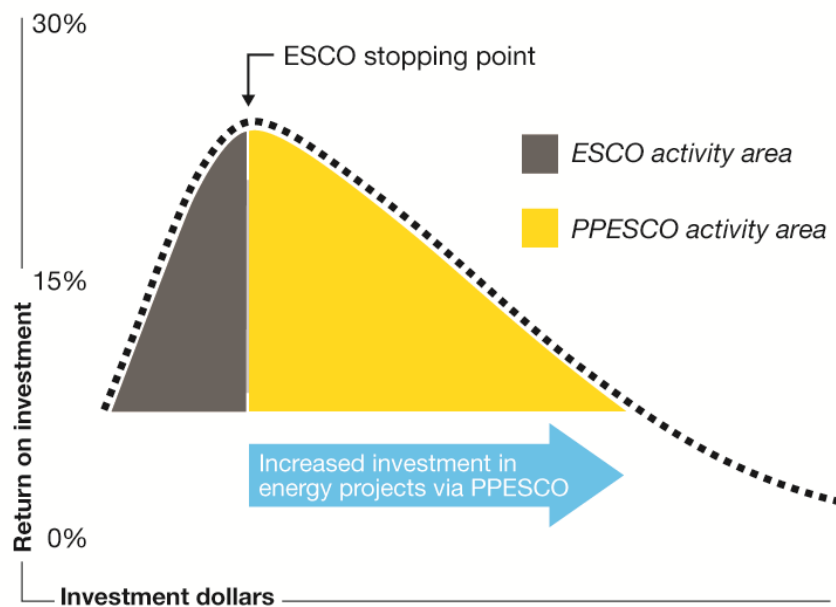


Figure 2. How return on investment drives ESCOs and the PPESCO.

ESCOs can achieve significant energy savings in large buildings, but they generally do it without providing truly comprehensive energy services. They install and control equipment, lighting, and appliances, but they do not typically airseal and insulate the building. All of these measures are important energy improvements that significantly increase building performance.

The reason is simple: Compared to typical ESCO measures, it is more difficult to estimate costs and savings on building shell measures prior to initiating a project, and difficult to meter and control them after they are installed. The ESCO business model thus overlooks two of the most proven and reliable energy-saving measures in most buildings. In addition, airsealing and insulation are time consuming and labor intensive, and thus contribute to smaller ESCO profits.

Sometimes these improvements are not a part of the ESCO project, because they do not involve products or services from affiliated or preferred suppliers and vendors. Many ESCOs are owned by or affiliated with organizations that sell energy or specific products; thus, improvements are often limited to specific energy sources or products. A PPESCO has no such limitations.

Integrated Services, Driven by Mission

Although often seen as a financing model, the ESCO model, and its PPESCO counterpart, provide owners with much more than access to project financing. Both ESCOs and PPESCOs share the integration of four services to clients: (1) technical assistance, (2) construction / installation, (3) financing, and (4) energy performance guarantee. A PPESCO's

emphasis on mission mandates that it go beyond those four services. It provides additional value to clients by adhering to its core practices and outcomes:

- Deep, cost-effective energy improvements that comprehensively address the whole building
- Cash-flow-positive results for the client, with an objective of providing immediate savings
- Access to and / or coordination with long-term capital that allows projects to achieve deeper energy savings
- Transparent pricing on products and services presented by a trusted partner
- Bias-free recommendations on energy sources and technologies
- Contracting for installations, including airsealing and insulation, that do not lend themselves to individual controls for measurement and verification
- Ability to coordinate PPESCO services so that the services can be integrated into a larger rehabilitation or new construction project
- Continued engagement with building owners and managers, after the installation project is complete, both to sustain energy savings and to find additional savings as new, appropriate technologies and services come onto the market
- Ongoing work with building staff to increase internal capabilities about energy use and performance

A PPESCO treats the costs of technical services in project development and construction management as development costs that can be financed as part of construction costs. The client pays for ongoing technical services via an annual fee. As shown in Figure 1, the combination of post-retrofit utility costs plus financing, plus ongoing annual costs, are designed to be less than the pre-retrofit utility costs, and therefore provide the owner with a cash-flow-positive result.

Serving Public-Purpose Markets

Defining itself as serving public-purpose organizations has clearly ruled out some market sectors that could potentially benefit from ESCO-like services. In particular, small commercial and industrial facilities are not part of the intended client base for PPESCO. The second line of the triple bottom line for a PPESCO—providing social good—drives its dedication to public-purpose facilities. If resources can be unlocked from sectors that are charged with providing the services that the public needs, then those organizations can provide additional social good. Indeed, many of these sectors have affinity sources of capital for precisely this reason. The sectors on which the PPESCO will target services are affordable housing, education, health care, and municipal services. These are not the only sectors in which a PPESCO could offer services to underserved markets, but they are the sectors that hold the greatest promise for a successful launch of the concept. Throughout its development, the PPESCO is designed to adjust the targets on both clients and services, depending on market and business conditions.

The Benefits of a Portfolio Approach

The portfolio concept, shown in Figure 3, is essential to the PPESCO business model. It mitigates the naturally occurring risk associated with the PPESCO's choice of unserved, smaller

projects with longer payback characteristics. One significant feature of a PPESCO project that mitigates this risk is the higher likelihood of operational stability at public-purpose buildings, which tend to have long-term ownership or control. This translates to lower risk of default.

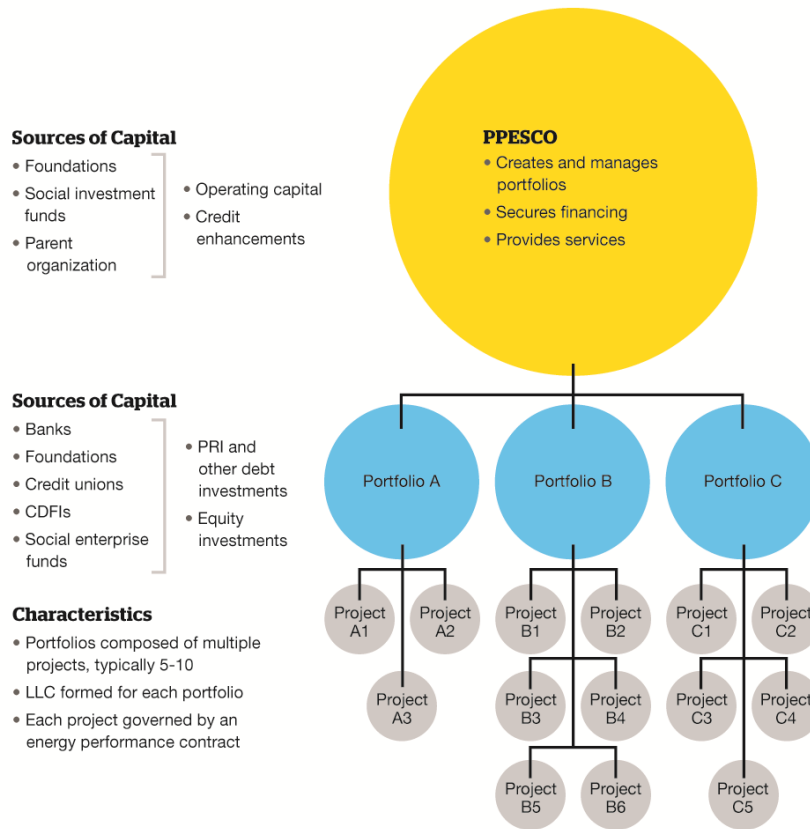


Figure 3. The PPESCO portfolio model.

Attention to portfolio composition makes marketing, partner development, and financing easier. Diversifying the portfolio reduces risks associated with:

- **Uniformity.** Whether in relation to geography or sector, portfolio diversification helps lessen the impact, should a particular region or market segment experience an economic downturn.
- **Economics.** The PPESCO will seek to mix small projects with large ones to create a risk-balanced viable portfolio. Combining multiple investment types within a portfolio is a standard risk mitigation investment strategy in other markets, and there is no reason that this approach will not work with a PPESCO. Further, this approach enables the launch of smaller projects (a significant segment of the underserved market) with thinner client economics when those projects are mixed with the strength of larger, more economically resilient projects.

Some likely capital providers for PPESCOs have unique sector, geography, or other defining attributes and therefore need to be matched with a portfolio that represents those target elements. Some lenders specialize in health facilities, and some foundations exclusively support

affordable housing. (For example, some Community Development Financial Institutions [CDFIs] target investments to affordable housing or charter schools.) Others might have broad carbon reduction interests that extend across all sectors and types.

PPESCO can attract capital providers by segmenting client projects into like-minded, equivalent-risk-profiled asset portfolios. This portfolio segmentation offers a relatively easily pooled investment vehicle for different types of investors. The PPESCO may create separate corporate structures for particular portfolios, mitigating risk to the capital providers and to the PPESCO itself. Separate subsidiaries offer a rigor and discipline that help match contract and financing terms, expectations for return on investment, and risk mitigation strategies, such as the presence of credit enhancement assigned to a portfolio.

This access-to-financing service of the PPESCO will likely require partnerships with one or more financial intermediaries capable of aggregating asset portfolios and / or aggregating capital sources. To the extent that capital sources are aggregated into a fund or funds, a financial partner will underwrite, originate, and service the loans.

Organizational Structure that Balances Mission and Profit

A PPESCO must be structured to allow it to appropriately balance mission with profits, while maintaining its ability to operate in a way that assures self-sufficiency. As it matures and as operations normalize past the start-up stage, portfolio revenue is expected to exceed overhead and growth reserve needs. In this instance, a PPESCO can elect to reduce its mark-up to allow more project capital to go to direct project costs.

Nonprofit and for-profit businesses each can direct any excess of revenues over expenses into growth, including growth that might not generate the same profit level. For-profit businesses generate a financial return to their investors. A PPESCO's objective is to enable as much available financing capital as possible to go to projects—with reasonable, but not maximized, profits as the organizational goal. This means that certain legal structures are ill-suited to the PPESCO model—specifically, those that are complex and / or whose obligations to investors dictate that the business prioritize profits over mission.

Just as it can be problematic for a standard corporate entity to balance mission with profit, it can be challenging for a nonprofit to balance profit with mission—or to create the optimal balance between the two. Because the PPESCO needs to be commercially viable, a nonprofit structure might not be ideal.

Because program- or mission-related investment (PRI / MRI) from foundations is a sound and likely source for early project financing, the legal structure for a PPESCO should be compatible with their requirements.

Furthermore, a nonprofit structure could inhibit a PPESCO's ability to use equity investments from social-enterprise or other private-sector sources, be those investments at the project, portfolio, and / or entity level. In certain cases, a for-profit structure can also allow the PPESCO, on behalf of its projects, to take advantage of investment tax credits that would not be available to a nonprofit.

One additional advantage of a for-profit entity is that it can significantly enhance the ability for PPESCO work to transform the market of existing service providers. A for-profit entity that appeals to small-business people and entrepreneurs who seek a profit, albeit a modest one, offers an easily replicable model. This model, once established, makes it possible for other PPESCOs to be created and move through the market quickly.

Necessary Experience

A PPESCO needs a strong track record, which, of course, does not exist at start-up. Therefore, a new PPESCO needs a parent or partner organization that has these attributes to launch it, with a staff and trusted contractors who bring deep experience in accurately predicting and measuring energy savings from installed improvements in buildings. Because financing for a project is typically based on projected savings, the savings estimates need to be as accurate as possible.

A PPESCO also needs deep roots in the communities in which it plans to work. Although the network of technical expertise should be grounded in local conditions, the use of portfolios and national pools of capital can provide geographic diversity as a way to mitigate risks. A new PPESCO also needs collaborative relationships with partners and networks that can bring projects (and in some cases, capital) to the PPESCO. Potential PPESCO clients need and value these relationships and possible sources of capital. One of the first qualifying questions will be the “but-for” test: Were it not for the PPESCO, would this work get done? These roots, partners, and market or sector networks will provide the access to decision makers to help move projects forward. Growing through networks is a core strategy of the PPESCO business model.

These requirements lead to the conclusion that in most cases, a PPESCO will be launched as a subsidiary of an existing organization that has experience and credibility in specific markets. A PPESCO might also be launched as a joint venture, bringing together the talent and market connections of more than one organization.

“Mind the Gap” – Perceived versus Actual Risk of Energy Performance

Energy professionals understand well the risks of the underlying energy conservation measures that a PPESCO will complete. The financial markets will have less understanding of such risks. However, these risks can be calculated and planned for. The risk of not meeting energy savings goals is cited most often, but industry professionals with many years of experience and substantial project knowledge characterize this risk as minimal and manageable.

The risk is not binary: It is not that the savings will result or they won't, but that the installations might under-perform. These are usually easily observable and can be readily fixed. The PPESCO's technical expertise and its monitoring after the installation lower the risk for under-performance. Essentially, under-performance is the degree to which realized savings vary on the low side from prediction.

Until financing is more readily available through standard commercial mechanisms (which will happen when energy savings are seen as a source of sound and financially secure debt repayment), non-traditional capital sources need to be identified, nurtured, and deployed. A primary source at the start is the philanthropic community. Mission-aligned investments that qualify as PRI are one such source for the parent organization that starts a PPESCO, and can lead to a wider range of social-enterprise capital. Such capital, drawn at both the local and national levels, can be matched with projects through portfolios that encompass specific geographic interests, sector interests, or both.

There are many reasons that patient, non-traditional financing is needed in the short term to achieve the long-term goal of wide capital access through traditional commercial lending channels. The case will need to be made that energy savings are a logical, safe, and predictable source of repayment.

A strong body of experience is necessary to make this case. The existence of multiple, successful PPESCOs, with accumulated experience and data, will inspire confidence in the lending community. When this happens, access to traditional commercial financing is more likely to occur. This in turn will enable expansion of the PPESCO model, significantly accelerating the opportunities to reduce energy use in public-purpose buildings across the United States. The long-term goal is to create access to standard commercial sources for long-term financing. This is many years off, but it is what the PPESCO vision leads to.

Conclusion: Transforming Markets Through a Triple Bottom Line

Good business models can transform markets. In the decades since the ESCO model entered the energy marketplace, many of the largest energy users have been able to lower their costs because of it. Although the model works for them, it has left a large part of the building sector underserved. As utility costs continue to rise, the needs of that wider range of clients have become more pronounced. Serving this wider market is both an opportunity and an imperative.

The existing energy services industry cannot easily apply its model to this wider range of clients, particularly not to those considered hard to reach and outside the basic business model. With a new model in place, however, redesigned to be attractive to the underserved markets, while providing benefits to society at large, the next generation of services to fill those needs is now ready to enter the marketplace.

The idea of using future energy savings to finance energy improvements—and putting that idea to work in the underserved building market—has been percolating for many years. PPESCO takes this idea further by specifying that the highest and best use of this proven concept is to apply it in sectors that explicitly exist to serve public interests. It does so by using another proven model, the social enterprise, which allows for the prioritization of energy savings and public benefit over financial return, installing measures that achieve more savings than an average energy improvement project, and finding and using non-traditional capital to finance projects. The PPESCO model emphasizes the best client solutions, regardless of technology or energy source. It operates transparently to engage the client as an active stakeholder in selecting the best choices for the client organization, the purpose of the building, and the building itself.

A PPESCO seeks a balance of mission and profit. The PPESCO mission is critical to enabling significant greenhouse gas emission reductions in important, underserved sectors. Providing services to public-purpose clients also creates significant positive cash flow for public-serving institutions.

Long-term financial sustainability is essential to successfully operating a PPESCO. Even though it has evolved from the ESCO model, the PPESCO is less a modification of an ESCO, and more an innovative twist on the savings-as-debt-service concept.

This model could bring significant benefits to organizations that are not able to access the expertise and financing they need to make their buildings more efficient. Potential PPESCO clients also would see lower operating costs and would reduce their environmental impacts by completing customized, comprehensive energy improvement projects in their buildings.

More important, this model can be widely scaled across many organizations, bringing new talent and capital to the task of deep energy savings in buildings. Multiple PPESCOs across the country, networked together, can catalyze energy and water savings in sectors that need both the cost savings and price stability. Finally, the deep carbon reductions that result will help in the urgent fight to move to a sustainable planetary carbon level.