Projects that improve energy efficiency can pay back their initial investments over several years through savings on energy costs. But a variety of barriers prevent end users from accessing commercial financing for such investments. In some contexts, so-called energy efficiency revolving funds may offer a viable way around these barriers. Such funds facilitate access to finance in the near term while paving the way for commercial financing in the medium to long term, particularly in the public sector.

Why is this issue important?

Energy efficiency promises huge economic returns, but market failures must first be overcome

Energy efficiency should be the “first fuel” of energy policy makers around the globe. It helps to meet growing energy demands cleanly and cheaply, increases competitiveness, generates employment, enhances energy security, reduces poverty, and protects the environment—thus contributing to the World Bank’s twin goals of poverty reduction and shared prosperity. According to the International Energy Agency (IEA), in the years 1974–2010, energy efficiency did more to meet growing energy demand in IEA member countries than any single energy resource. Harnessing the benefits of energy efficiency could facilitate more-efficient allocation of resources across the global economy, potentially boosting economic output by $18 trillion through 2035 (IEA 2014).

However, the potential gains of energy efficiency have been difficult to realize owing to prevailing market failures. Even though investments in energy efficiency are generally profitable and cost-effective, with energy savings repaying investment costs over time, many opportunities to invest in greater efficiency are overlooked because of systemic barriers, including:

- **Policy and regulatory issues**, such as low energy pricing, lack of codes or standards, failure to enforce codes and standards where they do exist, import duties on efficient equipment, and weaknesses within relevant institutions.
- **High project development and transaction costs** involved in conducting energy audits and measurement and verification (M&V), comparing alternative technologies, and making what are often small and dispersed project investments.
- **Lack of awareness and information**, including of credible energy consumption data, information on energy efficiency potential and opportunities, and evaluations of energy efficiency programs and their costs/impacts.
- **Lack of incentives to act**, perhaps because the entities making capital investment decisions are not the same as those that pay the energy bills and would benefit from energy efficiency, or because they have competing priorities (e.g., production expansion) or expect to see assured returns in a relatively short time frame.
- **Behavioral inertia**, or people’s reluctance to do things differently, try new approaches, or take action in the face of perceived risk. This may be strengthened where consumers are not charged cost-reflective energy tariffs.

There are several ways to address these barriers. One involves creating incentives for business owners, public officials, and citizens to prioritize energy efficiency, whether through laws and regulations, taxes and subsidies, information, or a mix of these. A second involves developing effective and scalable financing and implementation mechanisms. These might include institutions and programs that match energy efficiency opportunities with financing and implementation, such as utility demand-side management programs, energy service companies (ESCOs), and energy audit/management systems. Without these and other positive actions, national goals to scale up energy efficiency will remain out of reach.
EERFs are designed to be financially sustainable by lending for energy efficiency retrofits or investing in projects and then recovering the investment costs and associated fees through the derived energy cost savings.

Countries around the world have used various types of financing and delivery mechanisms to support energy efficiency investments. While some of these are best suited to certain types of markets (e.g., credit lines for large and mid-size industrial enterprises), others may be adapted to serve multiple sectors. The spectrum of financing options may be conceptualized as a ladder (figure 1), advancing from those that rely more on public resources (e.g., grants and public revolving funds) to those that rely more on commercial capital (e.g., leasing and project financing). While the goal is to ascend the ladder and leverage commercial financing to protect scarce public resources, the World Bank’s global experience suggests that moving up the ladder too quickly may hamper the creation of market capacity to sustain energy efficiency investments in the absence of continued public support. In fact, countries that have taken more intermediate steps generally experience a more stable market-development trajectory. As local markets evolve, energy efficiency programs can evolve apace, climbing the financing ladder.

The selection of appropriate mechanisms and their subsequent design will depend on several factors, including: (i) applicable legislative, regulatory, and institutional frameworks; (ii) the maturity of financial and credit markets; (iii) the current state of local energy service markets, including ESCOs and energy auditors; and (iv) the technical and financial capabilities of targeted end users. Once the basic mechanisms are selected, they must be carefully adapted to suit the local context and target market. Their design should also include elements to facilitate the transition to more commercial schemes further up the ladder, including studies and pilots. Of course, mechanisms may overlap, and governments need not use every step of the ladder.

What are energy efficiency revolving funds?

EERFs are financially sustainable mechanisms for facilitating investments in energy efficiency

An energy efficiency revolving fund (EERF) provides financing and related services to its clients—public or private entities—to facilitate their investment in energy efficiency projects. It is important to differentiate between EERFs and energy efficiency funds. Many developed countries have energy efficiency funds that receive annual government budgetary allocations or special tax revenues (e.g., from energy surcharges) and offer grants or other incentives to their clients. Examples include ECoFund in Slovenia, the Rational Energy Utilization Fund in the Republic of Korea, and state energy conservation funds in the United States and India. Such funds depend on continuous budgetary allocations or revenues to cover their administrative costs and maintain their programs. EERFs, on the other hand, are designed to be financially sustainable by lending for energy efficiency retrofits or, in some cases, investing in projects and then recovering the investment costs and associated fees through the derived energy cost savings. An EERF can help demonstrate the commercial viability of energy efficiency investments\(^1\) and provide a credit history for public agencies and other borrowers, paving the way for future commercial financing. EERFs may also cofinance projects with commercial banks or even offer guarantees to help bring in commercial financiers. Some EERFs have been designed to finance investments in both energy efficiency and renewable energy (e.g., rooftop solar photovoltaic, solar water heating, biomass heating, geothermal heat pumps).

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\(^1\) Such investments may include building-envelope measures (windows, doors, wall insulation, roofs), heating and cooling, lighting, pumps/fans, and sensors/controls, among others.
A key advantage of EERFs is that they can help pool funding from governments and different international financial institutions and donors to facilitate coordination.

When is an EERF a viable option?

EERFs can help overcome particularly difficult obstacles, including market failures and underdeveloped commercial financing

An EERF is a good option where there are market failures, where commercial financing is otherwise underdeveloped, or where local banks perceive energy efficiency as too risky. Especially during an EERF’s initial phase, it should focus on a single sector. Others may be added at a later stage, if end users in those sectors are not able to access commercial financing on their own. The public sector is often a good place to start. Here, the potential to increase energy efficiency is generally high, access to affordable commercial financing or sufficient budget resources is often limited, and capacity to implement energy efficiency projects is often low. It is easy to bundle public projects—say, all the schools in a district—allowing for economies of scale, and to promote these as models for other sectors.

Table 1 summarizes how EERFs can address typical barriers to energy efficiency improvements.

A key advantage of EERFs is that they can help pool funding from governments and different international financial institutions and donors to facilitate coordination. Also, an EERF’s staff is permanent—unlike typical project staff—allowing the EERF to recruit excellent candidates and develop their capabilities over the long term. However, there are several prerequisites for EERFs to be a viable option:

- **Demand for financing.** A key prerequisite is the existence of cost-effective opportunities to invest in improving energy efficiency—e.g., investments that can be repaid from the actual energy cost savings within 8–12 years, driven by demand from potential beneficiaries, yet constrained by the market conditions outlined above (insufficient liquidity in the banking sector, risk aversion, borrowing constraints, etc.).

Table 1. How EERFs can address key barriers to energy efficiency investments

<table>
<thead>
<tr>
<th>Barrier to energy efficiency investments</th>
<th>How the EERF can address the barrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low energy tariffs</td>
<td>Provide longer financing tenors to allow investment costs to be fully repaid out of energy cost savings</td>
</tr>
<tr>
<td>High project development and transaction costs due to small project sizes</td>
<td>Standardize agreements and procedures; aggregate similar projects</td>
</tr>
<tr>
<td>Potential beneficiaries lack awareness and information of project benefits</td>
<td>Build demand for energy efficiency investments through outreach and marketing; demonstrate their commercial viability; provide turnkey services to make it easy to identify, finance, and implement energy efficiency measures</td>
</tr>
<tr>
<td>Commercial banks charge high interest rates; public entities are unable to borrow</td>
<td>Provide lower interest rates than commercial banks; enter into nondebt instruments with public entities (e.g., energy service agreements, lease contracts, energy performance contracts)</td>
</tr>
<tr>
<td>Beneficiaries have limited capacity to implement energy efficiency measures</td>
<td>Provide support services (e.g., conducting energy audits; developing technical designs; procuring equipment; supervising construction and installation; completing M&amp;V; and providing training, case studies, and standard documents and templates)</td>
</tr>
<tr>
<td>Service providers (e.g., auditors, construction companies) have low capacity levels; ESCO market is underdeveloped</td>
<td>Provide TA to service providers to strengthen their capacity; use simple ESCO contracts to help build local ESCO industry</td>
</tr>
</tbody>
</table>

Source: Authors’ compilation.

Note: EERF = energy efficiency revolving fund; ESCO = energy service company; M&V = measurement and verification; TA = technical assistance.
In addition to offering financial support, EERFs may also provide services such as energy audits, technical designs, procurement of equipment, and supervision of construction. A full-service EERF is very attractive to clients, particularly those in the public sector, that have limited capacity to accomplish these tasks on their own.

**How do EERFs work?**

**EERFs invest in projects whose returns will be realized only after several years and through various mechanisms.**

In its initial phase, an EERF may be capitalized from sources as various as concessional loans, grants from donor agencies, government budget allocations, special tariffs on electricity sales, petroleum taxes, and carbon revenues, among others. Since the repayment periods may be long (typically 5–8 years, but they have extended to 15 years in Eastern Europe and other places with low energy prices or chronic underheating/cooling), the initial capitalization of the EERF should be sufficient to cover operations until accumulated energy cost savings allow the EERF to sustain its annual investment targets. Alternatively, the initial capitalization may be smaller, but this requires a plan for a second re-capitalization after 5–7 years, once successful performance has been demonstrated.

An EERF may offer financing products that include debt financing, energy service agreements (ESAs), guarantees, “budget capture”, grants, and forfeiting. Table 2 provides an overview of these products and their suitability for different sectors. An EERF targeting the public sector should be designed to serve the needs of a range of public agencies and therefore include innovative financing products such as ESAs (see box 1 for more on ESAs) or budget capture. If a sustained funding source is available, or if there is an earmarked government or donor grant, an EERF may also offer grants. For example, if a government (through special taxes, levies, or surcharges) or a donor agency commits to providing grant financing for a given number of years, these grants could be blended with loans to beneficiaries to improve projects’ financial feasibility.

In addition to offering financing products, the EERF may also provide support services. It may, for example, help conduct energy audits, develop technical designs, procure equipment, supervise construction and installation, and complete M&V, particularly for public agencies or other clients that have limited capacity to accomplish these tasks on their own. A full-service EERF is very attractive to clients, particularly those in the public sector, as the administrative costs and risks are passed on to the EERF. Also, EERFs have the opportunity to bundle several small projects together to obtain better pricing and reduce transaction costs.

Alternative procurement methods can be used to manage risks. When using financing schemes that are directly tied to actual energy cost savings, such as ESAs, EERFs must minimize technical performance risks by increasing contractor accountability. One strategy involves output- or performance-based procurement. In a traditional scheme, the EERF would hire an energy auditor, then a designer, then a construction contractor, and then an M&V expert. But disparate contractors can easily pass the blame around if a project does not perform as expected. Alternatively, the EERF could consider bundling some of these services and introducing the condition that part of the final payment be tied to the energy savings generated. To accomplish this, the project’s parameters, as well as baseline conditions and energy-use patterns, must be clearly defined. So, for example, the EERF may conduct a preliminary audit to estimate the minimum energy savings and then (i) ask bidders to propose.

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2 EERFs to date have focused on investing in upgrades of existing infrastructure that result in actual energy cost savings. Nevertheless, there are many “greenfield” opportunities (e.g., to expand street lighting) where the higher up-front investments needed for more-efficient design, equipment, or materials would be financially feasible.
Table 2. EERF financing products

<table>
<thead>
<tr>
<th>Financing product</th>
<th>Description</th>
<th>Advantages and disadvantages</th>
<th>Suitable for target sectors?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt financing</td>
<td>An EERF may provide traditional loans to clients, sometimes with a longer tenor than typical commercial loans, and up to 100 percent debt financing. It may waive the requirement for full collateral and instead ask clients to pledge future energy cost savings or, for public clients, tax collections or transfers from the Ministry of Finance. Alternatively, public clients may also obtain guarantees from the Ministry of Finance to back up the loan repayment.</td>
<td>Loans are a common financing mechanism that is well understood, and may be helpful where forecasted energy cost savings are low. But in many cases beneficiaries are not eligible for debt financing.</td>
<td>✓</td>
</tr>
<tr>
<td>Energy service agreements (ESAs)</td>
<td>Under an ESA, the beneficiary agrees to pay the current baseline energy bill for the duration of the agreement. The EERF invests in the project, pays the new reduced energy bill, and uses the difference between the reduced energy bill and baseline payments to recover its investment costs and associated fees. The contract duration can be terminated after an agreed amount has been repaid to the EERF, thereby offering an incentive for the beneficiary to save more energy. After the ESA ends, the beneficiary keeps all the energy cost savings.</td>
<td>ESAs can be very attractive to clients, since they do not involve incurring debt. For ESAs to be suitable, the energy cost savings must be sufficiently high to cover investment costs within the agreement period, clients must regularly pay their energy bills, and a legal framework for ESAs must be in place.</td>
<td>✓</td>
</tr>
<tr>
<td>Guarantees</td>
<td>By providing commercial banks or other financial institutions with a partial coverage of the risk involved in extending loans, credit guarantees can encourage them to engage in energy efficiency projects. Guarantees are designed to address the perception of lenders that energy efficiency investments are more risky than traditional investments, or to enable lenders to lend to marginally creditworthy clients presenting attractive plans for investing in energy efficiency.</td>
<td>Guarantees can quickly bring local banks into the energy efficiency financing market. But they require financial markets that are fairly well developed in terms of liquidity, competition, interest rates, and financial institutions that are willing to face some risk.</td>
<td>✓</td>
</tr>
<tr>
<td>Budget capture</td>
<td>Recovering capital through future budget capture is possible only with public sector clients. The mechanism is possible when a public entity receives dedicated funds from the Ministry of Finance or another government agency to pay its energy bills. After the EERF completes an investment for a public agency, the government reduces its budgetary transfers to the public client by an amount equivalent to the energy cost savings (thereby capturing the savings gained through energy efficiency) and transferring this amount to the EERF.</td>
<td>Budget capture removes concerns about creditworthiness and repayment from the EERF setup. It can be used to support central, regional/state, and local governments. But the parent budget agency must agree to assume the additional administrative burden.</td>
<td>✓</td>
</tr>
<tr>
<td>Forfeiting</td>
<td>Under a forfeiting arrangement, a local ESCO enters into direct energy performance contracts with its clients, both public and private. The EERF then buys the receivables from the ESCO, thereby refinancing its portfolio and allowing the ESCO to finance more projects. The EERF then continues to accept payments from the ESCO clients for the duration of the contracts.</td>
<td>Forfeiting allows private ESCOs to enter the market without huge up-front capital and significantly reduces the EERF’s risk because the EERF purchases the project only after it is completed and generating energy savings. The market must already have active ESCOs capable of prefinancing projects, as well as sufficient client demand.</td>
<td>✓</td>
</tr>
</tbody>
</table>

Source: Authors’ compilation.

Note: ✓ Suitable; ✓ ✓ Highly suitable.

EERF = energy efficiency revolving fund; EPCs = energy performance contracts; ESA = energy service agreement; ESCO = energy service company; SMEs = small and medium enterprises.
Some EERFs have exclusively financed energy efficiency investments, while others have included renewable energy or, more broadly, investments that support environmental protection or urban infrastructure.

**Box 1. Comparison of debt financing and a typical energy service agreement (ESA)**

Under debt financing, the energy efficiency revolving fund (EERF) signs a loan agreement with the beneficiary. In such cases, it is then the responsibility of the beneficiary to contract service providers for audit, design, construction, installation, and other services needed to implement the project. The energy cost savings accruing from the project can then be used by the beneficiary to repay the principal, interest, and fees, which allows the EERF capital to revolve. Under an energy service agreement (ESA), the beneficiary agrees to make fixed payments based on the baseline energy bill to the EERF. Since the EERF pays the reduced energy bill and keeps the rest of the payments to recover its costs, it requires that actual energy cost savings be realized, which results in higher risk for the EERF under an ESA than under a traditional debt arrangement. Therefore, the EERF usually directly contracts service providers to implement projects, and may pass on some of the risk to the contractors using various procurement strategies (e.g., output- and performance-based procurement). The fixed payments bundle together the energy bill payments and repayments to the EERF for cost recovery, which may provide the EERF some added leverage, since it can cut off the energy supply should the beneficiary default on its payment obligations. Note that the ESA described here represents a typical example, but contractual arrangements and payment flows are often adopted to suit country-specific circumstances.

Source: Author’s compilation.
An EERF requires a legal framework. A provision for establishing an EERF may be included in a general energy law or a specific energy efficiency law. A key decision to be made is whether the EERF will be set up on the basis of an existing fund or as an entirely new entity.

Technical solutions to maximize energy savings; (ii) select a winning bid by considering output in terms of net present value rather than the lowest cost; and (iii) require that a commissioning test be linked to the contractor payment.

However, output- or performance-based procurement is significantly more complex than traditional procurement, requiring that both the EERF and contractors have sufficient capacity to monitor and verify results. Mechanisms for dispute resolution also need to be developed and agreed on by all parties.

It is important that the EERF also provide technical assistance to support both individual investment projects and the EERF’s overall program. For projects, this may include support of energy audits and design, construction supervision, commissioning, and M&V. To support the EERF’s overall program, technical assistance may include:

- **Market development**, including market assessments and outreach to build demand for energy efficiency investments through workshops, flyers, websites, social media, advertising, and case studies, among others.
- **Development of procedures and standard documents**, for example, standard legal agreements, tender and audit templates, environmental assessments, postproject inspections, and terms for the ESAs.
- **Capacity building** to strengthen the ability of (i) energy auditors, (ii) EERF staff and local banks (e.g., in screening, designing, evaluating, implementing, and monitoring energy efficiency investments including M&V); (iii) energy service and equipment providers, design firms, and construction companies (especially in regard to output- and performance-based procurement); and (iv) beneficiaries (e.g., in operating and maintaining new equipment). Periodic training to share lessons from earlier projects, common mistakes, and typical variances between audit and actual savings can also be helpful.

An EERF requires a legal framework. A provision for establishing an EERF may be included in a general energy law or a specific energy efficiency law. A key decision to be made is whether the EERF will be set up on the basis of an existing fund (e.g., one devoted to municipal development, the environment, or infrastructure) or development bank, or established as an entirely new entity. If an existing organization is appointed, changes to its legal charter and operating procedures may be required. If the government decides to establish a new entity, secondary legislation needs to be developed to specify its legal organization and ownership.

**Where have EERFs been used?**

**EERFs are found in many countries, including in Asia, Europe, and South America**

EERFs have been established around the globe, often with support from international financial institutions such as the World Bank or from climate finance instruments such as the Global Environment Facility. Some EERFs have provided guarantees (e.g., in Bulgaria, Hungary, Slovenia) or credit lines (e.g., Thailand) to commercial banks to mobilize private sector financing. Some have exclusively financed energy efficiency investments, while others have included renewable energy (e.g., Armenia, Mexico) or, more broadly, investments that support environmental protection (e.g., Slovenia) or urban infrastructure (e.g., India). Table 3 describes EERFs supported by the World Bank, with a snapshot of results. All the EERFs listed are still active, though the Hungary Energy Efficiency Guarantee Fund was merged into the regional Commercializing Energy Efficiency Finance Program in 2005 to replicate its success across the Central Eastern European and Baltic States (the Czech Republic, Slovakia, Lithuania, Latvia, and Estonia).
Table 3. Examples of EERFs supported by the World Bank

<table>
<thead>
<tr>
<th>Fund name (period of activity)</th>
<th>Description</th>
<th>Supported investments</th>
<th>Target sectors</th>
<th>Financing products</th>
<th>Results (at the end of the World Bank’s support)</th>
</tr>
</thead>
</table>
| Armenia: Renewable Resources and Energy Efficiency Fund (2005–present) | Provides turnkey services (energy audit, procurement, detailed design, financing, construction, and monitoring) *Capitalization: IDA, GEF, Armenia* | Energy efficiency Renewable energy | Public | Loans ESAs | Results as of 2016  
• No. of projects: 63  
• Investments: $10 million  
• Lifetime energy savings (MWh): 8.1 million  
• Lifetime carbon savings (tCO2e): 2.2 million |
| Bulgaria: Energy Efficiency and Renewable Sources Fund (2005–present) | Incorporating lessons learned from the Romanian EERF, this fund has a simpler institutional structure, stronger focus on marketing, and a different menu of financial products. *Capitalization: GEF, Austria, Bulgaria, private shareholders* | Energy efficiency | Public Commercial/industrial | Loans Guarantees | Results as of 2010  
• No. of projects: 112  
• Investments: $39 million  
• Lifetime energy savings (toe): 130,000  
• Lifetime carbon savings (tCO2e): 1.1 million |
• No. of projects: 16  
• Investment: $34 million  
• Lifetime carbon savings (tCO2e): 2.8 million |
| Hungary: Energy Efficiency Guarantee Fund (1997–2005) | Broke ground by being the first such fund to use guarantees to facilitate commercial energy efficiency lending. *Capitalization: GEF, IFC* | Energy efficiency | Commercial/industrial Residential | Guarantees | The fund was merged into the regional Commercializing Energy Efficiency Finance Program in 2005 |
| India: Tamil Nadu Urban Development Fund (1996–present) | Extends long-term loans to creditworthy municipalities, public undertakings, and private investors for the financing of urban infrastructure projects including municipal energy efficiency projects (e.g., street lighting). *Capitalization: IBRD, JICA, KfW* | Energy efficiency Other | Public Commercial/industrial | Loans | Results for 1999–2004  
• Investment: $160 million  
• Supported infrastructure improvement in over 25 municipalities  
Results for 2005–14  
• Investment: $390 million  
• 100% project loan recovery, no nonperforming assets |
| Mexico: Energy Efficiency in Public Facilities (2016–present) | Operated by Fideicomiso para el Ahorro de Energía Eléctrica, the fund uses ESAs to finance energy efficiency measures in municipal street lighting, buildings (e.g., schools, hospitals), and wastewater utilities. During the fund’s initial phase, the government of Mexico provided subsidies to support investments. *Capitalization: IBRD, Mexico* | Energy efficiency | Public | ESAs | World Bank support ongoing  
• One project under implementation ($3.5 million)  
• Two projects under procurement ($5 million)  
• One project to be tendered ($0.35 million)  
• Six projects in preparation |


Note: EERF = energy efficiency revolving fund; ESA = energy service agreement; GEF = Global Environment Facility; IBRD = International Bank for Reconstruction and Development; IDA = International Development Association; IFC = International Finance Corporation; JICA = Japan International Cooperation Agency; MWh = megawatt-hour; tCO2e = tons of carbon dioxide equivalent; toe = tons of oil equivalent.
Experience shows that the role and functions of an EERF as defined in its design phase may need to change during implementation to adapt to changing market conditions—for example, when financing or services from other donors become available or as the private sector starts to develop.

What are the key lessons learned?

**EERFs are best suited to unserved markets, and in a form carefully tailored to the context**

Experience with EERFs to date has yielded the following key lessons:

An EERF should serve an unserved market. As discussed earlier, EERFs are suitable where there are market failures or in sectors where commercial financing is otherwise underdeveloped and local banks perceive high risk. It is important that an EERF not compete with local lenders or lead to a distortion of the financial market by offering below-market interest rates, which could hinder commercial lending. EERFs and commercial bank financing are not mutually exclusive; when EERFs provide only a portion of the financing, efforts should be made to coordinate with local banks to streamline applications and approvals, and build the capacity of these banks. Starting with one market segment allows the EERF time to build its capabilities.

The EERF needs to be flexible to adapt to changing market conditions. Experience shows that the role and functions of an EERF as defined in its design phase may need to change during implementation to adapt to changing market conditions—for example, when financing or services from other donors become available or as the private sector starts to develop. For example, an EERF might be able to shift from providing loans to guarantees as the private sector develops, or shift from the public to residential sector as public financing enters the mainstream. Fee structures should be designed to cover costs while remaining affordable.

The financial products and services offered should be designed for the target market and aimed at lifting prevailing barriers. For example, guarantees can mobilize commercial financing and develop ESCOs, which may have weak balance sheets, if applied in appropriate markets (where there is adequate liquidity, attractive interest rates, competition, and reasonably mature financial institutions that are willing to accept some risks). However, guarantees alone cannot solve systemic banking or credit problems and do not help commercial banks to extend loans to public sector borrowers that have good repayment records and companies that receive loans based on their strong balance sheets. ESAs, meanwhile, may be best suited to public sector clients. Many clients prefer full-service EERFs that offer turnkey energy efficiency projects.

An EERF’s governance and management structure must offer sufficient incentives for high performance. To be most effective, an EERF is established as an independent organization, governed by a management board comprising both public sector and private sector members; managed by a well-incentivized fund manager; staffed with competent, motivated experts with adequate compensation; and operated based on transparent procedures. Offering the EERF team an additional bonus for strong results and low defaults can help. At the same time, the institutional design should be simple—the EERF needs to be lean to limit its operational costs and ensure financial sustainability. The progress of the EERF’s activities and their impact should be monitored and evaluated periodically to test planning assumptions, fine-tune implementation processes, and incorporate lessons learned to improve the EERF’s future operations.

An EERF should operate based on transparent rules and make use of standardization and aggregation to reduce transaction costs. An EERF should have an operations manual that lays out principles and procedures, including for fund management, project implementation, and results monitoring. The use of standard documents (e.g., legal agreements, tender and audit templates) and the bundling of similar, small projects can further reduce transaction costs.

Access to technical assistance and the development of a project pipeline are crucial. As described earlier, it is important that the EERF provides technical assistance to build support for both its day-to-day operations and longer-term sustainability. Substantial time and training are often required to build the capacity of service and equipment providers, in particular when the EERF introduces new financing products and innovative procurement and contract schemes. Given that EERFs are demand driven, early marketing is critical to raise awareness and build a project pipeline. Experience also shows that due to the innovative financing mechanisms offered by EERFs, clients are often reluctant to move forward before initial successes have been achieved. One way to address this issue is to implement one to two projects on a pilot basis to showcase early success.
References


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