Pipeline Development Manual

Activities to support the development of energy efficiency loan pipelines

March 2019

This project was made possible with the support of the European Union through Life budget and the EIB. The authors take full responsibility for the contents of this report. The opinions expressed do not necessarily reflect the view of the European Union or the European Investment Bank.
The „Pipeline Development Manual“

This manual presents ideas for pro-active energy efficiency loan pipeline development through financial intermediaries. Many of these activities are implemented by partner banks of the Private Finance for Energy Efficiency (PF4EE) instrument, often with support of the PF4EE Expert Support Facility. This manual covers activities from three main areas: (1) internal capacity building, (2) identification of clients, and (3) acquisition of clients.

Private Finance for Energy Efficiency (PF4EE)

The Energy Efficiency Manual has been developed as part of the Expert Support Facility of the “Private Finance for Energy Efficiency” instrument. PF4EE is a joint financial instrument of the European Investment Bank and the European Commission under the European Union’s LIFE Programme. PF4EE was launched in 2015 to provide adequate and affordable commercial financing for energy efficiency investments across Europe. The instrument leverages energy efficiency financing through PF4EE partner banks, which benefit from an EIB loan, a risk sharing facility, and dedicated expert support.

The PF4EE loan conditions and how to apply:

Who can apply? In general: SMEs, MidCaps and large enterprises (including ESCOs)

Loan size? Up to EUR 5 million, depending on company type and project

Maturity? 3-20 years

Target projects? Energy efficiency projects relating to existing buildings, industry, public lighting, district heating and cooling; as well as small renewable energy projects for self-consumption and cogeneration of heat and power.

How to apply? The energy savings potential of investment projects must be estimated and documented to qualify for PF4EE financing. Get in touch with a PF4EE partner bank to learn which documentation is required.

Download this document & find out more about PF4EE on the project webpage pf4ee.eib.org

✔ Overview of and links to participating partner banks
✔ Links to the PF4EE Web-Check Tools and the EEQuest Tool
✔ Overview of pipeline development activities
✔ PF4EE news and success stories
✔ Downloadable material
✔ Contact information
**Purpose of the Manual**

Pro-active loan pipeline development is key for a successful implementation of energy efficiency financing schemes such as the European Investment Bank’s PF4EE instrument. The activities presented in this manual thus have the objective to increase energy efficiency loan uptake and to facilitate energy efficiency lending.

The manual was developed by consultants of the PF4EE Expert Support Facility and aims to foster idea generation for pipeline development activities which could be implemented by PF4EE partner banks, if needed with support of the PF4EE Expert Support Facility (ESF).

The pipeline development activities presented here-in can broadly be attributed to three main areas: (1) internal capacity building, (2) identification of clients and (3) acquisition of clients, which are explained in more detail in the subsequent chapters.

### [Internal Capacity Building]
- Workshops and Training for Bank Staff
- Workshops and Training for Bank Staff
- Internal Helpdesk and FAQ Documents
- E-Learning
- Portfolio Screening

### [Identification of clients]
- Identification of Target Sectors and High Potential Clients
- Approaching Third-party Energy Efficiency Market Agents
- Identification of Existing Grant Schemes

### [Acquisition of clients]
- Best Practice Examples
- PF4EE Online Tool
- Energy Efficiency Measures Guide
- Networking and Marketing Events with the EE Market
- Showcases of Financed Energy Efficiency Projects
- Targeted Advertisements and Articles in Journals and on Websites
- Flyer Highlighting the Multiple Benefits of Energy Efficiency
Internal Capacity Building

Workshops and Training for Bank Staff

**Issue:** Energy efficiency lending is special in several ways: Project proposals must be evaluated in view of their energy savings potential; clients and project related contracts can be quite specific to the energy efficiency market; and, in cases where publicly funded instruments such as PF4EE are involved, certain eligibility criteria must be met. All this requires special knowledge and capacities on the side of bank staff from different departments.

**Solution:** Thematic workshops and trainings on the topic of energy efficiency financing can be offered to bank staff from various departments. Ideally, such workshops should be developed and implemented in collaboration between responsible bank staff and internal or external technical experts with an expertise in the local energy efficiency market.

**The ESF case:** In relation to the PF4EE instrument, such workshops are regularly implemented through the Expert Support Facility, which consists of national as well as international consultants. The specific workshop agenda and focus topics are developed in close collaboration with PF4EE partner banks to ensure that the partner bank’s energy efficiency financing background and strategy is taken into account.

**Details:** Topics that are regularly addressed in PF4EE related capacity building workshops include the following (depending on participants’ previous experience):

- What is energy efficiency and what are typical measures and technologies?
- What are specific project, client, and best practice examples?
- Which national and international directives and legislation are relevant?
- What are Energy Service Companies, Performance Guarantees, etc.?
- How to read energy savings documentation such as Energy Audits?
- What are the risks related to specific technologies, clients, and contracts?
- How to develop an energy efficiency loan pipeline?
- What are the eligibility criteria of special instruments such as PF4EE?

The target audience of such trainings and workshops ranges from relationship managers such as branch officers and corporate bankers, to staff from product development, risk management, underwriting, as well as strategy and marketing.

The timing of such trainings should be well chosen – if participants cannot implement the lessons learned in short time after the workshop, many insights will get lost.
Ideally, such trainings should be repeated on a regular basis to train new staff but also to remind long-term staff on the bank's energy efficiency financing priorities.

**Example agenda of a 2-day PF4EE Start-Up Training:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 min</td>
<td>Welcome &amp; Introduction of Trainers and Participants</td>
<td>The Partner Bank’s Strategy towards PF4EE</td>
</tr>
</tbody>
</table>
| 90 min | Introduction to Energy Efficiency (EE) | • Concepts and potentials of EE  
• Added value for banks to engage in EE  
• Case studies |
| 240 min | PF4EE Eligibility Check, Verification & Reporting | • Compliance with eligibility criteria  
• Requirements for verification and reporting  
• Assessment of EE investments  
• Online tool |
| 90 min | EE Policy Framework in the EU and the Specific Country | • EU regulations, directives and funding programs on EE  
• National key laws, institutions and promotional programs on EE |
| 90 min | Financing EE Investments | • Specific characteristics of EE financing  
• Challenges and risks  
• Instruments and financing models |
| 90 min | Marketing EE Financing | • Specifics in marketing EE loan products  
• Identification of target group and suitable marketing materials  
• Online tool |
| 180 min | Design of a Pipeline Development Strategy | |
| 60 min | Definition of Support Needs from ESF for Pipeline Development | |
E-Learning

**Issue:** In-person workshops and trainings to build capacities for energy efficiency financing are only feasible if the target group is rather small and attributes significant priority (and thus time) to become educated in energy efficiency financing. Capacity building activities should however also address wider groups of staff for which energy efficiency financing is not a key priority. For example, officers in banks’ branch network play a key role in energy efficiency pipeline development. Yet, they typically deal with a large number of different financing products and thus do not have the time to obtain in-depth training on energy efficiency financing.

**Solution:** E-learning can be an effective means to educate bank staff such as branch officers on the basic concepts of energy efficiency financing, loan pipeline development, or specific lending criteria. E-learning can also be used as an engaging way to remind a branch network of the banks’ energy efficiency lending priorities and the branch officers’ important role there-in.

**The ESF case:** The PF4EE Expert Support Facility has supported some partner banks in the development of dedicated e-learning modules for their branch network. Experience shows that such e-learning modules often need to be highly customised to the banks’ internal processes, and hence can be developed by banks themselves in the most effective manner.

**Details:** E-learning modules that have been developed in context of PF4EE covered, for example, the following topics:

- Basic concepts and elements of energy efficiency and PF4EE
- Eligibility criteria of the PF4EE instrument
- Interpretation of energy audits
- Identification and acquisition of clients
- PF4EE processes at the partner bank

**Example screen from a potential e-learning module on the topic of client acquisition:**

![Example screen from a potential e-learning module on the topic of client acquisition](image-url)
**Issue:** Energy efficiency financing goes along with detailed technical project documentation, specific contractual constructs, and numerous technical terms and concepts that are often unfamiliar to bank staff. Bank staff engaged in client contact and project appraisal thus requires day-to-day support with specific questions in order to build confidence in energy efficiency financing and loan pipeline development.

**Solution:** Questions that occur on a regular basis and that can be addressed in a general manner can be covered through Frequently Asked Question (FAQ) documents. Such FAQ documents can target banks staff and clients alike. To assist bank staff with very specific questions on individual projects, an internal helpdesk for energy efficiency loan products should be established. Ideally, such a helpdesk consists of staff with a technical background in energy efficiency or with previous experience in the energy efficiency market. If such internal technical staff capacities are not available, external energy professionals should be engaged.

**The ESF case:** In relation to the PF4EE instrument, the Expert Support Facility supports partner banks to develop FAQ documents and internal helpdesks. This involves training of bank staff that constitutes the internal helpdesk, as well as ad-hoc support to the bank’s helpdesk team regarding complex questions.

**Details:** Questions that are regularly addressed to internal helpdesk teams of PF4EE partner banks and their external ESF consultants include the following:

- Can this specific technology be considered as an energy efficiency investment?
- Can the project documentation presented by the client be considered a reliable source for estimated energy savings?
- How can energy savings be verified after project implementation?

---

**Portfolio Screening**

**Issue:** Banks may finance energy efficiency projects without recognising them as such. For example, building refurbishment and industrial modernisation projects regularly go along with energy savings, but are often not tagged by banks as green investments due to a lack of awareness. This results in missed opportunities regarding the identification of a bank’s green lending portfolio and regarding bank staff’s on-the-job training with respect to the identification and appraisal of energy efficiency projects.
**Solution:** Through screening of a bank’s loan portfolio, investments that were previously financed but remained under the radar and were not perceived as energy efficiency projects can be identified ex-post. Thus, awareness among bank staff regarding the energy efficiency potential in their existing loan and client portfolio can be raised. Following such an exercise, involved bank staff has better insights which projects should be targeted for energy efficiency financing and can potentially be considered for financing through dedicated instruments such as PF4EE. Such an activity should involve technical experts which can relate specific project characteristics and technologies to energy efficiency.

**The ESF case:** Portfolio screening is an activity that is regularly offered to PF4EE partner banks and has been implemented through the Expert Support Facility in the past. Experience shows that such an activity is not only useful to raise partner banks’ awareness of the energy efficiency potential in their existing portfolio, but also facilitates an improved understanding of PF4EE lending criteria.

**Details:** Portfolio screening activities in relation to PF4EE typically consists of three steps:

1. Based on advice from the ESF consultants, the partner bank’s headquarter or specific branches provide loan cases that could potentially be related to energy efficiency and thus may qualify for PF4EE financing.

2. The consultant reviews the respective loan files on-site (i.e. at the partner bank). Points of interest include investment data, business plans and (technical) project descriptions.

3. The consultants share conclusions about the analysed loan sample and provide recommendations how to identify such loans as energy efficiency loans in the future.
Identification of clients

Identification of Target Sectors and High Potential Clients

**Issue:** Building an energy efficiency loan pipeline requires insights into sectors and client types that should be targeted. Financial intermediaries may however not know the energy efficiency investment needs and potentials in their country in sufficient detail to identify such targets. Further, they may be unaware of the characteristics that make a client “high potential”, or of the sources that provide insights in such characteristics.

**Solution:** With the support of internal staff that has a background in the energy efficiency market or through the support of local external consultants, the most relevant sectors and high potential clients can be identified. Identified target sectors may vary across different regions, and may depend on the energy efficiency technologies / investment types that a bank intends to finance. The identification of high potential clients can go hand in hand with portfolio screening activities and trainings, both as lined out before. During trainings, staff can learn about client characteristics that may indicate high potential for energy efficiency (e.g. clients with a high share in energy costs, clients that are obliged to conduct an energy audit, clients with old industrial buildings and facilities etc.). Internal or external staff can also infer potential target clients from publicly available sources, e.g. lists of company types that are legally obliged to conduct an energy audit (and hence may already know their energy savings potential) or European initiatives such as the ENERFUND tool, which rates and scores deep building renovation opportunities across Europe (http://enerfund.eu/).

**The ESF case:** PF4EE partner banks already have an initial idea of their energy efficiency target sectors when they join the PF4EE instrument. However, identified targets may need to be specified in more detail or be aligned with market needs over the course of PF4EE implementation. The PF4EE Expert Support Facility, in particular its local consultants network, regularly supports partner banks in such activities. In addition to the identification of target sectors, ESF consultants also support the partner banks through material that can be used to approach specific sub-sector groups (e.g. best practice EE project examples), or during meetings that may be held with representatives from these sectors. The ESF’s local consultants also provide their expertise and market overview with respect to sources that can be used to identify clients with particular potential to invest in energy efficiency.

**Details:** Client characteristics and types that may indicate high potential to invest in energy efficiency include the following:

- Clients that invest in energy efficiency by their business model, in particular Energy Service Companies (ESCOs)
- Clients with a particularly high share of energy costs which are usually operating in energy intensive sectors
• Clients with an energy audit as they are likely to be aware of their energy savings potentials
• Clients with relatively old industrial facilities, assuming that great energy savings potential is associated with old buildings and old machinery
• Clients with a positive economic outlook as companies with high gains in recent years are typically more willing to invest in their production facilities in the near future
• Clients who lack behind their competitors as they might be willing to conduct energy efficiency investments to keep up with the competition
• Clients who can realise particular marketing benefits from energy efficiency investments, e.g. hotels which can increase their competitive advantage and gain new customer segments through a “green” image

**Illustration: Identification of clients with high energy savings potential:**

<table>
<thead>
<tr>
<th>Clients with a positive economic outlook</th>
<th>Clients who lack behind their competitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify clients with potential for energy efficiency measures</td>
<td>[Corporate banker]</td>
</tr>
</tbody>
</table>

**Approaching Third-party Energy Efficiency Market Agents**

**Issue:** Energy efficiency loans rarely just “fly off the shelves”. Rather, financial intermediaries offering such financing products must target the energy efficiency market with dedicated activities, offers, and communication. This also involves a need to approach specific third-party stakeholders in the energy efficiency market, i.e. those agents which can act as multipliers and raise awareness on energy efficiency investment potentials and available financing.
Solution: To approach such third-party stakeholders, financial intermediaries may require support regarding the identification of relevant agents and in approaching them. External energy consultants can provide such support, for example through specific overviews on stakeholders and institutions in the local energy efficiency market. Such overviews can inform about relevant business associations in the bank’s target sectors, energy professionals and energy auditors in the country, or energy efficiency project developers and technology suppliers. It may also be useful to involve internal or external technical experts in meetings and communication with such stakeholders in order to bridge the gap that often exists between the technical and financial worlds of energy efficiency.

The ESF case: Local consultants from the Expert Support Facility network regularly assist PF4EE partner banks in their outreach activities to the national energy efficiency market. Examples include the provision of detailed lists of energy auditors in the respective country which can be used to market PF4EE among these companies, as well as extended market overviews of relevant market players and associations from a variety of energy efficiency market sub-sectors. PF4EE ESF consultants can also be intensely involved in approaching such market players if the partner bank approves such involvement.

Identification of Existing Grant Schemes

Issue: Energy efficiency grant schemes that already exist in a country may impede or foster energy efficiency loan pipeline development through financial intermediaries. On the one hand, such grant schemes may constitute competition to the debt financing possibilities offered through banks. On the other hand, some clients may want to obtain an energy efficiency loan to finance expenditure not already covered through the grant.

Solution: Bank staff needs to be well informed about existing and upcoming grant schemes, in particular regarding target investments and beneficiaries, possible grant amounts, and eligibility criteria. With a view to grant schemes that may constitute competition to the bank’s energy efficiency financing offers, banks should aim to identify niches not already covered by larger grant schemes. With a view to grant schemes that can complement energy efficiency lending, banks should ensure that their staff is well informed and can advise their clients regarding such possibilities of combination. It is also recommended to evaluate how investments that already obtain a grant should be treated in loan appraisal procedures. Projects that obtain grant financing may have undergone a stringent “eligibility check” already and can thus potentially be treated with higher speed during loan appraisal.

The ESF case: Regarding grant schemes, the Expert Support Facility supports PF4EE partner banks through local energy efficiency market experts. These experts have a good overview on existing as well as upcoming grant schemes, and can support banks to identify the key characteristics of such schemes. They can also support partner banks in their engagement with local authorities that are in charge of administering relevant grant schemes.
Acquisition of clients

Showcases of Financed Energy Efficiency Projects

Issue: Awareness on energy savings potential is often limited among agents who could qualify as potential borrowers of energy efficiency loans. Though there are many initiatives that aim to showcase the savings potential of energy efficiency measures to individuals, companies, or public entities across Europe, banks also have an important role to play in raising this awareness.

Solution: Banks can produce showcases of energy efficiency projects that have been financed through them. Such showcases should tell the story of the borrower and the facility in which the measures were implemented, ideally present details on the realised energy/cost/CO2 savings, and give an overview on the specific technologies and investment costs. Both videos and illustrative texts can be useful in this regard. These showcases can then be presented in the banks marketing material, be used by bank staff when talking to potential clients, and serve as an effective add-on during presentations at networking events.

The ESF case: The PF4EE Expert Support Facility has produced a number of 1-page showcase documents in collaboration with PF4EE partner banks. These showcases present projects that were co-financed by PF4EE and are useful to give final beneficiaries as well as bank staff an idea of potential projects. Some PF4EE partner banks have also produced such showcases and respective videos without ESF support.

Details: The examples provided below show a video produced by Belfius bank and a 1-page showcase document produced by the PF4EE Expert Support Facility. Both examples relate to PF4EE financed projects in Belgium.

Three-minute video on a PF4EE-financed co-generation project in Belgium:

The full video can be found here: https://www.youtube.com/watch?v=uwwMX0AQ6Sk.
One-pager on a PF4EE-financed project in Belgium, involving an Energy Performance Contract:

**Energy Efficiency Improvements at Anderlechtse Haard**

**Financed Through the Belfius Energy Efficiency Package**

**Description of the project:**
EDF Luminus Solutions (third-party investor and service provider) and Anderlechtse Haard (one of the largest social housing companies of the Brussels Capital Region) have signed an Energy Performance Contract to improve the energy efficiency of Anderlechtse Haard’s social housing. The following measures have been implemented:

- **15 new Building Management Systems**
- **7 PV systems with 168 solar panels**
- **31 new boilers**

In addition, EDF Luminus Solutions is providing maintenance/repair services of technical installations. The project is financed through BEEP (see right side).

**Belfius Energy Efficiency Package (BEEP):**
Reducing energy needs, generating your own energy or switching to alternative energy sources? With the Belfius Energy Efficiency Package (BEEP), Belfius encourages institutions to invest in energy efficiency and renewable energy. As the only bank in Belgium, Belfius has an exclusive cooperation with the European Investment Bank (EIB) in the context of the Private Finance for Energy Efficiency (PF4EE) instrument, allowing Belfius to offer favorable lending conditions and flexible credit granting thanks to the EIB’s portfolio guarantee.

**Facts and figures**
- **Total investment costs:** EUR 4,046,000
- **PF4EE loan amount:** EUR 3,750,000 (93% of capex)
- **Annual primary energy savings:** 5,324,000 kWh
- **Annual energy cost savings:** EUR 266,500
- **Contract duration:** 12 years

*Raoul Nihart, CEO of:* Belfius was able to quickly analyze the project and to decide on its relevance. Thanks to the cooperation between Belfius and EIB, we can borrow at a preferential rate. For us, the advantage of this financing is to increase our investment capacity in the field of energy efficiency and renewable energies.

The initiative benefits from technical assistance through MACS and adelphi.
When banks are still at the beginning of their energy efficiency lending activities, they may not have showcases of financed energy efficiency projects available. Thus, for bank staff as well as potential clients, it may be difficult to obtain an idea on projects that can be financed, and on the energy savings potential of such projects.

Best practice examples relating to specific energy efficiency technologies and projects should be prepared in such cases, if needed with the support of external experts. External energy efficiency experts typically have a good overview on such example projects. These examples can, for example, be prepared in the form of flyers, and can serve both as marketing material towards clients and as information source for bank staff.

The PF4EE Expert Support Facility has developed the brochure “Energy Efficiency Projects in Europe”, which collects examples of good practice energy efficiency projects across Europe. For each example information on estimated energy and cost savings is included. The brochure can be used as a source of inspiration, by bankers as well as their clients.

**Example cases from the brochure “Energy Efficiency Projects in Europe”:**

**IFA Continental Hotel**  
**SPAIN – Gran Canaria**  
**Measure:** Installation of a new chiller with a heat recovery system, heat used for pool heating and domestic hot water generation.  
**Key Figures:**  
- **Total investment cost:** EUR 42,300  
- **Annual energy savings:** 334,832 kWh  
- **Annual CO2 savings:** EUR 8,807  
- **Payback period:** 6.2 years

**Office building**  
**CROATIA – Zagreb**  
**Measure:** Deep renovation of a business building, including the complete renovation of the outer building envelope (including all the walls and openings, i.e. windows and doors) to low energy standard, reconstruction of existing heating and ventilation systems, installation of new LED technology in the lighting system and installation of a PV power generation system on the façades.  
**Key Figures:**  
- **Total investment cost:** EUR 2,800,000  
- **Annual energy savings:** 968,468 kWh of electricity, 868,759 kWh of heat (CHP)  
- **Annual cost savings:** EUR 150,000  
- **Payback period:** 15 years
**Issue:** Bank staff without a technical background typically has a limited overview on technologies that are related to energy efficiency. Further, even if such an overview is available, knowledge on the advantages of and mechanics behind such technologies is often absent. However, some basic understanding of energy efficiency measures is useful when talking to potential clients and when appraising specific loan requests.

**Solution:** Bank staff should have access to informational material which overviews typical energy efficiency measures and provides basic technical background information. Such material should be developed in accessible language and describe each technology in a concise manner.

**The ESF case:** The PF4EE Expert Support Facility has developed the “Energy Efficiency Manual” which informs about energy efficiency measures that are generally eligible for PF4EE financing. The manual briefly describes these measures and highlights factors that should be kept in mind when considering financing through the PF4EE instrument. The manual is targeted to staff at PF4EE partner banks as well as their potential clients. Partner banks can draw on the content of the manual when developing their own material.

**Example pages from the brochure “Energy Efficiency Manual”:**

---

**Which are the PF4EE target measures?**

This list is not exhaustive. Measures not mentioned in this list can be targeted as well.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
<th>Energy savings</th>
<th>Payback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal insulation of roof</td>
<td>Better insulation of a roof can reduce energy needs due to a reduction of heat losses and heat gains.</td>
<td>up to 90% of heat losses can be avoided</td>
<td>5-10 years</td>
</tr>
<tr>
<td>Thermal insulation of walls</td>
<td>Better insulation of walls can reduce energy needs due to a reduction of heat losses and heat gains.</td>
<td>up to 90% of heat losses can be avoided</td>
<td>5-10 years</td>
</tr>
<tr>
<td>Sealing and replacement of windows</td>
<td>A reduction of heat losses can also be achieved through better sealed windows, e.g. in the form of sealing seals in windows or through double or triple glazing.</td>
<td>up to 90% of heat losses can be avoided</td>
<td>5-10 years</td>
</tr>
<tr>
<td>Replacement of heating systems</td>
<td>A switch to efficient heating systems reduces the total energy consumption of buildings.</td>
<td>50-70% of energy demand can be saved</td>
<td>3-5 years</td>
</tr>
<tr>
<td>Boiler replacement</td>
<td>Through replacing conventional boilers with high-efficiency models, significant reductions in fuel consumption and fuel costs can be achieved.</td>
<td>5-15% of fuel for boilers can be saved</td>
<td>5-10 years</td>
</tr>
<tr>
<td>Building automation</td>
<td>Through the centralised control of a building's heating, ventilation, air conditioning and lighting systems, building automation systems can allow for energy savings compared to decentralised control systems.</td>
<td>up to 15% of total energy demand can be saved</td>
<td>3-10 years</td>
</tr>
<tr>
<td>District heating (district heating rehabilitation)</td>
<td>Improvements of heat exchangers, pumps and control systems in district heating systems can reduce the local energy consumption.</td>
<td>5-15% can be saved</td>
<td>1-5 years</td>
</tr>
<tr>
<td>Heat pumps (replacement)</td>
<td>Through the extraction and transfer of heat from outside air, water or soil, heat pumps can meet heating, hot water and cooling objectives at lower final energy input needs as compared to conventional appliances such as boilers.</td>
<td>up to 70% of final energy usage for heating/cooling and hot water supply</td>
<td>5-15 years</td>
</tr>
<tr>
<td>Improvement of illumination</td>
<td>Energy efficiency improvements can be achieved through modern illumination systems due less energy needs for the same luminous output.</td>
<td>up to 80% of energy demand for illumination can be saved</td>
<td>3-10 years</td>
</tr>
</tbody>
</table>

---

**Optimisation of Compressed Air Systems**

Description: Compressed air is simply, put, air that is kept under pressure. Air compressors are used in a lot of industrial processes, for instance for food and beverage processing and fermentation, air start systems in engines or air brakes. For many production processes, compressed air systems are a vital input. Although the system operates (only with air), compressed air is quite expensive. Only 5 to 20% of the electric energy input reaches the point of use. – A lot of energy is lost through conversion or leakage. In that respect, energy efficient compressed air utilities can reduce energy costs considerably.

Factors influencing the energy savings potential: Power rating of the current system, annual operating hours of the system, replacement of the compressor, improvement of controls and compressed air storage systems, improvements in the distribution network, etc.

**Waste Heat Recovery**

Description: In industrial processes, significant amounts of energy are discharged as “waste” heat. Waste heat sources are e.g. combustion exhausts, cooling water as well as brines from equipment and products. Depending on the temperature level and demand, recovered heat can be used for space heating, air, water or load preheating and power generation. Thus, significant energy efficiency gains can be met through the use of industrial byproducts.

Factors influencing the energy savings potential: Energy source for heat production, energy demand of the system for which a heat recovery will be installed, average thermal recovery, annual operating hours of the heat recovery, etc.

**Economizer on Existing Boilers**

Description: Economisers on existing boilers are one particular measure in the field of heat recovery (see above). They capture the residual heat that is contained in exhaust gases which leave the boiler through the flue. By passing the boiler input (e.g. water) through the economiser, which is inserted around the flue, the input is preheated before it enters the boiler. Thus, less fuel (e.g. natural gas) is needed by the boiler to heat the input, and energy efficiency gains can be achieved. Note that economisers require proper dimensioning and should...
PF4EE Online Tool

**Issue:** To foster the development of energy efficiency loan pipelines on a broad scale, a high degree of standardisation in pipeline development and loan appraisal is required. This is particularly true where investment volumes are small and the involvement of internal and external experts is thus difficult to justify. Sales staff typically constitutes the first point of contact for potential customers and therefore plays a crucial role for the development of such high granularity / low complexity pipelines. Enabling this group of staff to raise awareness for energy efficiency, to market dedicated financial products, and to appraise specific financing requests in a smooth manner is therefore key.

**Solution:** Web-based solutions are ideal to ease the appraisal of standard energy efficiency projects with smaller investment volumes through banks’ sales staff, and to raise awareness for the energy savings potential of typical measures among clients.

**The ESF case:** Under PF4EE, two online tools have been developed by the Expert Support Facility: The PF4EE Web-Check Tool and the Energy Efficiency Quick Estimator (EEQuest). These tools aim to support financial intermediaries in marketing dedicated energy efficiency financing, raise awareness for the energy savings potential in different sectors, and facilitate on-lending for energy efficiency. Based on limited user input, the tools provide a rough estimate on energy, cost, and CO2 savings that can result from measures in buildings and industry. Users such as bank sales staff, companies, and individuals can access the tools free of charge and without registration, and can draw on them to obtain savings estimates for their energy efficiency projects. Estimation results can also be downloaded as a PDF summary, which can support application and documentation for financing. The PF4EE Web-Check tool is customised to specific partner banks to an extent and enables users to pre-check eligibility for PF4EE financing.

**Details:** Both tools can be accessed through the PF4EE website: pf4ee.eib.org

**Landing page of the EEQuest online tool:**
Targeted Advertisements and Articles in Journals and on Websites

**Issue:**
Energy efficiency market participants, and hence potential borrowers and multipliers, can best be targeted through their own channels of communication and marketing. Banks implementing energy efficiency loan schemes, however, may not be aware of the key publications, journals, and web-pages in the energy efficiency market. Further, bank staff may not have the technical knowledge to write articles that are targeted to a very technical audience.

**Solution:**
In absence of internal technical staff, external consultants can support banks in the identification of relevant communication channels and in articles that speak to a specific technical audience.

**The ESF case:**
The PF4EE Expert Support Facility has provided such services to partner banks in the past. These services included the development of a list on relevant publications in the field of energy efficiency and the preparation of articles on the subject. On this basis, the partner banks were able to place targeted advertisements and articles in specialised or regional journals as well as on websites in the field of energy efficiency.

Flyer Highlighting the Multiple Benefits of Energy Efficiency

**Issue:**
Bank clients are often not aware of the multiple benefits of energy efficiency, which include energy cost savings and hence improved cash flows, but also co-benefits such as independence from scarce resources or an improved atmosphere in buildings. Such co-benefits are often considered key drivers for energy efficiency investment decisions.

**Solution:**
The multiple benefits of energy efficiency can be communicated to clients through bank staff, for example in the form of flyers which advertise the financing possibilities at the same time. Any such material should be customised to the specific target group, for example the buildings sector vs. the industrial sector.

**The ESF case:**
PF4EE partner banks typically develop their marketing material according to their internal standards. However, the Expert Support Facility regularly provides input to such material, for example in the form of flyer content, technology lists, or best practice project examples.
Example flyer highlighting the multiple benefits of energy efficiency:

[loan product name]

69% of hotels want to implement energy efficiency solutions

How about you?

[bank name] and the European Investment Bank support energy efficiency measures in the [country name] Hotel & Tourism Industry through preferential loans

Your business in the Hotel & Tourism Industry can enjoy multiple benefits from an investment that increases the energy efficiency of your operations:

- Increase your profits by lowering your energy costs
- Get access to favorable loan conditions
- Increase the level of comfort for your guests
- Strengthen your independence from scarce energy resources
- Improve your environmental performance and image
- Achieve a competitive advantage

[bank name] partners with the European Investment Bank to support your business in achieving higher energy efficiency.

<table>
<thead>
<tr>
<th>Potential energy efficiency solutions:</th>
<th>Access our energy efficiency loans:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficient LED lighting</td>
<td>HOTEL EEiciente eligibility criteria:</td>
</tr>
<tr>
<td>Occupancy and presence detectors</td>
<td>• Spanish Hotel &amp; Tourism Industry</td>
</tr>
<tr>
<td>Natural gas or biomass condensing boiler</td>
<td>• Financing of energy efficiency solutions</td>
</tr>
<tr>
<td>Efficient inverted chiller</td>
<td>• Loans from 10,000€ - 5 Mio. €</td>
</tr>
<tr>
<td>High efficiency heat pumps</td>
<td>Learn more about financing possibilities and eligibility criteria via:</td>
</tr>
<tr>
<td>Water-saving aerators in the taps</td>
<td>![Web](bank web page)</td>
</tr>
<tr>
<td>Thermostatic valves for radiators</td>
<td>![Any](bank name) branch</td>
</tr>
<tr>
<td>Insulation of windows</td>
<td></td>
</tr>
<tr>
<td>High efficiency appliances</td>
<td></td>
</tr>
<tr>
<td>Solar thermal system ...</td>
<td></td>
</tr>
</tbody>
</table>
Networking and Marketing Events with the EE Market

**Issue:** It is often said that one reason for the slow uptake of energy efficiency loan products is the apparent gap between the technical and financial sides of energy efficiency investing. Agents from both sides often do not encounter each other unless a specific financing request is concerned. This induces missed opportunities for energy efficiency loan pipeline development, since the key target group, i.e. the energy efficiency market itself, may be unaware of attractive financing possibilities and of the project documentation required to obtain an energy efficiency loan.

**Solution:** Banks that want to approach energy efficiency as a dedicated financing segment need to connect to the market in a very pro-active manner. Regular presentations and participation in industry events, e.g. organised by relevant business associations, ESCO forums, or from the technology supplier side, should be one of the core pillars of such activities. Banks should also consider the organisation of own events, bringing the market together and strengthening the bank’s visibility as a committed green lending institution.

**The ESF case:** The PF4EE Expert Support Facility offers several services to PF4EE partner banks in this respect: Local ESF experts provide overviews on relevant events in the national energy efficiency market as well as lists regarding target groups for own events; the ESF offers support regarding the preparation of presentation material that speaks to the audience; and the ESF can also participate in such events and provide technical input.
Imprint

adelphi takes full responsibility for the contents of this publication. The opinions expressed do not necessarily reflect the view of the European Union or the European Investment Bank.

Publisher
adelphi consult GmbH
Alt-Moabit 91
10559 Berlin
T +49 (30) 8900068-0
F +49 (30) 8900068-10
office@adelphi.de

Project support
This project was made possible with the support of the European Union through Life budget and the EIB.

Authors
Rainer Agster, Svenja Hector, Carmen Hennig and Silas Schürmann

Pictures
Page 1: © Helloquence - Unsplash.com

Date
March 2019

© 2019 European Investment Bank