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Energy Savings Insurance Program Toolkit

Guidelines for implementing agencies of the IDB Regional
Energy Savings Insurance and Risk Management Program





Regional Energy Savings Insurance and Risk Management Program Toolkit

Guidelines for implementing agencies of the Regional Energy Savings Insurance and Risk Management Program

Version 1.0



This toolkit is designed to support national development banks and other agencies responsible for implementing energy efficiency financing programs under the Inter-American Development Bank's Regional Energy Savings Insurance and Risk Management Program. It aims to support key implementers including program managers and consultants in creating programs in their own countries. In addition, the toolkit is intended to inform implementers of energy efficiency financing programs interested in following the ESI model in Asia and Africa.

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Welcome to the Energy Savings Insurance Program Toolkit

This toolkit is a practical guide on how to implement an Energy Savings Insurance (ESI) Program for a national development bank or an entity with similar functions. It is designed to support program managers and consultants in the preparation and implementation phases.

Based on experience in Latin American countries, the toolkit contains detailed instructions on how to develop seven integrated mechanisms necessary for an ESI program: market assessment, financing structure, standardized performance contract, energy savings insurance, validation, marketing and communications plan, and capacity building.

The toolkit includes chapters with instructions on each individual mechanism, as well as resources such as templates that can be used in program implementation.



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Abbreviations

B2B	Business to business
BASE	Basel Agency for Sustainable Energy
BTU	British Thermal Unit
CO ₂	Carbon Dioxide
EnPI	Energy Performance Indicator
ESCO	Energy service company
ESI	Energy savings insurance
EPC	Engineering procurement construction
FI	Financial institution
GHG	Greenhouse gas
HP	Horsepower
IDB	Inter-American Development Bank
IEA	International Energy Agency
IRR	Internal rate of return
kWh	Kilowatt hour
LAC	Latin America and the Caribbean
LED	Light-emitting diode
LOE	Level of effort
MIS	Management information system
NDB	National Development Bank
NPV	Net present value
rpm	Revolutions per minute
SMART	Specific, Measurable, Attainable, Realistic, and Time-sensitive
SWOT	Strengths, weaknesses, opportunities, and threats
ToR	Terms of reference
TSP	Technology Solution Provider
USD	United States Dollar

Symbols

- ✓ Task
-  Lessons learned
-  Electronic resource (available in electronic toolkit pack or as Annex)
-  Tip
-  Program implementation milestone



Introduction

Why an energy savings insurance program?

A national or regional energy savings insurance (ESI) program can increase energy efficiency (EE)¹ investments and develop EE markets by matching bankable project opportunities with finance – including climate finance. The favourable economics of EE projects can be attractive for both local firms and financial institutions (FIs), while at the same time supporting public goals such as clean air and reduced fossil fuel imports. To achieve this favourable economics of EE projects, all relevant financial and non-financial barriers need to be addressed so that risks are managed by parties best able to do so.

While there are many options for reducing energy use, this ESI program toolkit focuses on establishing programs for upgrading specific old technologies to new technologies (e.g. replacing an old air conditioning system with a newer, more efficient one). These upgrades are aimed to lead to monetary savings and increased productivity in firms where the existent equipment leads to high energy costs as a share of total firm's costs.

Energy efficiency opportunities

EE offers a large range of opportunities to reduce greenhouse gas (GHG) emissions, and to realize other benefits such as cost savings and increased productivity². More efficient technologies should be able to do the same amount of work using less energy, thereby reducing costs to the user of the technology and reducing its emissions. Furthermore, the potential market size for EE upgrades is large³, and there is generally a broad range of technology solution providers (TSPs) already operating in local markets who can implement these upgrades and can, if capacitated, also provide energy savings services. Small- and medium-sized enterprises represent often a substantial share of the market and underlying EE opportunities.

Energy efficiency barriers

Although there is enormous potential for EE projects to decrease firms' energy costs, increase production efficiency, reduce costly waste and increase cash flow, there are barriers that prevent many firms from developing these projects. The four main barriers are:

¹ This toolkit uses the term *energy efficiency* to refer to all measures that reduce the use of energy. This toolkit applies the term *energy savings* as a subset of all energy efficiency measures and refers to specific measures such as replacement of equipment with energy savings contemplated in this toolkit. This toolkit furthermore uses the terms old and existing equipment interchangeably.

² See, e.g., IEA 2014. *Capturing the Multiple Benefits of Energy Efficiency*; the McKinsey Global GHG abatement cost curve, in: McKinsey & Company. 2009. *Pathways to a Low-Carbon Economy*; Worrell, E, Laitner, J. A., Ruth, M. & Finman, H. 2003. 'Productivity Benefits of Industrial Energy Efficiency Measures'. *Energy* Vol 28: 1081-1098.

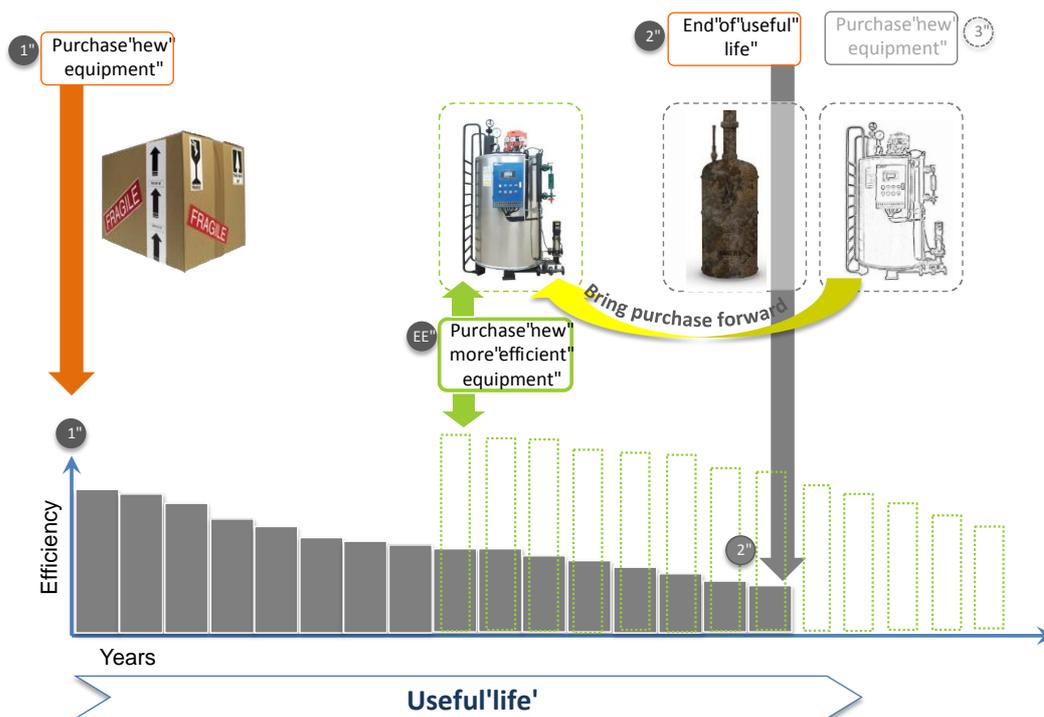
³ IEA. 2014. *Energy Efficiency Market Report*.



1. Lack of priority

Firms do not often place a high priority on investing in EE. They generally have many competing investment priorities, and most owners tend to prefer to use their capital and financing capacity in other investment priorities to grow their firms. Firms will only invest if they are better off with the investment rather than without. The economics of any investment needs to ensure that the returns (e.g. energy savings) justify the risk (e.g. taking the loan or investing own capital). Investment to replace existing equipment usually occurs when the equipment breaks down and can no longer be repaired. Saving energy costs through EE investment requires firm owners to change their usual behavior and upgrade their equipment *before* it reaches the end of its useful life (see Figure 1). The ESI program enables the firm to take out a loan for an EE technology with an increased certainty about its own ability to pay it back through the savings realised. Therefore, the program offers a strategy to increase firms' demand for investing in EE.

Figure 1: Business-as-usual investment compared with energy efficient investment



2. Lack of trust

Experience has shown that firms commonly have a lack of trust in TSPs, and in the ability of EE projects to actually deliver the promised energy savings.

TSPs, particularly in LAC, often do not have the financial capacity to pay for an EE technology and charge the firm later or per use. As a consequence, the firms have to undertake this investment themselves and take out a loan to finance the EE upgrade in their buildings or processes.



When a firm upgrades a piece of equipment, a TSP predicts a certain amount of energy cost savings; however, the firm bears all the risk if the promised savings do not materialize. This can result in the firm being skeptical about the predicted potential for EE. The toolkit seeks to overcome this perception and trust barrier through mechanisms to mitigate performance risk for firms that invest in EE upgrades.

3. No access to finance

Even if firms are willing to make an investment in EE, often they have trouble accessing finance for it – particularly for SMEs, and with terms that are long enough for the savings to pay back EE upgrades. The toolkit aims to address this barrier by providing the enabling environment so that long-term finance channelled through national development banks or similar development institutions through local financial institutions reaches the investing firms. In terms of EE projects, local FIs currently do not recognise savings as collateral, as their risk models cannot reflect the benefits from lower expenses. A credit line can be structured to specifically suit EE upgrades, including longer loan terms or grace periods, while accounting for the monetary benefits from energy savings.

4. Lack of experience

Local FIs often have limited experience with financing EE upgrades, and thus often lack the capacity to evaluate project proposals. By establishing a structured program that guides FIs through lending to EE upgrades, the toolkit help FI gain internal capacity that allows them to gain experience through the assessment, approval and instrumentation of new operations.

Most developing and emerging economies are dominated by SMEs, which play a strategic role in economic growth and development through their contribution to the creation of wealth, employment, and income generation. However, SMEs face challenges not only in EE project realization. Providing credit to SMEs can present important additional challenges given that many SMEs have lack of collateral, solvability, or more generally, they are often considered too risky by FIs, independently on the type of investment opportunity.

Furthermore, SMEs are not used to investing in savings; most of firms prioritize investments related to growth and expansion in terms of sales and production.

In some developed countries there is a strong market of Energy Service Companies (ESCOs), which are providers that offer a range of energy solutions that include energy audits, design, implementation, risk management and financing methods. The ESCO model is attractive because they are able to remove most of the investment risks for firms and, sometimes, the initial upfront investment required for this type of project. However, in many emerging economies ESCO markets are weak and ESCOs have a limited financial capacity to scale investments which makes distributed models, based on smaller quality providers serving SMEs necessary to address financial and non-financial EE investment barriers.



Why this toolkit?

This toolkit provides guidelines for developing a functioning ESI program to engage and support SMEs in investing in EE opportunities.

The program is conceived to be owned and managed by a national development bank (NDB) or other local entity that can coordinate the different elements of the program.⁴

This toolkit provides step-by-step instructions for establishing an ESI program for an NDB or other organization planning EE financing programs. An ESI program consists of seven mechanisms, all of which are presented and elaborated upon in this toolkit. All seven mechanisms play an integral part within the program and – when applied together – can overcome the key barriers to EE investment and create demand for EE financing.

How the toolkit works

The toolkit is based on prior experience realizing an ESI programs in Colombia and Mexico. It includes resources for a set of technology upgrades for buildings that can be easily replicated in other buildings but also in processing plants and other types of firms in Latin America and beyond. The toolkit includes standard methodologies for energy savings estimation, examples and templates for six different technologies: co-generation, electric motors, compressed air, solar water heaters, boilers and air conditioning/refrigeration.

The toolkit focuses on upgrading individual technologies rather than facility-wide energy processes or building retrofits. The rationale of this approach is mainly to build trust and standardize the validation procedures. The program looks to work with reliable and reputable local TSPs (e.g., air conditioning provider, boiler provider) to start building trust with firms, taking advantage of the TSPs' existing expertise in their respective technologies. Furthermore, the individual technology approach allows standardization of the validation procedures of projects and reduces complexity compared with a wide energy retrofit.

Additional technology improvements from those listed in the toolkit (for instance for industrial processes or for distributed energy generation) could be developed over time and added to the toolkit. When using this toolkit, each program will identify the most suitable technologies for the specific target country or region⁵.

The mechanisms

As described above, there are multiple barriers to stimulating demand for financing (i.e., motivating firms to invest in these projects) and to mobilizing the supply of suitable

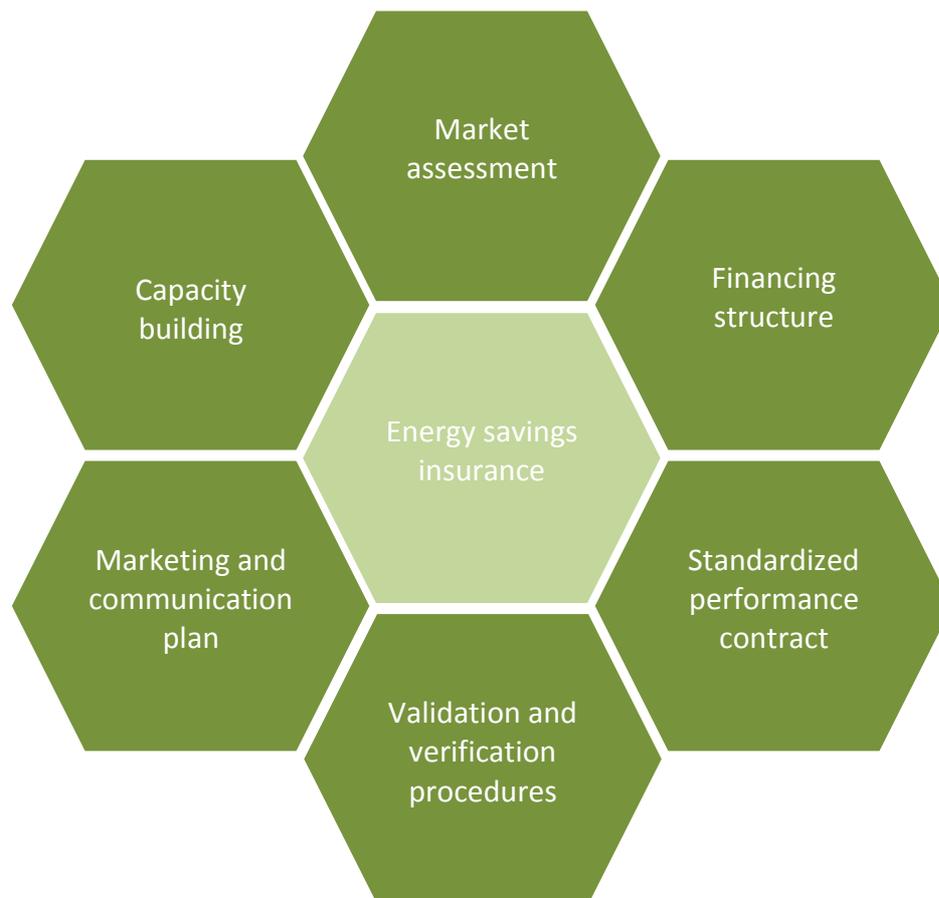
⁴ For more information on the role of NDBs in catalyzing the market for EE, please refer to: IDB. 2013. *The Role of National Development Banks in Catalyzing International Climate Finance*.

⁵ In regions outside LAC, different technologies might be preferable. In this case, additional work will be required to adapt the templates provided to the different technologies.



financing for EE projects. This toolkit proposes a package of seven financial and non-financial mechanisms designed to work together to overcome these barriers (see Figure 2).

Figure 2: Mechanisms in the toolkit



Guidelines for implementing each of these mechanisms are given in each of the subsequent chapters; however, these mechanisms should be adapted to the specific circumstances identified in the program's country. It is recommended that the project team (see Chapter on implementation) reviews each chapter of the mechanisms and issues recommendations on how to implement them in the program's target market.

Who can use the toolkit?

This toolkit is part of the technical assistance provided by multilateral development FIs (e.g., the IDB) to NDBs to help them establish EE financing programs.



As respected public FIs with development mandates, NDBs⁶ are well placed to catalyze EE markets by providing a much-needed link between international climate funds, a country's local FIs and firms with potential for EE investment. NDBs are particularly ideal implementers of EE financing programs due to their development mandate and their ability to mobilize domestic resources and channel financing from international climate funds to local FIs. They can also channel financing from other sources (e.g., reorienting of existing national credit lines). This allows them to bring the supply of financing to the local market. Importantly, NDBs can also play a role in helping to drive demand for that financing from firms. This is essential, as investment opportunities can only be realized when financing is available *and firms* request financing for “bankable” EE projects.

For consistency, the toolkit refers to NDBs as lead implementers throughout; however, other entities could also serve as lead implementers. Special advice will be given whenever additional considerations are necessary, in case of a non-NDB implementer.

Additional to the lead implementer, the different mechanism chapters of this toolkit specify where other parties, consultants or agencies should assist in completing key steps.

Toolkit schedule for ESI program set-up

When implementing the ESI program, the seven mechanisms are integrated and the finalization of one mechanism is often the required input for the continuation with subsequent mechanisms and it is thus recommended to follow the order of the toolkit chapters and take into account the needs of the market actors in the planning schedule. The following preliminary Gantt chart offers a broad outline of such a schedule. Table 1 refers to mechanisms to be developed for the use by market actors. The preparation and the market assessment set the stage for the other mechanisms, the marketing and communications plan and the capacity building mechanisms support the ESI program implementation and generate bankable EE deals throughout the program and beyond. The green colored mechanisms are developed and made available for the firms to access directly in order to structure the actual financing and associated processes and agreements.

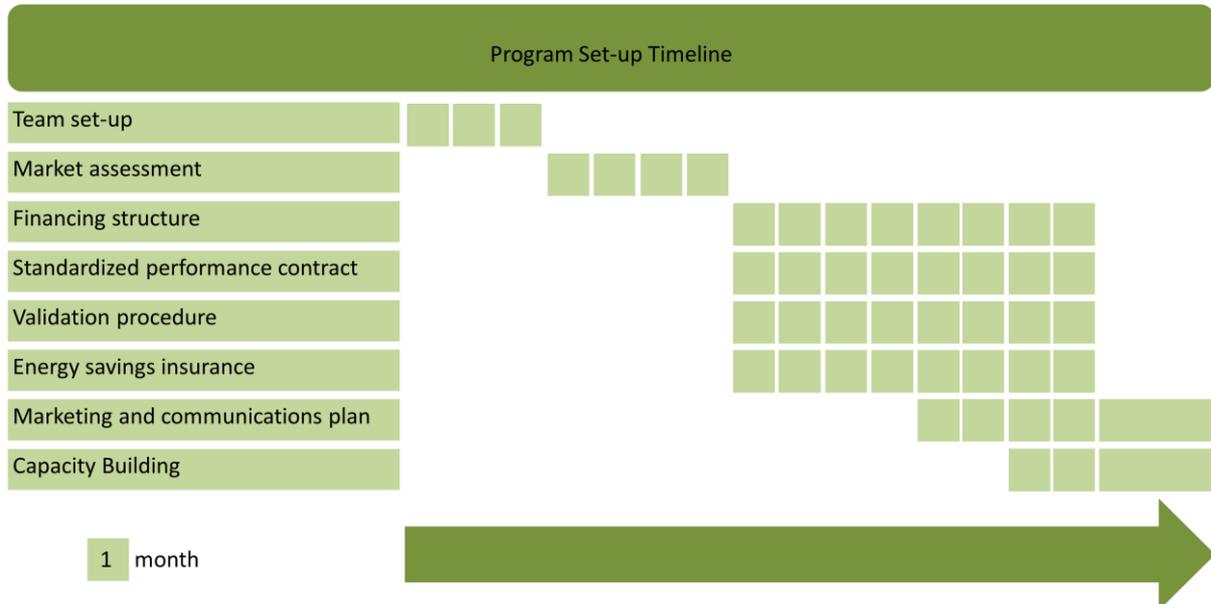
It is expected to take one year to establish the strategy⁷ not including about 3 month of preparation and set-up of the team including hiring the expert consultant. After the set-up of the full program, loans can be provided through a credit line to support energy savings projects using the mechanisms established.

⁶ NDBs and similar development finance institutions have several key features that make them suitable implementers. In specific cases they can act as first-movers to catalyse the market taking the risk that market players are currently not willing to take. Once a track record is established the NDB can retreat so as to avoid crowding out effects. See also Smallridge, D., Buchner, B., Trabacchi, C., Netto, M., Gomes Lorenzo, J. J., & Serra, L. (2012). The Role of National Development Banks in Intermediating International Climate Finance to Scale Up Private Sector Investments. Inter-American Development Bank.

⁷ This estimate is based on smooth transition between each step in the toolkit – see Implementation Plan Chapter for further detail.



Table 1: Preliminary Gantt chart for Program Set-up



Each of the mechanisms is described in a detailed chapter in this toolkit and it is absolutely essential to set up **all** seven mechanisms.

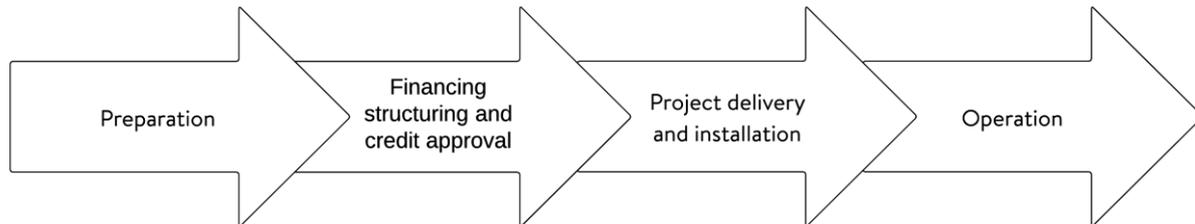
The Implementation Plan chapter offers a more detailed description of the activities the NDB will need to undertake and oversee.

The result

Where the different mechanisms come into play

From the perspective of a firm, the ESI program offers four different mechanisms for it to benefit from directly. These mechanisms are: the financing structure that impacts the payment structure and the cost of the investment to be made for the EE project; the standardized performance contract that sets the legal agreement between the firm and the TSP; the validation procedure that establishes the guidelines to be followed for setting a baseline of current energy consumption and the method to ensure quality measurement of the savings; and the ESI for the project that protects the firm in case the project does not deliver the promised results. The different mechanisms come into play during different stages of the EE project (Figure 3 illustrates these different stages).

Figure 3: Stages of an energy efficiency project for a firm



In the following, each stage is discussed and the way the mechanisms come into play explained in detail.

Figure 4 shows the preparation and credit approval process the firm will have to follow. During the preparation stage, the TSP presents a proposal of an EE project to the firm. If the firm accepts the proposal, it becomes the basis for a standardized performance contract. This contract provides a legal and transparent agreement between the TSP and the firm. This simple and well-established turnkey contract states the energy consumption baseline, specifies the energy savings potential of the project and sets the monitoring and reporting obligations regarding the energy savings. It also incentivises the TSP to deliver the estimated energy savings through the retention (explained in Chapter 3).

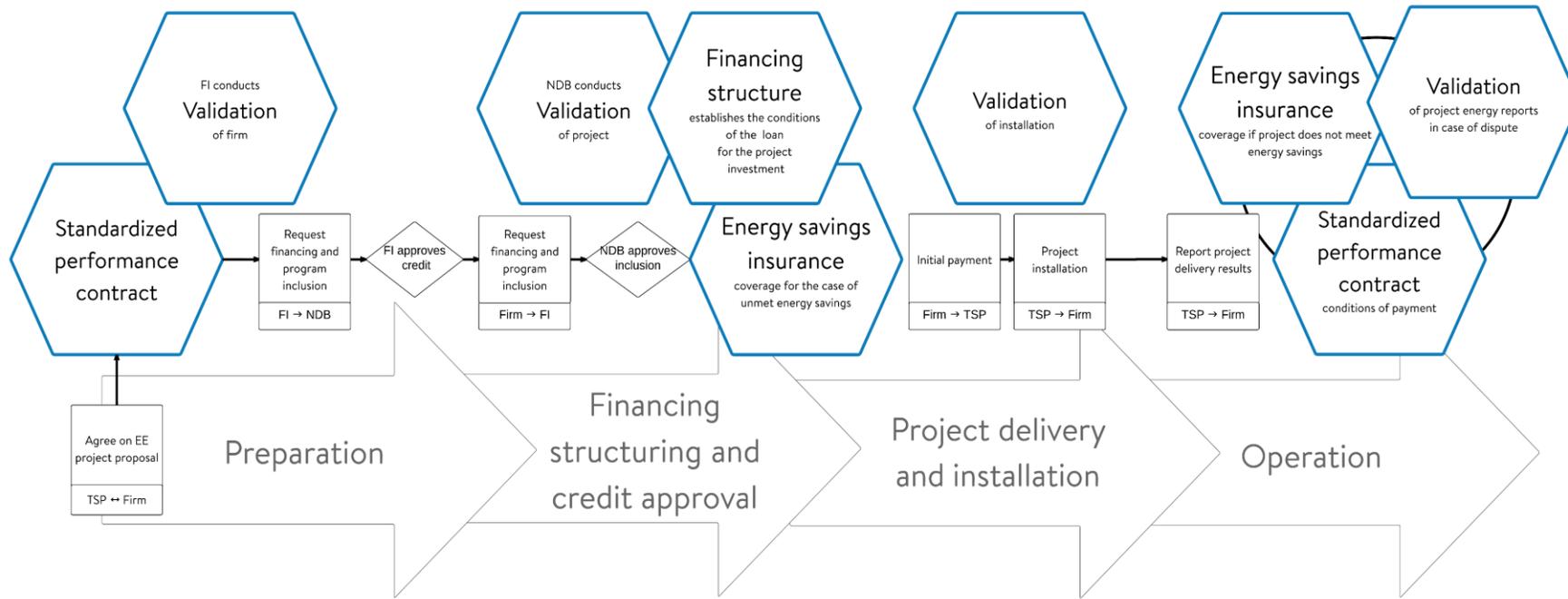
During the financing structuring and credit approval process the firm requests financing for the project from an FI. The FI validates whether the firm has good credit standing and informs the NDB of its decision. The NDB then initiates a validation of the proposed project. If the project has the potential to achieve the promised energy savings, the NDB approves the project to be included in the program. After that insurance coverage is issued for the TSP on behalf of the investing firm. After the project has been approved and included in the program, the new equipment is delivered, installed and put into operation.

After the installation of the project, the validation entity checks that the right equipment has been installed and that the necessary measurement instruments are in place. Once the project installation has been validated, the firm puts the equipment into operation. The standardized performance contract lays out the reporting of the equipment's performance and achieved energy savings. Generally, the TSP reports to the firm and the firm approves of the reports. If the energy savings are achieved as promised, the standardized performance contract specifies the regular payments from the firm to the TSP. In case the project fails to deliver the proposed energy savings, the TSP compensates the firm for the damage (the savings not achieved). In case the TSP is unable to compensate the damage to the firm, the energy savings insurance will step in. In case of a dispute over the project results between the TSP and firm, the validation entity resolves the dispute through checking the accuracy of the measurements.



Energy Savings Insurance Program Toolkit

Figure 4: Project preparation through operational stage





ESI Mechanisms address financial and non-financial barriers

The goal is to identify bankable energy savings projects that incentivise firms to decide to invest in such a project due to its profitability either with own resources or through loan resources. Table 2 shows how each mechanism is essential to make sure the key barriers are addressed. The market assessment will be needed to understand the market opportunities and the level of barriers and risks perceived. It provides the necessary information on the needs of potential investing firms, TSPs and financial institutions to inform the development of the remaining mechanisms.

The financing structure aims to provide financing with competitive and suitable long-term financing conditions and tackle the lack of financing for EE projects and SMEs. Furthermore, it is important that the financing is structured to lower the firms' annual energy and financing cost, and to ensure that the financing conditions incentivise SME firms to investing in these types of technologies.

The standardized performance contract overcomes the trust barrier through the establishment of the "rules of the game". This is in a market where firms are not used to buying future energy saving promises and where providers are not used to selling guaranteed energy savings. Furthermore, the contract also provides the framework for negotiations between the firm and the TSP and establishes the guarantees and risk mitigation instruments that improve the credit evaluation process and access to financing.

The validation procedures help to build trust between TSPs and firms, and between firms and FIs and insurance companies. A third party expert in EE technology conducts the validation procedures and evaluates the capacity of the project to generate the energy savings promised.

The energy savings insurance is a financial risk mitigation instrument that helps to build trust between TSPs and firms, and FIs and firms. The insurance acts as the guarantor of the contract's performance guarantee and pays a firm the performance guarantee in case a TSP fails to fulfill its commitment. This instrument reduces a borrower's (a firm's) risk for credit payment default.

The marketing and communications plan addresses the lack of priority placed on EE projects by providing convincing arguments in an accessible way to the target firms.

The capacity building efforts overcome the lack of experience of TSPs and FIs in dealing with EE projects and in realizing them. Additionally, this mechanism also helps to overcome the priority barrier as it aims to build TSPs' and FIs' understanding of energy efficiency investment opportunities and risk mitigation instruments.



Table 2: ESI mechanisms address barriers to energy savings projects

Mechanism	Description	Lack of trust	Lack of priority	No access to finance	Lack of experience
1. Market assessment	Gain understanding of market and identify high potential opportunities				
2. Financing structure	Increase supply of financing for firms wanting to invest in EE				
3. Standardized performance contract	Establish the "rules of the game" between firms and TSPs				
4. Validation procedures	Set the baseline for project saving measurement, validate TSPs and projects, and verify reporting of energy savings				
5. Energy savings insurance	Cover firms in case promised energy savings are not achieved				
6. Marketing and communications plan	Promote EE to increase awareness and drive demand for investment				
7. Capacity building	Train TSP and FIs in "selling" EE				

Structure of the toolkit

The toolkit contains individual chapters on each of the seven mechanisms described above. Each chapter contains: a brief overview of the mechanism, background on the rationale behind the mechanism, an overview of the key steps, a time estimate and detailed instructions on each step illustrated with examples. Templates and standard methodologies are also provided for several of the mechanisms. These are included in the resources section at the end of the toolkit; the templates are also supplied as electronic files to enable individual programs to adapt them. The example implementation plan given at the end of the toolkit offers a guideline on the timeline, resources and budget necessary before and during establishing a program.



1. Market assessment

The market assessment is a study to gain a deep understanding of the supply and demand side for finance in the target market for energy efficiency. It uses a combination of desk research and interviews to understand the barriers to EE investment and the necessary conditions for investment.

The market assessment aims to identify the demand for finance by:

- Priority sector(s) with attractive energy efficiency business opportunities
- Key actors: businesses, TSPs, local FIs, partners

And to identify the supply of finance by exploring:

- Existing initiatives and regulation, and
- Financing options

The outcome of the market assessment is a report on the state of the market, with recommendations on how to adapt the toolkit mechanisms to the country situation.

Background

A program can be most effective in catalyzing the market for EE if it is based on a solid understanding of that market.

Identification of priority sectors with high potential business opportunities can enable the program to efficiently target those firms that are more likely to invest in EE⁸. It is important to identify sectors whose energy cost make up a large share of a firms' cost.

By identifying key actors in the beginning, the program can work to connect them with each other, and to ensure that the program meets their needs. This can help to overcome key barriers to EE financing: the lack of communication between firms, TSPs and FIs that leads to a lack of prioritization of EE projects.

Similarly, identification of existing initiatives and financing options will mean that the program can cooperate with these where possible, combining efforts to catalyze the EE market and learning from each other's experiences. This also applies to initiatives that enhance enabling environments, for example through regulation and incentives.

Use the market assessment to find the best business opportunity for energy efficiency investment

⁸ Targeting the program at a particular sector means that strategy development and resources are focused on that sector; it does not necessarily mean that other sectors must be excluded from borrowing under the program.



Key steps

Table 3 gives an overview of the key steps and milestones for the market assessment; each individual step is then detailed in the sub-sections below. The implementation chapter includes an indicative time schedule where the following steps can be seen in a Gantt chart.

Table 3: Key steps and milestones for a market assessment

Step	To do	Time estimate
1.1 Market assessment consultant	Contract consultant with relevant experience	4-8 weeks
1.2 Pre-feasibility analysis	Identify priority sectors based on scorecard matrix evaluation	3-4 weeks
Milestone 1.1: <i>Priority sector(s) decided upon</i>		
1.3 Priority sectors review	Gain deeper understanding of priority sector(s)	1-3 weeks
1.4 Firm questionnaire design	Develop questionnaire for priority sector firm interviews	1 week
1.5 Firm interviews	Conduct interviews with sample of priority sector	8 weeks
1.6 Provider interviews	Conduct interviews with TSPs	4 weeks
1.7 Financial sector overview	Conduct interviews with banks and other FIs	3 weeks
1.8 Analysis	Evaluate results of interviews and desk research	6 weeks
1.9 Report	Report and make recommendations	2-3 weeks
Milestone 1.2: <i>Market assessment report received and approved by the designated NDB or similar development finance implementing agency.</i>		
Milestone 1.3: <i>Market assessment report discussed internally and utilized for program strategy development</i>		

1.1 Market assessment consultant

- ✓ Engage market assessment expert

There are two options to conduct the market research: a) in-house with a team or individual expert in conducting market research, or b) external consultant, which requires contracting an expert individual or organization to conduct

For a smooth workflow roles and responsibilities of the consultant and the NDB need to be clearly defined.



the market assessment. The consultant should also have knowledge of the main FIs, firms and TSPs in the local market. It is likely that the consultant will assign a multidisciplinary team of assistant consultants to help conduct the market assessment (for guidelines regarding managing external consultants, see the Implementation plan chapter).

1.2 Pre-feasibility analysis

Conduct a pre-feasibility analysis to identify one or more target priority sector(s) or subsectors. The pre-feasibility analysis is driven by desk research, will be guided by the market assessment consultant.

The final result should be a brief report that enables the NDB to select one or more high potential sectors for deeper analysis. It is important that the market assessment consultant and the NDB project manager agree, and those decisions are documented in case questions arise later in the process.

✓ Gather available information

The market assessment consultant should start by gathering literature and other information available on:

- Sectors within the target country that could have high potential for EE upgrades. This should include finding out how sectors are classified by the government and looking for existing reports by development agencies on EE potential, market size, and growth trends.
- EE technologies that can be potentially relevant for the identified sectors, and their returns on investment.
- Regulatory environment, incentives, and initiatives related with the identified sectors, energy or environmental measures.



The market assessment consultant should ensure that he has a team of experts assisting him

Examples of literature sources are given in:

 *File 1 Potential literature sources*

✓ Shortlist sectors

Develop a shortlist of up to 10 sectors⁹ with high potential for EE investment. Using existing literature, begin to segment the market for EE. This shortlist should only include sectors that use the technologies covered under the program – co-generation, electric motors, refrigeration, compressed air, solar water heaters, boilers, air conditioning and LED lighting. An example sector shortlist is given in Table 4.

⁹ Here, the term “sector” is used – depending on the mandate of the NDB, it may be more appropriate to analyze sub-sectors within a given sector.



Table 4: Example sector shortlist

No.	Sector	Sub-sector
1	Industry	Food Processing
2	Industry	Pharmaceutical industry
3	Industry	Textile manufacturing
4	Industry	Leather manufacturing
5	Industry	Plastic industry
6	Services	Hotels
7	Services	Restaurants
8	Services	Office buildings
9	Services	Supermarkets and malls
10	Services	Hospitals

✓ Establish evaluation criteria

Establish criteria according to which the shortlisted sectors can be evaluated, and weight these according to their importance for the success of an EE program. Example criteria can include profitability of investment in EE projects, and availability of technologies and providers in the country. Each criterion should be given a weighting (from 0 to 100) that reflects its importance.

The market assessment consultant should guide this process, but the criteria and their weightings need to be developed by several team members, with each member contributing and justifying opinions based on their areas of expertise. It is important that the process be transparent and that no individual team member can unduly influence the outcome of the process. Table 5 shows 15 example evaluation criteria, and the example weighting given to each.

Table 5: Example evaluation criteria and weighting

No.	Evaluation criteria	Weighting
1	Profitability of investment in the projects	100
2	Size of the market	90
3	Potential for growth in the sector	90
4	Existence of supportive policies	30
5	Availability of the technology in the country	60
6	Availability of reliable providers	60
7	Ease of generating firms' interest (perception and regulatory barriers)	70
8	Priority sector for the NDB	100



No.	Evaluation criteria	Weighting
9	Competitiveness of the NDB in the sector	100
10	Interest of financial intermediaries in the sector	90
11	Existence of industry associations that can help promote the program	30
12	Energy intensity of the sector	70
13	Reduction in emissions, energy or water use	90
14	No subsidies that distort the market	80
15	Regulation/certification requirements that stimulate the change	80

✓ Evaluate using matrix tool

Evaluate each sector according to the defined criteria, using a spreadsheet-based matrix evaluation tool. A snapshot of an example tool is shown in Table 6 below; a template version of the tool is given in the resources section and with the electronic templates.

File 2 Template matrix evaluation tool (in Annex)

The team of experts should assign each sector a score per criterion, ranging from 1 (low) to 5 (high). The tool then automatically weights and adds the scores to produce a final total score out of 100 for each sector.

Table 6: Extract from example matrix evaluation tool

No	Sector	Sub-sector	Technologies	1	2	3	4	...	Final score
				Profitability of the projects	Size of the market	Potential for growth in the sector	Existence of supportive policies		
				100	90	90	30		
1	Industry	Food Processing	Boilers, electric motors, compressed air, cogeneration, Cool rooms, lighting.	5	4	3	2	...	81
2	Industry	Pharmaceutical industry	Boilers, electric motors, compressed air, cogeneration, cool rooms, lighting.	5	3	3	2	...	79



3	Services	Hotels	Boilers, electric motors, cogeneration, lighting.	5	5	4	3	...	87
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Note: This table provides only a snapshot of the full matrix evaluation tool, showing three (of 10) sectors, and four (of 15) criteria. The final scores shown relate to the full matrix evaluation tool analysis.

✓ Report and select priority sector

Finally, prepare a brief report or presentation to enable the NDB's decision makers to review the matrix evaluation analysis and decide on a priority sector to target.



Milestone 1.1: Priority sector decided on

The NDB's key decision makers agree on the selected priority sector. This first major achievement needs to be signed off by the NDB before proceeding to the next stages of the market assessment.

1.3 Priority sectors review

After the pre-feasibility analysis has been completed, the next step is to analyze the priority sector in greater detail, using existing literature and connecting with industry actors.

✓ Review literature

Use existing literature to find out details of the market and sector, including:

- Sectorial information: how many firms there are, where in the country they are located, and who the main actors are
- Energy prices and trends
- Energy consumption
- Sector-specific incentives, regulations, and initiatives
- Energy efficient technologies, investment sizes, returns on investment
- Key barriers and risks to financing EE (or other productivity opportunities) projects the selected sector
- Key actors: TSPs of EE projects, associations, public entities working with the targeted sector

✓ Get information from industry actors

Start to make contact with key actors within the priority sector, such as industry associations and other groups representing firm owners, to gain their opinions on the program, and to



explore opportunities for working together.

Industry associations generally have strong networks within their sectors, and can be helpful partners in providing information on the sector and connecting with firms. Partnering with an industry association can also provide additional credibility to the program.

It is important to encourage a win-win strategy for engaging with the industry associations to create a sustainable channel for industry associations to actively engage with firms on behalf of the program. The NDB may have existing relationships with industry associations or other key actors in the sector, which can be a good starting point for engagement.

1.4 Firm questionnaire design

The following step is to develop a questionnaire to be used in interviewing a sample of firms in the priority sector. Make sure the questionnaire offers clear, unambiguous definitions, and does not include any unclear terms. The results from the questionnaire will be used to inform the strategy for the ESI program.



✓ Determine essential outputs

First, determine what information is needed from the interviews to develop the strategy for the program. For example, to conduct a project investment analysis (section 2.2 of this toolkit) of replacing old equipment with new equipment, information on the type of equipment that firms currently use is necessary, as well as all cost and income components to calculate project profitability. The main objective of the questionnaire is to get information related with:

- Characteristics of the targeted sector(s), such as: size of the firms (sales and number of employees), existing equipment and ages, etc.
- Energy consumption characteristics, such as: types of energy used, energy costs and consumption
- Investment priorities of the firms, EE investment perception, risks and barriers

A list of suggested outputs and their purpose for the analysis is given in Table 7.

✓ Determine required inputs

After the necessary outputs are clear, determine which inputs are needed to calculate these. For example, to determine the classification of a firm' size, most countries use a combination of the number of employees and the annual sales. The following table shows the inputs that are required to obtain the suggested outputs.



Table 7: Suggested outputs, function of outputs in analysis, and required inputs

Output	Function in analysis	Required inputs
Characteristics of the firm		
Sub-sector	Market segmentation (including cross-tabulation with other variables)	Name of sub-sector
Size	Market segmentation (including cross-tabulation with other variables)	Number of employees (range) Annual sales (USD range) Annual production (or service)
Existing technologies		
Snapshot of existing equipment	Project investment analyses (enabling estimation of existing energy costs)	Quantity of existing pieces of equipment for each technology (e.g., number of air conditioners) Size of each piece of equipment (e.g., tons) Age of each piece of equipment (years) and expected remaining useful life of existing equipment Frequency of use of each piece of equipment (hours/week) Cost of maintenance of each piece of existing equipment (USD/year) Name of type of fuel used (relevant for boilers only)
Energy costs		
Monthly fuel and electricity costs	Impact of energy costs	Types of energy sources used (fuels, electricity) Amount spent on each fuel (USD/month) Amount spent on electricity (USD/month)
Price of electricity per kWh	Project investment analyses (enabling estimation of existing energy costs)	Amount paid per kWh of electricity (USD/kWh)
Relationship between energy costs and total operating costs	Impact of energy costs	Ratio of energy costs to operating costs (%)
Perceptions and barriers		



Output	Function in analysis	Required inputs
Perception of risk and return of EE investment	Barriers to EE investment	Rating for perceived risk of EE investment (scale: low to high) Rating for perceived return of EE investment (IRR range) Ratings for perceived risk and return of other investments (scale: low to high/IRR range) Ratings for different types of risks to EE investment (scale: very low to very high) Most important reason that prevents firms from investing in EE Decision criteria for firm to exchange equipment
Acceptable payback period	Structure of financing mechanisms	Amount of time that is acceptable to recoup the cost of an EE investment through energy savings (years)
EE priority	Identify possible incentives	Identify the level of priority of investment (and willingness) of the firms to invest in EE compared with other investment opportunities of the firm.

✓ Develop questions

Using the list of required inputs, develop questions to help obtain the required information. For example, to calculate the size of the company the number of employees and annual sales are needed. Therefore, example questions could be:

What is the size of your firm?

For example - According to the national classification system, the size of a company is determined by the number of employees and the company's sales

Number of employees

- 1 – 9 employees
- 10 – 50 employees
- 51 – 100 employees
- > 101 employees

Annual sales

- < USD 100,000
- USD 100,001 – 1,000,000
- USD 1,000,001 – 5,000,000
- >USD 5,000,001



In the resources section there is an example questionnaire that includes questions designed to obtain the required inputs.

File 3 Example questionnaire for firms

The questionnaire will need to capture both technical and financial information; in some companies, these questions will need to be completed by two different people. It is recommended to separate the technical and financial questions into different sections of the questionnaire to enable easier completion of the questionnaire by two separate people if necessary. Before moving on to the next activity, the NDB should review the questionnaire.

✓ Test, review and finalize

Where possible, it is helpful to test the questionnaire with one or two firms before moving to full-scale interviewing. This will help to determine which questions work well, and improve those that do not work as expected.

If testing with priority sector firms is not possible, another option is to have colleagues not involved in the questionnaire development test it.

1.5 Firm interviews

The next step is to use the questionnaire to conduct interviews with firms in the priority sector. These interviews need to capture detailed information about existing equipment so technical experts (e.g. engineers) are the most suitable interviewers.

✓ Train interviewers

First, the interviewers need to be trained in how to administer the questionnaire. Experience has shown that in-person interviews are the most effective way to obtain complete and accurate information; thus, interviewers will need to be trained in how to engage with interviewees to get high quality responses to the questionnaire.

Helpful tips for interviewers include:

- Complete basic company information in advance to save time during the interview
- Conduct visual inspection of equipment if interviewees do not know exact details

It will be useful to also train interviewees on how the interview data will be managed (e.g., questionnaires to be completed on paper and entered into spreadsheet like provided in File 6).

✓ Select sample

Second, select a sample of firms within the priority sector. It will be necessary to either use an existing list or develop a list of firms. Ideally, a minimum of 50 interviews should be



conducted. Not all firms on the list are likely to agree to being interviewed, so it is advisable to have at least 150 potential companies to contact.

The NDB may already have contact details of firms. If industry associations have already been contacted, they may be able to provide a list of firms in the sector. Otherwise, use other sources of information (e.g., internet search, existing reports) to develop a list.

✓ Organize interviews

Third, contact the list of participants to ask them to be interviewed, and arrange dates and times for the interviews if they agree to participate. In-person interviews tend to work best, as the interviewers can visually inspect existing equipment if necessary.

It will be necessary to draft a letter or an email with a short text describing the research being conducted, as many potential interviewees prefer to have some detail about the program before committing to an interview, including the benefits of participating, and how their data will be used.

 *Be aware that it may not be easy to get firms to participate in the survey¹⁰. Some recommendations for increasing survey participation include:*

- *Following up – after the initial email or call, follow up a week later to ask firms to commit to participating in an interview*
- *Partner with industry associations – ask industry associations to introduce the project to members and recommend to members that they participate*
- *Use the NDB's existing networks and communications channels – the NDB might have access to existing clients within the target sector who would be willing to be interviewed*

Once an interviewee has agreed to participate, it can be helpful to send him/her the questionnaire in advance to help him/her prepare.

✓ Conduct interviews

The interviewers can start conducting interviews parallel to organizing interviews.

The interviewer should arrive at each company to be interviewed at the agreed time, and try to move through the questionnaire quickly and thoroughly. The interviewer should also explain the benefits of participating and how the data will be used.

¹⁰ Past experience has shown that firms may decline to participate for reasons ranging from lack of time to distrust of providing firm details to an NDB (because of its status as a public institution).



✓ Collate results

If using a paper survey, the interviewers should enter the results of each interview into the database as soon as possible following the interview to ensure that information is accurately captured. The market assessment consultant should ensure that the information is collated in a standardized way and checked for robustness.

1.6 Provider interviews

It is relevant to understand the maturity of the TSP market in the country, for this reason it is also recommended to conduct interviews with key TSPs. TSPs include technology suppliers (intermediaries), manufacturers, engineering procurement construction (EPC) companies, or ESCOs.

TSPs can give information about the cost of new equipment, which is an essential input into the project investment analysis. Additionally, interviewing several providers will enable analysis of their interest in the program and potential capacity building needs. The final objective is to understand the status of the TSPs in the country, and be able to define how many TSPs are active per sub-sector and what their key characteristics are.

✓ Analyze information gaps

Review results of interviews with firms compared with what is needed for the analysis, and identify information gaps that the TSPs may be able to fill (e.g., costs of new equipment).

✓ Develop questions

Develop a list of questions to ask TSPs. These should cover the key information gaps and any other points that could help with the understanding of the market.

The types of questions that can be asked include:

- Years in the market
- Types of services they provide (sell equipment, engineering, installation/mounting, maintenance, repair)
- Financing (for how long and under which conditions)
- Guarantee they offer on their equipment (including performance and time of response)
- Their interest in participating in the program and this type of model, and potential capacity gaps

File 4 gives an outline for questions for TSPs that can be adjusted according to the target country.



📁 File 4 Example questionnaire for TSPs

✓ Identify TSPs and request interviews

Identify TSPs for the technologies covered under the program that are active in the country. Request interviews with two or three TSPs for each technology, where possible. The TSPs can be identified through the local association of engineers, by asking for recommendations from the firms interviewed, or in industrial directories (which normally are available online).

✓ Conduct interviews

Conduct either face-to-face meetings or telephone calls with the TSPs. Explain the aim of the program to the TSPs as well as the benefit for them. Where possible, conduct at least two or three of the TSP interviews face-to-face: the depth of information gathered from face-to-face interviews is usually better than from phone interviews.

✓ Record and collate results

Enter information obtained from the TSP interviews into the program records, and collate and compare results. Check whether information gaps have been filled, and approach further TSPs for interviews if necessary.

1.7 Financial sector overview

The market assessment should also be used to gain a picture of the FIs and products in the market, including types of institutions (banks, insurance/reinsurance companies, and green specialized private equity funds), existing relevant products and services, ability of companies in the target sector to access finance, and potential for collaboration and/or competition.

✓ Review NDB financing instruments

The NDB project manager should provide the market assessment consultant with information on the existing financing instruments within the NDB. The market assessment consultant should then analyze these regarding their relevance for the program.

✓ Map financing instruments and their providers

Consider the types of FIs that could be relevant in the target country, and the financing instruments that they provide (Figure 5 gives an overview of potential institutions and instruments). This will include local banks through which the NDB can lend to firms, as well as other institutions that could provide equity or risk mitigation instruments, such as private



equity funds or insurance/reinsurance companies. At this stage, the analysis should focus on instruments that already exist within the market and that could be relevant to the program.

The market assessment consultant should develop a list of institutions and instruments, and plan to interview the most relevant FIs.

Figure 5: Types of financial institutions and mechanisms for energy efficiency projects

	Planning	Construction	Operation
Banks		Debt / Credit	
Technology providers / private equity funds	Equity	Equity	
Businesses	Equity	Equity	
Government	Grants / soft loans	Loan guarantees	
Insurance companies		Construction risk coverage	Performance coverage

Orange: credit, blue: equity, purple: grants, green: risk coverage

✓ Develop list of questions

The discussions with FIs should be used to explore their attitudes towards EE projects and the target sector, as well as to gain insight into the types of products they offer. Helpful questions can include:

- What is the FI's interest/current activity/experience in EE/renewable energy?
- What is its perception of the target sector?



- Which risks does it perceive in this sector and with this type of project?
- Which types of financial products does it usually offer to the target sector (including conditions, loan term, grace period etc.)?
- What other financial products does it offer clients (e.g., insurance, guarantees)?
- What is needed for them to consider an EE project as bankable?

It is recommended to interview someone from the development of new products department or the credit evaluation and approval department.

When the program is developed, a website will be needed to enable communication among the NDB, TSPs and FIs. Therefore, it can also be helpful to ask FIs about their existing websites, and whether they also have internal tools like intranets.

- ✓ Contact and interview potential participants

Contact the identified FIs that might be suitable for participating in the program, and ask to interview them. Interviews can be conducted by phone or in person. To ease the interview arrangements, it is recommended that the NDB helps the interviewer with introductions to the FI.

- ✓ Record and collate results

Record important details from the interviews, including specifics of the types of financial products offered.

1.8 Analysis

After the interviews with firms, TSPs and FIs have been completed, the next step is to analyze the results to assess the maturity, willingness, and ability of the demand and supply side of finance to conduct EE projects on market terms.

- ✓ Describe market size

Estimate the size of the market for EE products in the sector(s). To do this, use the number of firms in the sector (identified during the priority sector review), the potential for investment in new energy efficient equipment (identified during the interviews with firms) and the price of new equipment (including installation, identified during interviews with TSPs).

- ✓ Segment the market

Analyze the sector in greater detail, looking at factors such as sub-sector and size of the firm, and how these relate to energy use. The goal of this activity is to realistically review the



types of firms in the different parts of the sector to work out which ones are most likely to invest in EE.

✓ Perform project investment analyses

For each technology it's important to perform a simple project investment analysis from the perspective of the firm of replacing an old piece of equipment with a new, more energy efficient one.

The goal should be to determine which technologies have an acceptable payback period as well as acceptable return for firms in the priority sector¹¹. The firm will only invest if the project is profitable and if the firm is better off as result of the project compared to the situation without the project. This analysis is relevant because it determines the level of financial incentive that will required to engage the firms, or could be decided to exclude the EE technology solution from the program.

The inputs for the project investment analysis should come from the interviews with firms (information on equipment being replaced, its usage, and electricity prices), TSPs (information on new equipment) as well as additional sources of information such as publicly available fuel prices, industry standard discount rates, and costs for the validation and the insurance.

In the resources section, a template for a simple project investment analysis of upgrading to new energy efficient equipment is provided. Make sure you keep the results of this simple project investment analysis; you will re-use it again later.

 *File 5 Simple Project Investment Analysis - Electric Motors example (in Annex)*

✓ Explore perceived risks

Analyze firms' responses to the questions about perceived potential risks and returns, and perceived key risks of implementing an EE project. To do this, review the questions that asked them to compare the EE investment opportunity with other types of investment opportunities such as the stock market or investing in a new production line, and the question that asked them to rate different risk situations from low to high risk. See which answers were prioritized and given the most frequently.

Firms were also asked what they perceive to be an acceptable payback period for investments in energy efficient equipment. This should also be analyzed (e.g., mean, median and range), and compared with the estimates of payback periods obtained in the project investment analysis. Look for common ways that firm owners phrased their responses.

¹¹ In Chapter 2: Financing structure, a detailed project investment analysis should be conducted including IRR and NPV to enable suitable structuring of the financial product.



File 6 Example overview of firms (in Annex)

✓ Analyze TSPs

It is relevant to understand the capacity and maturity of the TSPs. To do this, analyze the identified TSPs according to the products and services they supply and other characteristics using a format as shown in File 7 according to the information gathered through the questionnaires.

File 7 Example overview of TSPs (in Annex)

✓ Analyze complementary and competing financing

Using the information obtained in interviews with FIs, assess existing financial products in the market as to whether they could complement the program, or compete with it.

✓ Conduct SWOT analysis

Use a SWOT analysis to evaluate the proposed program and how it fits into its environment. This involves first making a list of all of the strengths and weaknesses of the program, and the opportunities and threats facing the program.

The SWOT analysis is used to succinctly summarize the information gathered so far during the market assessment and to identify strategic issues for the adaptation of the toolkit to the target country. A SWOT analysis template is given in the resources section, and as an electronic resource.

File 8 SWOT analysis template

Strengths and weaknesses refer to points internal to the program, over which the program has influence. Opportunities and threats refer to factors external to the program, over which it does not have direct control. Table 8 provides some initial example questions and results from the SWOT matrix analysis.



Table 8: SWOT questions to analyze the program

	Question	Example
Strength	What are key strong points the program offers? What makes this program better than other national initiatives for facilitating EE investment? Does the program have a strong customer base? What is the unique thing about the program? ...	This program enables access to finance on terms that match the investment ...
Weakness	What area does the program still need improvement on? Is the customer base too low? ...	The program has a complicated loan application procedure ...
Opportunities	What are the current ongoing trends? Will these trends affect the program in a positive manner? Can the program take advantage of the local market? What is the market missing that the program could provide? ...	There are a lot of capable TSPs in the market ...
Threats	What are the negative aspects in the current market? Are there potential competitors for the program? Are the government regulations going to affect the program? ...	There is limited interest on the part of the local insurance industry ...

Once strengths, weaknesses, opportunities and threats have been identified, these can be used to identify strategic issues for the program to consider. “Strategic issues” are important issues in which the internal strengths and weaknesses of the program interact with the external opportunities and threats. For example, strategic issues might be the answer to the following questions:

How can the program’s competitive finance package be used to drive the demand of firms to access financing? Or how can capable TSPs be motivated to guide firms through the loan application procedures?

The strategic issues identified should be used in making recommendations of how to adapt the toolkit to the target country. Refer to File 8 for a more detailed description of formulating strategic issues.

1.9 Report

The final output of the market assessment goes beyond the market potential and the analysis of the actors. The aim is to base the report on the findings and make recommendations for the structure to adapt and implement the different mechanisms of the toolkit. Develop a report and a PowerPoint presentation that present the key findings of the analysis for decision makers, both within the NDB and externally (e.g., the IDB).

- ✓ Adapt package

As described in the introduction, beyond the market assessment, the package of



mechanisms to be implemented includes (see Figure 2):

- Financing structure
- Standardized performance contract
- Energy savings insurance
- Validation, including standardized methodologies to assess baseline and energy savings per technology/activity
- Marketing and communications plan
- Capacity building

✓ Write report

After the recommendations have been defined, write a report detailing the highlights of the market research and the recommendations for adapting the package to the target country.

Milestone 1.2: Market assessment report received and approved

The NDB needs to receive and formally approve the market assessment report from the project manager and the market assessment consultant.



Milestone 1.3: Market assessment report discussed internally and utilized for program strategy development

An internal discussion on and presentation of results of the market assessment report needs to be held to facilitate use of the findings in implementation of the further mechanisms. At this stage, the NDB needs to decide to (a) continue as there is enough potential market interest or (b) stop the program as there is no market interest.



2. Financing structure

An adequate financing strategy increases the supply of financing for firms to invest in EE projects. It addresses the lack of access to finance and it alters the prioritization of investments by firms, as EE becomes more competitive when compared with other types of Firms' investments. The ESI program aims to provide competitive and suitable financing to EE projects.

This chapter of the toolkit guides the NDB in determining the conditions of financing to be offered to businesses under the program, including tenors of loans and grace periods.

This chapter also supports the NDB's determination of program size, based on realistic projections of penetration of the market as quantified in the market assessment. This would help the NDB to assess the adequacy of various sources of program funding to cover the financing needs of the target market (sector and market segment).

Background

To drive investment in EE projects, the NDB needs to offer local FIs suitable and demand-driving financing structures for EE projects, which could take the form of credit, guarantee or other type of financing instrument as illustrated in Figure 5.

The program should aim to develop a simple financing model under which the money that firms save through reduced energy consumption match, to the extent possible, the repayment of their financing for the EE upgrades. To the extent necessary and as identified in the market assessment, the program should also use risk mitigation instruments that allow the FIs to use the project or its future cash flow as credit collateral¹². These measures combined address the access to finance barrier and enables FIs to provide finance on longer-term maturities necessary for financing EE projects.

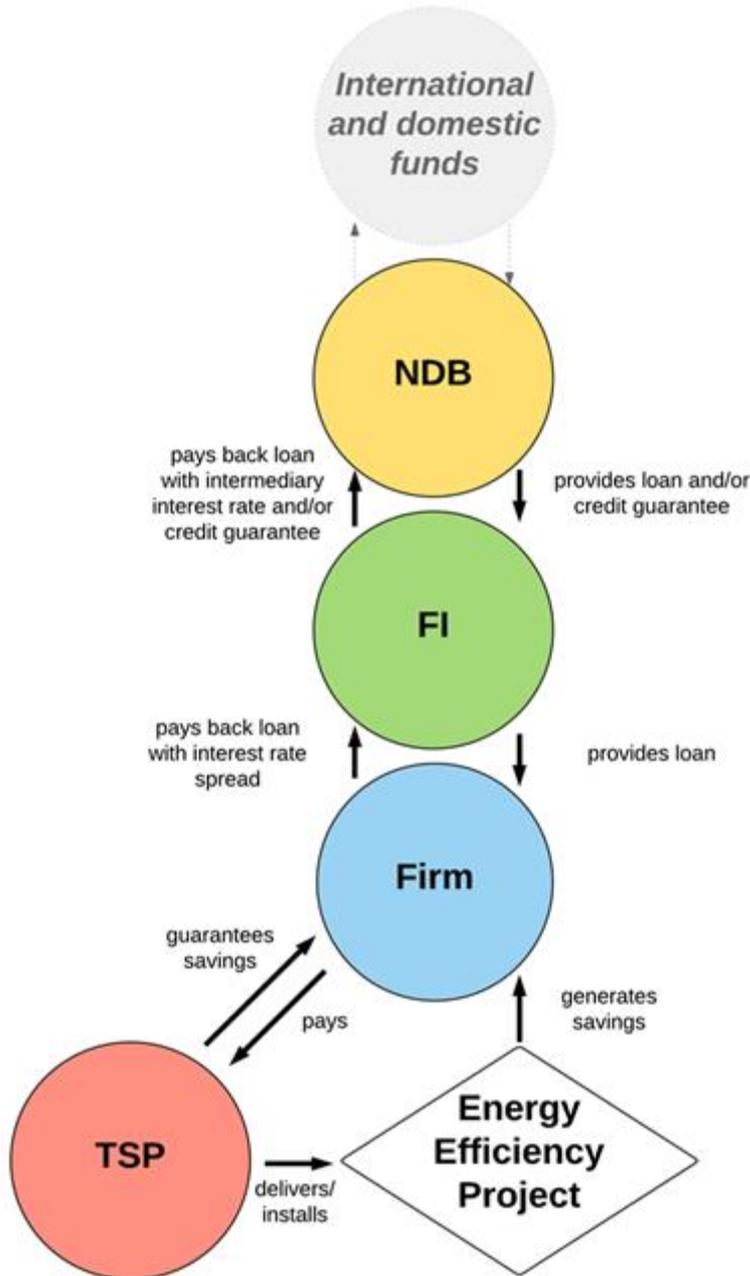
The program's financing conditions are determined by a number of factors; Figure 6 illustrates the financial flows that need to be considered when establishing the program. The program allows the NDB to lend to local FIs at an intermediary interest rate and with long-term maturities. The FIs then lend to firms to finance EE upgrades conducted by TSPs. The savings produced by the projects are used by the firms to pay back the loans to the financial institution. The NDB can, in some cases, apply for international and domestic funding, so as to support the structuring of the program, and its implementation.

The design of the financing structure will depend strongly on the local realities and needs to be adapted accordingly. An outline of the information required to define financing structure and terms is detailed in this chapter.

¹² In most cases, FIs lend money to a firm based on the credit capacity of the firm and not on the use of the investment.



Figure 6: Program finance flow



Key steps

An overview of the key steps and milestones for the NDB to put in place the financing structure is provided in Table 9; the individual steps are then detailed below.



Table 9: Key steps and milestones for a financing structure

Step	To do	Time estimate
2.1 Finance consultant	Sign a contract with a consultant with expertise in finance and conducting detailed project investment analyses (File 5 and File 9) and a cost-benefit analysis at program level	10-12 weeks
2.2 Financing terms of projects	Define the financing terms for EE projects within the program	2-4 weeks
2.3 Program size	Define the amount of funding required for the market size	2-3 weeks
Milestone 2: Financing structure report (incl. detailed project investment analysis & program size) received and approved		

2.1 Finance consultant

- ✓ Sign contract with finance consultant

Hire a consultant who specializes in finance and project investment / cash flow analysis to conduct financial analysis and prepare a report for the NDB.

2.2 Financing terms of projects

The first step is to define the type of financing that is needed to support firms in investing in EE solutions. The most common financing support that can be offered to the market can take the form of: a) competitive credit with attractive interest rates and financing periods and/or, b) a credit guarantee for FIs that aims to increase access to credit for firms by covering a share of the default risk of the loan.

The decision of which instrument to use is based on the following criteria:

Competitive credit for firms depends on:

- Lack of long term financing
- High interest rates in the market
- Lack of funding
- Ability of the NDB to channel competitive funding to the market via LFIs

Credit guarantees for the FI depends on:

- Access to credit for firms (SMEs)
- Credit conditions for firms
- Ability of NDB to provide credit guarantees

To define the convenient credit characteristics for energy efficient solutions it is essential to first estimate the potential returns on investment and payback period of the energy efficient projects. To conduct this analysis it is required to compare the operating cost of the existing



equipment versus the potential cost and investment of new energy efficient equipment. This can be done using a project investment analysis, where income and outgoings can be reflected.

- ✓ Determine and set variables for financing terms

To conduct the suggested detailed project investment analysis, the finance consultant will need to consider several variables to establish the real costs per project or technology.

For each project category or technology the following needs to be determined:

- Cost and Expenses New Equipment
 - Total investment project
 - Equipment cost
 - Installation cost
 - Monitoring cost
 - Annual maintenance cost
 - Retention cost
 - Insurance cost
 - Validation and verification cost
- Financing Credit conditions (assume initial values similar to the ones offered by the NDB):
 - Credit period
 - Grace period
 - Debt-to-equity ratio
 - Intermediary interest rates between NDB and the FI
 - Expected spread interest rate between FI and client
 - Existing national incentives such as grants or subsidies
- Energy Data
 - Base line consumption in kWh/year
 - Energy saving in %
 - Energy cost in local currency/kWh
 - Annual maintenance cost in local currency /kWh
- Economic data:
 - Assumed Firm's Discount rate
 - Annual inflation
 - Energy price inflation
 - Taxes
 - Depreciation

- ✓ Conduct the detailed project investment analysis

A detailed project investment analysis from the perspective of a firm needs to be conducted by the finance consultant and discussed with the NDB to determine the total financial costs of an EE upgrade

Make sure to
share info
gathered for
Chapter 1.9 with
the finance
consultant



project. An example of a detailed financial analysis for electric motor projects is provided in File 9.

 *File 9 Detailed Project Investment Analysis - Electric Motors example (in Annex)*

The NDB, together with the finance consultant, should review the financial variables net present value (NPV), internal rate of return (IRR) and payback period, as well as the need for long-term finance of each technology analysed to ensure that the types of EE upgrades proposed are financially viable for the target firms. Furthermore, these should be compared with other programs that offer financing to ensure the program is competitive, complementary and to avoid crowding-out of market actors. Some conditions might have to be reconsidered and adjusted, for example extending the grace period or extending the financing period to match the needs of the investors.

It is advisable to conducting a sensitivity analysis that shows the effects of changing the financial variables. For example, how do the financial variables change when the interest rate increases or decreases, or when the credit period is increased? It is important to ensure that the financial variables are competitive and that financial conditions are adjusted where possible without endangering the sustainability of the model beyond public support.

In the case of including a credit guarantee, the guarantee conditions have to be analyzed using a cash flow analysis and the same procedure described before.

-  *A TSP will offer a different price for equipment that is paid in cash and where the firm absorbs all the performance risk compared to an equipment proposal under the ESI program. This is because of the additional costs for the TSP such as monitoring cost, risk coverage costs, financing cost (of retention).*
-  *TSP might be concerned that the transaction cost that can impact the project cost. This concern can be addressed by illustrating that the transaction costs are optimised given the program standardization.*

2.3 Program size

- ✓ Determine the size of investment required per technology

This information can be taken from the detailed project investment analysis per technology (as demonstrated in File 9 File 9 Detailed Project Investment Analysis - Electric Motors example (in Annex)).

- ✓ Set number of projects per technology expected to be implemented

Together with the finance consultant, the NDB should decide on the target number of projects per technology. The market assessment recommendations on the market potential should be used to guide the decision on how many projects are realistic for the program.



- ✓ Calculate total investment amount required for the program

Multiply the investment required per included technology with the number of projects per technology to arrive at the total investment necessary to implement the program. See Table 10 for an example.

Table 10: Program size example

Technology	Investment per project (in 1,000 USD)	Number of projects	Total investment (in 1,000 USD)
Electric motors	25	220	5,500
Air conditioning system	150	90	13,500
Boilers	50	120	6,000
Total program requirement		430	25,000

In this example, the program will catalyze USD 25 million of total investment in EE projects. Some of the USD 25 million will come from the equity provided by project owners.

It is necessary to determine the limits for the debt-to-equity ratio that local FIs commonly use when evaluating a loan. In the scenario where the common practice is an 80:20 debt-to-equity ratio, the actual credit line would need to be USD 20 million (80%), and the expected capital provided by the firm would be USD 5 million (20%).

Milestone 2: Financing structure report (incl. detailed project investment analysis & program size) received and approved.

The report that contains the financial structure and schemes as well as the program size needs to be signed-off by the NDB before moving on to the next mechanism.





3. Standardized performance contract

The standardized performance contract is an agreement between a TSP and a Firm regarding an energy efficiency project, and aims to facilitate negotiations between these two actors. It includes specific clauses to allocate risks and protect Firms if promised energy savings are not achieved.

The template of a standardized contract provided in this toolkit is designed to be adapted to local legal characteristics and includes all necessary elements to ensure successful implementation of energy efficiency projects. The contract provides information on the mechanisms of the program and how they interact to reduce risks and stimulate investment in energy efficiency.

The performance contract aims to:

- Overcome the lack of trust between the Firm and the TSP
- Provide an easy-to-understand contractual framework to facilitate contract negotiations
- Mitigate the performance risk of the energy efficiency project and guarantee the energy savings estimated, thereby increasing access to finance
- Assign additional responsibilities to key actors to limit risks

Background

This chapter provides an overview of the contract structure and its features that contribute to overcoming the barriers of EE project investment.

A standardized contract fosters trust by offering a clear and transparent framework for negotiations between key actors (firms, TSPs, FIs, and insurance companies) on how project energy savings are guaranteed and risks are allocated to actors best able to manage the risk. The contract aids TSPs in selling EE equipment to firms by offering a more trustworthy and reliable service, as well as ensuring savings that turn into profitable investments.

The standardized contract establishes a legally binding agreement between the firm and the TSPs, and it is structured on the *turnkey* contract model to facilitate its acceptance and understanding in the market. In a majority of countries, turnkey contracts are common and well-recognized legal documents, which do not require any special legal or regulatory approval. Thus, basing the standardized contract on a turnkey contract can avoid lengthy and costly procedures for legal recognition.

The turnkey contract is an agreement under which a provider is obliged to complete a project according to pre-specified criteria, and for a price that is fixed at the time the contract is signed. The difference between this standardized performance contract and a common turnkey contract is that this standardized contract includes additional clauses and responsibilities between the firm and the TSP.



The most significant clauses in the standardized contract refer to (1) a performance guarantee by the TSPs that energy savings of a certain level will be realized; (2) a first-loss guarantee reserve to compensate for a shortfall in energy savings; and (3) an energy savings insurance to cover shortfalls in savings beyond the first-loss. Together, these provisions provide credibility for the firm in relation to the TSPs and the proposed project. The performance guarantee and first-loss guarantee reserve together establish the parameters that guide the insurance company to provide a risk coverage product, in the form of an insurance/surety bond. Besides these clauses, relevant and more conventional clauses relate to the installation, maintenance, and equipment warranties, among others.

First, the standardized performance contract establishes additional and all-round responsibility of the TSP for the *maintenance* of the equipment installed under the EE project. Second, *monitoring and reporting* clauses guide the responsibility of the TSP to monitor and report on energy savings on a regular basis. Third, *dispute settlement* mechanisms are put in place to avoid legal measures. A fourth mechanism is the validation and verification procedures that establish the role of a validation entity. See Table 11 for the contract content outline.

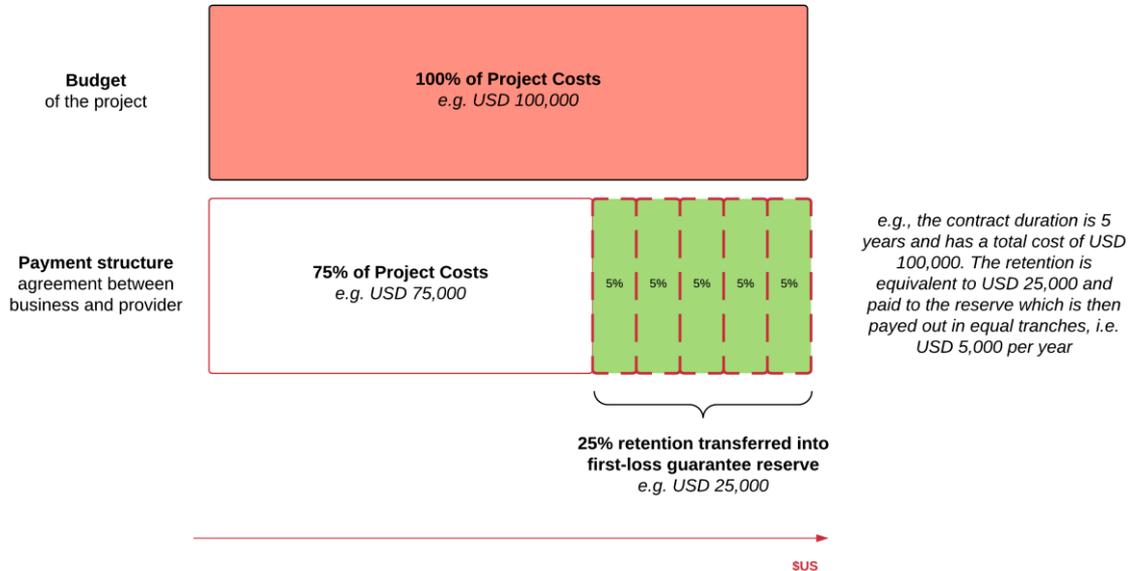
How is the guarantee reserve mechanism structured in the contract?

The guarantee reserve mechanism is a tool to ensure the commitment of the TSP to the firm and the insurance company on the promised energy savings. The energy savings guarantee is built into the project payment structure, establishing a first-loss guarantee reserve that is used in the case that the promised savings are not achieved (as illustrated in Figure 7).

Accordingly, the firm is required to pay 75% of the total project costs directly to the TSP, while the remaining 25% are put into a first-loss guarantee reserve as retention. Depending on whether or not the energy savings are achieved, the standardized contract establishes the conditions under which the reserve is used to pay the TSP for the realisation of energy savings, or to withhold the retention in case there is a savings shortfall. The percentage of the first loss guarantee reserve can vary from country to country, and depends on a) the capacity of the TSPs, b) the requirement from the insurance companies and c) the perceived TSP commitment (percentage retention) being acceptable for the firm to create trust in the EE project offer. It is important to note that the higher the retention, the more TSP might charge for the project. The following Figures illustrate the payment structure, and the three possible outcomes of achieved savings, savings below estimation but within retention, and savings below estimation but beyond retention.

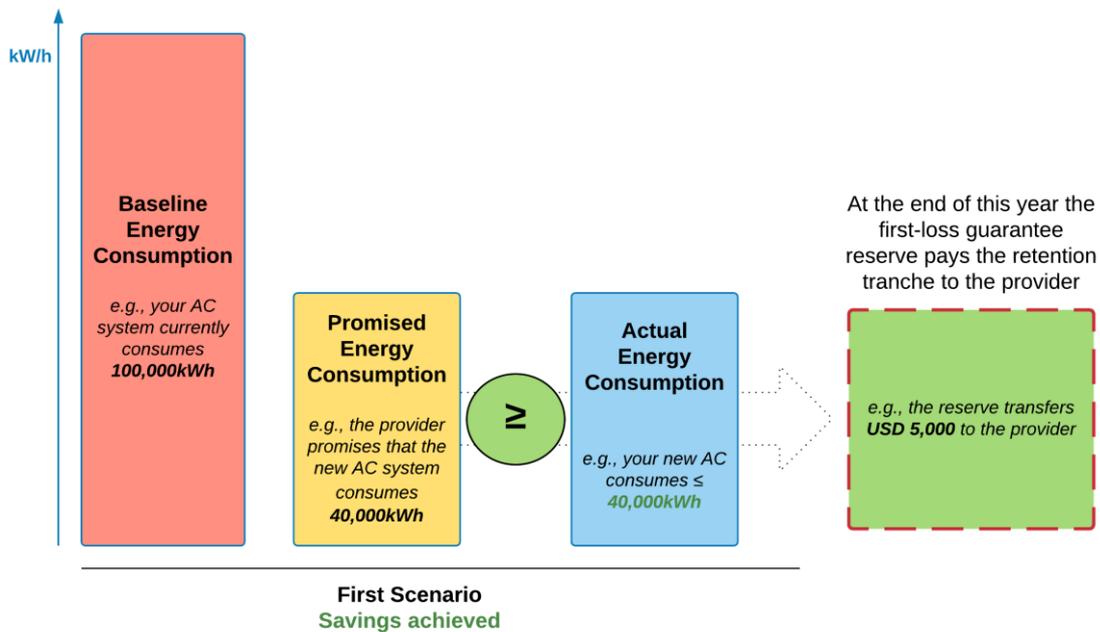


Figure 7: Payment structure



If the promised savings are achieved, the provider receives a tranche of the retention from the reserve as agreed upon in the compensation section of the contract (see Figure 8).

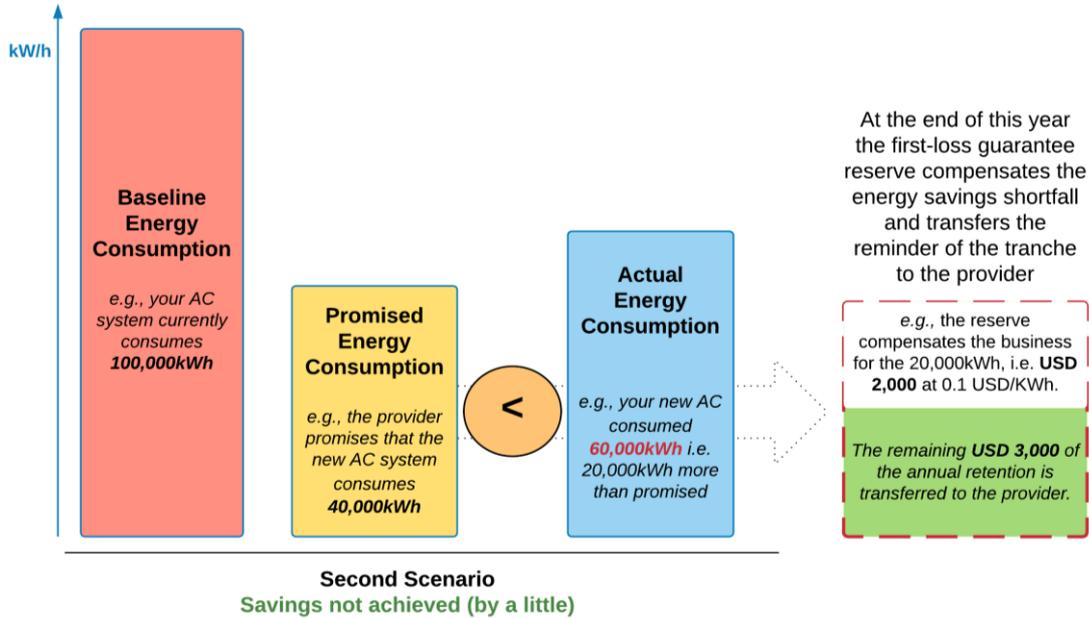
Figure 8: First loss guarantee reserve - Promised savings achieved



If the promised energy savings are not achieved, the first-loss guarantee reserve is used to compensate the damage suffered by the firm. As illustrated in Figure 9, if the savings are below the guaranteed level, the provider is obliged to compensate the firm accordingly. The tranche of the retention paid out by the reserve is therefore used to compensate the firm, while the provider only receives the remaining amount of the tranche.

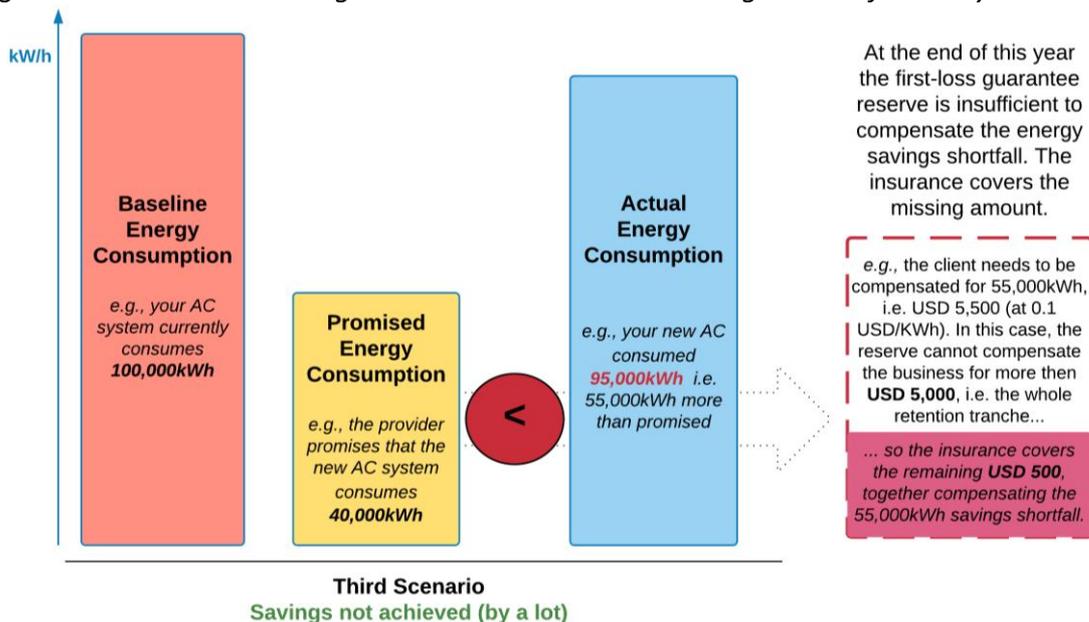


Figure 9: First-loss guarantee reserve - Savings shortfall within retention



In the case that the savings shortfall is of such a scale that the required compensation exceeds the tranche of the retention from the first-loss guarantee reserve, the TSP must compensate the firm for the difference (see Figure 10). Here, the TSP is backed by an insurance company – if the TSP is not able to cover the additional compensation obligation to the firm, the insurance company compensates the firm instead. The detailed workings of the insurance are explained in Chapter 4: Energy savings insurance.

Figure 10: First loss guarantee reserve - Savings shortfall beyond retention





How is the standardized contract structured?

The template contract provided in this toolkit (

📁 File 10 Standardized Performance Contract template (in Annex)

The standardized contract is based on a simple and well-established turnkey contract with the inclusion of additional energy savings coverage. The following table offers an overview of the features of the contract.

Table 11: Relevant standardized performance contract sections overview

Sections	Content summary
Declarations	
1. Definitions	Elaborates terminology used.
2. Objective	States purpose of contract.
3. Duration of project installation	Regulates work schedule of the project installation.
4. Project regulatory compliance	States the TSP's obligation to comply with applicable regulation, construction code and environmental regulations.
5. Compensation	<p>Defines the total payment amount and the stages in which it should be paid to the TSP. Stipulates the following payments:</p> <ul style="list-style-type: none"> a) Advance payment to cover initial expenses b) Intermediate first payment when the equipment is delivered c) Intermediate second payment when equipment is operational, i.e., once the validation entity has verified it d) Remaining payments according to the energy performance results as per Section 6 of the contract (first-loss guarantee) <p>The sum of all payments should account for 100% of the contract value.</p>
6. First-loss guarantee reserve	Regulates the payouts of the first-loss guarantee reserve to the TSP, depending on promised energy performance compliance of the project. This first-loss guarantee reserve can be managed by the insurance company, which should disburse the payments to the TSP when commitments are achieved or to the firm in the contrary case.
7. Contract duration	States the time period throughout which the TSP is committed to deliver the promised energy savings.
8. Contract activation conditions	Establishes the conditions necessary for contract activation ¹³ .
9. Project execution	States the regulation, working space, resources and supervision conditions to

¹³ The contract is contingent on credit approval of the firm, validation of the TSP and project, and issuance of ESI.



Sections	Content summary
	be met during project execution.
10. Putting equipment into operation	Describes the steps following installation of project equipment, including tests, and verification procedure by the validation entity.
11. Maintenance of equipment	Defines the maintenance obligations of the TSP. Both preventive and corrective maintenance are regulated in this chapter.
12. Measurement of current energy consumption / costs	Defines how the energy savings are measured. This section also regulates the case of a dispute and the arbitration role of the validation entity.
13. Training	States the responsibility of the TSP to train the firm to operate the equipment.
14. Waste disposal	States the responsibility of the TSP to dispose of the replaced equipment and waste according to local environmental and social regulations and in line with international standards.
15. Quality and operating warranties	Defines the different warranties of the equipment during the installation and operating phase and the related responsibilities of TSP and firm.
16. Penalties and guarantees	<p>Establishes the need to provide surety bond coverage that guarantees the following:</p> <ul style="list-style-type: none"> a) Advance payment b) Energy savings surety to cover shortfall beyond first-loss guarantee reserve c) Latent defects <p>Note that the sum of the amount covered by all the risk mitigation instruments does not necessarily add up 100% of the contract value; this would depend on the different types of risk coverage products and their conditions. The different risk coverage instruments work independently.</p>
17. Insurance	Establishes the need to provide insurance coverage that covers all projects risks including the ESI energy savings coverage.
18. Legal relationship	Establishes the legal relationship between the firm and the TSP.
19. Labor relationship	States that the TSP does not have an employee relationship with the firm (and vice versa) and the employee liabilities of each party.
20. Force majeure	Establishes the status of contract liabilities in case of a force majeure.
21. Early termination of contract	Establishes the conditions under which the contract can be terminated.
22. Confidentiality	Establishes confidentiality responsibilities regarding any information related to the project.
23. Contract modifications	Establishes the contract modification procedures for both parties.
24. Transfer of rights	Establishes the contract rights transfer procedures for both parties.



Sections	Content summary
25.Contract components	Elaborates on the additional documents that constitute parts of the contract (annexes).
26. Notifications	Includes contact information of both parties to submit notifications.



Key steps

An overview of the key steps and milestones to be taken by the NDB to adapt the standardized contract is given in Table 12; the individual steps are then detailed below.

Table 12: Key steps and milestones for a standardized performance contract

Step	To do	Time estimate
3.1 Legal consultant	Hire a legal consultant to assist in the following steps	12 weeks
3.2 Contract review and adaptation	Go through contract chapters and adapt legal wording according to national requirements	2-4 weeks
3.3 Stakeholder engagement	Discuss the proposed contract with selected key actors (TSPs, firms, FIs and insurance companies)	2-4 weeks
Milestone 3: <i>Standardized performance contract finalized and ready for public distribution</i>		

3.1 Legal consultant

- ✓ Sign contract with legal consultant

The activities to be done in this chapter need expertise from a legal consultant. Preferably, the hired consultant should have an understanding of construction and installation contracts, as well as an understanding of the insurance regulation and market, given that the contract has to be aligned with insurance requirements.

3.2 Contract review and adaptation

- ✓ Review contract and adapt it to national legal wording and requirements

It is imperative to work through the contract and adjust it to the national legal requirements and wording. To do this, the project manager is advised to consult with the NDB legal advisor as well as with the legal consultant as well as the other consultants involved in the program development.

 *File 10 Standardized Performance Contract template (in Annex)*

- ✓ Discuss adapted contract with consultant team

Once the legal wording has been adapted and the contract reviewed it is important to consult with insurance specialists and the validation entity before consulting with stakeholders regarding the contract.



- ✓ Discuss adapted contract with insurance company(ies)

It is important to consult with the insurance companies participating in the program. They might request to adapt or add clauses to the contract in order to comply with their internal regulation and facilitate the development of an energy performance risk coverage product.

3.3 Stakeholder engagement

- ✓ Discuss contract

The adapted form of the contract should be discussed with TSPs and firms, as well as with FIs. The discussions should focus on whether the actors generally feel the contract would help them advance EE projects, as well as on identifying specific clauses that may need adjustment.

Furthermore, these discussions can also cover the other risk mitigation mechanisms in the toolkit: ESI, as well as validation and verification.

- ✓ Engage TSPs

Organize a round-table discussion with TSPs. Invite around 30 TSPs to ensure that at least 10 to 15 are present on the day. Try to secure the participation of TSPs that offer all the different types of technologies that are covered by the program.

Briefly present the program, including what its goals are, and what the benefits are for TSPs. Special emphasis should be given to the potential for TSPs to sell to established customers well before their current technology reaches the end of its useful life. Then present the contract in more detail and invite the TSPs to discuss it. Particular focus should be given to the terms of the first loss reserve, and TSPs' reactions to this¹⁴.

Then discuss the ESI and the validation and verification, as well as the terms of the financing and/or guarantees.

After collecting feedback from the TSPs, analyze their comments and review options for adapting the contract or other risk mitigation mechanisms, if necessary.

During the roundtable discussions, it is likely that a few TSPs will be more active and enthusiastic than others. It can be helpful to return to these TSPs to discuss further updates to the contract, and potentially to engage them as first participants in the program (see Initial projects chapter 6.10).

¹⁴ Try to record both TSPs' initial reaction to the contract, as well as the outcome of discussions. Understanding these TSPs' first reactions can be helpful in planning how to communicate the contract to other TSPs in the capacity building phase.



✓ Engage firms

Organize a roundtable discussion with firms from the priority sector¹⁵ to start building relationships with them. Here, it can be helpful to engage the relevant industry associations to find participants for the roundtable.

This roundtable should be similar to that conducted with the TSPs, focusing on the proposed contract, as well as the ESI and the validation and verification mechanisms, and financing and/or guarantees. Here, the focus should be on how the existence of these mechanisms would affect firms' decisions to invest in EE.

After collecting feedback from the firms, analyze their comments and review options for adapting the contract if necessary.

This roundtable discussion is an opportunity to identify firms that might be interested in being early participants in the program.

✓ Engage FIs

Organize a roundtable discussion with FIs, using the NDB's existing relationships with FIs to select appropriate participants, and including other potentially interested FIs identified in the marketing study.

This roundtable should focus on the proposed contract, as well as the ESI and the validation and verification mechanisms, and what these would mean for the terms of financing offered by the FIs.

After collecting feedback from the FIs, analyze their comments and review options for adapting the contract if necessary.

✓ Adapt contract

Compile feedback from TSPs, firms and FIs and, where appropriate, adapt the contract.

Milestone 3: Standardized performance contract finalized and ready for public distribution

The NDB needs to sign off on the final standardized performance contract and the contract needs to be ready for public distribution. Only when this is done should the next mechanism be established.



¹⁵ The sector(s) identified in the market assessment.



4. Energy savings insurance

The ESI is a policy to cover Firms in the event that promised energy savings are not achieved, and that the TSP cannot compensate for this. It is linked to the standardized performance contract and is triggered if a TSP breaches specific clauses in the contract.

The ESI mitigates the project risks for Firms in case the TSP cannot compensate the damages to the Firm if the promised energy savings are not achieved.

The ESI structure proposed for this program:

- Guarantees low-risk investment for Firms
- Builds upon existing insurance instruments

Background

The aim of the ESI is to insure the contract commitment in the event of the TSP failure to comply with the energy savings promised. The inclusion of the ESI scheme in the standardized contract (see chapter 3) reduces the performance risk of an EE project for a firm and helps to create trust between the firm and the TSP on the EE offer. The risk mitigation impact of the policy also increases the loan repayment probability, which increases the commercial banks' willingness to lend to the firm for these project types. Under the contract, the TSP commits to obtaining a risk coverage product from an insurance company. The ESI policy compensates a firm for losses should the first-loss guarantee reserve be unable to fully compensate the shortfall in the savings guaranteed and should the TSP be unable to compensate the firm for the damages.

Two instruments can partly cover performance risks

There are two standard commercial instruments that can be used to mitigate the performance risk of EE projects: insurance and surety bonds. Insurance is a two-party contract between the insured (the firm) and the insurer, and the premium is priced according to the probability of future claims based on the associated risks.

A surety bond is a contractual agreement among three parties: the TSP, the insurance company and the firm. The insurance company provides a financial guarantee to the firm (the beneficiary) that the TSP will fulfill its obligation (in this case to deliver the guaranteed energy savings). A surety bond insures the promised energy savings in the event that the TSP breaches its commitment. The premium paid for a surety bond is for the guarantee itself and is not designed to cover potential losses.

Modifying existing insurance mechanisms to cover EE projects

It is important to note that energy performance risk coverage normally is not a standard product offered by the insurance companies and can be seen as something new in the market. However, the risks configuration of energy efficient projects is very similar to the risks associated with other industrial construction projects. For this reason, it is strongly



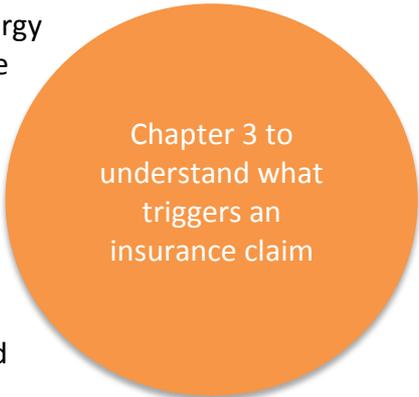
recommended to use existing local instruments that can be slightly adapted to cover energy performance risk. For instance, in Mexico and Colombia, the energy savings risk coverage was added to construction insurance contracts already available in the market. This avoids the need to develop new insurance products, which requires a long and costly process. Deciding between a surety bond and insurance, based on premium costs, availability, and set-up costs

The premium for both the surety and insurance instruments is the cost of de-risking. A comparison of premiums between instruments needs to take into account indirect factors. For instance, while the insurance instrument premium costs has a direct cost above that of the surety bond, the surety bond can require that the TSP delivers collateral to the insurance company to counter guarantee the coverage. The preference of the TSP depends on which cost is easier to bear.

Surety bonds are a well-known product in the construction industry and in most countries so these can be used to cover ESI projects without a need to change the regulation. Both the surety bond and insurance cost depends strongly on the reputation and the track record of the TSP, and both risk transfer mechanisms are able to cover the energy savings risk.

An important consideration in deciding which form of energy savings coverage is suitable for the program is the cost of the energy savings coverage and its impact in the return on the investment. Some of the key factors that determine the price of the insurance premium include:

- The maximum expected amount that the insurance would pay in case of a default by the TSP. If the covered amount is small, the premium will be small; if the covered amount is greater, the premium cost would be higher.
- The financial capacity and track record of the TSP
- The technology: proven technologies have lower risks.



Chapter 3 to
understand what
triggers an
insurance claim

Approach reinsurance companies to facilitate negotiations with local insurers

It is common practice that local insurance companies share their coverage risks with reinsurance companies, and it might be that international reinsurance companies take the biggest risk share (80%) and the local insurance retains the remaining risk (20%). It is thus useful to approach a reinsurance company and then continue with local insurance companies, as this might facilitate the negotiation and product development process.

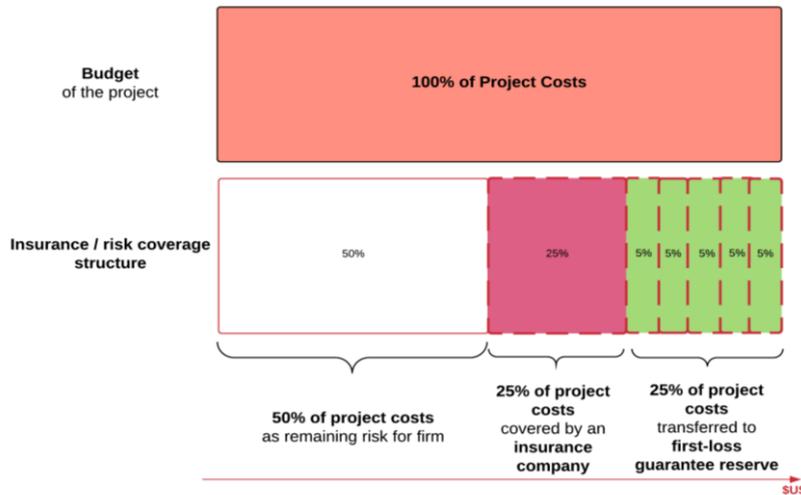
To be a financially and economically viable investment, the total energy savings and savings on maintenance during the term of the financing must equal or be greater than the total investment. The total investment is used often by insurance companies to estimate the maximum coverage and the payment premium.

The following figures show two cases. In the first case, illustrated in, Figure 11 the insurance covers up to 25% of the total energy savings and an additional 25% of the energy savings are covered from the first-loss guarantee reserve. This means that the firm has a financial guarantee of 50% of the energy savings and the remaining risk would be absorbed by the



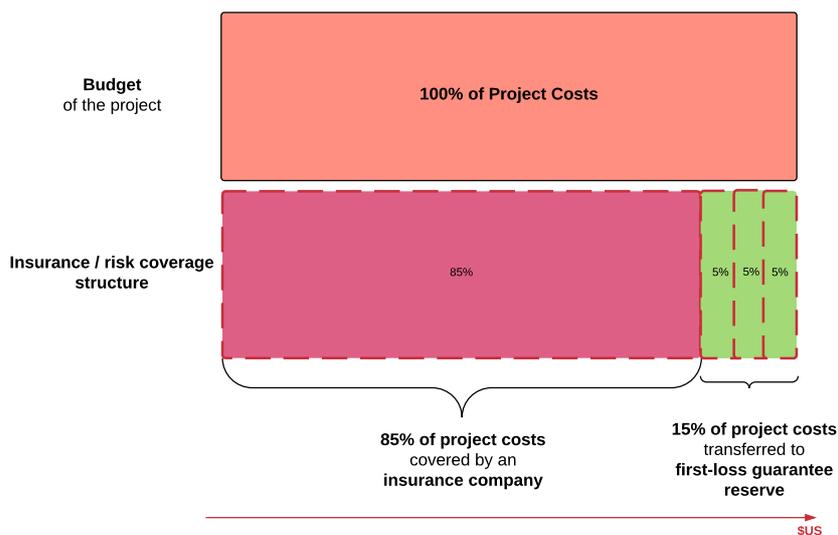
firm. In an extreme case where no energy savings were achieved through the EE project, the firm would be compensated 25% of the total project costs from the first loss guarantee reserve and additionally it would receive up to 25% from the insurance company.¹⁶

Figure 11: Insurance / risk coverage structure – 1st example



The second case illustrates the risk coverage of 100% of the total cost of the project, where 15% of the energy savings are covered by the first loss guarantee reserve and the remaining 85% is covered by the insurance. In this case the risk taken by the firm is very low. This is illustrated in Figure 12.

Figure 12: Insurance / risk coverage structure – 2nd example



¹⁶ As the the total energy savings during the term of the financing must be equivalent to or greater than the total investment, we use project costs and energy savings interchangeable for the explanation of the retention mechanism.



The way the surety bond works is that when there is a claim the, insurance company would compensate the firm and would try to recover the claims made by the firm from the TSP directly. This recovery is often based on a real guarantee provided by the TSP to the insurance company that is likely to be much higher than the claim made by the firm. Therefore the TSP has a strong incentive to avoid the complications that ensue from triggering the insurance and would try to compensate the firm for the energy savings shortfall by itself.

As a result, this type of ESI has the potential to mitigate project risks for the firm mainly because:

- It is very unlikely that the TSP will allow the triggering of the insurance. Instead it will compensate the damages to the firm by itself as:
 - Its guarantees are likely much higher than the claims
 - It would lose credibility and jeopardize future insurability

Thus, the firm has a robust risk mitigation instrument that guarantees the energy savings, independently of the maximum amount covered by the insurance and the first loss guarantee reserve because, in case of a claim, the economic and reputational damage to the TSP would be bigger than the total cost of the EE project.

Insurance / risk coverage structure

The development of the insurance should take the following considerations and shall be negotiated with the relevant actors:

- The coverage ratio of the first-loss guarantee has been an important factor for determining the coverage ratio of the insurance. Based on experience, the insurance can provide energy savings coverage equivalent to the first loss guarantee retention. For example, if the first-loss guarantee retention is 25%, then the insurance provides an additional 25% coverage.
- The coverage should be multiannual, which means it should cover the complete contract period. Experience has shown that insurance companies and regulation are able to cover up to five years.
- A strategy that has been used to reduce the energy savings premium cost is to merge the cost of this instrument with the other required risk mitigation instruments such as liability insurance, natural disaster insurance, etc. It is recommended that the energy savings coverage premium cost should be between 0.5 and 1.5% of the total cost of the contract.
- It has been relevant to technically support the insurance companies to understand the risks associated with investing in EE, which may include: miscalculation of the baseline, energy consumption estimation, or technical design failures. This understanding can help them to value the validation process that is included as part of the mechanisms of the program.



Key steps

An overview of the key steps and milestones to be taken by the NDB to successfully include ESI into the program is offered in Table 13; individual steps are then detailed below.

Table 13: Key steps and milestones for ESI

Step	To do	Time estimate
4.1 Market assessment and legal consultant	Re-engage the market assessment and legal consultant	12 weeks
4.2 Local insurance companies engagement and risk coverage structure	Provide relevant insurance companies with material to get them involved in the program	5 weeks
Milestone 4: <i>At least one insurance policy is generated and available for firms participating in program</i>		

4.1 Market assessment and legal consultant

- ✓ Sign contract with two consultants

For the following activities, it is advisable to hire a consultant who has a good understanding of EE, and a legal consultant; ideally the consultants who conducted the market assessment and the standardized performance contract activities, respectively.

4.2 Local insurance companies identification, engagement and risk coverage structure

- ✓ Identify main insurance companies

The consultants – with the help of the NDB project manager and recommendations by reinsurance companies - should map insurance companies that could potentially be interested in participating in the program. It is important to understand what kind of insurance policies they currently offer and how this could potentially be of advantage to the program. Companies currently offering insurance in existing IDB-ESI programs are a good starting point.

Proactive engagement is key to reach the decision makers in insurance companies

- ✓ Contact relevant personnel within identified insurance companies

Contact the relevant person within an insurance company, preferably someone in a decision-making position. Use existing contacts and networks or internet-based research to get this contact information.



- ✓ Gain interest of the relevant personnel regarding the program

At the first contact, provide concise and only the most relevant information regarding the program to get the contact interested in the program.

- ✓ Provide material for insurance company's internal evaluation and matching of existing products

Once the insurance company's attention has been attracted, provide them with the adapted standardized contact (File 10) and the methodology to structure EE project (including relevant forms for the validation and verification procedures) for review.

- ✓ Organize a meeting

Bring together the interested insurance companies with the legal and EE expert as well as the validation entity of the program to a roundtable discussion. Discuss changes and comments regarding the standardized performance contract and the methodology. The final version of the standardized performance contract as well as the methodology has to be submitted to the NDB for its approval.

- ✓ Set feasible insurance/risk coverage and cost structure

The roundtable should result in a decision regarding the insurance/risk coverage structure as well as the expected costs of the coverage for the program; that is, on the share of total project cost to be covered by the insurance.

- ✓ Provide input for insurance policy development

It is important that the NDB collaborates with the insurance company in the development of the insurance product. The insurance company's feedback and recommendations with regard to the standard performance contract and the validation mechanism should reduce their perceived risk for EE projects.

Check the detailed project investment analysis to ensure competitiveness

- ✓ Set the cost of insurance

Once the policy has been developed the cost of insurance can be set. The detailed project investment analysis conducted in Section 2.2 should be revisited and updated.

Milestone 4: At least one insurance policy is generated and available for firms participating in program

At the end of this mechanism establishment, the NDB needs to ensure that there is at least one insurance policy generated that can be included in the program.





5. Validation and Verification

Providing reliable and transparent validation and verification procedures reduces perceived performance risks of energy efficiency projects and builds trust among Firms, TSPs, FIs and insurance companies.

The validation and verification procedures recommended in this chapter are implemented during the different project phases: the credit evaluation, project installation, and the operational phase.

These procedures are carried out by a neutral and well-qualified validation entity during the three different project phases.

Background

The perception of performance risk of an EE project is a significant barrier for its implementation. To reduce this risk, a common understanding on the way to estimate the baseline and energy savings needs to be established. Additionally validation and verification procedures need to be in place to ascertain whether a project will be able to achieve promised energy savings, whether equipment has been installed properly and whether reporting of energy savings is correct. The methodology and procedures described in this chapter provide a transparent and reliable framework for estimating the baseline and energy savings, and procedures for validation and verification of EE projects. These procedures will contribute to viable and profitable projects being financed as the firm is more certain about savings and commercial banks see a positive independent validation as an increase in the loan repayment probability.

Why a methodology to estimate the baseline and energy savings?

A transparent and independent methodology to estimate the baseline and the energy savings helps TSPs and firms to build trust in an EE project. The standardization of the baseline and the energy savings estimation allows simplification of the validation procedures. The estimation of the baseline and the energy savings is conducted by the TSP for preparing an EE proposal.

Who executes the validation and verification procedures?

An independent validation entity with the relevant technical capacity and experience should be contracted to manage all validation and verification on behalf of the NDB for the whole



EE-financing program.

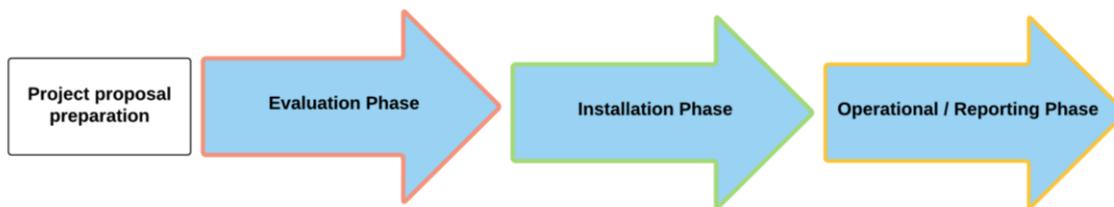
This toolkit provides a methodology¹⁷ that guides how to determine information for the validation procedures. The methodology includes guidelines for:

- Determining the baseline and the energy savings estimations
- Filling out the forms to standardize information collection and evaluation processes for validating the project and the TSP for program inclusion

Template forms to standardize information collection and evaluation processes are provided in the annexes of this document.

When are the validation and verification procedures followed? Figure 13 illustrates the proposal preparation and the three phases in which the external validation and verification procedures need to be followed.

Figure 13: Phases of validation and verification procedures



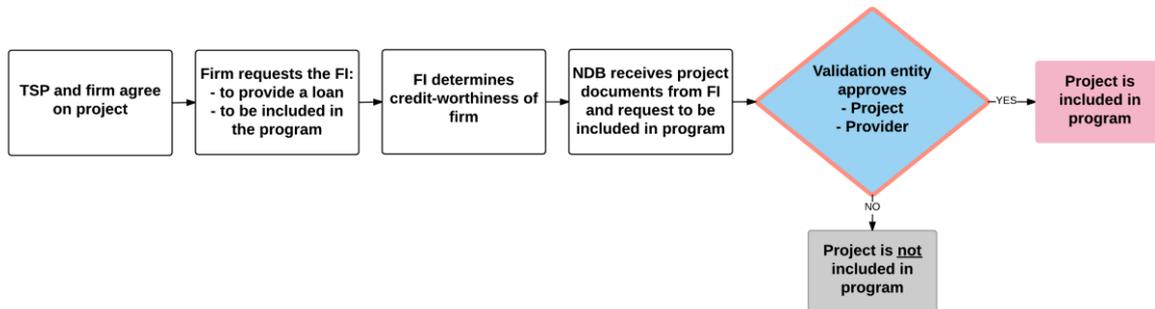
After the firm and the TSP have agreed on an EE project, the firm submits its credit evaluation and the project proposal to a participating FI. If the FI determines that the firm is creditworthy, the project proposal is submitted to the NDB to be included in the program.

To decide on inclusion, the NDB asks the validation entity to evaluate the technical capacity of the project to generate the proposed energy savings and the capacity of the TSP to execute the project, including maintenance, and monitoring of energy savings for the duration of the contract. If the validator does not approve the project then it should not be included in the program.

¹⁷ This methodology was developed under the standards of ISO 50006: 2014 and ISO 50015: 2014 which are part of the standard energy performance ISO 50001: 2011



Figure 14: Evaluation Phase: Technical validation for program inclusion



Verification of project installation, monitoring and disposal

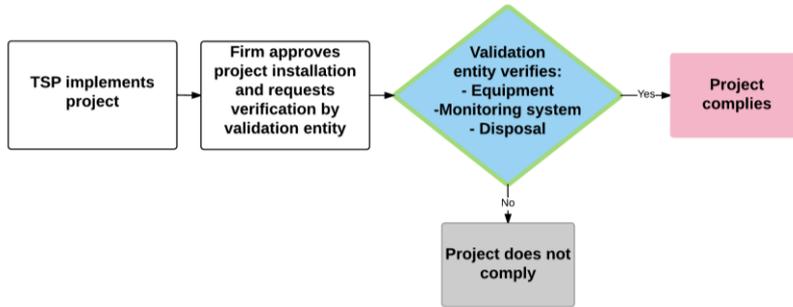
After project inclusion in the program has been approved, the TSP installs the energy efficient equipment as specified in the project proposal submitted previously for evaluation.

Once the TSP has installed the equipment, the firm requests the validation entity to verify that (a) the specified equipment is installed, (b) that the monitoring systems are properly installed and calibrated, and (c) that the disposal of the old equipment has been done according to local environmental regulation, particularly for disposal of chemicals, refrigeration gases and other dangerous substances, so as to avoid adverse impacts of the program. If the verified project does not comply, for instance, if the system was not built as it was specified in the validated proposal, the project shall be removed from the program according to the program operating guidelines. Depending on the degree of wrongful installation discovered by the verifier and the ease of correcting the installation error, the operating program guidelines and contractual obligations under the standard contract should stipulate the actions to be taken to correct the installation error while minimizing the cost in terms of downtime and financial resources to the firm. In case of intentional technical wrongdoing, identified by the verifier, the exclusion of the TSP from the program should be considered.

A change in the technical specifications automatically rescinds the insurance policy. To facilitate effective trust building and increase the certainty of both firms and financiers, it is recommended that any change to the project be notified to the firm, NDB, validator and insurance company previous to the commencement of the project installation. Any change in the project needs to be validated by the validator and accepted by the insurance company and the NDB to ensure coverage beyond the standard performance contract. The firm can proceed legally against the TSP as any other contract, if it was not informed adequately about changes in project specifications. In addition, the project will be removed from the Program.

The verification procedures in the installation phase are illustrated in Figure 15.

Figure 15: Installation phase: Verification of project implementation



File 11 in the Annex is a detailed guide for validating, verifying and reporting on individual Program projects. It explains and illustrates the procedures and the use of the supplementary formats for validation, verification and reporting, and dispute settlement to ensure transparent and standardized processes.

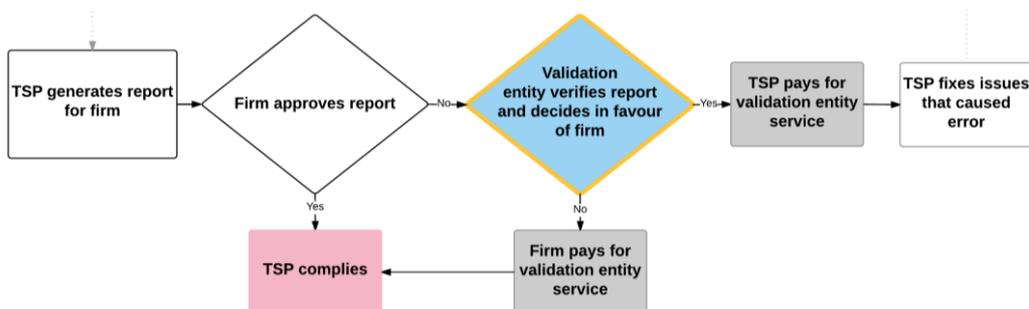


After successful project verification, the project becomes operational and the TSP is required to provide periodic reports on energy use and underlying savings as requested in the performance contract. The template for reporting is included as supplementary material File 11 (a-h).

The validation entity will act as a referee should the firm doubt the accuracy of the TSP report. The entity will review the report produced by the TSP and decide on the report's accuracy based on its own estimations and equipment checks. To prevent the abuse of this referee procedure, the cost of this procedure is borne by the party losing the claim.

Figure 16 illustrates the verification procedures in case of dispute between the firm and the TSP regarding the reports.

Figure 16: Operational phase: Dispute settlement through validation entity



The dispute settlement procedure is elaborated in the provided methodology together with relevant forms that ensure transparent and standardized dispute settlement.



The following table provides an indicative amount of days that are needed by the validator to carry out the different activities.

Table 14: Indicative days and fees of the Validation Mechanisms

Validation Mechanisms	Estimated days and fees.		
	Small scale projects (up to USD 40K)	Small scale projects (USD 40K to 100 K)	Large scale (more than USD 100 K)
1) Technology solution provider	2 days	2 days	2 days
	USD 400	USD 400	USD 400
2) Project validation	6 days	6 days	6 days
	USD 400	USD 800	USD 1,100
3) Project verification installation + travel expenses	1 day	1 day	2 days
	USD 400	USD 400	USD 800
4) Results verification (in case of dispute between firm and	4 days	4 days	4 days
	USD 3,000	USD 3,000	USD 3,000
Cost of 1) -3) as share of total project cost by size	From 1.2% to 2%	From 1.2% to 2%	From 1.2% to 2%

* Days are indicative of the activities described in File 11. Validation of Technology Solution Provider is per provider and not per project. The validation of the provider has a validity of 3 years, which means that the provider is validated once every three years and don't need to be validated per project.

How are energy savings measured?

Each proposed EE project estimates the project's energy savings achieved by replacing current equipment with more efficient equipment. Once the project equipment has been installed, energy savings are measured as the difference between the energy consumption of the existing equipment and the energy consumption of the new, more efficient equipment.

To calculate the energy savings of an EE project it is necessary to specify three different scenarios.



Table 15: Scenarios of EE energy savings calculation

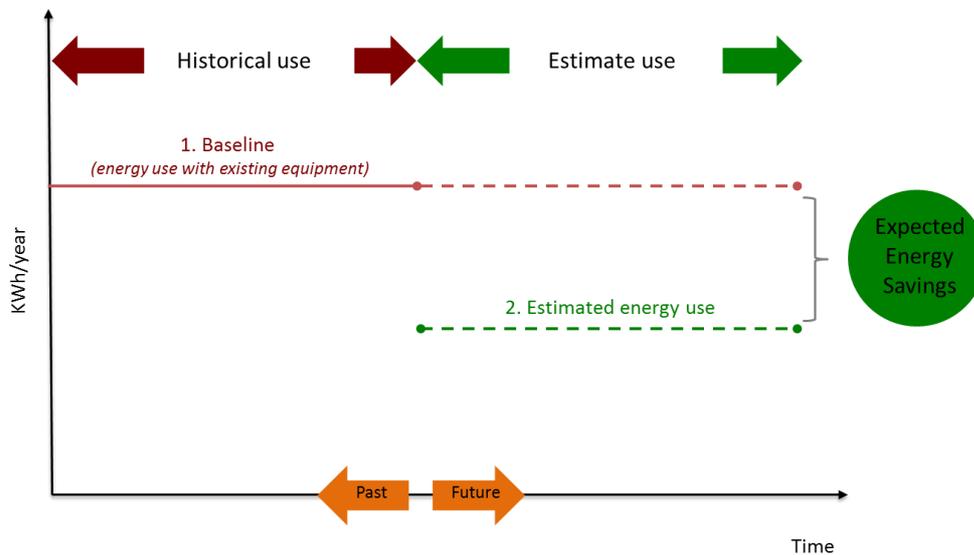
Scenario		Data Source
1. Baseline Expected future energy use of current equipment	Energy use of existing equipment that has not been replaced	Historic data and measuring the performance of the existing equipment
2. Estimated energy use Expected future energy use of new EE equipment	Potential energy use of EE equipment that is NOT yet in operation	Based on manufacturer specifications
3. Actual energy use Measured energy use of new EE equipment in operation	Actual energy use of the new and installed EE equipment in operation	Measuring the performance of new EE equipment

These assumptions and measurements help to calculate the estimated energy savings, which are used to analyse a project proposal, and the actual energy savings, which are used to measure the actual performance of an EE project.

The estimated energy savings are calculated from the difference between the baseline and the estimated energy use

$$\text{Estimated Energy Savings} = \text{Baseline} - \text{Estimated energy use}$$

Figure 17: Expected energy savings compared to the baseline

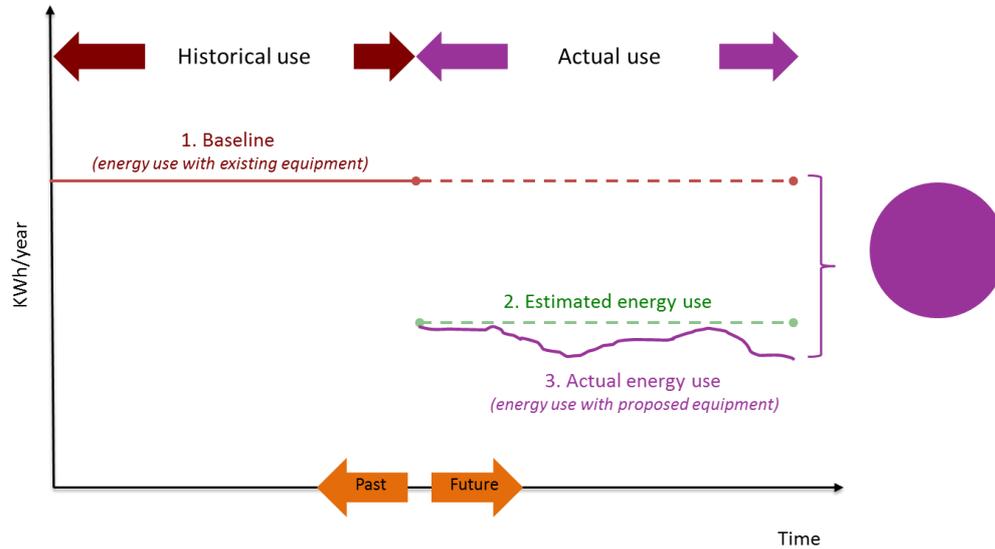


The actual energy saving is the difference between the baseline and the actual energy use.

$$\text{Actual Energy Savings} = \text{Baseline} - \text{Actual energy use}$$

The following figure illustrates the actual energy savings

Figure 18: Actual energy savings compared to the baseline



It is important to standardize the procedure to determine the baseline, the estimated energy use, and the actual energy use to ensure common understanding and agreement on how to estimate and measure the actual savings. This aligns the interests from the involved parties and facilitates negotiations and evaluation. Usually such standardization is not existent in many countries, despite its positive impact on the evolving energy efficiency market. By establishing robust, technical standards and demonstrating their application, these procedures contribute positively to the market and increase investor confidence.

To facilitate and standardize the calculation of energy savings, the methodology establishes general principles and guidance to estimate the Baseline, the Estimated energy use and the Actual energy use using Energy Performance Indicators (EnPIs). ENPIs are commonly used in the industry to measure equipment performance. Specifically, EnPIs express the ratio between energy consumed (e.g., in kWh) and the outcome work of the system (see Equation 1). The voluntary international standard to estimate EnPIs is ISO 50006:2014. This methodology will apply to estimate EnPIs for all projects under the program.

$$(1) \quad EnPi = \frac{\text{Energy consumption}}{\text{Use (Delivered work)}}$$

For example, the EnPI of an existing electric motor is the ratio of kWh of energy consumed when running for a day divided by the amount of Horse Power (HP) of the engine in the same time. The same ratio will be established for the new, more efficient electric motor. For each type of technology and equipment covered under the program, a respective EnPI needs to be determined. The lower the EnPI the more efficient is the equipment.

For example, a motor in a factory that works for eight-hour consumes 314 kWh and has an



output of 15 HP has an EnPI = 22.1 KWh/HP/day and 2.76 KWh/HP/hrs when divided by 8 hrs per day.

The EnPI is subsequently used to build the Baseline, the Estimated and the Actual energy consumption models over a certain time period. Every energy model uses a different EnPI.

For example, to build the baseline of an existing electric motor it is necessary to estimate the number of operating hours per year¹⁸. If the motor is used ten hours per day, 5 days a week all year, and if the outcome is 15 HP then the Baseline can be modelled as follow.

$$10\text{hours} \times 5 \text{ days/week} \times 52 \text{ weeks/ year} = 2600 \text{ hrs.}$$

$$\text{Baseline} = 2.76 \text{ KWh/HP/hr} \times 15 \text{ HP} \times 2600 \text{ hrs/year.}$$

$$\text{Baseline} = 107,640 \text{ KWh /year.}$$

The Estimated energy consumption for the new equipment is calculated from the EnPI provided by the manufacturer. An example for the electric motor could be EnPI (estimated) = 15 KWh/HP/day or 1.875 KWh/HP/hr

$$\text{Estimated energy consumption} = 1.875 \text{ KW/HP} \times 15 \text{ Hp} \times 2,600 \text{ hrs/year.}$$

$$\text{Estimated energy consumption} = 73,125 \text{ KWh/year.}$$

Which means that the Expected energy saving per year is:

$$\text{Estimated Energy Savings} = 107,640 \text{ KWh} - 73,125 \text{ KWh}$$

$$\text{Estimated Energy Savings} = 34,515 \text{ KWh.}$$

To define the Energy Savings in percentage:

$$\text{Estimated energy savings (\%)} = \frac{\text{Baseline} - \text{Estimated}}{\text{Baseline}}$$

$$\text{Estimated Energy Savings} = 32.12\% \text{ KWh}$$

It is important to highlight that the guaranteed energy savings refers to energy units reduced (KWh or other similar unit) and not to monetary savings. The indicated energy savings can be converted to energy cost savings by multiplying energy savings (e.g., KWh) by the established cost of energy per unit (e.g., USD 0.15/KWh).

The Estimated EnPIs need to be agreed upon in the performance contract (Chapter 3). Forms provided for validation and verification procedures already propose predefined variables

¹⁸ This Information can be provided by the Firm



that need to be measured for the six technologies discussed in this toolkit to determine their EnPIs and it is recommended that they be considered when proposing a project and validating or verifying it.

Key steps

An overview of the key steps and milestones to be taken by an NDB to establish a validation and verification system is given in Table 16; the individual steps are then detailed below.

Table 16: Key steps and milestones for validation and verification procedures

Step	To do	Time estimate
5.1 Validation entity	Search for and select validation entity	12 weeks
5.2 Validation and verification material adaption	Adapt forms and methodology to local context	8 weeks
Milestone 5.1: Final methodology for validation and verification is approved and ready for public distribution		
Milestone 5.2: Final cost of validation and verification is approved and detailed project investment analysis updated		

5.1 Validation entity

- ✓ Shortlist validation entities

The validation entity needs to be a neutral, external organization that can demonstrate high technical capacity, experience and the necessary resources to fulfill this role. Search for companies in the target country that have validation and verification experience, and make a shortlist of the best ones.

- ✓ Request and evaluate proposals

Prepare terms of reference (ToR) describing the program and the role of the validation entity, and invite shortlisted companies to submit a proposal.

Evaluate the submitted proposals and select the most appropriate validation entity.

Select an experienced, trusted, and well-known validation entity to give the program credibility

5.2 Validation and verification material adaption

- ✓ Check forms and methodology and adapt if necessary

Template documents outlining validation and verification procedures in the different phases are provided in the resource section of this toolkit (see File 11). lists and describes the



different forms and their use. And Table 18 describes what information is needed to fill in each of the forms. Additional to these forms, a methodology is included that guides the user to build the baseline and savings of a project, and provides instructions to implement the validation and verification procedures. File 11.

 *File 11 Methodology and forms for validation and verification procedures for an ESI project (in Annex)*



Table 17: Forms for validation and verification provided

Form ID	Document Title	Description	Project Phase		
			Evaluation	Installation	Reporting
P01-TSP (File 11a)	TSP validation form	<i>Filled out by:</i> TSP; <i>Sent to:</i> Validation entity <i>Used for:</i> Included in the request for program inclusion dossier the firm sends to the FI	✓		
V01-TSP (File 11b)	Provider validation result form	<i>Filled out by:</i> Validation entity; <i>Sent to:</i> NDB, TSP <i>Used for:</i> Program inclusion recommendation	✓		
P02-Project (File 11c)	Project validation form	<i>Filled out by:</i> TSP; <i>Sent to:</i> Firm, validation entity <i>Used for:</i> Included in the request for program inclusion dossier the firm sends to validation entity	✓	✓	
P02AX-technology (Files 11d) ¹⁹	Project technology validation form	<i>Filled out by:</i> TSP; <i>Sent to:</i> Firm, validation entity <i>Used for:</i> Included in the request for program inclusion dossier the firm sends to validation entity. This document is part of the P02 document but includes specific information about project technology.	✓		
V02-project (File 11e)	Project validation result form	<i>Filled out by:</i> Validation entity; <i>Sent to:</i> NDB, firm <i>Used for:</i> Program inclusion recommendation	✓		
P03-installation (File 11f)	Installation verification form	<i>Filled out by:</i> TSP; <i>Sent to:</i> Firm requests validation entity to verify <i>Used for:</i> Request for verification of correct project installation necessary to initiate project operation		✓	
V03-installation (File 11g)	Installation verification result form	<i>Filled out by:</i> Validation entity; <i>Sent to:</i> Firm and NDB <i>Used for:</i> Verification of correspondence of project instalment with P02-project form.		✓	
P04-reporting (File 11h)	Reporting form	<i>Filled out by:</i> TSP; <i>Sent to:</i> Firm, validation entity, NDB, insurance company <i>Used for:</i> Reporting results of a specific period. It works as the logbook of the project. This document is essential for verification in case there is a dispute between the TSP and the firm.			✓

¹⁹ Note. There is one format for each technology: P02A1 Electric motors, P02A2 – Air conditioning & refrigeration, P02A3 – Boilers, P02A4 – Solar preheating, P02A5 –Compressed air, and P02A6 – Cogeneration.



Table 18: Information requested or managed in the forms for validation and verification

Form ID	Document Title	Information requested or managed
P01-TSP	TSP validation form	<p>General information about the TSP</p> <p>Experience of the TSP (track record of projects with reference contact information)</p> <p>Technical capacity (key personnel CVs, organizational chart)</p> <p>Financial capacity (average project size, company liquidity and solvency)</p>
V01-TSP	Provider validation result form	<p>Validates the legal constituency of the TSP</p> <p>Validates the experience of the TSP</p> <p>Validates the financial capacity of the TSP</p>
P02-project	Project validation form	<p>Project general information (location, description of current equipment and new EE equipment proposal)</p> <p>CO₂ reductions</p> <p>Budget</p> <p>Payment schedule</p> <p>Monitoring system description</p> <p>Waste disposal information</p> <p>Work plan</p>
P02AX-technology	Project technology validation form	<p>For each technology the following information is needed in this form:</p> <p>Old equipment data (brand, power, model, output service, etc.)</p> <p>New (proposed) equipment data (brand, power, model, output service, etc.)</p> <p>Metering variables and monitoring frequency period</p> <p>EnPIs (base line, and estimated)</p> <p>Estimated energy savings and CO₂ reductions</p>
V02-project	Project validation result form	<p>This validation corresponds to the forms PO2 and P02AX</p> <p>Validates the registry of the TSP and contract documents</p> <p>Validates that the technical information is complete (EnPI, energy savings, etc.)</p> <p>Provides the validation criteria for accepting a project</p>
P03-installation	Installation verification form	<p>Equipment manuals and instructions</p> <p>Logbook with installation pictures</p> <p>Documents that certify proposer waste disposal</p> <p>Letter certifying that the equipment has been installed</p>



V03- installation	Installation verification result form	Checks that the documentation is complete (including letter signed by TSP and firm) Onsite revision of the installation to check that the equipment and installation was done according to proposal, and that monitoring systems are in place Verifies the waste disposal receipts. Evaluation criteria for accepting the installed project
P04- reporting	Reporting form	General data of the project Metering report EnPIs during the reported period Relation between the baseline and actual energy consumption of the EE project



✓ Engage stakeholders

It is important that the validation entity discusses the validation and verification procedures with TSPs, insurance companies, firms and FIs as part of the stakeholder consultation regarding the contract. If necessary, the entity needs to adapt the validation and verification procedures according to the outcomes of the discussions.

✓ Establish role and responsibilities within the NDB

It is crucial to define internal roles, responsibilities, and information flows within the NDB. This establishes who will receive documents pertaining to validation, verification documents and any dispute resolution processes. Similarly, the results of the different validation processes need to be properly directed and communicated to other persons and organizations involved in the program.

Milestone 5.1: Final methodology for validation and verification is approved and ready for public distribution

At the end of this mechanism establishment, the NDB needs to approve the validation and verification methodology developed. The version needs to be ready for public distribution and shall not be subject to changes after sign-off.



Milestone 5.2: Final cost of validation and verification is approved and detailed project investment analysis updated

Before moving on to the next mechanism, the NDB needs to sign-off and analyze the impact on the project financing of the costs of validation and verification.





6. Marketing and communications plan

The marketing and communications plan targets Firms to drive demand for energy efficiency upgrades and thus meet the program's loan disbursement goals.

The marketing plan involves:

- Setting specific and measurable objectives to reach loan disbursement targets
- Gaining a deep understanding of the needs of target Firms
- Working with a marketing agency to develop a campaign addressing those needs
- Evaluating the campaign against the loan disbursement targets
- Supporting initial projects to get the program started

Background

Firms do not often place a high priority on EE investment because they have many competing priorities. Therefore, it is important to understand what firm owners' needs really are, and show them how EE can help them to meet these needs.

This is an essential step for the program, because it will only be possible to disburse loans under the program if firm owners decide they want to finance EE upgrades.

The marketing and communications plan should aim to make firms aware of the program. In addition, it should seek to change their attitudes – that is, help them to see why EE is relevant for them – and motivate them to take action.

Furthermore, the marketing and communications plan should set specific and measurable targets so that the NDB can track how marketing activity is helping to influence uptake of EE loans. The plan can then be evaluated and adjusted over the lifetime of the program.

At the beginning of the program, it is also recommended that the NDB help to get a limited number of initial projects started and engage key TSPs that are committed to bring projects to the program. This involves actively connecting firms with TSPs and FIs before the program is launched on a large scale. It may also include financial support for a number of pilot projects – for example, to cover the costs of project design – to demonstrate the concept in the market. This will enable the NDB to gain valuable experience, and to have some case studies to promote when the program becomes widely available.

The marketing and communications plan should drive demand from Firms for energy efficiency loans



Key steps

An overview of the key steps and milestones for the marketing and communications plan is given in Table 19; each individual step is then detailed in the sub-sections below.

Table 19: Key steps and milestones for a marketing and communications plan

Step	To do	Time estimate
6.1 Marketing consultant	Sign a contract with and manage the marketing consultant	12 weeks
6.2 Business objective and strategy	Set sales objectives and strategies to reach these	1-3 weeks
6.3 Target group insights	Get a deeper understanding of the target firms	1-3 weeks
6.4 Annual plan and budget	Set an annual sales plan and marketing budget	1-3 weeks
6.5 Communications targets and strategies	Set targets related to business objectives and strategies to reach these	4 weeks
Milestone 6.1: <i>Marketing agency briefing received and approved</i>		
6.6 Marketing agencies	Select and manage marketing agencies	12 weeks
6.7 Pre-launch communications activities	Develop the activities that need to be completed before the program launches	8 weeks
Milestone 6.2: <i>Program identity approved</i>		
Milestone 6.3: <i>Creative concept approved</i>		
Milestone 6.4: <i>Printed materials approved</i>		
6.8 Website / Management Information System	Develop a platform to share the program documents, contacts and share experiences and lessons learnt.	1 month
6.9 On-going communications activities	Conduct on-going activities throughout the life of the program	ongoing
6.10 Initial projects	Kick-start the program with select initial projects	ongoing



6.1 Marketing consultant

- ✓ Sign contract with marketing consultant

A marketing consultant will assist the NDB project manager to implement the key steps of a marketing and communications plan. Preferably, the hired consultant also has an understanding of EE projects, as well as knowledge of the principal FIs, firms and TSPs in the market.

6.2 Business objective and strategy

The marketing and communications plan aims to help the program meet its loan disbursement goals. Therefore the first step is to succinctly describe the program's business objective(s) and define the strategies that the program will use to achieve it. The marketing consultant should use this as an input to the brief for the marketing agency. The NDB should then sign off on this brief before it is given to the marketing agency.

- ✓ Describe the business objective

In chapter 2: Financing Structure, an overall goal is defined for how much EE investment the program should catalyse (e.g., the program might have the goal of catalysing USD 40 million in EE investment).

Furthermore, analysis of how much investment is required per project should have been conducted (e.g., how much an average new air conditioning system costs). From this, estimations were made of the total number of projects required to reach the program's goal (e.g., 6,150 projects).

Review this information, and use it to format a business objective. This objective should be specific, measurable, and include a timeframe. An example business objective could be:

To have 6,150 firms take out loans for new energy efficient equipment (air conditioning, boilers and motors) by 2020.

If the NDB has not yet defined the final amounts of investment and loans, the marketing consultant should discuss best estimates with the market assessment consultant (consultant 1) and the financing consultant (consultant 2), and be prepared to adapt the marketing and communications plan if the amounts change.

- ✓ Define strategies to reach the objective

The business objective describes *what* needs to happen; now strategies for *how* to achieve this need to be developed. The strategies should be broad descriptions of the types of marketing and sales activities that will be used to reach the objective.

One important strategy that this toolkit suggests is engaging key TSPs from the beginning – existing providers of technologies like air conditioning or boilers – to join the program and help sell EE to their clients (see Chapter 7: Capacity Building for more detail). Therefore, an



example strategy for the program could be: *Engage at least 50 TSPs for energy efficient equipment (air conditioning, boilers and motors) as representatives of the program by 2017.*

A further strategy could be: *Use a marketing communications campaign to create interest among firms for investing in EE.*

6.3 Target group insights

The market assessment identified a sector with high potential for investment in new energy efficient equipment and the main barriers that keep this potential from being realized. To help develop strong marketing, it is now necessary to describe the potential target group in even more detail, including their needs, the barriers that might stop them from investing in EE, and how the program could communicate its benefits to them.

The marketing consultant should also do this as an input to the brief for the marketing agency (see File 12). The NDB should then sign off on this brief before it is given to the marketing agency.

✓ Describe a typical firm

Start by describing a typical firm in the target sector. To do this, information from the market assessment and any other input from experts can be used. The goal of this exercise is to move from a general description of the sector (e.g., hotel sector in Colombia) to a specific description of an example firm that can help bring the marketing to life. The description should include:

- Type and size of firm
 - *A family-owned firm with around 10 employees*
- Firm owner (or other key decision maker)
 - *Owned and run by the family patriarch*
- Challenges the firm faces
 - *Finding enough working capital, finding the money to pay salaries and suppliers*

✓ Analyze the needs of the firm owner

Once the typical firm has been described, think in detail about the needs of the firm owner. Start with how the firm owner describes his/her needs, for example:

I want to expand my firm.

This need is undoubtedly true; however, the first response that people give often does not reveal their underlying motivation for action. A good way to find that underlying motivation is to ask “why?”: *Why do you want to expand your firm?* An example answer might be:



I want to have a strong firm in the future.

Once again, asking “why?” can reveal a deeper motivation: *Why do you want to have a strong firm in the future?* An example answer could be:

I want to hand my firm over to my son.

This exercise can be a good way to get to the root of people’s motivations, and therefore to better target the program. If the firm owner’s underlying motivation is to build a strong firm to hand over to his son one day, this is an important insight that can be used in communications about the program.

Ideally, this exercise is done in consultation with a select group of firm owners, but, if necessary, it can be done by the consultant and NDB team, based on insights gained during the market assessment and through other sources.

✓ Find the main benefit of the program

The program has many advantages for firms, for example: helping them to save money, helping them to improve their capital stock in the firm, making them appear environmentally friendly, and offering them low-risk investment opportunities. However, when communicating with firm owners, simply listing these advantages is unlikely to really catch their attention and convince them of the relevance of the program.

Instead, it is important to consider what the *benefit* of the program is: a statement about how the program can help to meet the main need of the target group.

For example, if the firm owner really wants to hand over a strong firm to his son, the main benefit of the program might be:

EE is the best way to build a strong firm for the future.

The benefit that is identified can then be used to develop the main messages for communicating with the target firms.

Note that the other advantages of the program can also be communicated, but these should be saved for places where firm owners seek further information (e.g., the website).

✓ Identify the specific barrier to energy efficiency

Try to identify what the firm owner currently thinks that could prevent him from investing in an EE upgrade. There may be many reasons why the firm owner could be hesitant about investing in an EE upgrade. However, here it will be most helpful to focus on the one barrier that is the most important.

Start by making a list of potential barriers from a firm owner’s perspective. These barriers will generally fall into one of three categories:

- Relevancy – for example, *I don’t really need to buy a new energy efficient machine because my machine isn’t broken yet*



- Credibility/perceived risk – for example, *I don't believe that this new machine will really save me money*
- Distinctiveness – for example, *I don't really see the difference between that new machine and the one I've got*

Assess which of the barriers is the most important, and would be the owner's main argument against more efficient equipment proposed by an equipment seller.

- ✓ Develop the target firm insight

The target firm insight is a statement that describes how the firm owner thinks, which links his current behavior (e.g., not investing in EE) with the desired behavior (e.g., upgrading to new energy efficient equipment).

If the target firm owner is concerned about paying salaries and bills, but really wants to grow the firm to hand over to his son, the consumer insight might be:

I'm always worried about next week, but I should be planning for the future.

6.4 Annual plan and budget

The marketing activity and spending should be planned around realistic timeframes for the key elements of the program.

The marketing consultant should do this together with the NDB project manager. This will be used as an input to the brief for the marketing agency, and will also guide the NDB's spending on marketing over course of the program.

- ✓ Review key program dates and targets

First, review the key elements of the program that are fixed, and that will influence the disbursement of loans. For example, the credit line might be available to the NDB for a period of five years so all loans will need to be disbursed within that five-year period.

Factors to consider include:

- Business objective (i.e., amount of loans to be disbursed and by when)
- Planned start of lending
- Planned capacity building sessions for suppliers (i.e., by when will suppliers be trained and ready to promote loans?)

- ✓ Create annual sales plan

Based on the information gathered above, break the projected total loan disbursements down by year to correspond to the business objective. For example, using the business objective from above – *To have 6,150 firms take out loans for new energy efficient*



equipment (air conditioning, boilers and motors) by 2020 – the annual sales plan might be as shown in Table 20.

Table 20: Example projected annual loan disbursements

	2016	2017	2018	2019	2020	Total loans
Loans disbursed	150	500	1,500	2,500	1,500	6,150

This example sales plan reflects the planned start of lending in 2016, but also recognizes that it is likely to take some time for sales to build, given that capacity building sessions with TSPs will only be beginning in 2016. The projected peak of loan disbursements is in 2019, with the number of loans dropping in 2020 as the reserves from the credit line are used up.

✓ Develop annual marketing plan and budget

Based on the annual sales plan, an annual marketing plan and budget can be developed. It is important to align the marketing activity with the realities of the program and the projected sales. For example, it does not make sense to spend a large amount of money on advertising to launch the program if there are not yet any trained/accredited TSPs that can respond to demand from firms.

When developing the annual marketing plan and budget, consider the activities that need to be done before the program is launched – for example, development of the program name, logo, website – and plan to have those completed by the time the program is ready to launch.

The exact method of developing the annual plan and budget will depend on the NDB. If a fixed budget is given (i.e., top-down budgeting), this should be spread over the years of the program in line with the sales targets.

If the amount to spend on marketing will be determined based on the necessary activities (i.e., bottom-up budgeting), the marketing activity should be planned with the sales targets in mind.

Keep in mind that the marketing budget will need to include both production of marketing materials (e.g., development of a print advertisement) and execution of the marketing (e.g., paying for the page in the magazines where the advertisement will be placed)²⁰.

²⁰ As a rough guide, the ratio of spending on production and execution is often around 1:2 or 1:3.



6.5 Communications targets and strategies

The communications targets and strategies describe how the program will communicate with target firms to reach its business objectives. Throughout this section, the example business objective from above – *To have 6,150 firms take out loans for new energy efficient equipment (air conditioning, boilers and motors) by 2020* – is used.

Once again, this should be done by the marketing consultant and used as an input for the brief for the marketing agency.

✓ Set communications targets

The communications targets should be specific, measurable and within a timeframe. They should outline how the business objective will be reached, according to what the target firms should see, think and do. For example, if the target firms are in the hotel sector:

1. See: *5,000 hotel owners should see the campaign about EE upgrades.*
2. Think: *2,500 hotel owners should be convinced that investing in EE is the best way to build a strong business for the future.*
3. Do: *500 hotels should discuss EE upgrade options with a program-affiliated TSP.*
4. Do: *100 firms should take out loans for EE upgrades.*

When setting these communications targets, it is important to check that these are realistic. Here it can be helpful to check the required conversion rates; for example, that 20% of the hotels that see the campaign and believe its message discuss EE upgrade options with a TSP is likely feasible.

✓ Define the program's proposition to target firms

Based on the target firm insights (use File 6), succinctly describe what the program offers firms. This does not yet have to be the final wording for the campaign, but it should describe the main offering, for example:

Upgrading to better, more efficient equipment builds a firm to last for generations.

✓ Consider the types of communications channels

Normally, a marketing campaign will rely on a combination of several different communications channels. Communications channels can be classified into three different types: paid, owned and earned. *Table 21* lists these types of communications channels with examples.

In the first years,
select a limited
number of
communications
channels (e.g., four)
and focus resources
on these



- ☞ *Make use of national branches or representatives of NDB (where available) to engage potential Firms, and TSP.*
- ☞ *Word of mouth advertising (unpaid spread of a positive message from a person to person) is a powerful way to influence on the firms' decisions to invest in EE*

Table 21: Overview of communications channels

	Paid	Owned	Earned
Description	Program buys media space	Program owns the channel	Program generates discussion about itself
Required budget	High	Moderate	Moderate
Control of message	Yes	Yes	No
Examples	<ul style="list-style-type: none"> • Advertising <ul style="list-style-type: none"> - TV - Radio - Online bannering - Social media - Outdoor - Print • Sponsorship • Direct marketing • Shop floor communication • Sales promotion • Sampling • Product demo • Fairs 	<ul style="list-style-type: none"> • Own website • Flyers, brochures • E-mail database • Blogs, podcasts, white papers, magazines • Facebook page • Twitter account • YouTube page • Own events • Account management • Customer care • Community sites • Own shops/branches 	<ul style="list-style-type: none"> • Public relations • Facebook fans • Twitter followers • YouTube views • Viral marketing • Co-creation • Crowd sourcing

It is essential for the program to use two of the owned communications channels listed above: a website and some printed materials, such as flyers or brochures.

The exact combination of other communications channels can be determined together with the program's marketing agency. Nevertheless, it is helpful to get an idea of the type of channels that will be used, as this can help to select an appropriate agency.

Chapter 6.7 describes the essential pre-launch communications activities – ensure that the marketing agency is capable of delivering these.

Chapter 6.8 describes the process for developing on-going communications activities; these can be guided by the expertise and recommendations of the marketing agency. One factor that will influence the choice of communications channel is the program's marketing budget. Many typical paid media channels, such as advertising, can be too expensive if the marketing budget is very small.



- ✓ Write the marketing brief

The briefing should include the results of the work done thus far in the marketing and communications plan chapter, including:

- Background
- What the agency needs to develop
- Business objective
- Communications objectives
- Target group description
- Underlying needs of the target group
- Benefit of the program
- Timing and budget

An example outline for briefing marketing agencies is given in the resources section.

 *File 12 Template brief for a marketing agency*

Milestone 6.1: Marketing agency briefing received and approved

The NDB should ensure that the marketing agency brief is completed and does not conflict with any internal staff or priorities. Only then, should the marketing agency be selected and the marketing strategy developed.



6.6 Marketing agencies

The NDB should engage an external marketing agency to develop and implement the program's communications activities. As the marketing consultant has developed the strategy thus far, the consultant and/or the NDB project manager should be responsible for managing the marketing agency at this stage of the program.

- ✓ Select a marketing agency

First, select a marketing agency to work with²¹. There are several criteria that can help to decide which type of marketing agency is best. Use these criteria to develop a shortlist of around four agencies.

²¹ Here, we describe the process for selecting and working with one marketing agency. It is also possible to work with several different marketing agencies. If choosing to work with more than one agency, tasks such as "brief the agency" need to be repeated individually with each agency.



- Full service versus specialist agency
 - A *full service agency* can do many different types of marketing, and can likely execute the whole marketing campaign (but will often be more expensive)
 - A *specialist agency* usually specializes in one specific type of marketing; therefore several specialist agencies would probably need to deliver separate parts of the marketing campaign (e.g., web agency that develops the website, or an events agency that manages the program's presence at trade shows nationally)²²
- Expertise in the sector
 - Look for agencies that have experience marketing to firms ("business-to-business" (B2B) marketing)
 - Some agencies might also have experience marketing financial products, EE, or marketing to the priority sector
- Expertise in essential communications activities
 - As described in Chapter 6.7, the marketing activity should include developing a program identity, and creating a website that includes a management information system
 - Check whether agencies have these capabilities
- Creativity
 - Agencies should be able to relay a strategic message through strong creative work
- Executional excellence
 - Ask agencies to provide examples of previous campaigns that were similar in scope (and ask them to include the metrics that were used to evaluate success)
 - Examine these to see how well the agency developed and implemented previous campaigns
 - Ask for contacts at previous clients to verify their performance
- Location
 - Face-to-face meetings can make managing the marketing agency easier, so consider where the agency is located and whether it will be possible to meet with them

²² For an overview of different types of specialist marketing agencies, see <http://www.amalgamatedmarketing.com/11-types-of-marketing-agencies>, accessed August 24, 2015.



- Agency self-promotion
 - The agency should make the effort to promote itself well, for example, through a polished website, social media presence
- Conflict of interest
 - The marketing agency should not significantly depend on the revenue of any of the key actors

Contact each of the shortlisted agencies and invite them to participate in a request for proposals. Supply the agencies ToR for the assignment. The request for proposals should not require the agencies to completely develop ideas for the campaign, but should require them to explain their understanding of and approach to the assignment.

Invite the shortlisted agencies to present their proposals in face-to-face meetings if possible. This will enable the NDB team to meet the marketing agency teams, and to clarify any open questions. After all agencies have presented, choose an agency based on the best proposal.

✓ Brief the agency

Once the agency has been selected, it is essential to give the agency a full briefing on the assignment. This includes both providing the marketing brief document, and holding a meeting to discuss the document in depth.

The clearer and better the briefing, the easier it will be for the marketing agency to meet the NDB's expectations. It is advisable to conduct the briefing in person if possible.

6.7 Pre-launch of communications activities

Some communications activities should be developed before the program is officially launched. This will require the marketing consultant and NDB project manager to work with the marketing agency to get these done in time for the launch. One important factor to consider is getting sign-off on each step from the NDB's key decision makers.

✓ Develop the program identity

The program needs to have an identity – including a name, a logo and a design style – so that it is easily recognizable for the target firms, as well as for other stakeholders (e.g., TSPs and FI).

It is important that the program identity is appealing to the target firms – the work done in chapter 1.5 to define the target firms' needs, and the benefit of the program for them, should be used to inform the design of the program identity.

Based on the brief given to it, the marketing agency should be able to support the NDB in developing the program identity.

The program's
external name
should be
different to the
NDB's internal
name for it



Normally, the marketing agency works on this in several iterations, presenting a concept to the NDB, asking for feedback and incorporating changes. The final program identity will need to be signed off by the NDB's key decision makers before the name and logo are used publicly.

The NDB project manager needs to decide at which point the NDB decision makers should be involved in the program identity development. If the decision makers want to have input and make suggestions, it is worthwhile involving them early in the process. This will take more time in the beginning, but can save time making costly changes to an almost finished concept. If the decision makers simply want to sign off on a finished concept, the concept can be presented in its final phases.

Milestone 6.2: Program identity approved

The NDB should sign-off on the program identity before subsequent communications activities are finalized and undertaken.



- ✓ Develop creative concept

To guide the direction of the rest of the communications activities, the marketing agency should propose a creative concept. This is the “big idea” behind the communications activity, and should be based on insights from the marketing briefing.

As well as the “big idea”, the marketing agency should also include proposals of media channels to use. The creative concept should be refined together with the marketing agency, and will usually take several rounds of discussion.

For the marketing consultant and NDB project manager, it is important to check the proposals of the marketing agency against the original business and communications objectives. For example, ensure that the concept is being designed to reach enough firm owners, and that the concept can reasonably be expected to effect the desired change in attitude.

The plan of the communications channels to use should be made for the first year of the marketing activity, and should be designed to reach the sales objectives of the first year. While the agency can also suggest ideas for future years, it is important to evaluate regularly and adjust the plan where necessary.

Milestone 6.3: Creative concept approved

The NDB should sign off on the creative concept before further communications activities are undertaken.



- ✓ Develop printed materials

The program will need to have printed materials – such as brochures – that can be used by



the participating TSPs and FIs to promote the program. These should be based on the creative concept that has been developed by the marketing agency.

The marketing consultant and NDB project manager should give specific instruction to the marketing agency as to what needs to be included in the brochures, and the marketing agency should develop the designs and the final text for the printed materials.

Milestone 6.4: Printed materials approved

After the printed materials have been designed, the NDB should sign off on them. This should happen *before* the materials are actually printed.

After the final designs have been approved, the marketing agency should organize printing and have the finished materials delivered to the NDB.



✓ Prepare program launch

When the program is ready to be made available to the public, the NDB and the marketing agency should conduct some communications activities to launch the program.

These could include: making an announcement on the program and NDB websites²³ and on the NDB's social media channels, issuing a media release and informing key journalists about the program, or making announcements through industry associations.

Note that at this stage of the program, it is unwise to use a large portion of the marketing budget. Given that there are not yet many TSPs that have been trained and accredited, it is not yet worth putting a lot of resources into trying to create demand for the program from firms. Rather the launch should serve as a first activity to start raising awareness of the program's existence.

6.8 Website / Management Information System

The program needs a website as a tool to enable communication among the NDB, TSPs and FIs. The website should serve two purposes:

First, as a hub of essential program information, including lists of participating TSPs and FIs, an overview of financing conditions and application procedures, and downloads of the contract and validation and verification procedures.

Second, a Management information system (MIS) where the key actors delivering the program can share information on the program impact (number of projects, amount of energy savings, etc.) and detailed information about individual project performance. For example, TSPs generate their firms' project annual reports (energy savings, CO₂ emissions reduced, etc.) using the MIS and the information is stored in a database. The firms, FIs,

²³ As well as on the sites of participating FIs and trade association partners.



insurance company, validator and NDB can access this information according to pre-established access permissions. The firm can access the information only regarding its own project, the FI can only access the information of the firms to which they have provided financing.

This can be done by setting up a section of the website that can only be accessed using a login and password.

The MIS requires a consultation and reporting section. This section delivers different types of reports according to the user. The users include the firms, the TSPs, the FIs, the insurance company, the NDB, and the international funders or donors that want to see the program impact.

Specific details on recommended sections of the website are given in the resources section.

File 13 Elements of the website

Setting up this type of MIS will require some specialist programming expertise. Ensure that the marketing agency selected has the required expertise, or can work with partners who do.

The website should be ready to go online by the time the program is launched. The marketing consultant and the NDB project manager will need to work closely with the marketing agency to test and approve sections of the website. After the website is up and running, the NDB project manager can choose to take over the management of its content if he/she feels confident to do so.

6.9 On-going communications activity

Once the program gets started, it is important to implement communications activities designed to drive firms' demand for EE financing.

The marketing agency should already have developed a plan for the first year along with the creative concept. Now the focus should be on implementing this plan.

The NDB should continue to monitor and support the marketing agency, and evaluate the success of the activity against the business objectives.

Note that the marketing activity should continue over the life of the program. Each year, the marketing agency should propose new communications activities based on the instructions and budget given to it by the NDB (see

Table 26). If the NDB project manager's responsibilities end with the program launch, the NDB should appoint another manager for the contract with the marketing agency.

- ✓ Produce marketing materials



Once its creative concept has been approved, the marketing agency should develop the different marketing materials called for in the marketing plan. For example, if an advertising campaign is planned in the first year, it should produce the advertisements; if stands at industry trade shows are planned, the marketing agency should develop the design and concept for the stands.

The NDB should oversee this, and give final approval of all materials.

✓ Execute communications activities

After the materials have been approved, the marketing agency should execute the communications activities according to the plan and through the agreed channels. For example, if the plan for the first year involves advertising in trade publications and sponsoring industry events, the marketing agency arranges to advertisements for magazines, pay for the sponsorship agreement and reserve stands at industry events.

✓ Evaluate communications activities

It is essential to evaluate the marketing activity as it progresses to enable comparison of objectives with what is actually achieved.

First, decide on evaluation parameters. Together with the marketing agency, the NDB should decide on how the success of the communications activity will be measured. Ideally, this will include:

- Inputs: number of media executed (e.g., number of advertisements) and number of people reached (e.g., website hits)
- Outputs: awareness levels, attitude towards the program, uptake of loans for EE upgrades

The marketing agency should regularly report on the agreed evaluation parameters, and the NDB should correlate this information with data on loan disbursements.

If the loan disbursement targets are not being met, it is important to try to understand why so that this can be corrected. Some helpful questions to ask include:

- Are the input targets being met? Are as many firm owners being reached as planned
 - This can be calculated by the marketing agency
- Is the message of the campaign having the desired effect? Are firm owners responding well to the message?
 - This could be evaluated in focus groups with firm owners from the target group

Measure more
than just sales – if
loan disbursement
targets are not
being reached, it is
important to know
why



- Is there another barrier preventing firm owners from taking out loans?
 - This could also be evaluated in focus groups with firm owners

If necessary, the planned communications activities and/or messages should be adjusted.

6.10 Initial projects

Before the official launch of the program, it is recommended to start lending to a small number of initial EE projects in a sort of “pilot” phase. This can be done before the work of the marketing agency is completely finished (e.g., before the website goes live). As only a few projects are needed, the NDB can make personal contact with the project participants rather than using the official channels that will be used later in the program.

By starting with a few initial projects, the different elements of the program can be tested (e.g., the loan, the standardized contact, and the validation and verification procedures). Additionally, early results from the initial projects can be used as case studies, which may be helpful in future communications activity (e.g., on the website).

 *It is highly recommended to have some demonstration projects that can be used to engage Firms and TSP in the program.*

- ✓ Contact key stakeholders regarding potential projects

As only a few EE projects are needed, a good way to identify them is to return to the stakeholders who were consulted regarding the standardized contract (see Chapter 3).

- Do the target firms that were consulted have potential projects?
- Do the TSPs want to try providing EE upgrades under the program?
- Do the TSPs that were consulted know of clients with potential projects?
- Do the FIs that were consulted want to try lending to EE projects under the program?

Ideally, the participants in the initial projects will be leaders in their sector so that they can serve as a good example for other firms.

Depending on the market and the interest of the firms, it may be helpful to offer them a small incentive to sign up as initial projects under the program, for example in the form of a subsidy for project design, in addition to promoting them as “first-movers”.

- ✓ Support project set up

At this early stage of the program, it will be necessary for representatives of the NDB to be involved in helping to connect actors, and to support them in using the different tools, such as the contract. As the website will likely not yet be live, the NDB representative should also ensure collection and sharing of necessary information (e.g., sharing contract files, project



proposals, application materials, and validation procedures, as well as ensuring that results are distributed in a timely way to the appropriate parties).

The program is attractive for TSP because it provides mechanisms that can help them to access costumers that would not invest in their solutions if there were no financing or risk mitigation mechanisms.

✓ Monitor project progress

The NDB representative should closely monitor both the project approval and project implementation phases of all the initial projects. This should enable correction of any problems in these projects' implementation, as well adjustments to the program as a whole, where necessary.

With the permission of the initial project participants, the NDB could also prepare case studies on the initial projects to be used in communications (e.g., on the program website when the program is launched).



7 Capacity building

The capacity building is a series of workshops and training materials for TSPs. These aim to equip TSPs to participate in the program and successfully sell energy efficiency to their clients.

Some of the topics to include in a Capacity Building program include:

- How to guarantee energy savings,
- Pricing strategy of energy efficiency projects
- Financial and operational implications of an EE project for the TSP
- Impact of the risk mitigation coverage
- How to promote EE to firms

Background

One of the main objectives of this program is to engage a broad number of TSPs. They can become the main driving force to sell EE and the program among potential firms.

The main interest of TSPs in the program is the potential to increase their sales. Currently, TSPs sell equipment in cash to different firms at the beginning of a new project (e.g., an air conditioning system for a new hotel building) and at the end of the lifetime of an equipment (e.g., when the air conditioning reaches its end of the lifetime and is not working anymore), but it is more challenging for them to sell an equipment to replace an existing and functioning (inefficient) equipment.

A key element to engage TSPs is to help them understand the business opportunity to include energy efficiency as part of their business offering. To achieve this, it is necessary to create a mechanism that is constantly building capacity and engaging TSPs to the program.

This chapter aims to provide support to NDBs and development financing institutions to structure and implement a capacity building program that can engage and train TSPs to offer bankable EE projects.



Key steps

The following table presents the key steps to prepare the capacity building.

Table 22: Key steps for capacity building

Step	To do	Time estimate
7.1 Capacity building execution	Organize the logistical and human resources to do the capacity building	2 weeks
7.2 Capacity building content review	Review and where necessary adapt the capacity building suggestions	2-4 weeks
Milestone 7.1: Capacity buildings are scheduled and the relevant content and materials ready for use.		

7.1 Capacity building execution

- ✓ Sign contract with host organization

Identify and engage an organization that is able to and interested in hosting the capacity building mechanism. This could be a university, a business school, a technical association or similar institution or alternatively the NDB itself if the necessary infrastructure is in place.

- ✓ Contract facilitator

The NDB, in collaboration with the host organization then identifies and contracts the facilitator of the capacity building. To do so, a respective ToR needs to be developed and candidates evaluated, interviewed and selected. Keep in mind the importance to find a trainer with expertise in EE (technical), performance contracts, and some knowledge in financing. Also, it is recommended to select a local trainer that understand the local challenges, and is able to provide credibility, and deliver the training on a regular basis. Finally, a contract needs to be signed.

- ✓ Schedule development

The host organization, the facilitator as well as the NDB project manager then develop the capacity building schedule, i.e. define the number of trainings, the dates, the location and other logistic issues.

- ✓ Participant engagement

The capacity building purpose, benefit and conditions need to be communicated to attract participants. It is recommended to work with associations, participate in trade fairs, and



active discussions at events. Sometimes, the implementer (e.g. NDB) has experience with training and capacity building programs, and thus can provide infrastructure and communication channels to engage participants.

7.2 Capacity building content review

Normally, the TSPs have strong technical capacities and understand the performance of the technologies and their opportunities well. However, as discussed in the introduction of this toolkit, EE has some particularities that are crucial to communicate and thus a comprehensive capacity building program is necessary to support TSPs on the topics reflected in Table 23.

✓ Review of capacity building content

National and regional programs may vary in terms of the selected sub-sector(s), the program size, and the financing structure and thus the topics in Table 23 need to be reviewed and adapted, where necessary.

Table 23: Capacity building content

Topic	Content
Rational of EE	EE is a package of selling the equipment as well as the service to realize future energy savings. It is crucial to understand the role of the savings in the investment, maintenance, and benefit for the firms and the TSPs.
Market opportunity of EE	Described is the market size, potential of the priority sector(s) as well as technologies – in line with the findings of the market assessment.
Risk and barriers	Elaboration of the barriers and risks for TSPs as well as firms perceive when considering an EE project or investment.
Risk mitigation instruments (Standard contract, Validation procedures and Energy savings Insurance)	Introduction of the standardized performance contract and its obligations, the validation and verification methodology and relevant forms as well as the ESI mechanism including the retention.
Project and Financing structure	Illustrate the project cycle and the role of each actor.
Installation and waste management control.	Clarification of the requirements in terms of replacement of old technologies and the respective disposal needed.
Financial analysis	The project investment analysis of EE technologies including the elaboration of the cash flow and other financing indicators' calculation as well as the sensitivity analysis and the interpretation of the analysis.
Maintenance and operation	Specifies the TSPs' roles during the operation phase of a project and the respective regulations according to the standardized performance contract.
Monitoring, reporting and verification	Specifies the TSPs' roles during the operation phase of a project and the respective regulations according to the standardized performance contract.
Marketing EE and the ESI program	Explanation of the national ESI program's marketing and communications strategies and targets.
Case studies	Presentation of already realized EE projects through ESI programs.



✓ Review of capacity building roll-out suggestions

The capacity building rollout suggestions include suggestions on the structure, duration and the evaluation of the capacity building sessions as well as on preliminary activities.

The capacity building should be delivered through two face-to-face sessions with each session taking approximately four hours. The following table shows the topics per session and recommended time for each topic.

Table 24: Capacity building sessions and duration

First session	
Topic	Duration
Rational of EE	30 min
Market opportunity	30 min
Risk and barriers	30 min
Risk mitigation instruments	120 min
Installation and waste management	30 min
Second session	
Topic	Time
Financial analysis.	30 min
Maintenance and operation	30 min
Monitoring, reporting and verification	30 min
Marketing EE and the ESI program	120 min
Case studies	30 min

✓ Review of capacity building supporting material

Each participant receives a training manual with the training content, case studies, validation forms, the standardized performance contract, and the program explanation to access the financing and insurance as well as some marketing material of the program to promote EE among their clients.

It is recommended to deliver a certificate of successful completion of the capacity building at the end, given the participant complies with the evaluation requirements. This certificate should be delivered on behalf of the NDB and the host organization, which has a motivational co-benefit for participants.

Provide attendants with a certificate of completion at the end of the capacity building.



8 Implementation

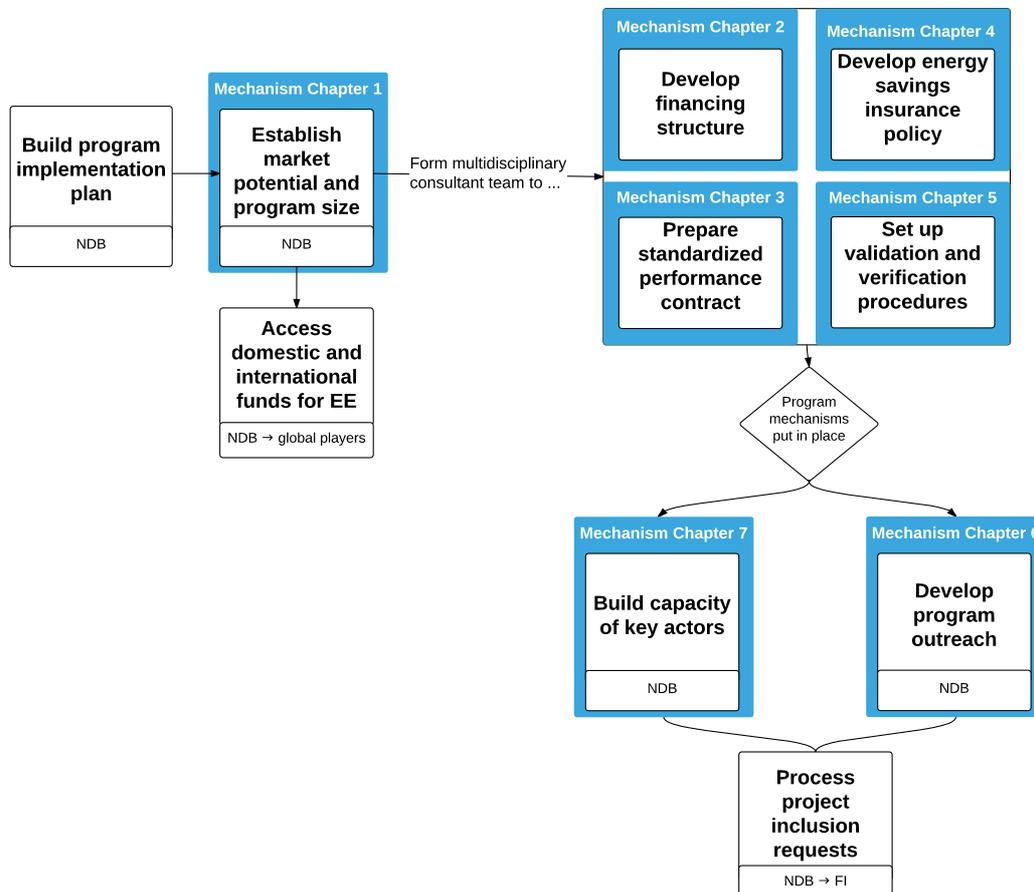
This chapter provides an overview of steps and resources needed to establish an ESI program. This plan aims to:

- Provide the implementing NDB with an indicative schedule of activities to set up the mechanisms
- Guide the NDB in building a team of staff and specialist consultants
- Offer indicative budget allocation for program establishment

Background

Establishing a national or subnational ESI financing program needs to be planned carefully and comprehensively. Figure 19 illustrates the flow of activities that an NDB needs to undertake to successfully establish such a program, and where each mechanism of this toolkit fits in.

Figure 19: Program establishment flow





To ensure proper management of the establishment of the program, the NDB has to first develop an implementation plan as described in this chapter. This includes preparatory tasks as defined in Table 25 below. Secondly, the market assessment (Chapter 1) needs to be conducted to define the scope of the program and scale and type of funding support that may be requested from domestic and international climate funds. After that, a multidisciplinary team of consultants needs to be hired, who will conduct the key steps to achieve the financing structure (Chapter 2), the standardized contract (Chapter 3), the ESI (Chapter 4) as well as the validation and verification procedures (Chapter 5). Once these mechanisms are in place, a marketing and communications plan (Chapter 6) will guarantee the program's effective public outreach. The capacity building (Chapter 7) of TSPs and other key actors will further foster smooth operation after program establishment.

This chapter provides a guideline to facilitate the implementation plan development, and illustrates critical steps and possible challenges the NDB could face.

Key steps

The following steps will help the NDB to develop its implementation plan to establish a program that incorporates the seven mechanisms presented in this toolkit. The steps take about 3 months and can be conducted in parallel.

Table 25: Key steps to an implementation plan

Step	To do	Time estimate
Formation of NDB internal team	Define NDB team member roles and appoint a project manager	weeks
Time schedule development	Discuss and adapt the indicative timeline of activities	2-4 weeks
Budget development	Develop a budget for the establishment and roll-out of the mechanisms	1 month
External Consultants	Identify and contract the team of consultants to assist with the development and implementation of the individual mechanisms	12 weeks

Formation of NDB internal team

- ✓ Establish an NDB decision-making committee

It is recommended to form a decision-making committee consisting of an internal team of officials from the NDB, to have responsibility for strategic decisions and proper execution, and approval of the milestone achievements as laid out in the schedule (see below). The committee could potentially be composed of officials from the products and customer service division, credit and risk assessment department and the sustainability and environmental area.



- ✓ Hire a project manager

It will be necessary to assign a project manager within the NDB for the one to two years of program development, as well as preparation and wrapping-up of activities. The position might be filled by hiring a new person or by an existing NDB staff member.



Allow for enough
time to form the
NDB team

Schedule development

Developing and establishing an EE financing program that includes all the mechanisms presented here would normally take the NDB around 12 months, plus program preparation and wrapping up activities of around three months each. File 14 presents an indicative time schedule for all key steps in the program establishment (based on a 12-month schedule).

 *File 14 Indicative time schedule template (in Annex)*

The following steps describe the process to adapt the schedule according to the NDB's specific circumstances.

 *It is recommended that the NDB forms alliances with FI and TSP.*

- ✓ Review key steps and milestones

The toolkit presents key steps in program establishment and forms the basis of the schedule. Deliverables for each step should be SMART (specific, measurable, attainable, realistic, and time-sensitive) to allow measurement of whether a key step has been successfully completed.

The project manager, together with the decision-making committee needs to review the key steps and the corresponding deliverables and adapt them where necessary. Additionally, it is important to carefully review the milestones, which are tasks that show an important achievement in the program establishment. While the project manager will manage the key steps and the achievement of the deliverables, the milestones should be formulated for careful review by the committee. In so doing, the milestones offer a way of monitoring how the program establishment is advancing, even if the committee will not have first-hand involvement in every key step that is taken or deliverable that is being worked on.



- ✓ Estimate duration of key steps and define milestone dates

Once the key steps, the deliverables, and human resources have been defined, the project manager needs to review the suggested duration per activity and deliverable. Make sure to allocate some float time in the estimations. Together with the committee, the project manager needs to discuss the date by which the milestones need to be reached. Some of these milestones need to be completed before moving to a next step or mechanism.

 *It is important to consider in the time estimations that some consultants may need to sign confidentiality agreements with the NDB to access specific sensitive information; for example, a confidential report that could be helpful for the market assessment or information regarding the NDB's current credit portfolio. Normally these confidentiality agreements take time, as they need to pass through the legal department of the NDB.*

- ✓ Allow for review of the timeline

The time schedule will likely be subject to changes during the program establishment process. Therefore, it is essential for the project manager to plan monthly reviews of the time schedule to check the progress of the activities and take corrective action, if needed.

Budget development

Establishing a budget and implementing the schedule developed above will require budget planning. The following steps will help the project manager to develop the budget for program establishment.

- ✓ Estimate human resources needed per key step

Analyze the contract duration per consultant and NDB support needed to carry out each of the key steps and deliverables developed in the schedule.

- ✓ Estimate budget allocation per key step

Estimate the monetary amount required per key step and deliverable, given the estimated human resources for it. Keep in mind that the key steps for each of the seven mechanisms require a specific budget that includes the cost of staff and consultants, associated expenses, such as travel, as well as costs to operate the mechanism.

Table 26 presents an illustrative budget that can be used to estimate the expected costs for implementing all mechanisms of the program. This should be used as an example and needs to be adjusted according to the NDB's implementation plan.



Table 26: Indicative budget for program establishment

Mechanism	Description of expense	Total ('000 USD)
Initial preparation	Hire a project manager for program establishment (budgeted for two years). It is recommended that the project manager have a strong understanding of EE projects and financing.	80-125
1. Market assessment	Contract an EE consultant for six months for developing the market research, which includes the pre-feasibility analysis and market assessment report. This budget should include travel expenses for the interviews.	40-60
2. Financing structure	Contract a finance consultant for six months for developing a financing strategy, a project investment analysis and defining the program size. It is recommended that an EE consultant support the work of the finance consultant.	40-50
3. Standardized performance contract	Contract a legal consultant (lawyer) over a six-month period to assist in adapting a standardized performance contract according to the local conditions and support in roundtable discussions to test the contract with key actors. It is recommended that an EE consultant and the validation entity provide inputs to the work of the legal consultant.	40-60
4. ESI	Contract a legal (LoE 20%) and EE consultant (LoE 80%) over a six-month period to discuss and provide inputs to the insurance companies on the characteristics of EE projects and risks to develop a suitable risk mitigation instrument covering energy savings. It is recommended that the validation entity provide inputs and feedback to the risk mitigation instrument to adapt it to market needs.	5-20
5. Validation and verification	Includes contracting a validation entity for six months to develop/adapt the validation and verification procedures and the respective methodology and forms. It is recommended that an EE consultant and legal consultant provide inputs to the work of the validation entity.	40-60
6. Marketing and communication plan	Includes:	
	Contract marketing consultant to develop the marketing strategy.	10-20
	Contract a marketing agency to develop the creative concept for program outreach.	10-20
	Costs of production and distribution of outreach and raising awareness material incl. printing, advertisement space, etc.	60-70
	Development and launch of website and management information system (provides program information, mechanisms material, and manages the validation and reporting information).	20-30
	Impact evaluation of program.	5-20



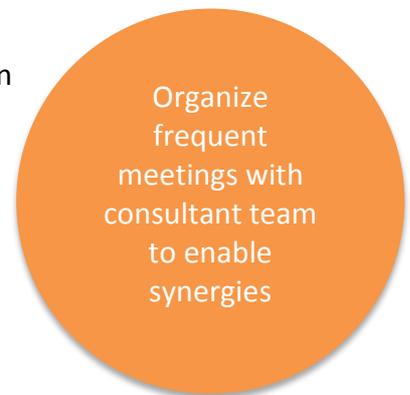
Mechanism	Description of expense	Total ('000 USD)
7. Capacity building	Contract an EE consultant for nine months to assist in preparing material for training and conducting capacity building	35-45
Wrap up and follow up activities	Includes NDBs expenses for wrapping-up of program establishment including a final committee meeting.	15-20
Total cost of program establishment		400-600

Consultants

- ✓ Assemble the multidisciplinary team of consultants

To establish the program, a flexible group of consultants is hired on a temporary basis to supplement the efforts of the project manager. The team should consist of:

- A market assessment consultant, if possible with knowledge of EE, to conduct the pre-feasibility analysis, the market assessment as well as help setting up the ESI procedures and assist in the capacity building activities
- A finance consultant to set up the financing structure
- A legal consultant, preferably a lawyer, to adapt the standardized performance contract and help set up the ESI procedures
- A validation entity to put in place the validation and verification procedures, and provide inputs to the standardized contract and the insurance.
- A marketing consultant to develop the marketing strategy



- ✓ Communicate with and manage the consultants

When managing the team of consultants it will be important for the project manager and the NDB committee to explain the efforts within the NDB. Internally it may be necessary to explain clearly why external consultants are being brought in, for example, by explaining which expertise they bring.

- ✓ Define accountability and responsibilities

It will be helpful to the project manager to establish a leader for implementing each of the steps of all seven mechanisms to define responsibilities and ensure ownership and accountability. The project manager should keep in mind that consultants are hired for specific tasks. It is important to properly frame their activities in their ToR, to assign clear tasks and establish expectations for each consultant. Make sure that the consultants have extensive experience in the assigned tasks. It is likely and key that they make use of their existing network to develop their tasks.



Resources

The toolkit counts with fourteen supplementary files of which six are included in the main text and the following eight files are annexed:

- File 2 Template matrix evaluation tool
- File 5 Simple Project Investment Analysis analysis –electric motors example
- File 6 Example overview of firms
- File 7 Example overview of TSPs
- File 9 Detailed Project Investment Analysis –electric motors example
- File 10 Standardized performance contract template
- File 11 Methodology and forms for validation and verification procedures for an ESI project
- File 14 Indicative time schedule template

File 1 Potential literature sources

When conducting desk research, the following sources might help to gain an overview of national and subnational efforts, opportunities and lessons learned.

- Check past and ongoing projects in the field of EE and particularly note challenges and pitfalls they have already identified.
 - Kreditanstalt für Wiederaufbau / Reconstruction Credit Institute (KfW) - www.kfw-entwicklungsbank.de/
 - Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - www.giz.de/en/
 - United States Agency for International Development (USAID) - <https://www.usaid.gov/>
 - United Nations Environment Programme (UNEP) - <http://www.unep.org/>
 - United Nations Development Programme (UNDP) - <http://www.undp.org/>
 - Inter-American Development Bank (IDB) - <http://www.IADB.org>
 - Corporación Andina de Fomento (CAF)/Development Bank of Latin America - <http://www.caf.com>
 - Japan International Cooperation Agency (JICA) - <http://www.jica.go.jp/english/>
 - Agence Française de Développement (AFD) - <http://www.afd.fr/lang/en/home>
 - European Investment Bank (EIB) - <http://www.eib.org/>
 - Economic Commission for Latin America and the Caribbean (CEPAL) - <http://www.cepal.org/es>
 - International Energy Agency Energy Efficiency Market Report <https://www.iea.org>



➤ Utilise information:

- On the country's national policies regarding EE, including ongoing policy level and regulatory framework discussions taking place in the government.
- On national energy plans, targets or ambitions and how they are being realized. Also check whether there are similar plans regarding general efforts for sustainability or climate change mitigation and adaptation.
- By national associations promoting EE, and check their activities and publications.
- By current international and bilateral climate finance for EE programs in the country.
- by existing market analyses by agencies, governments etc. such as <http://www.efficiency-from-germany.info>



File 3: Example questionnaire for firms

The following questionnaire can be used as a template for developing a questionnaire for the target firms.

FIRM INFORMATION

To be filled out by interviewer before interview

Firm name:

Interviewee:

(Sub-)sector:

To be filled out by the interviewee

What is the size of your firm?

According to the [COUNTRY] national classification system²⁵, the size of a company is determined by the number of employees and the company's sales

Number of employees

- 1 – 9 employees
- 10 – 50 employees
- 51 – 100 employees
- > 101 employees

Check the national classifications in the target country

Annual sales

- < USD 100,000
- USD 100,001 – 1,000,000
- USD 1,000,001 – 5,000,000
- USD 5,000,001

TECHNICAL QUESTIONS

Complete the details of the pieces of equipment you have for each technology

If you have more than five pieces of equipment for a technology, extra sheets can be provided

Only include the technologies relevant for the program

²⁵ For information on national classification systems of most countries, see: United Nations Statistics Division. 2015. *National Classifications*. <http://unstats.un.org/unsd/cr/ctryreg/ctrylist2.asp>, accessed September 8, 2015.



Boilers

Qty	Size (HP or Vapor/hour)	Age (years)	Frequency of use (hours/week)	Cost of maintenance (USD/year)	Type of fuel
1					
2					
3					
4					
5					

Electric motors

Qty	Size (HP or KW)	Age (years)	Frequency of use (hours/week)	Cost of maintenance (USD/year)
1				
2				
3				
4				
5				

Refrigeration/Air conditioning

Qty	Size (tons or BTU)	Age (years)	Frequency of use (hours/week)	Cost of maintenance (USD/year)
1				
2				
3				
4				
5				

Compressed air

Qty	Size (KWH)	Age (years)	Frequency of use (hours/week)	Cost of maintenance (USD/year)
1				
2				
3				
4				



5				
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Solar water heaters

Qty	Size (KWH)	Age (years)	Frequency of use (hours/week)	Cost of maintenance (USD/year)
1				
2				
3				
4				
5				

Co-generation

Qty	Size (KWH)	Age (years)	Frequency of use (hours/week)	Cost of maintenance (USD/year)
1				
2				
3				
4				
5				

FINANCIAL QUESTIONS

What types of thermal fuel do you use?

E.g. Natural gas, liquid petroleum gas, diesel

How much do you pay for thermal fuels per month?

USD/month

How much do you pay for fossil fuels per month (gas/diesel/petrol)?

USD/month

How much do you pay for electricity per month?

USD/month



How much do you pay for electricity per kilowatt-hour?

USD/kWh

How do you evaluate the level of risk and your expected rate of internal return for the following investments?

Put the letter for each type of investment in the grid below

- A. Reducing energy expenditure in your company
- B. Increasing production in your company
- C. Expanding sales efforts of your company
- D. Stock market²⁶

Include an option like "stock market" that allows objective comparison of risk perception

Risk	High			
	Medium			
	Low			
		<10%	10 – 20%	<20%

Internal rate of return

If you invested in new energy efficient technology, how do you assess the level of risk of the following situations?

	Level of risk				
	Very low	Low	Moderate	High	Very high
The price of energy decreasing significantly in the next few years					
The political situation in the country being too uncertain to invest					
Investments with a payback period greater than five years being risky					
Failure of the new energy efficient equipment causing production downtime					
The development of the EE project not being optimal and the project not achieving the promised savings					

²⁶ A potential investment external to the company – e.g., the stock market – can be used to compare Firms' risk perception of EE compared to other types of investments.



	Level of risk				
	Very low	Low	Moderate	High	Very high
The TSP not taking responsibility in case of failure to achieve promised savings					
The TSP not providing good after-sales service					

If you were to invest in new energy efficient equipment, what would you consider to be an acceptable payback period?

Number of years

Why is this payback period acceptable?

Open question

What was your most recent equipment upgrade, and what was the payback period for that?

Type of equipment and number of years' payback

When you invest, how much equity do you provide when taking a loan?

Any other comments

Open question

Example questionnaire for TSPs

ABOUT THE TECHNOLOGY SOLUTION PROVIDER (TSP)

To be filled out by interviewer before interview

TSP name:

Interviewee:

(Sub-)sector:

To be filled out by the interviewee

What is the size of your TSP?





According to the [COUNTRY] national classification system²⁷, the size of a company is determined by the number of employees and the company's sales

Number of employees

- 1 – 9 employees
- 10 – 50 employees
- 51 – 100 employees
- > 101 employees

Annual sales

- < USD 100,000
- USD 100,001 – 1,000,000
- USD 1,000,001 – 5,000,000
- USD 5,000,001

How many years has your firm been in business?

Years

What are the main services offered by the TSP?

Services			
Installation	Maintenance	Repairs	Other
<i>Air conditioning</i>			
X	X	X	[type of service]
X	...		
...
<i>[Technology]</i>			

²⁷ For information on national classification systems of most countries, see: United Nations Statistics Division. 2015. *National Classifications*. <http://unstats.un.org/unsd/cr/ctryreg/ctrylist2.asp>, accessed September 8, 2015.



What is the average size of the services per technology?

Air conditioning: *USD/service of installation*
 USD/service for maintenance
[Technology]: *USD/service of installation*
 USD/service for maintenance
... ...

Does the TSP offer any guarantee of its services?

FINANCIAL INFORMATION

What types and amounts of finance are required for the projects implemented by TSPs?

What are the capital needs of the TSPs themselves?

USD/month

How are these capital needs met at the moment?

Does the TSP currently use any ESCO type services?

Does the TSP offer some kind of financing themselves?

[The interviewer needs to explain the concept of an energy performance contract as proposed in the national or subnational program.]

Is the TSP interested in offering an energy performance contract?

Yes / No

Why?

[The interviewer needs to explain the concept of the ESI program.]

What do you think about a potential energy savings insurance program?



Does the TSP see investment opportunities in EE?

Any other comments

Open question

File 8 SWOT analysis template

The following template should be used to conduct an analysis of the program’s strengths, weaknesses, opportunities and threats²⁸.

First, start by listing factors for each of the four categories. Remember – strengths and weaknesses refer to internal factors under the control of the NDB/the program, and opportunities and threats relate to external factors outside the control of the NDB/the program.

Strengths	Weaknesses
[List the strengths of the program, e.g., competitive interest rates]	[List the weaknesses of the program, e.g., complicated loan application procedures]
Opportunities	Threats
[List external factors that could be positive opportunities for the program, e.g., increase in electricity price]	[List external factors that could threaten the success of the program, e.g., competitor launching an EE financing product]

The completed lists should then be used to identify strategic issues for the program to consider. “Strategic issues” are important issues in which the internal strengths and weaknesses of the program interact with the external opportunities and threats.

²⁸ For further instructions on conducting SWOT analyses see: Strategic Management Insight. 2013. *SWOT Analysis – Do It Properly*. <http://www.strategicmanagementinsight.com/tools/swot-analysis-how-to-do-it.html>, accessed December 8, 2015; and Queensland Government. 2014. *Conducting a SWOT Analysis*. <https://www.business.qld.gov.au/business/starting/market-customer-research/swot-analysis/conducting-swot-analysis>, accessed December 8, 2015.



To consider how the internal and external factors interact, use the table below.

	Opportunities	Threats
Strengths	How can strengths be used to take advantage of opportunities?	How can strengths be used to mitigate threats?
Weaknesses	How can weaknesses be improved to avoid missing opportunities?	How can weaknesses be improved to mitigate threats?

For example, strategic issues might be:

- How can the program’s competitive interest rates be used to gain an advantage over competitor loans? or
- How can the capable technology suppliers be motivated to guide firms through the loan application procedures?

After strategic issues have been identified, the most important ones should be selected for inclusion in the market assessment report.

File 12 Template brief for a marketing agency

Why have we issued this brief?	
Background	<p>NDB is launching a new program that will lend money to agribusinesses to enable them to upgrade their old equipment for more energy efficient equipment. Firms can upgrade air conditioning systems, boilers and/or motors under the program.</p> <p>The money saved on energy use will enable the firms to pay back their loans, and to continue saving money after the loan has been paid back. The program includes measures to help guarantee that the equipment upgrades will save the agribusinesses money.</p> <p>In total, the program aims to catalyse USD12.5 million in EE investment by 2020. This translates to giving loans to around 250 firms. The program is open to firms all over the country.</p> <p>Existing providers of air conditioning, boilers and motors are currently becoming accredited under the program, and they will act as a “sales force” for the program, proposing EE upgrades to their clients.</p> <p>If firms like the proposal from the TSP and decide they want to upgrade their equipment, they need to apply for a loan with a participating FI (e.g., name of local bank). Their loan application and the type of EE project will then be evaluated by the FI and NDB, and successful applications will be given a loan under the program.</p> <p>A marketing communications campaign is necessary to support the TSPs in approaching Firms, and to position EE upgrades as attractive and relevant investments for firms.</p>



Agency develop to	<ul style="list-style-type: none"> • An identity for the program (including name, logo and design) • A creative marketing concept and corresponding media plan that will deliver required results based on briefing below • A website that will also serve as a management information system for the program (see attachment for further detail)
What needs to change?	
Business objective	To have 250 firms take out loans for new energy efficient equipment (air conditioning, boilers and motors) by 2020.
Communication objectives	<ul style="list-style-type: none"> • 10,000 firm owners see the campaign about EE upgrades. • 5,000 firm owners are convinced that investing in EE is the best way to build a strong firm for the future. • 500 firms discuss EE upgrade options with a program-accredited TSP. • 250 firms take out loans for EE upgrades.
With whom does the change need to happen?	
Target group description	<ul style="list-style-type: none"> • Firms in the fruit and vegetable packing sector in the target country • Family-owned firms with around 10 employees • Owned and run by the family patriarch • Owner faces daily challenge of finding enough money to pay salaries and suppliers • Owner wants to build the firm into something strong that he can hand down to his son in future
What is the underlying need of the target group?	
Barrier	<ul style="list-style-type: none"> • I don't need to buy new equipment because mine isn't broken.
Target group insight	<ul style="list-style-type: none"> • I'm always worried about next week, but I should be planning for the future.
What does the program offer to meet the need of the target group?	
Benefit	<ul style="list-style-type: none"> • EE is the best way to build a strong firm for the future
Timing and budget	
Key performance indicators	<ul style="list-style-type: none"> • Number of loans disbursed • Number of firms that discuss EE upgrades with technology suppliers • Number of firms that see the campaign • Discuss with agency: how to measure change in attitude
Executorial mandatories	<ul style="list-style-type: none"> • Program identity must be completed in 2016 • Website must go live in 2016 (and include elements described in attachment)



Milestone deadlines	<ul style="list-style-type: none"> • 15 loans disbursed by end 2016 • 50 loans disbursed in 2017 • 80 loans disbursed in 2018 • 80 loans disbursed in 2019 • 25 loans disbursed in 2020
Budget Production Media	<p>\$500,000 over five years to 2020</p> <p><i>Include more detailed budget breakdown if available</i></p>
Attachments	<ul style="list-style-type: none"> • Market assessment (background research) • Essential elements of the website

 *File 13 Elements of the website*

The website should serve as a central hub of information, both for people interested in the program, and for program participants. There should be sections accessible to all website visitors, as well as an MIS to which program participants must log in to access. The website could be created as a stand-alone site, or as a microsite within the NDB's website. A suggested sitemap for a microsite within an NDB's website is outlined below.

- Landing page
- For firms
 - Why do EE upgrades?
 - Technologies that firms can upgrade
 - Financing conditions
 - Guaranteed energy savings
 - Standardized performance contract
 - Validation and verification
 - ESI
 - Case studies
 - Participate in the program
 - Find a TSP (*with search function*)
 - Find an FI (*with search function*)
- For TSPs
 - Why provide EE services?
 - Eligible technologies
 - How the program works
 - Financing conditions
 - Guaranteed energy savings
 - Standardized performance contract
 - Validation and verification

Information for businesses and TSPs should not be exactly the same – target the information to the audience



- ESI
 - Case studies
 - Participate in the program
 - Training sessions
- About the program
 - Implementing organisations
 - Participating TSPs (*list*)
 - Participating FIs (*list*)
 - News
 - Contact
- Downloads
 - Standardized contract template
 - Validation and verification procedures
 - Energy savings insurance product disclosure statement
- Participant login (*see table on the next page for further detail on the MIS section*)

The MIS section of the website should only be available to participants in the program, who have to receive login details to access it. The participants include:

- The NDB
- The validation entity
- Participating TSPs
- Participating firms
- The insurance company
- Participating FIs

The table below outlines some of the essential functions that the MIS should have, as well as which party should complete the information and when it should be completed.

Information	Entered by	Timing
Details of participating firm	Validation entity	When validating project
Details of participating TSP	Validation entity	When validating project
Details of project <ul style="list-style-type: none"> • General information • Baseline energy consumption • Promised energy consumption reductions 	Validation entity	When validating project
Validation approval of project and TSP	Validation entity	Upon project validation
Data entry of the individual projects' performance, including energy consumption during the period, CO ₂ , energy saved, etc.	TSP	Monthly
Acceptance of energy consumption reports	Firm	Monthly



Report	Description
Individual project report	This report displays the details of a specific project, such as energy savings, energy CO ₂ reduction, and comparison between energy consumption estimation vs. actual energy consumption reported for each of the periods.
Aggregated project reports	This report lists all the current and past projects in the pipeline and their key indicators and status.
Summary of program performance report	This report summarizes the results of the all the projects financed through the program.

The NDB and the validation entity should have access to the whole MIS, and it should be possible for them to search the projects recorded in the system by characteristics such as name, TSP, technology etc.

However, it is important that not all participants have access to all projects, e.g., participating firms and TSPs should only be able to see their own projects, not those of their competitors, and the insurance companies and the participating FIs should only have access to the reports of the projects to which they have provided financial services.

The following table shows a recommendation of the MIS access permission that each of the actors should have:

REPORT	NDB	Int. donor/ funder	Validator	FIs	Firm	TSP
REPORT Summary of program performance	X	X				
REPORT Aggregated project reports	X		x			
REPORT Individual project	X		X	X	X	X



ESI | PT

Energy Savings Insurance Program Toolkit

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