Guideline for EPC customers

- How to start an EPC project

EFFECT4buildings Toolbox:

Energy Performance Contracting; Annex 1

The project “Effective Financing Tools for implementing Energy Efficiency in Buildings” (EFFECT4buildings) develops in collaboration with public building managers a comprehensive decision-making support toolbox with a set of financial instruments: **Financial calculation tools**; **Bundling**; **Funding**; **Convincing decision makers**; **Energy Performance Contracting**; **Multi Service Contracting**; **Green Lease Contracting**; **Prosumerism**. The tools and instruments chosen by the project has the biggest potential to help building managers to overcome financial barriers, based on nearly 40 interviews with the target group. The project improves these tools through different real cases.

To make sure building managers invest in the best available solutions, more knowledge on different possibilities is needed as well as confirmation from colleagues that the solutions performs well. EFFECT4buildings mapped **technological solutions** for energy efficiency in buildings with the aim to share knowledge and experiences of energy efficiency solutions among building managers in the Baltic Sea Region.

Energy Performance Contracting (EPC) is a well-tested and successful model for energy saving. It is used by public building owners to reach climate and energy targets at a faster pace than with traditional implementation. There is still a large energy-saving potential in public sector.

The Guideline for EPC customers is based on the Guide to EPC developed in the framework of the EFFECT4buildigs project. The guide introduces a new implementation model based on experiences in the countries involved in the EFFECT4buildings project - its main novelty aspects being contract based partnership during the analyses phase and new award criteria to better fit the goals of building owners.

This **Guideline for EPC customers** is part of a toolbox of 9 documents and templates adapted to the new implementation models various phases primarily emphasising the first two phases. Experiences from past EPC projects shows that decisions made early are crucial. The goal is to promote EPC as an energy saving model and simplify the start-up of an EPC project.

Below is a schematic overview of the adapted tools and instruments for EPC:

Guide to Energy Performance Contracting (EPC)
with contract-based partnership during the analyses phase

EPC toolbox - documents and templates for implementing EPC

Phase 0 Start-up and tender	Phase 1 Energy analyses	Phase 2 Implementation	Phase 3 Guarantee
1. Guideline for EPC customers – how to start an EPC project			
2. EPC Presentation and Training material			
3. Tender for procurement of EPC supplier - Template	7. Partnership contract for phase 1, Analyses – Template		
4. EPC tender analyses – Template*	8. Project development report and energy analyses – Template		
5. Baseline data –Template*			
6. Checklist for qualification and award criteria – Template*		9. Attachment to contract terms for Phase 3, Guarantee - Template	

**Not considerably altered compared to traditional EPC implementation model documents.*

Partners

EFFECT4buildings project is implemented with the support from the EU funding Programme Interreg Baltic Sea Region (European Regional Development Fund) and Norwegian national funding. The aim of the project is to improve the capacity of public building managers in the Baltic Sea Region by providing them a comprehensive decision-making support toolbox with a set of financial instruments to unlock the investments and lower the risks of implementing energy efficiency measures in buildings owned by public stakeholders. More information: http://www.effect4buildings.se/

Guideline for EPC customers

Content

1. About the Guideline

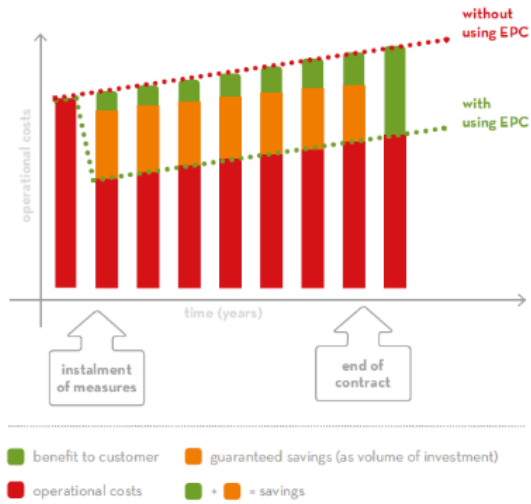
This guideline provides introduction for the start-up of Energy Performance Contracting (EPC). to contribute to reduction of energy use and CO_2 emissions. The target group is EPC customers and especially building owners and property managers in public sector.

An EPC project consists of four phases: 0) Start-up and tender phase, 1) Energy analyses and project development phase, 2) Implementation and construction phase and 3) Energy-saving and guarantee phase. This guideline mainly focuses on the two initial phases. Market analyses and experiences from former EPC projects show that decisions made in the early phases of an EPC projects are important for future successes and avoidance of potential pitfalls that occur later in the process.

Through this guideline the municipality / building owner get information about various implementation models and processes for EPC, including start-up advice and available tools and instruments.

2. What EPC is

In an EPC project the energy efficiency measures are financed through guaranteed energy savings and provides an upgrade of technical installations/equipment and rehabilitation of the building mass. The building owner enters a contract for the energy analyses phase (phase 1). The contract contains an option for project implementation and follow-up of the guaranteed savings.



When starting an EPC project, it is important to obtain necessary knowledge of the EPC concept and the different implementation models, to find out what is right for your municipality.

There are two implementation models for EPC: traditional and new. Both implementation models are based on standard contract terms for EPC[1]. The major difference between the two is that a new implementation model proposes a contract-based interaction in phase 1. Both implementation models depend on good dialogue and trust between the parties to achieve a good result. This guideline mainly focuses on the new implementation model and templates developed for that (see Chapter 6).

When phase 1 is over, the project will be implemented as a turnkey contract in accordance with national turnkey standards, laws and regulations.

[1] Based on the Norwegian official standard for EPC projects, NS6430. This might be useful also for other countries – especially for Phases 2 and 3 of EPC projects. The standard can be ordered here.

2.1. Traditional implementation model for EPC

In the traditional implementation model, phase 1 of the project is a pre-project / analysis phase, where the supplier will carry out energy analyzes of all the buildings in the portfolio and propose measures. When all the buildings are analysed, the building owner will be presented with a project development report, consisting of an overview of all the proposed measures. A selection of the measures with the lowest investment and the highest energy saving is usually selected and collected in a “package of measures”. This must document that the EPC supplier has managed to offer energy saving measures as guaranteed for in the offer. The customer then chooses which measures they want to implement, and then enters into a contract with the supplier for phases 2 and 3.

The challenge with this implementation model has, in some cases, been that the suppliers offer an investment and savings that they are difficult to achieve, and that the presented measures in the "package" therefore are not what the customer wants to proceed with in phase 2. This can be due to poor quality of the measures or that the measures have little credibility as energy saving measures. It is therefore important that the customer is aware of the energy and maintenance goals they want to achieve. This should be communicated in the tender documents in the form of award criteria and / or requirements specifications.

Templates of tender documents and descriptions for traditional implementation of EPC projects are available in most European countries.

2.2. New implementation model for EPC with partnership in phase 1

In the templates for the new implementation model, the award criteria have been changed significantly compared to the traditional model. In addition, the parties enter into a partnership agreement for phase 1, the analysis phase. This phase ends with an unified package of measures that constitute the basis they proceed with in phases 2 and 3. Unlike in the traditional implementation model, the supplier has not provided a guaranteed price for investment and energy / power savings in the offer. In the new model, on the other hand, the parties jointly arrive at the optimal solutions / measures in collaboration / partnership in Phase 1. In the offer, the supplier has guaranteed, among other things, prices, and qualities of typical measures in 1-3 selected example buildings. The supplier commits to keep the stated quality and price level on the rest of the building portfolio.

The new implementation model for EPC proposes frequent meetings between the parties in phase 1, and both the supplier and the customer are expected to actively participate with their knowledge in order to achieve the best possible result. Templates and tools for this collaborative model are listed in chapter 6, EPC Toolbox.

An EPC Guide[2] with description of the new implementation model for EPC with partnership in phase 1 has been developed.

[2]The EPC Guide can be found here: http://www.effect4buildings.se/

3. When to choose EPC?

The EPC model is a well-known and recognized model that has been tested in several Nordic and European countries for more than a decade. It has been helping building owners reach their energy and climate targets more quickly than with inhouse implementation of energy saving measures.

It is however important to make a critical assessment of whether the EPC model is the right choice [3] for your buildings and which implementation model is most in line with the municipality's goals and available resources.

3.1. EPC is the right choice when

- there is a need for rapid implementation of energy saving measures
- there is considerable savings potential in all or part of the building stock
- there is a maintenance lag in all or part of the building stock
- the municipality has ambitious climate and energy targets
- it is demanding to find good measures and there is a need for expert analyses
- there is a desire for an energy service company (ESCO) to implement a wide range of measures
- a holistic approach to the building stock is desirable

3.2. EPC is less relevant when

- many technical energy saving measures have been implemented in the last 5-10 years
- many organizational measures have been implemented such as the introduction of Energy Monitoring System (EMS) or Integrated Building Management /Automation system (BMS) over the last 5-10 years
- the municipality has internal resources and expertise to implement comprehensive energy saving measures by itself
- the need for maintenance or improvement of the indoor climate financially exceeds the energy saving potential

3.3. Which implementation model is the correct choice for your municipality?

EPC with contract-based partnership in phase 1 is however not necessarily the best method of implementation for all customers. For some, the implementation of traditional EPC implementation would be a good alternative to the new model, especially if the improved templates are used. See chapter 6, EPC Toolbox.

If the municipality wants to entrust larger parts of the process, including the choice of measures and solutions in the analysis phase to the energy contractor, a traditional implementation model would be better suited. In this way, the municipality can focus on other core areas of business. The disadvantage of choosing a traditional model is that the

[3] There is an EPC pre-check available: EPC pre-check – Find out if an EPC works for you.

measures the EPC supplier finds and chooses to present based on analyzes in phase 1 will be guided by the guarantee given in the offer. Hence, the building owner will not be equally involved in the choice of measures and solutions. This could mean that maintenance measures with longer payback time that could have been included and covered by the savings of highly profitable measures will not be presented to the building owner.

The partnership model requires a greater presence in the form of meetings, both for the customer and the supplier, in phase 1 of the project than the traditional model requires. It also requires some more expertise in the municipality, both in terms of the contract form, but also in energy efficiency and technical solutions. It must nevertheless be pointed out that the work that is put into phase 1 in a partnership is work that the municipality must do in phase 0 in a successful traditional EPC and a competent EPC facilitator will be able to contribute. In terms of time and resources, there is not necessarily a difference between the two implementation models.

The EFFECT4buildings' aim is that the developed documents and templates will be used by all customers who wish to implement an EPC project, with or without contract-based partnership in phase 1.

We recommend that a qualified assessment be made of which implementation model fits the specific project best. This might be done with the assistance of an EPC facilitator with knowledge of both implementation models. See section 5.1 for information on procurement of an EPC facilitator.

In the EFFECT4buildings project, tools have also been developed for Multiservice contracts (MSC)[4] and a template for decision-making processes that can be useful in selecting an implementation model for an EPC project as well.

4. Anchoring in the organisation

Internal anchoring to create ownership in the organisation / municipality is important in an EPC project. It should be rooted in the administration and among politicians, but also among operational personnel who will be directly affected both in the initial phases of the project and in the implementation. The following are relevant audiences for internal sales:

- Building manager, property manager
- Politicians and chief municipal executives
- Climate and energy adviser
- Technical personnel and operating personnel
- Financial manager, controller

It will often be appropriate to start with the building department and political leadership and then introduce the model to others in the organization. As part of the EPC Toolbox you will find an example of such a presentation[5] that can be customized and used for this purpose.

[4] The "Guideline for MSC decision process" can be downloaded here: http://www.effect4buildings.se/

[5] Example of an EPC presentation can be found here: http://www.effect4buildings.se/

This presentation can be held by a person with knowledge of EPC in the organization. Good experience has also been gained in recruiting an external expert at EPC. It will be an advantage if this expert is a neutral party that will not be included in the project itself in the event of a possible implementation. The presentation should be selling, but realistic. It is important to highlight both pitfalls and success criteria for EPC to build trust and confidence in the model.

5. Procurement of EPC

There are several steps in the procurement process. In order to equalize the difference in competence between the building owner and a future EPC supplier, the assistance of an EPC facilitator is recommended. Procurement of such assistance should be done in accordance with national procurement laws and regulations.

5.1. EPC facilitator

EPC contracts are complex in many ways: financing, preparation and launch of tender, technical implementation of measures, and follow-up and monitoring of operations in the guarantee phase. All these tasks must be carefully planned and executed.

It can be challenging for public authorities to prepare and implement an EPC contract without previous EPC experience. There are many aspects that make EPC different from traditional modernization and energy saving measures in buildings.

This is where the EPC facilitator contributes with the necessary experience and expertise and can support to the building owner in all the necessary steps to carry out a successful EPC contract. Equally important is that the facilitator acts as an intermediary and negotiator between the building owner and the EPC supplier. This is important to build good understanding and lasting good cooperation between the future parties. The facilitator must therefore also understand the contractual, economic and technical aspects of the project from the EPC supplier's point of view.

5.2. Procurement of EPC facilitator

There are existing templates for procurement of an EPC facilitator in many countries. These are mostly based on the traditional EPC model. It is recommended that the facilitator has knowledge of both implementation models (sections 2.1 and 2.2). To ensure that the facilitator has knowledge of both implementation models, this should be included as a separate award criterion in the EPC tender.

The EPC facilitator's role

In the start-up phase of an EPC project, phase 0, the facilitator's role is to assist with:

- Provision of baseline data
- Assessment of savings potential
- Choice of implementation model
- Prepare a tender document adapted to the municipality's energy and climate goals
- Launching the EPC tender (on official national tender platform)
- Assessment of offers and choice of EPC supplier
- Phase 1 contracting

For the other phases, the facilitator will assist with important tasks such as:

- Assessment of project development report and package of measures (phase 1)
- Contracting phases 2 and 3

National energy authorities or other governmental bodies might have an overview of qualified EPC facilitators in your country.

5.3. EPC supplier

In an EPC project a building owner and an EPC supplier enters into an agreement. The EPC supplier is a contractor and is often called an energy service provider or ESCO (Energy Service Company). The EPC supplier is responsible for the development and implementation of the energy saving measures involved and then guarantees technical performance. In an EPC contract, the EPC supplier is held accountable if the goals for performance and savings are not achieved.

5.4. Procurement of an EPC supplier

With the assistance of the chosen EPC facilitator, the tender documentation for procurement of an EPC supplier for phases 1, 2 and 3 is conducted.

The EPC supplier is implementing phase 1 - the analysis phase with or without contract based partnership. Later the EPC supplier will lead the implementation and guarantee phase (phases 2 and 3) of an EPC project as a turnkey enterprise.

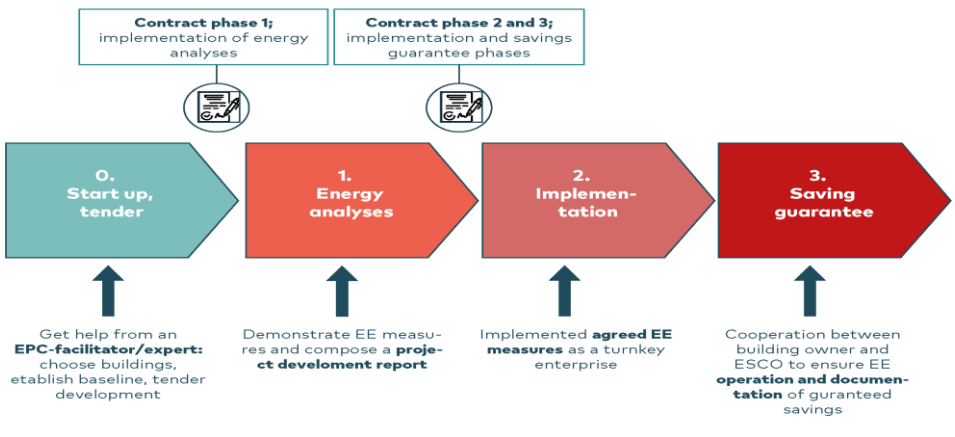


FIGURE 2. THE PHASES OF AN EPC PROJECT

The EPC suppliers' role

In an EPC project with phase 1 interaction, the EPC supplier will be responsible for the following:

- Implement phase 1 in a contract-based partnership with the EPC customer
- Implementing phases 2 and 3 as a turnkey enterprise

To procure an EPC supplier in line with a new implementation model with partnership in phase 1, templates and tools developed for this model are used. These must be adapted to the individual building owner / municipalities goals for the project.

This guideline mainly focuses on the initial phases (0 and 1) of an EPC project.

6. EPC Toolbox

New tools and instruments for introduction of EPC and procurement of EPC Supplier is developed. The templates are adapted to the new implementation model for EPC with partnership in Phase 1.

A guide to Guide to EPC is developed in the framework of the EFFECT4buildigs project. The EPC Guide introduces the new implementation model based on experiences in the countries involved in the EFFECT4buildings project.

Based on this guide a toolbox of 9 documents and templates adapted to the new implementation models' various phases is implemented, primarily emphasising the first two phases. Experiences from past EPC projects shows that decisions made early are crucial. The goal is to promote EPC as an energy saving model and simplify the start-up of an EPC project.

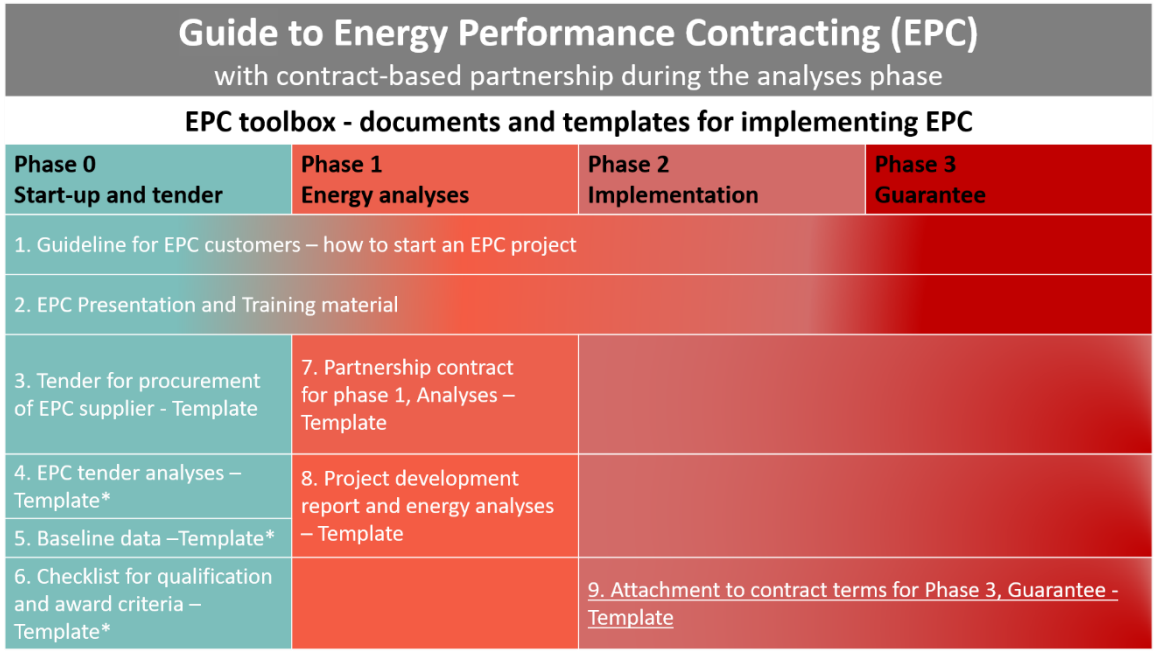
The EPC Toolbox consists of the following documents:

1. Guideline for EPC customers – how to start an EPC project
2. EPC presentation and Training material
3. Tender for procurement of EPC supplier - Template
4. EPC tender analyses - Template
5. Baseline data - Template
6. Checklist for qualification and award criteria - Template
7. Partnership contract for Phase 1, Analyses - Template
8. Project development report and energy analyses - Template
9. Attachment to contract terms for Phase 3, Guarantee - Template

Both The EPC Guide and the EPC Toolbox can be found at the EFFECT4buildins webpage here[6].

[6] http://www.effect4buildings.se/

Below is a schematic overview of the adapted tools and instruments for EPC:



**Not considerably altered compared to traditional EPC implementation model documents*

7. Financial support schemes and financing

An overview of financial support schemes, available grants and financial possibilities in the Baltic Sea Region can be found at the EFFECT4buildins webpage under the heading "Funding Guide" here[7].

8. Useful links and documents on EPC

- EFFECT4buildings international website - http://www.effect4buildings.se/
- EPC Nordic – Market report on EPC in the Nordic countries, 2016
- EPC pre-check – Find out if an EPC works for you
- Six Norwegian EPC municipalities and their experiences (Norwegian)
- Market report on EPC in Europe, guarantee 2016
- Market report on EPC in Norway, guarantEE 2017
- The official Norwegian Standard for EPC, NS6430:2014

[7] http://www.effect4buildings.se/

Interreg Baltic Sea Region

EUROPEAN UNION

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EU STRATEGY FOR THE BALTIC SEA REGION FLAGSHIP

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