



european energy
service initiative 2020

EVALUATION REPORT

on existing EPC projects

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Objective of evaluation

The target audiences of EPC database are facilitators (consultants, energy agencies, etc.) and final customers (for example predominantly decision makers, officials of public administrations or city governments). It provides a single point of access to high quality EPC reference, guidance and marketing information.

The access to the evaluated and relevant reference project information will be organized from a user's point of view. In addition to key information on the project the idea is also to provide contact data of stakeholders of the relevant projects to enable interested parties to receive and exchange first hand experience.

Structure of information of the EPC project

Information about project is divided into three groups – basic information, timing of the project and project specifications.

Basic information includes especially information about customer, EPC facilitator and EPC provider, type of awarding procedure and type of provided financing.

Timing of project states among dating of procurement procedure and installation measures also the duration of the entire contract.

The third group including project specification is given to the description of installed measures, the amount of investment and achieved savings.

Template for the example of EPC project (see next pages).

Information structure of the EPC project for the Best Practice Database	
Basic information	
Facility (project title)	
Photo (including copyright)	jpg, horizontal, at least W:650 H:250 pixel
City, region (site)	
Country	
EPC customer - name	
EPC customer - logo	
EPC customer - contact (e-mail address)	
EPC customer - web link	
Type of customer	Municipality
	Region
	State
	Other public: ...
	Private
Building type	School/university
	Healthcare facility
	Cultural building
	Sport facility
	Prison, fire department, police, army building
	Administration/office building
	Commercial
	Industry
Other: ...	
Number of buildings	
Climatic region	Continental
	Dry (arid and semiarid)
	Humid subtropical
	Mediterranean
	Oceanic
EPC facilitator - name	

EPC facilitator - web link	
Type of EPC	Standard EPC
	Integrated energy contracting
	EPC with thermal insulation
	EPC with subsidy
	EPC "light"
	Street lighting EPC
Awarding procedure	Negotiated procedure
	Competitive dialogue
	Direct award of contract
	Open tender procedure
	Restricted tender procedure
Financing provided by	> 50% by client
	> 50% by EPC provider
	100% by client
	100% by EPC provider
EPC provider - name	
EPC provider - web link	
Timing of the project	
Year of procurement procedure	
Year of installation measures	
Contract duration	< 3 years
	3-8 years
	9-12 years
	> 12 years
Project specifications	
Implemented measures (by alphabet)	Boiler refurbishment
	Combined heat and power (CHP)
	Cooling
	Energy management
	Fuel change
	Heat recovery
	Heating system
	Hot water
	Insulation basement ceiling
	Insulation upper floor ceiling
	Lighting
	Measuring and control system
Renewable energy source	

	Thermal insulation building shell
	User trainings
	Ventilation and air conditioning
	Water saving measures
	Windows exchange
Investment (EUR)	< 50.000 EUR
	> 50.000, < 500.000 EUR
	> 500.000, < 2.000.000 EUR
	> 2.000.000 EUR
Annual energy costs - baseline (EUR)	< 50.000 EUR/year
	> 50.000, < 200.000 EUR/year
	> 200.000, < 500.000 EUR/year
	> 500.000 EUR/year
Guaranteed savings (%)	
Annual guaranteed savings (EUR)	< 50.000 EUR/year
	> 50.000, < 150.000 EUR/year
	> 150.000, < 300.000 EUR/year
	> 300.000 EUR/year

EPC best practice generally

From implemented best practice is evident that the EPC projects are typical successful on public buildings, which can be explained by suitable conditions in public buildings regarding constant energy use and possibilities for central energy management installations. Increasing financing problems for own investments by public budget. Therefore most often customer of EPC projects is municipality or state. There are most commonly used objects are in the areas of education, health, culture and administration. Successfully developed is area of street lighting.

For now the use of the EPC method in private sector is controversial because of legal and ownership relations.

EPC method can be used in individual separate buildings, and preferably for complexes of buildings belonging to one owner. The advantage of the inclusion to the group of building is the option to include objects with worse payback, which can be covered by object with better payback.

In our list of best practice projects there was most frequently used standard type of EPC consisting in the implementation of energy saving measures by ESCO, which is not the facilitator and supplier of energy, but only guarantee to achieve savings for the contract. These companies mainly provide 100% of the investment costs through bank loans.

The method of selecting providers in each country differs in relation to local legislation. There is represented as negotiated procedure - candidates who meet the qualifying conditions are chosen in several selection rounds. Next, open procedure, which is not based on a series of negotiations, but straight to the assessment of the qualification of ESCO and criteria of submitted bids. In several cases, there is used a direct award of contract.

The implemented measures included in particular those with a shorter payback period. We find especially type of measures as energy management, measuring and control system, then measures related to heating, hot water, ventilation or lighting, generally in the range of investment between 500.000 and 2.000.000 EUR or more. Measures including improving thermal insulation of the construction are due to investment performance and long payback period represented in minimum.

The greatest savings can be certainly achieved in buildings with the high energy consumption. This also applies for the selected best practice, where annual energy costs counts more than 500.000 EUR.

Savings which are guaranteed by EPC projects is mostly in the range 30 to 50%.

List of EPC best practice examples

As part of the activities associated with the project EESI 2020 was compiled list of projects as best practice examples database.

The list is compiled by dividing the countries where the projects were implemented in alphabetical order of countries.

Austria

- EPC in Ansfelden
- Greenlight 1, Graz
- Comprehensive refurbishment and enlargement of Kindergarten, Burgenland
- Light and Energy Supply Contracting for a Conference Centre & Guesthouse

Belgium

At the moment there is no best practice EPC example. EPC projects are at the various stage of development.

Bulgaria

- EPC in Elverum Municipality

Croatia

At the moment there is no best practice EPC example. EPC projects are at the various stage of development.

Czech Republic

- National Theatre, Národní 2, 110 00 Praha 1
- Schools in Prague 13, Praha 5
- State Opera Prague, Wilsonova 4, 110 00 Praha 1
- Institute for the care of mother and child, Podolské nábřeží 157/36, 147 00 Praha 2
- PENAM Bakery, Nádražní 8, 665 01 Rosice
- Buildings and objects in the Pardubice Region

Germany

- Beuth Hochschule Technik, Luxemburger Straße 10, 13353 Berlin
- Jewish Museum, Lindenstraße 9-14, 10969 Berlin
- Correctional facility Moabit, Berlin
- Energy Saving Partnership, Pool 26, Berlin
- EPC light Pankow, Berlin
- Hamburg University of Applied Sciences, Berliner Tor 5, 20099 Hamburg

Ireland

- Royal Victoria Eye & Ear Hospital, Adelaide Road, Dublin
- Liffey Meats, Ballyjamesduff, CO. Cavan

Norway

- Lier Municipality, Buskerud county
- Eiker Municipalities, Øvre Eiker and Nedre Eiker, Buskerud county

Spain

- Energy efficiency in geriatric centers, Valencia
- Gran teatre del LICEU, La Rambla, 51-59, 08002 Barcelona
- Tona's City Hall, Tona, Barcelona

In total, there were gathered information and data about 24 best practice examples.

Conclusion

Good examples of projects would be possible to find a lot more, but in the context of the database was to focus on a specific information structure, which is quite difficult for most good examples focus.

The resulting database will be expanded and supplemented to become a project overview, as good examples for the application of EPC in accordance with the Directive on energy efficiency (EED 2012/27/EU).