



D2.4 Country Report on Identified Barriers and Success Factors for EPC Project Implementation

NORWAY



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Drammen

Authors

Thea Marie Mørk

tmm@nee.no

NEE

www.nee.no

Input from:

Kjell Gurigard

Kjell Gurigard AS

kjell@gurigard.com

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Abbreviations

EESI - European Energy Service Initiative (EIE project)

EPC – Energy Performance Contracting

ESCO – Energy Service Company (EPC provider)

1 Summary

The present report aims at providing an overview of the existing EPC market in Norway. The report focuses on identified barriers and success factors for the implementation of EPC projects.

The report is building on the data and information gathered by other similar projects, like Eurocontract, ESPARR and the European Energy Service Initiative¹ (EESI). It is also intended as a continuation on the work of the European Commission's Joint Research Centre – Institute for Energy, and more particularly on its 2010 Status Report on Energy Service Companies Market in Europe².

The Norwegian EPC market is still small, but developing. There are currently around 10 active ESCOs, 5 with major experience. Over the last 3 years 32 municipal EPC projects have been initiated. A national standard for EPC contracts has been developed based on standard documents for EU projects (Eurocontract/EESI), and will be launched in 2014.

The main barriers for EPC in Norway have not changed significantly over the last few years:

- Lack of incentives for energy efficiency in general and EPC in particular
- Lack of knowledge on EPC and energy use
- Lack of capacity within municipalities to initiate and follow-up EPC projects
- Few success stories

¹ <http://www.european-energy-service-initiative.net/eu/toolbox/national-reports.html>

² http://iet.jrc.ec.europa.eu/energyefficiency/sites/energyefficiency/files/escos-market-in-europe_status-report-2010.pdf

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2 Introduction

2.1 Methodology

The contents of this report are based on two main sources:

- the results of an EPC survey which was conducted among the country's main actors within the EPC market
- the market knowledge of the authors, as well as research from local / national literature (publications and studies, legislation documents, official statistics and databases)

The first step in collecting the data used in this document was to distribute a survey focused on Energy Performance Contracting (EPC) to the country's most relevant energy services companies, organisations and public agencies/policy makers. The survey contained questions around four main areas: existing ESCOs and national EPC market; EPC models, financing models and policy initiatives. The answers were then analysed and the results are presented in this report in aggregated form.

Once the survey responses had been obtained, additional information was gathered by the authors in order to present a thorough and up-to-date picture of the state of the EPC market in Norway.

2.2 What is Energy Performance Contracting

Energy performance contracting (EPC) is when an energy service company (ESCO) is engaged to improve the energy efficiency of a facility, with the guaranteed energy savings paying for the capital investment required to implement improvements. Under a performance contract for energy saving, the ESCO examines a facility, evaluates the level of energy savings that could be achieved, and then offers to implement the project and guarantee those savings over an agreed term.

A typical EPC project is delivered by an Energy Service Company (ESCO) and consists of the following elements:

- **Turnkey Service** – The ESCO provides all of the services required to design and implement a comprehensive project at the customer facility, from the initial energy audit through long-term Monitoring and Verification (M&V) of project savings.
- **Comprehensive Measures** – The ESCO tailors a comprehensive set of measures to fit the needs of a particular facility, and can include energy efficiency, renewables, distributed generation, water conservation and sustainable materials and operations.

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- **Project financing** – Sometimes the ESCO arranges for long-term project financing that is provided by a third-party financing company, typically in the form of a bank loan.
- **Project Savings Guarantee** – The ESCO provides a guarantee that the savings produced by the project will be sufficient to cover the cost of project financing for the life of the project.

Energy Performance Contracting allows facility owners and managers to upgrade ageing and inefficient assets while recovering capital required for the upgrade directly from the energy savings guaranteed by the ESCO. The ESCO takes the technical risk and guarantees the savings.

The ESCO is usually paid a management fee out of these savings (if there are no savings, there is no payment) and is usually obligated to repay savings shortfalls over the life of the contract. At the end of the specific contract period the full benefits of the cost savings revert to the facility owner.

The methodology of Energy Performance Contracting differs from traditional contracting, which is invariably price-driven. Performance contracting is results-driven: ensuring quality of performance. ESCOs search for efficiencies and performance reliability to deliver contractual guarantees.

While there is a vast number of definitions of EPC within Europe, the Energy Efficiency Directive³ (EED) finally provided EU wide definition as follows:

“energy performance contracting means a contractual arrangement between the beneficiary and the provider of an energy efficiency improvement measure, according to which the payment for the investment made by the provider is in relation to a contractually agreed level of energy efficiency improvement or other agreed energy performance criterion, such as financial savings”.

While within the Transparense project we stick with the EU wide definition, the focus will be given to the EPC projects, where the above mentioned “agreed level of energy efficiency improvement” are **guaranteed** by the EPC provider.

³ Directive 2012/27/EU of the European Parliament and of the Council on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC was approved on 25 October 2012.

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3 The EPC market in Norway: an introduction

The Norwegian EPC market has developed considerably over the last 2-3 years, but it is still immature and small. In the years before 2008 there were sporadic occasions of EPC or similar projects. Various companies offered versions of “energy saving with guaranteed results”, but the market response was not high. Some pilot projects on outsourcing or result based contracts were initiated through an EU/SAVE project, mainly in the private sector, but the contents differ from the EPC concept as defined in this report.

Low energy prices over the last years and expected for the coming years result in low interest in energy measures in general, and the recent finance crisis has led to less interest from the banking sector.

However focus on climate both in media and in municipalities through Climate plans (not mandatory but strongly encouraged) has resulted in focus on energy use in public buildings, where EPC can be a strong tool. In addition some EU projects (Eurocontract and EESI) have been in place to promote knowledge on EPC, conduct training, initiate pilot projects and develop tools. In addition the “Green municipalities” initiative by KS⁴ has played an important role in spreading information about the EPC concept and model, and in developing model documents. The focus has been on public buildings, with schools, offices and nursing homes as the main building types.

Based on the EU and KS initiatives work to develop a national standard for EPC contracts was initiated in 2012. The standard is submitted for public hearing in the end of 2013. Having an official standard will be important in further promotion of EPC as it will remove many of the barriers related to trust, public procurement and “outsourcing”.

There are currently maximum 10 active and experienced ESCOs on the Norwegian market, and usually around 5 bidders for contracts. Some local actors have also shown interest but so far not been able to win a project. The ESCOs have a limited number of EPC personnel – and even more on EPC experts, which is currently a barrier as the ESCO capacity run out.

Over the last 3 years (2010-2013) in total 32 tenders for municipal EPC projects have been published. The market is expected to increase further in the years to come when good experiences have been made and as the actors and procedures become more professional.

All the respondent of the Transparensense survey have indicated that they believe that the Norwegian EPC market will increase significantly in the years to come.

⁴ The Norwegian Association of Local and Regional Authorities

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4 Legislative framework

Due to low energy prices and excess hydro power energy saving in Norway has not traditionally been high in focus. After the deregulation of the energy market in 1991 various efforts have been put into energy saving, but there are still large potentials. In 2001 the national energy agency Enova SF was funded. They have introduced several campaigns and grant programs aimed at both heat production and energy saving. No major focus has however been put on EPC as a tool, but over the last couple of years Enova has supported training and marketing of EPC as a model.

There is no other legislative enforcement of energy efficiency or EPC. There are no demands on energy use in existing buildings, only in new through building regulations. Public administrations have had few formal incentives to implement energy saving or climate measures. Strained economies, lack of knowledge and time and organisational issues have resulted in little focus on this. Some personal initiatives have shown good results, but without proper management systems these become very vulnerable.

The main legislative framework for EPC in Norway is the coming national standard (NS6430) for EPC contracts. This is originally based on model documents from EU/KS projects, where guidelines have also been developed.

The municipal Climate plans are also important as they usually describe objectives for energy saving in public buildings. EPC can be a tool to reach these goals.

5 Identified Barriers

Based on a market survey conducted in the Eurocontract in 2006, input from national Eurocontract/EESI project partners, experiences from the pilot projects and the Transparense survey the following barriers were identified as the most important for diffusion of EPC in Norway (in random order):

1. Lack of incentives to implement energy efficiency measures (low energy prices, no regulations).
2. Lack of knowledge on EPC both among municipalities and ESCOs, lack of documented experiences and success stories (decreasing but still important).
3. The process before an EPC contract can be complicated and expensive because extensive amounts of information have to be collected to develop tendering documents.
4. Insecurity about legislation and framework (public procurement)
5. Lack of capacity (time and knowledge)
6. Insecurity around the process and tendering/contract documents

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7. Lack of project facilitators
8. Lack of available and experienced ESCOs

Other barriers for public building owners are:

- Focus on investment costs, not on operation costs. Budgeting issues.
- Savings go to the administration not the building users. The profits "vanish".
- Building owners are conservative and not used to buying services. Fear of losing control and responsibilities.
- Low energy prices in Norway leads to longer payback times and less interest in energy saving measures.

The lack of ESCOs has been an issue in particular in remote geographical areas. The building owners have complained that the competition is not sufficient. The ESCOs have limited capacity and are only interested in the best projects (most profitable, short travelling distances, highest potentials etc).

5.1 Regulatory and administrative barriers

5.1.1 General regulatory barriers

The regulatory barriers connected to lack of incentives are not easy to solve as they are part of the general energy/building market. Increased focus on climate issues have shown and is expected to continue to show increased focus on energy efficiency measures.

5.1.2 Regulatory and administrative barriers in the public sector

The barriers regarding public procurement will be reduced with the introduction of the standard for contracts. This will act as proof that EPC meets the public procurement regulations.

5.2 Financial barriers

Financial issues were previously believed to be the biggest barrier towards energy efficiency – and hence the major advantage with EPC. However the recent development in the EPC market has shown that the public building users who choose EPC as a tool usually provide

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their own funding, usually through KBN⁵, the state funding bank for municipalities. The main advantages with EPC is the saving guarantee and the fact that major building upgrades can be implemented over a short time period with one contractor.

6 Success factors

6.1 Successful regulatory and structural models

Important success factors for EPC are:

1. Marketing of and training in EPC – by use of good examples
2. Grants for the contract process. Training of actors. Standard documents.
3. Standard tendering and contract documents. Guidelines.
4. The authorities (e.g. Enova) should market EPC actively towards building owners and operators and offer courses for the involved actors (building owners, ESCOs and finance institutions). This will give a legitimacy and approval of EPC that will be seen as positive in the market
5. For each project:
 - a. Sale should start at the management (understanding of non-energy related advantages/financing, power to decide on projects)
 - b. Involve technical personnel in the buildings (important in decision making, understands the value of energy use from a technical aspect, needs reassurance)
 - c. Offer flexible solutions adapted to the customer (not to overwhelm)
6. Energy prices: higher energy prices in Norway in the future would lead to better profitability of energy saving measures and increase the interest in EPC.

EPC facilitators

Experiences show that the municipalities often need external help in preparing an EPC project – a project facilitator. The work load and skills involved in preparing tender documents, finding building data and selling the project idea in the organisation (to get formal agreement and involvement of operating personnel) means that consultants can be

⁵ <http://www.kommunalbanken.no/kbn-uk/about-kbn/general/about-kbn/>

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essential. In this context the division between preparing and participating in bids must be strong. As the market is very limited and the actors are few this can be a practical problem for the building owners (have to use one consultant to prepare the bid and the same cannot be the contracting ESCO). The availability of project facilitators is a barrier in the current EPC market.

The ESPARR project points to the importance of local enthusiasts as a major driving force in an EPC project. These people need both the technical skills to understand the importance of energy saving and the institutional skills to be able to get the idea heard and accepted. Implemented projects have been based on administrative initiatives, not political.

Another issue is the trust in EPC. The formal recognition from actors like the national energy agency and KS plays an important role. Marketing of tools and good examples are vital for the market trust. Training of both building owners and ESCOs with the public actors involved makes a big difference in the market development.

Studies have shown that which political parties the municipalities are run by does not make any difference as to whether they go for EPC or not. This proved the hypothesis that socialist run municipalities were more sceptical towards private cooperation wrong.

6.2 Successful financing models

The model presented by the KBN (state owned municipal bank) with “green interest rates” for energy efficiency investments have proven very successful. Neither the remaining financial sector nor the ESCOs have been able to compete with this solution, which is used by all projects tendered over the last few years. As a result there are no significant financial barriers for public building owners in Norway with relation to project investments. The administrative costs (project identification/preparation, procurement, management and evaluation) can however still be an issue in strained municipalities.

Grant programs run by the authorities exist but provide low support rates. An increase in these could push the market in the right direction.

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- EESI report “D6.2 Draft policy recommendations paper”, NEE
- EESI report “D6.3 National EPC position paper”, NEE
- Input from national EPC expert/facilitator Kjell Gurigard (interview 8.1.14 etc).
- KS web site: www.ks.no
- KNB web site: www.kommunalbanken.no

Definitions and glossary

Term	Definition
energy efficiency (EE)	means the ratio of output of performance, service, goods or energy, to input of energy (as defined by EED)
energy efficiency improvement	means increase in energy efficiency as a result of technological, behavioural and/or economic changes (as defined in EN 15900:2010)
energy management system	means a set of interrelated or interacting elements of a plan which sets an energy efficiency objective and a strategy to achieve that objective (as defined by EED)
energy savings	means an amount of saved energy determined by measuring and/or estimating consumption before and after implementation of an energy efficiency improvement measure, whilst ensuring normalisation for external conditions that affect energy consumption (as defined by EED)
final energy consumption	means all energy supplied to industry, transport, households, services and agriculture. It excludes deliveries to the energy transformation sector and the energy industries themselves (as defined by EED)
guarantee of energy efficiency improvement	means commitment of the service provider to achieve a quantified energy efficiency improvement (as defined in EN 15900:2010)
energy performance contracting (EPC)	means a contractual arrangement between the beneficiary and the provider of an energy efficiency improvement measure, verified and monitored during the whole term of the contract,

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where investments (work, supply or service) in that measure are paid for in relation to a contractually agreed level of energy efficiency improvement or other agreed energy performance criterion, such as financial savings (as defined by EED)

EPC provider

means a natural or legal person who delivers energy services in the form of Energy Performance Contracting (EPC) in a final customer's facility or premises

energy service provider /energy service company (ESCO)

means a natural or legal person who delivers energy services or other energy efficiency improvement measures in a final customer's facility or premises (as defined by EED)

energy service (ES)

the physical benefit, utility or good derived from a combination of energy with energy-efficient technology or with action, which may include the operations, maintenance and control necessary to deliver the service, which is delivered on the basis of a contract and in normal circumstances has proven to result in verifiable and measurable or estimable energy efficiency improvement or primary energy savings (as defined by EED)