



COUNTRY REPORT ON THE ENERGY EFFICIENCY SERVICES MARKET AND QUALITY

Latvia



QualitEE Project

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The QualitEE consortium comprises 12 partner organisations covering 18 European countries, an expert advisory board, including the European standards body CEN/CENELEC, and 59 supporters from major financial institutions, government bodies, trade associations and certification bodies.

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Definitions and glossary

Term	Definition
Client	means any natural or legal person to whom an energy service provider delivers energy service
Energy Efficiency Directive (EED)	means Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency
energy efficiency improvement*	means increase in energy efficiency as a result of technological, behavioural and/or economic changes
energy efficiency*	means the ratio of output of performance, service, goods or energy, to input of energy
energy efficiency service (EES)**	means an agreed task or tasks designed to lead to an energy efficiency improvement and other agreed performance criteria
energy efficiency improvement*	means an increase in energy efficiency as a result of technological, behavioural and/or economic changes
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
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, 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
energy supply contracting*** (ESC)	means a contractual arrangement for the efficient supply of energy. ESC is contracted and measured in Megawatt hours (MWh) delivered
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
energy service*	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
energy service provider*	means a natural or legal person who delivers energy services or other energy efficiency improvement measures in a final customer's facility or premises
energy*	means all forms of energy products, combustible fuels, heat, renewable energy, electricity, or any other form of energy, as defined

	in Article 2(d) of Regulation (EC) No 1099/2008 of the European Parliament and of the Council of 22 October 2008 on energy statistics
EPC provider	means an energy service provider who delivers energy services in the form of Energy Performance Contracting
ESC provider	means an energy service provider who delivers energy services in the form of Energy Supply Contracting
energy service project facilitator (facilitator)	means an advisory company working on behalf of the client to procure and/or implement an energy service project
Public Procurement Framework	means a standard procurement route for Energy Performance Contracting for use by public sector organisations in the UK that avoids the need to go to full public tender through the Official Journal of the EU. The framework owner offers a standard project development process, contract template and a panel of pre-procured services providers from which one can be selected through a mini-competition process. The framework owners often offer facilitation services and expertise to clients through dedicated project development / support units. Access to the framework and facilitation is often heavily subsidised via European technical assistance grants or claimed back through services fees to reduce barriers to entry.
Integrated Energy-Contracting (IEC)	means a combination of energy efficiency measures with energy supply contracting typically with short term 'operational verification' rather than ongoing Measurement & Verification
Savings	means energy savings and/or related financial savings; the financial savings include the costs of energy provision and can also include other operational costs, such as the costs of maintenance and workforce
The International Performance Measurement and Verification Protocol (IPMVP)	is the widely referenced framework for "measuring" energy or water savings, which is available at www.evo-world.org

Notes

*Definitions according to the Energy Efficiency Directive

**Definition according to the European Standard EN 15900:2010

***Definition is a simplified version of IEA DSM Task Force 16 definition

1 EXECUTIVE SUMMARY

The objective of this report is to compile evidence to inform the development of European & national quality criteria and the implementation of quality assurance schemes for energy efficiency services (EES). This report has been developed as part of the "QualitEE – Quality Certification Frameworks for Energy Efficiency Services" project supported by the EU's Horizon 2020 programme. The QualitEE project aims to increase investment in EES and improve trust in service providers.

Information has been collected through a market survey and literature review. The analysis and conclusions reached are presented in this report as well as in the online database on the QualitEE project website.

This report aims to improve the market knowledge of stakeholders so that they can make well-informed decisions based on evidence. The report lays out the barriers and success factors for energy efficiency services, their quality determinants and the related legal, political and institutional framework. Lessons learned from existing certification frameworks will serve to establish strategies for the implementation of national quality assurance schemes.

Although the first EPC projects have been implemented in Latvia as early as 2009, the EPC market is still small and the concept is new to the clients. EPC projects have been developed in residential, tertiary and industrial sectors, but not in the public sector so far. Usually ESCOs in Latvia are small and medium-sized and have difficulties to attract necessary debt financing from banks. EPC service and project certification would help in gaining more trust from clients and financial institutions. In this report, several experts working with EPC projects have been interviewed to find out their views on quality criteria and implementation of quality assurance schemes for energy efficiency services. Two other well-known H2020-supported projects – “Accelerate Sunshine” and “Sunshine” – are being implemented in Latvia at the moment, offering a standard documentation process for energy efficiency projects in residential and public building sectors. There are substantial differences between QualitEE and Sunshine projects: QualitEE focuses on a wider range of energy efficiency services where the technical criteria can be applied for different kinds of projects whereas Sunshine strictly focuses on deep renovation of buildings. A dialogue between the projects has already been established.

2 INTRODUCTION

2.1 Objective of the report

The objective of this report is to compile evidence to inform the development of European and national quality criteria and the implementation of quality assurance schemes for Energy Efficiency Services (EES). The report has been developed as part of the "QualitEE – Quality Certification Frameworks for Energy Efficiency Services" project supported by the EU's Horizon 2020 programme. The QualitEE project aims to increase investment in EES and improve trust in service providers.

Information has been collected through a market survey in the form of an online questionnaire and personal interviews. In addition, a literature review of relevant local and national documents and publications has been conducted. The analysis and conclusions reached are presented in this report as well as in the online database on the QualitEE project website.

This report aims to improve the market knowledge of stakeholders so that they can make well-informed decisions based on evidence. The report lays out the barriers and success factors for energy efficiency services, their quality determinants and the related legal, political and institutional framework. Lessons learned from existing certification frameworks will serve to establish strategies for the implementation of national quality assurance schemes.

2.2 Scope of the report and definitions

2.2.1 Energy Efficiency Services (EES)

The European Standard EN 15900:2010 defines EES as an agreed task or tasks designed to lead to an energy efficiency improvement¹ and other agreed performance criteria. EES shall include an energy audit (identification and selection of actions, e.g. according to EN 16247) as well as the implementation of actions and the measurement and verification (M&V, e.g. according to IPMVP) of energy savings. A documented description of the proposed or agreed framework for the actions and the follow-up procedure shall also be provided – often referred to as an Investment Grade Proposal. The improvement of energy efficiency shall be measured and verified over a contractually defined period of time through contractually agreed methods (Amann S., Leutgöb K. et al., 2015).

This report focuses on the following key types of energy efficiency services:

-  Energy Performance Contracting (EPC);

¹ According to the EED, "energy efficiency improvement" means "an increase in energy efficiency as a result of technological, behavioural and/or economic changes".

Energy Supply Contracting (ESC).

2.2.2 Energy Performance Contracting (EPC)

According to the Energy Efficiency Directive, "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, where investments (work, supply or services) 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."

The energy efficiency improvement measures described above may also be based on low or no up-front investment. EPC may also include additional services related to efficient energy supply.

The report focuses on EPC projects where the "contractually agreed level of energy efficiency improvement", by the definition above, is guaranteed by the EPC provider. The guarantee of energy efficiency improvement is the commitment of the service provider to achieve a quantified energy efficiency improvement (EN 15900, 2010).

This is in line with the EED, Annex XIII of which lists guaranteed savings among the minimum items to be included in energy performance contracts with the public sector or in the associated tender specifications. Moreover, as per Article 18 of the EED, Member States are required to promote the energy services market and SMEs access to this market by, among other things, disseminating clear and easily accessible information on available energy service contracts and clauses that should be included in such contracts to guarantee energy savings as well as final customers' rights.

The European Code of Conduct for EPC (2014) defines that the EPC provider assumes the contractually agreed performance risks of the project throughout the duration of the EPC contract. These include the risks of not achieving contractually agreed savings as well as design risks, implementation risks and risks related to the operation of installed measures. If an EPC project fails to achieve the performance specified in the contract, the EPC provider is contractually obligated to compensate savings shortfalls that occurred over the life of the contract. Excess savings should be shared in a fair manner according to the methodology defined in the contract.

2.2.3 Energy Supply Contracting (ESC)

"ESC means a contractual arrangement for an efficient supply of energy. ESC is measured in Megawatt hours (MWh) delivered". This definition is a simplified version of the IEA DSM Task Force 16 definition. ESC definitions are not used in Latvia; some of the EPC projects address energy supply along with energy efficiency measures.

2.2.4 Other types of energy efficiency services

Besides energy performance contracting and energy supply contracting, a range of other related energy efficiency services exist, from energy auditing to energy management. Latvian Energy Efficiency Law serves as the umbrella document for EES and defines the main services:

- ✔ energy auditing in industry, companies and buildings;
- ✔ introducing of energy management systems and monitoring;
- ✔ other energy efficiency services.

In Latvia, the EED was transposed into the Energy Efficiency Law in March 2016. According to the law, large enterprises should conduct energy audits or introduce energy management systems according to the ISO 50 001. The law sets the main requirements that should be reflected in energy efficiency service contracts, defines basic requirements for energy audits in industry and for energy management.

2.2.5 Market actors

The main actors operating on EES markets are EES providers, clients and project facilitators.

Within the QualitEE project, we use the EED's definition of an energy service provider:

- ✔ "An '**energy service provider**' is a natural or legal person who delivers energy services² or other energy efficiency improvement measures at a final customer's facility or premises."

We use the commonly used term "ESCO" as the equivalent of energy service provider. We also use the definitions listed in glossary for the following terms:

- ✔ "an '**EPC provider**' is an energy service provider who delivers energy services in the form of EPC";
- ✔ "an '**ESC provider**' is an energy service provider who delivers energy services in the form of ESC";
- ✔ "a '**Client**' is any natural or legal person to whom an energy service provider delivers energy service";
- ✔ "an energy service project '**facilitator**' is an advisory company working on behalf of the client to procure and/or implement an energy service". In the QualitEE project we use the shorter term "facilitator" to denote an energy service project facilitator.

² According to the EED, energy service is "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".

2.3 Sources of data and methodology

2.3.1 Sources of data

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

- ✔ the results of a nationwide EES survey of the country's main actors within the EES market; and
- ✔ a literature review (publications and studies, legislative documents, official statistics and databases) and the market knowledge of the authors.

2.3.2 Survey and interviews

To collect the data used in this document, market actors were approached in the following manner:

- ✔ an online questionnaire was distributed to the country's main EES providers and facilitators;
- ✔ personal semi-structured interviews were conducted with the representatives of financial institutions and client organisations that implement EES projects.

The market and quality survey focused on energy efficiency services presented the stakeholders an opportunity to provide their input and steer the development of quality assurance. The surveys and interviews contained questions about the EES market, barriers and success factors, EES quality determinants, minimum financial information requirements for financial institutions, certification frameworks and EES-related legal, political and institutional frameworks. The answers were analysed and the results are presented in this report in an aggregated form.

Throughout this study the results from the online survey conducted in Latvia are compared with the results from the online survey across 15 European countries (**All Countries**) that responded. A total of 188 respondents participated in the online survey across **All Countries**.

- ✔ Respondents operate in 15 European countries: Austria, Belgium, Bulgaria, the Czech Republic, France, Germany, Greece, Italy, Latvia, the Netherlands, Portugal, Slovakia, Slovenia, Spain and the UK.
- ✔ Respondents include 109 representatives of ESCOs: 53 of them operate on the EPC market only, 11 operate on the ESC market only, 45 operate on both EPC and ESC markets.
- ✔ Respondents include 79 representatives of EES facilitators: 37 of them operate on the EPC market only, 17 operate on the ESC market only, 25 operate on both EPC and ESC markets.

Note: full results from the QualitEE project's survey across 15 European countries – and trend analysis via comparison with previous surveys conducted in 2013 and 2015 by the Transparens project – can be explored via an interactive online navigation tool on the project website at <https://qualitee.eu/market-research/>.

The market in Latvia is still very small; thus, this study reached nearly all of the key stakeholders and experts working in the field. In addition, there are personal interviews conducted with:

- ✔ three representatives of financial institutions and banks, the main providers of loans for EPC projects in Latvia;
- ✔ three EPC clients.

2.3.3 Literature and other sources of data

Apart from the surveys, the report builds on the literature review of the relevant local and national sources (legislative documents, publications and studies, official statistics and databases) and the market knowledge of the authors that builds on 25 years of implementing EES projects and supporting the EES market.

The key sources of information were up-to-date national publications, such as:

- ✔ data and studies by the Association of Energy Service Providers (AESP);
- ✔ publications by the Ministry of Economics of Latvia.

The report also builds on the data and information gathered primarily by the Transparens project and other previous European projects and simultaneous projects in Latvia (Sunshine and Accelerate Sunshine). We also used data from the Status Report on Energy Service Companies Market in Europe by Joint Research Centre.

Some of the core sources of the report:






- ✔ Latvian national laws on energy and energy efficiency;
- ✔ D2.1 online survey (questions are included in sections);
- ✔ D2.2 interviews (similar to D2.1 questions);
- ✔ Information from the Transparens project:
 - D2.5A Country Report on Recommendations for Action for Development of EPC Markets;
 - D4.1 Survey on EPC quality:
<https://drive.google.com/drive/folders/0B0HMqQ7exKppQzISZ3M3bVJEX2M?usp=sharing>;
 - European Code of Conduct for EPC, its signatories and role on the market:
<http://transparens.eu/eu/epc-code-of-conduct/>.
- ✔ JRC EU report:
 - <https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/energy-service-companies-eu-status-review-and-recommendations-further-market-development>.

3 LEGAL AND REGULATORY FRAMEWORKS

The Ministry of Economics is responsible for energy policies in Latvia. However, some support programmes and energy efficiency policies in the municipal buildings sector are administered by the Ministry of Environmental Protection and Regional Development. In 2017 a new Energy Financial Instruments Division was established at the Ministry of Economics, which is going to be responsible for the development of new financing mechanisms for energy efficiency projects. The newly established division will oversee the development of the EPC market. Most of the programs that support energy efficiency projects are administrated by ALTUM – a state-owned development finance institution, and CFCA – the Central Finance and Contracting Agency subordinated to the Ministry of Finance of the Republic of Latvia.

The main energy efficiency policy targets include support for renovation of multi-apartment buildings, increase of energy efficiency in public and industrial buildings, energy efficiency for public lighting systems, increase of energy efficiency in district heating and increase of energy efficiency in the transportation sector.

The Latvian legislative framework for energy efficiency consists of a number of laws and legislative acts. 2030 Energy Strategy is the long-term planning document for the development of the energy sector. A growing number of Latvian municipalities and cities have their own energy plans and sustainable energy action plans. The main legislative acts are as follows:

-  2030 Energy Strategy;
-  Energy Law;
-  Electricity Market Law;
-  Energy Efficiency Law;
-  Law on the Energy Performance of Buildings.

Supporting legislative acts:



-  Cabinet Regulation No. 555 of 12 July 2011, Regulations Regarding the Procedures for Entering into and Supervision of an Agreement Regarding Energy Efficiency Improvement;
-  Cabinet Regulation No. 138 of 12 March 2013, Regulations Regarding Industrial Energy Audit;
-  Cabinet Regulation No. 348 of 25 June 2013, Regulations Regarding the Methodology for Calculating the Energy Performance of Buildings;
-  Cabinet Regulation No. 383 of 9 July 2013, Regulations Regarding the Energy Certification of Buildings;
-  Cabinet Regulation No. 382 of 9 July 2013, Regulations Regarding Independent Experts in the Field of Energy Performance.

There are several programmes for energy efficiency projects that could support EPC as well as ESC. Although there have been a number of successful projects in the residential sector last year, overall there has been no substantial growth of EPC projects. The necessary experience, knowledge and agreed EPC contract forms and financial mechanisms behind them are still lacking. At the moment, legislation for EPC is rather restrictive than supportive. Public budgeting and contracting rules discourage long-term service contracts. Public bodies and municipalities can sign up to five-year service contracts, which is an insufficient amount of contract time for public building renovation projects. If service contracts that extend five years are necessary, the public-private partnership (PPP) framework must be used. Similar barriers have been mentioned before in Transparency D2.5A Country Report on Recommendations for Action for Development of EPC Markets.

Cross-subsidies are mentioned by ESCOs as a general barrier which is distorting energy prices at the regulatory level. District heating companies receive subsidies for refurbishment of heat distribution networks and installation of new energy production loads. On top of this, the high feed-in tariff for electricity produced by CHP has lowered heat energy tariffs in several municipalities, making EPC less competitive. The reduced VAT rate for centralised energy supply and real estate tax (increase of the cadastral value of a building after renovation) are also indicated as regulatory problems for EPC in the residential sector.

3.1 Key governmental institutions

Besides the Ministry of Economics, which is the main institution responsible for energy policy, and the Ministry of Environmental Protection and Regional Development, energy efficiency projects are supported through agencies:

-  ALTUM – a state-owned development finance institution;
-  CFCA – the Central Finance and Contracting Agency.

3.2 Implementation of the EU Energy Efficiency Directive

Directive 2012/27/EU on energy efficiency (EED) establishes a common framework of measures for the promotion of energy efficiency within the EU in order to ensure the achievement of its 2020 20% headline target on energy efficiency.

Article 18 of the EED also imposes obligations on Member States to support the energy services market. In Latvia, the EED was transposed into the Energy Efficiency Law in March 2016. The law defines energy efficiency services as services that guarantee energy savings as a result, and the costs of those energy efficiency services shall be covered with a part of the financial value of the energy efficiency improvement or energy savings that have been achieved via the provision of the said energy efficiency services. The EES provider shall take on the financial, technical and commercial risks of the project. According to the Energy Efficiency Law, if the recipient of energy efficiency services is the government or municipality, the contract could span a time period of up to 20 years. In the report we will focus more on energy efficiency services as defined in the Energy Efficiency Law of Latvia which corresponds

with the definitions of energy performance contracting. Such forms as energy supply contracting or integrated energy delivery contract are not defined in detail in the Latvian law. Energy auditing for buildings and energy auditing for companies are an exception as both services are described in a number of legislative acts and supporting methodologies.

3.3 National strategy documents

3.3.1 National Energy Efficiency Action Plan

The main energy policy pillars of Latvia are the following: a safe, efficient and competitive energy supply in the country; optimal use of energy; economic growth, increased quality of both life and the environment. The main planning document, the Sustainable Development Strategy of Latvia "Latvija 2030", defines increasing self-sufficiency of energy resources and integration into the EU energy networks as priorities in the energy sector. Main energy policy goals are defined in the Order of the Cabinet of Ministers on Energy Development Guidelines 2016–2020. The guidelines outline the following energy efficiency targets:

Non-binding targets:

- ✔ Primary energy savings of 0.670 Mtoe (28 PJ) in 2020. The goal is stated in the National Reform Programme of Latvia for the Implementation of the Europe 2020 Strategy.
- ✔ Reducing the average energy consumption for heating in buildings (climate-adjusted) by 50% compared to 2009, reaching the average energy consumption for heating in buildings of 150 kWh/m² per year by 2020.

Binding targets:

- ✔ Renovate 3% of governmental buildings, estimated 678,460 m² of building area in total. Target set in accordance with Directive 2012/27/EU.
- ✔ Accumulated final energy savings of 0,850 Mtoe (9,896 GWh) by 2020, target set in accordance with Directive 2012/27/EU.
- ✔ Decrease energy intensity from 372.9 kg of oil equivalent per 1,000 euros of GDP in 2010 to 280 kg of oil equivalent per 1,000 euros of GDP by 2020, target is defined in the National Development Plan of Latvia 2014–2020.
- ✔ Share of renewable energy sources (RES) from total gross final energy consumption should be 40% by 2020;
- ✔ Reduction of primary energy savings of 7,792 GWh by 2020.

A number of measures in the heating sector have also been adopted:

- ✔ renovation of apartment buildings and reduction of heat consumption;
- ✔ improvement of heat production efficiency: Latvia should widely use biomass CHP plants and boiler houses with high efficiency (wood, straw) in the heating supply to

major cities; in other cities and towns the existing centralized heat supply systems should increase the efficiency of thermal energy production;

- ✔ investments in centralized heating systems – reduction of heating loss will result in substantial cost savings regarding the purchase of fuel;
- ✔ promotion of rational energy consumption in households: educating the public and raising awareness about energy-saving opportunities;
- ✔ Moving towards nearly zero-energy performance buildings as of 2020.

3.4 Standardisation of energy efficiency services

3.4.1 Model documents

The main principles of EPC contracts are defined in the Energy Efficiency Law of Latvia. Several initiatives have addressed the ESCO market and contracting. Furthermore, the European Code of Conduct for EPC has been developed within the project Transparens and tested in several pilot projects. Information on the Code of Conduct for EPC has been published on the website of the Ministry of Economics of Latvia (https://www.em.gov.lv/lv/nozares_politika/energoefektivitate_un_siltumapgade/energoefektivitate/energoefektivitates_pakalpojumi/). In 2016 and 2017 EBRD financed the development of an EPC contract template for public buildings. At the moment the contract is not used in practice and needs further revisions in accordance with the requirements of the legislation of Latvia. The EPC template will be tested during EPC projects within the framework of the two H2020-supported projects – Sunshine and Accelerate Sunshine (see more at <http://www.sharex.lv/lv/>). Different energy service providers often offer their own template EPC contracts.

3.4.2 Project implementation guidelines

Templates for tender documentations and M&V of energy savings are planned to be devised during the Sunshine and Accelerate Sunshine projects. Supporting documents like project implementation manuals for public sector buildings and for residential sector buildings will also be developed. Project implementation guidelines for energy efficiency projects in the residential sector have already been provided as part of the SunShine project activities.

3.5 European Code of Conduct for EPC

The European Code of Conduct for EPC defines the basic values and principles that are considered fundamental for successful preparation and implementation of EPC projects. The Code of Conduct has been developed within the Intelligent Energy Europe project Transparens in cooperation with EPC providers, clients and European ESCO associations, among others. The two organisations representing ESCOs at the European level – the European Association of Energy Services Companies (eu.esco) and the European Federation

of Intelligent Energy Efficiency Services (EFIEES) – endorse the European Code of Conduct for EPC and support its use when implementing EPC projects and continue in administering and maintaining the Code of Conduct. By the end of October 2017, the Code of Conduct had 234 signatories across Europe. This includes 148 EPC providers, 13 national associations (with 160 members in total), two European associations of ESCOs and 70 facilitators and other signatories. The European administrators organise regular conference calls with national administrators to exchange information about regulatory developments and new projects.

It is expected that the European Code of Conduct for EPC will serve as a harmonised European quality standard of EPC projects, raise potential clients' confidence in the business model and thus lead to higher demand for EPC projects.

The list of the Code signatories is available online and promoted within eu.esco and EFIEES activities (press releases, articles, national and international events). EPC providers who become signatories of the EPC Code undertake to conduct EPC projects in compliance with the EPC Code of Conduct. It is a voluntary commitment of the EPC providers and is not legally binding.

The Code has vast potential to support EPC market development, which can be exploited. For example, it has been used as a discussion guideline between client and EPC provider, guidance for the preparation of tender dossiers and contracts and as a marketing tool. Within the QualitEE project, it is being used as a starting point for developing an energy service quality assurance scheme.

The Building and Energy Conservation Bureau (ESEB) took over the administration of the EPC Code in Latvia on the 1st of August 2015. The Code was signed by four EPC providers and two facilitators. Some details follow on the EPC providers who have signed the EPC Code: eco.NRG Ltd (Atkal Jauns Nams) is an energy services company that specializes in energy efficiency retrofits for Soviet-era multi-family apartment housing which result in reduced energy costs for the building. Projektu Konsultantu Grupa Ltd is a project management company which develops, designs and implements deep renovation projects in the sector of multi-family residential buildings. Renesco Ltd is a social enterprise aimed at improving housing conditions for medium and lower income households, especially in Central and Eastern Europe. Salaspils Siltums is a municipally owned district heating company. Its job is to supply and develop safe, environmentally correct, climate friendly and competitive district heating to customers in the towns of Salaspils and Saulkalne in Latvia. The company is committed to finding comprehensive solutions to the residential buildings they serve, especially since these measures will relieve investments in power generation and distribution. ESEB and Ekodoma have signed the Code as EPC facilitators.

3.6 Support schemes

The Latvian government supports energy efficiency projects for multi-apartment buildings, governmental and municipal buildings, in the industrial sector and for district heating systems. Financial support is usually provided in the form of grants, guarantees to lending

institutions and alternative investment funds or in the form of direct loans if commercial loans are not available in the case of multi-apartment buildings and industries.

State-owned development finance institution ALTUM provides legal background and support for energy efficiency projects in apartment buildings (the government provides direct support or financial incentives to make commercial loans easier for flat owners). The state-owned development finance institution ALTUM offers governmental aid for energy efficiency for the implementation of an energy efficiency improvement project to apartment buildings in the form of a grant or an ALTUM loan with a repayment term of up to 20 years. ALTUM also offers guarantee for a bank loan or a loan provided by an alternative investment fund for 80% of the principal sum of financing for a time period of up to 20 years. Some of the main barriers to this process are the low energy costs and the slow decision-making process regarding the buildings. Very often building owners tend to focus on measures with short to medium payback periods, which usually generate savings of less than 30%. However, most of the buildings require “deep renovation” (comprehensive renovation aiming to improve energy efficiency and solve technical problems). Although according to the Latvian law 51% of owners’ votes are enough to decide on renovation, banks or other financial institutions typically require a vote of at least 75% to make a decision about deep retrofit.

4 ENERGY PERFORMANCE CONTRACTING MARKET

4.1 EPC market actors

EES market in Latvia is underdeveloped. So far EPC has been used in some projects of deep renovation of apartment buildings and in some lighting projects in the tertiary sector. As stated in the JRC-IE report, only five companies were identified as ESCOs offering EPCs as of 2009, a market share of EUR 1–1.5 million (at the moment about EUR 2–3 million/year). Some of the companies and main stakeholders identified during interviews are listed in Table 1. If a wider definition is applied that includes the so-called Energy Service Provider Companies as well, the number of actors is more in the range of 50–60 companies³.

Table 1. EPC providers and facilitators

Company	Sector
eco.NRG http://atkaljaunsnams.lv/lv/atkal-jauns-nams-pakalpojums	ESCO company in the residential sector – deep renovation of buildings
Renesco http://www.renesco.lv/en	ESCO company in the residential sector – deep renovation of buildings
RCG-lighthouse http://rcg-lighthouse.eu/	Industry – lighting projects
Salaspils Siltums http://salaspilssiltums.lv/lv/	Energy production, the residential sector – deep renovation of buildings, facilitator
http://ekubirojs.lv/lv/	NGO – supports deep renovation of buildings using EPC
Ekodoma www.ekodoma.lv	Measurement & verification, energy consultancy, facilitator

The EPC market in Latvia is at the beginning of its development and very few ESCOs are developing projects for now. The most successful EPC projects are being developed in the residential sector but those are long-term projects and usually companies face difficulties to re-finance the existing projects and to develop new ones. ESCOs are small and medium-sized enterprises, they often lack capital and most ESCOs have limited balance sheet capacity and limited opportunities to re-finance their projects. As part of the H2020 projects “Sunshine” and “Accelerate Sunshine”, the Latvian Baltic Energy Efficiency Facility (LABEEF,

³ http://www.changebest.eu/images/stories/deliverables/national_report/task2_1_latvia_final.pdf

<http://fcubed.eu/>) was established, which is an investment fund with the purpose of forfeiting receivables from EPC projects. Here process standardization is very important for attracting private and institutional investors. Some new developments take place in the public sector as four municipalities in Latvia collaborate on solving technical, legal and financial issues and process standardisation with the aim to renovate their buildings and develop the projects using the EPC approach (bundled EPC-based procurement). Each municipality has established a support scheme for deep renovation of multi-family residential buildings. As the total EPC market is relatively small with few active ESCOs, there is no association of ESCOs.

ALTUM, the Ministry of Economics of Latvia and the Ministry of Finance of Latvia are the key actors. The Ministry of Economics is the authority responsible for managing structural funding for energy efficiency in Latvia and also able to adapt/modify rules and regulations to fit and support market development. European Bank for Reconstruction and Development plays a role as a development bank by investing in Latvian Baltic Energy Efficiency Facility, which gives high credibility and creates trust for future proposition of investments. Municipalities are important stakeholders because they own public buildings and sometimes municipal building management companies. They can also help residents decide in favour of renovation of buildings and support them by organizing meetings and making decisions.

Most of the residential buildings in Latvia are served by house maintenance companies. These companies therefore have deep knowledge of the current state of the buildings (i.e. energy data, technical condition, etc.) and are key actors in energy efficiency project development.

4.2 EPC market developments

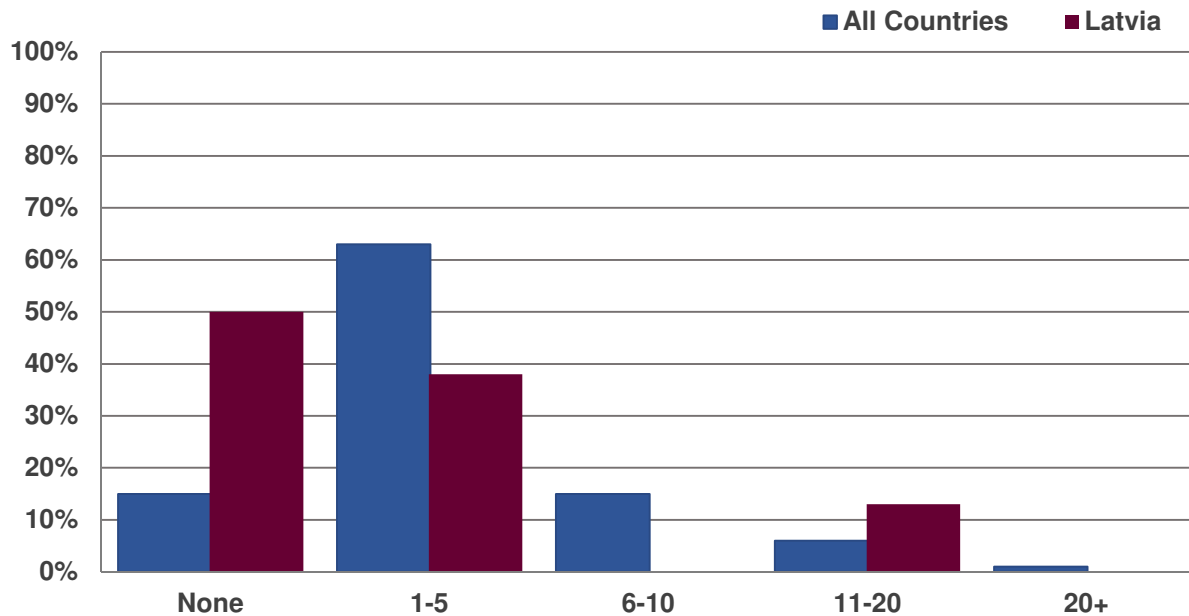
The first EES pilot projects were developed in the Tukums municipality in 2001 in the lighting sector. There are approximately 60 companies providing energy supply services, but very few companies are actively offering EPC. The recent Energy Efficiency Law has served as a stimulus to energy suppliers to get more interested, and they could potentially use EPC to fulfil the obligation to save energy on the side of the consumer. Yet few projects are using EPC at the moment: about 20–30 EPC projects are being implemented in the building and lighting sectors with a total investment volume of about EUR 20 million. Renesco carried out the first EPC-based projects in the residential sector in 2008, and have already implemented EPC-based projects for over 15 multi-apartment buildings (JRC, 2016). As of 2009, EPC has been used in energy efficiency projects in the residential building sector. Street lighting projects supported with grants have been implemented without any performance guarantee, just as business as usual.

The EPC market in Latvia grows very slowly. Thanks to the latest legislation changes, ESCO companies working on EE projects in the residential sector can begin to apply for grants as if doing building renovations in the conventional way, without using the EPC contract form. Given these changes, we can expect that ESCO companies will resume offering their services to residents. In order to overcome the lack of capital for ESCOs, the LABEEF was established. It is financed by the EBRD and the parties have agreed on the first transaction. As part of the

Accelerate Sunshine project activities, four municipalities are involved in tendering the renovation of a portfolio of public buildings using EPC. It is expected that the first EPC for public buildings will be used in 2018/2019. Even so, the EPC share in the total renovation market will remain small.

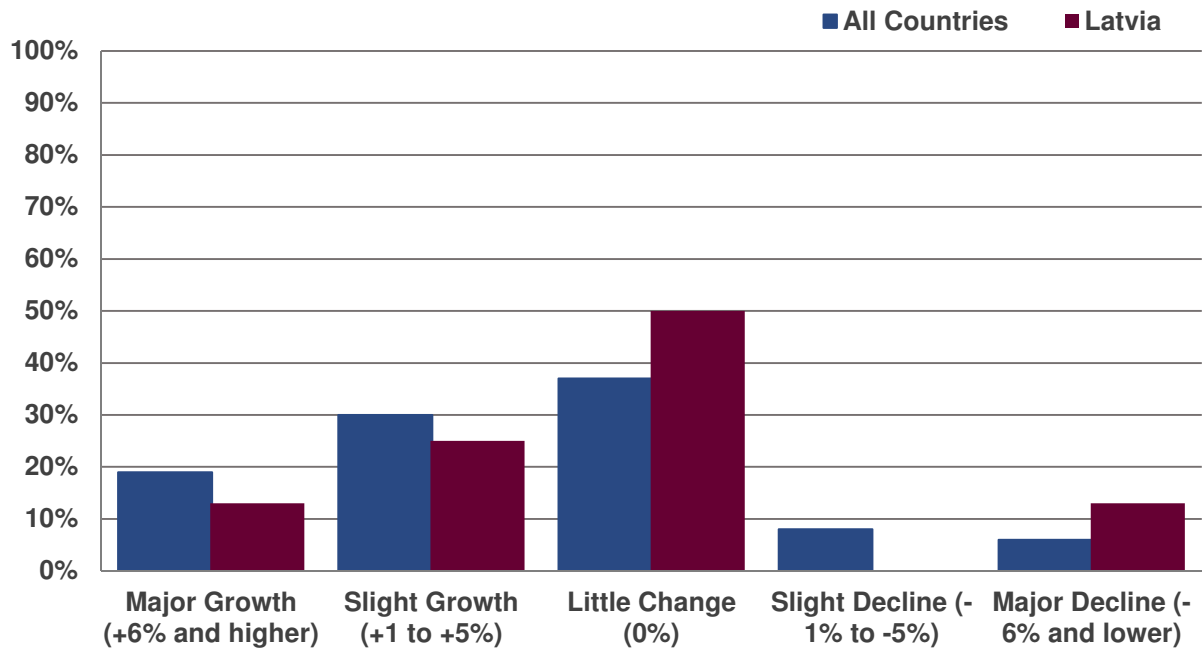
According to the QualitEE survey, 38% of respondents from Latvia were involved in one to five EPC projects and 50% were not involved in EPC projects last year, which is below average compared to other countries. One possible explanation is that until fairly recently, support for energy efficiency projects had been stopped and potential clients were waiting for new EU support programs to start. Almost 13% of Latvian respondents participated in 11–20 projects, which is above the result of All Countries (6%). However, no Latvian EPC providers and facilitators are involved in over 20 projects. There are only a few EPC providers in Latvia, and they often are small and medium-sized companies.

Figure 1. How many EPC projects (that have reached Contract Signature) has your organisation initiated / become involved with in the last 12 months? (Percentage of responses of providers and facilitators, Sept 2017)



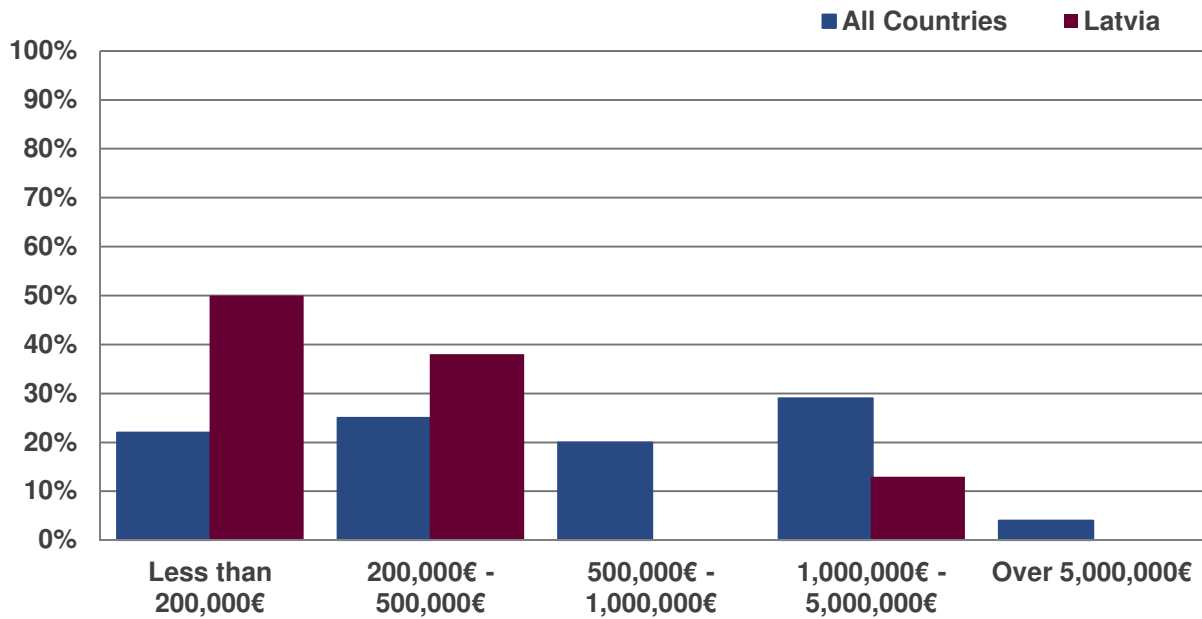
50% of EPC providers and facilitators in Latvia did not see any growth of EPC orders in the last 12 months. 13% of EPC providers and facilitators witnessed a decline in the number of orders. Overall, 38% of respondents experienced growth in EPC markets, which is less than the EU average.

Figure 2. In the last 12 months your EPC orders have seen (Percentage of responses of providers and facilitators, Sept 2017)



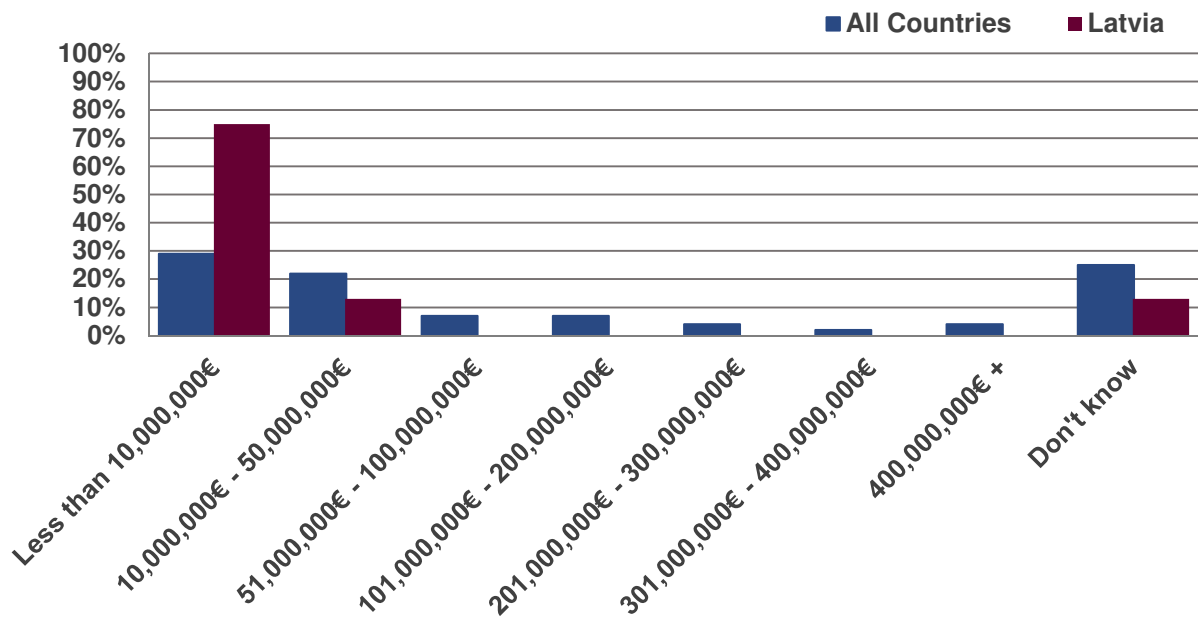
About 88% of EPC projects in Latvia comprise investments of monetary value of less than EUR 500,000. Most frequently, in 50% of cases the value of project investments is less than EUR 200,000, which is above the EU average.

Figure 3. What is the most common overall value (investment outlay) of the EPC projects you are involved in? (Percentage of responses of providers and facilitators, Sept 2017)



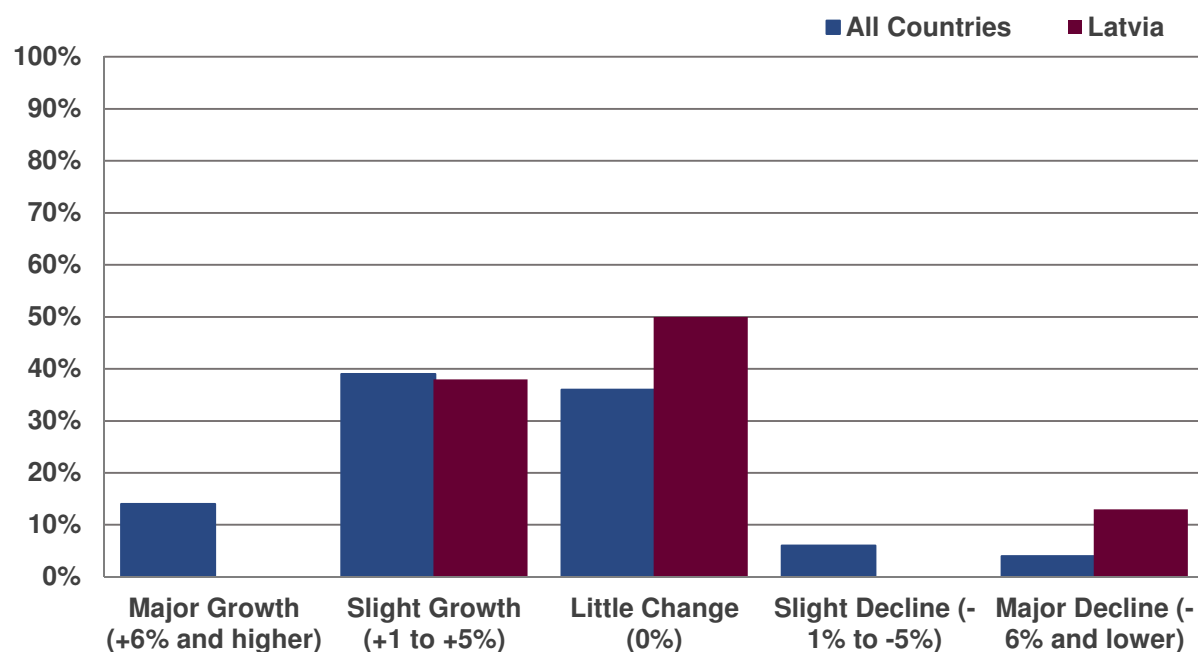
Value of projects over EUR 500,000 is much more common (52% of all projects) in other EU countries than in Latvia. Only 13% of respondents in Latvia are involved in EPC projects worth at least EUR 1,000,000 to EUR 5,000,000. On the other hand, in other EU countries project values are more evenly split between all categories. In Latvia there are no projects with investment value over EUR 500,000. Overall, most of EPC projects in Latvia so far have been implemented in the apartment building sector and are in the investment range of EUR 150,000 to EUR 350,000.

Figure 4. How much revenue do you think the EPC market in your country generated in 2016? (Percentage of responses of providers and facilitators, Sept 2017)



The overwhelming majority of the respondents (75%) believe that the EPC market in Latvia in 2016 was worth less than EUR 10,000,000 and 13% of all respondents admitted they don't know. Slightly over half of EU respondents also consider their respective EPC markets no bigger than EUR 50,000,000.

Figure 5. Over the last 12 months, the EPC market in your country has seen: (Percentage of responses of providers and facilitators, Sept 2017)

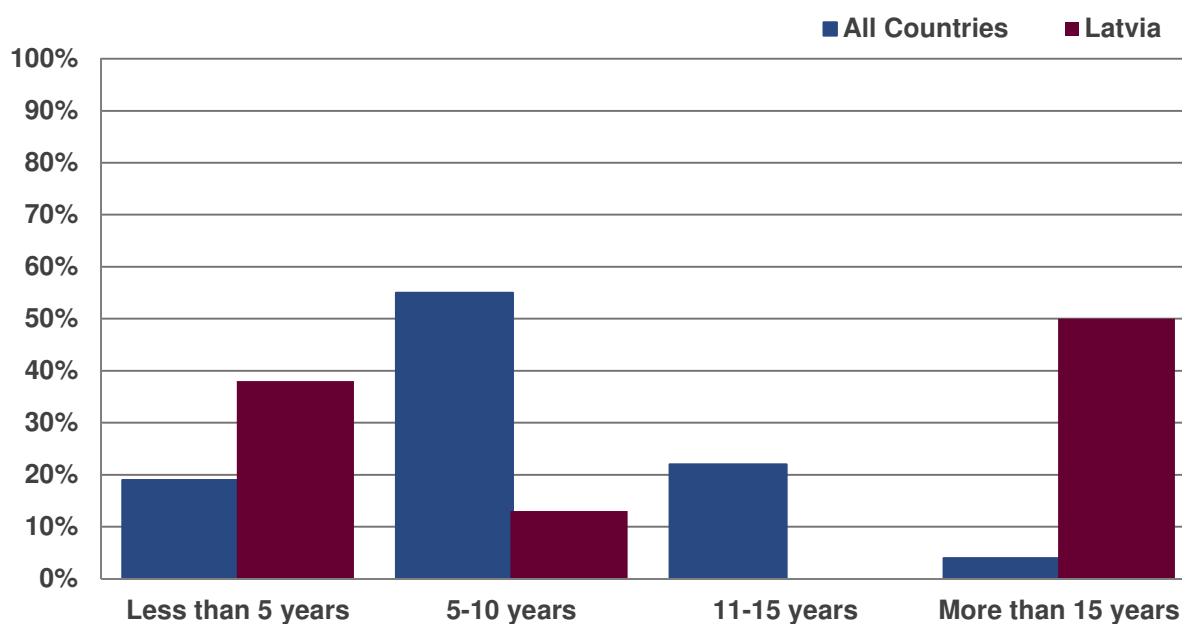


In the opinion of EPC providers and facilitators, the market of EPC services is stagnating or experiencing slight growth in all EU countries. Half of the respondents answered that EPC market in Latvia has seen little changes over the last year. The number of respondents who think the EPC market is declining is fairly small (10% of European respondents and 13% in Latvia). No EPC providers or facilitators in Latvia believe that the EPC market has seen major growth, compared to 14% of EU EPC providers and facilitators.

4.3 EPC business models

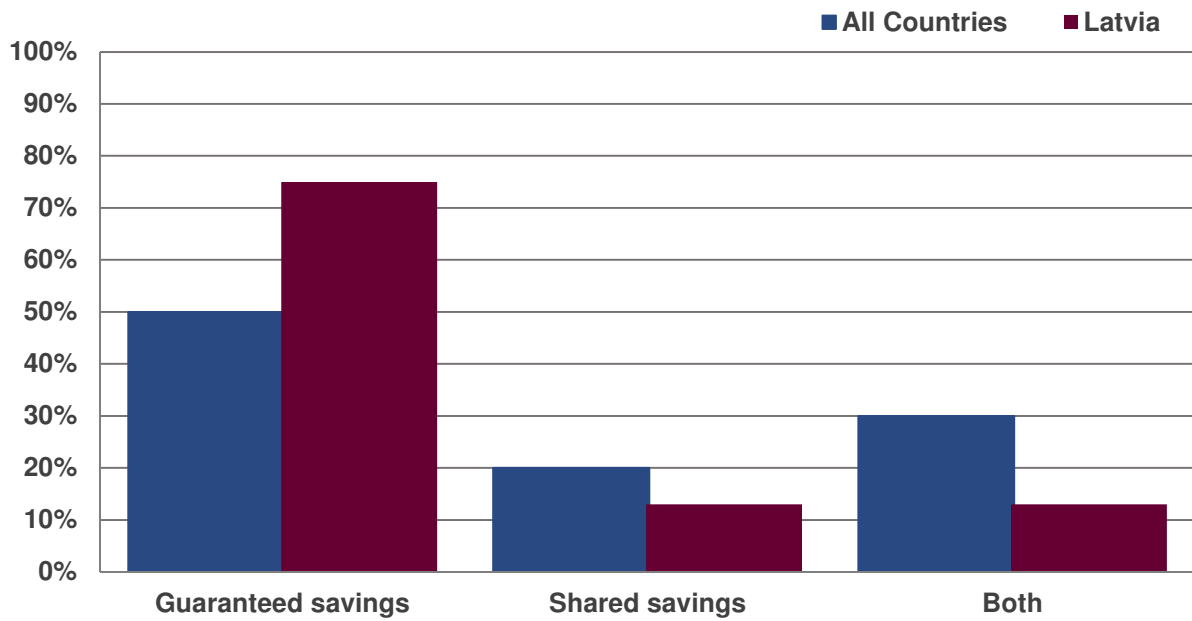
So far in Latvia EPC projects have been most commonly implemented in the residential building and lighting sectors. The durations of EPC contracts in the residential sector are relatively long – up to 20 years, and much shorter in the lighting sector – from 3 to 7 years.

Figure 6. What is the most common duration of the Energy Performance Contracts you are involved in? (Percentage of responses of providers and facilitators, Sept 2017)



As shown by answers, the most common duration of EPC projects in Latvia is more than 15 years (50% of all projects), then come projects with much shorter contracts of less than 5 years. In other EU countries only a small share of projects is longer than 15 years. In other EU countries most of the projects’ duration is 5 to 10 years (55%).

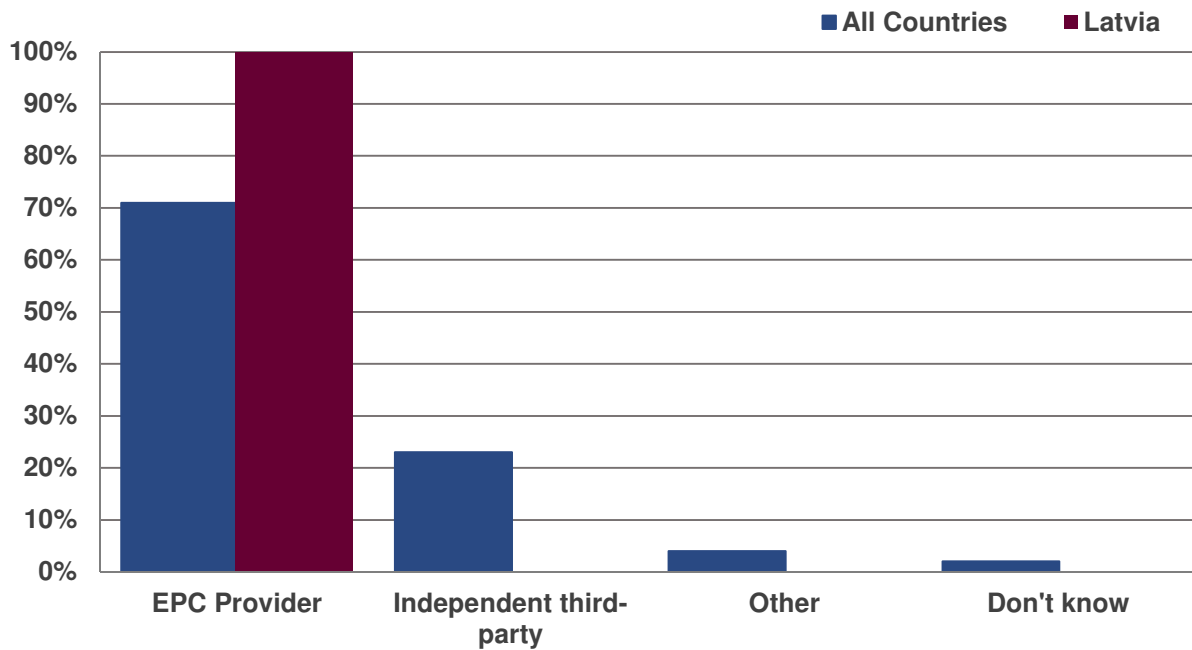
Figure 7. What type of energy savings model is offered in the EPC projects you are involved in? (Percentage of responses of providers and facilitators, Sept 2017)



Note: in a shared savings model, the client pays the ESCO a pre-determined percentage of its achieved cost savings from the project

Answers from respondents clearly indicate that guaranteed savings are by far the most frequently offered energy savings model in projects in Latvia with almost 75% of EPC providers and facilitators stating guaranteed savings as the primary model. Shared savings or both are offered in a minority of cases, in 26% of projects in Latvia.

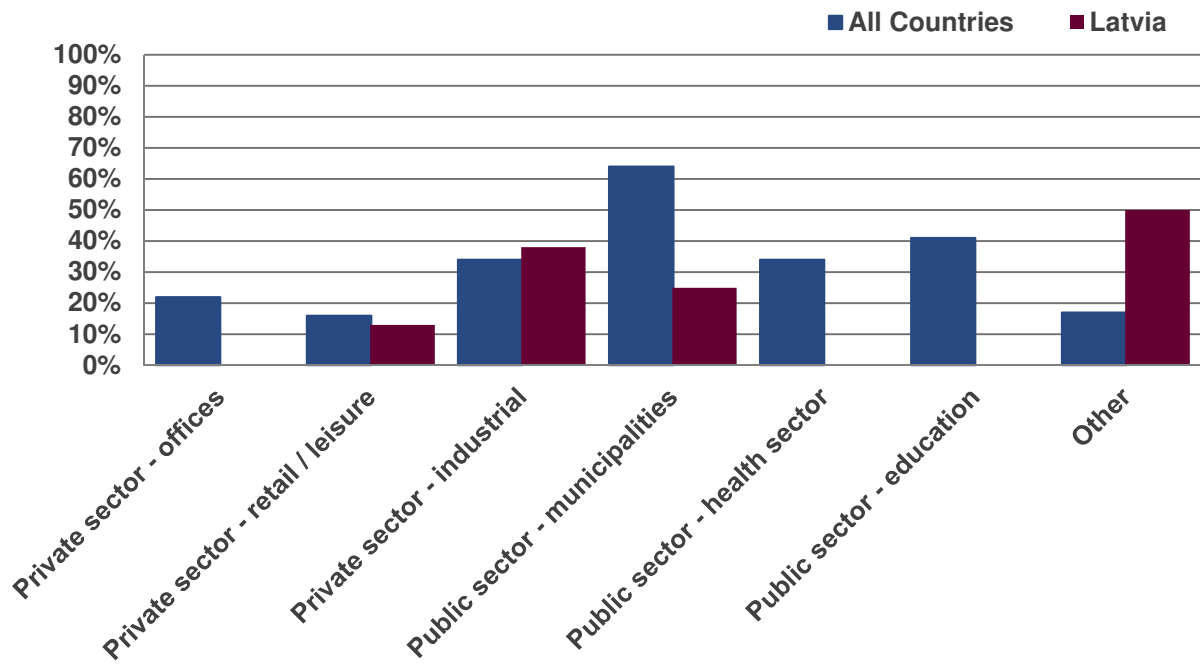
Figure 8. Who typically conducts the energy savings performance analysis in the EPC projects you are involved in? (Percentage of responses of providers and facilitators, Sept 2017)



As shown by answers, in Latvia energy savings performance analysis is always conducted by the EPC provider (100%) which is in line with the European trend that the analysis is also conducted by the EPC provider (71% of respondents from EU countries stated this as primary option). This could be explained by the fact that there are still few EPC projects in Latvia and most of the time the know-how is with the EPC provider.

4.4 EPC market sectors

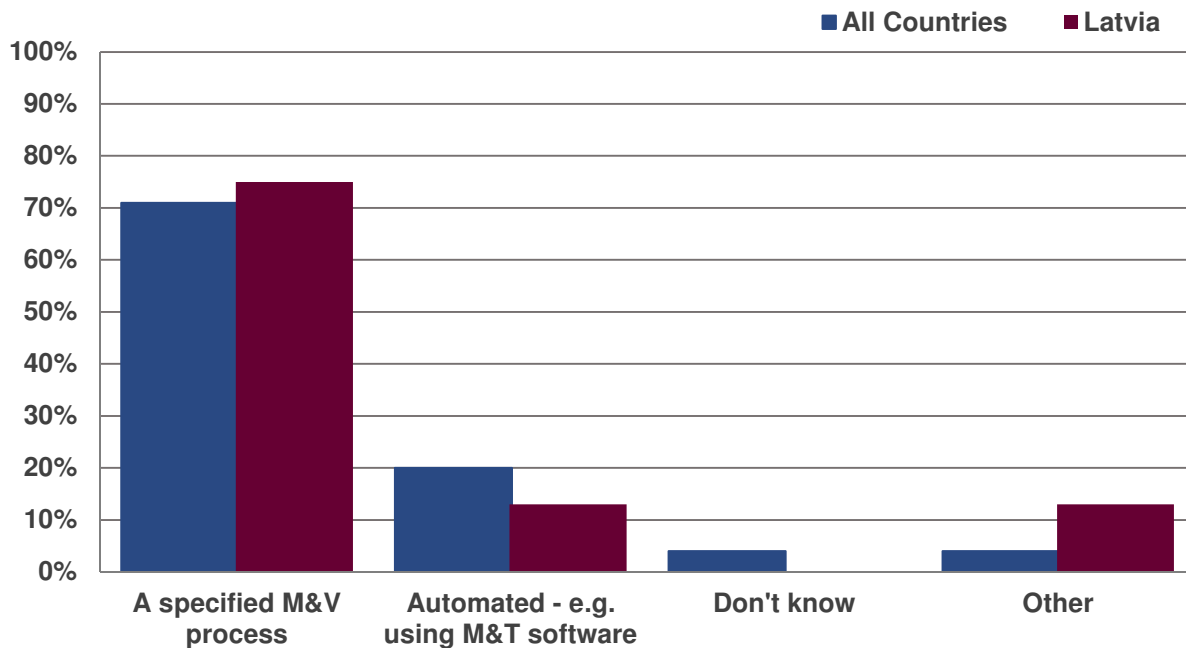
Figure 9. Which sectors do your EPC clients generally come from? (Percentage of responses of providers and facilitators, Sept 2017)



38% of clients of EPC providers and facilitators in Latvia come from the private – industrial sector; most frequently (50%) checked answer regarding clients was “Other” because in Latvia most of the EPC projects are implemented in the residential sector. Compared to other countries, Latvia has no examples of EPC projects for health or education-related public sector clients.

4.5 EPC measurement & verification

Figure 10. How is energy savings performance of the EPC projects you are involved in typically measured and quantified? (Percentage of responses of providers and facilitators, Sept 2017)

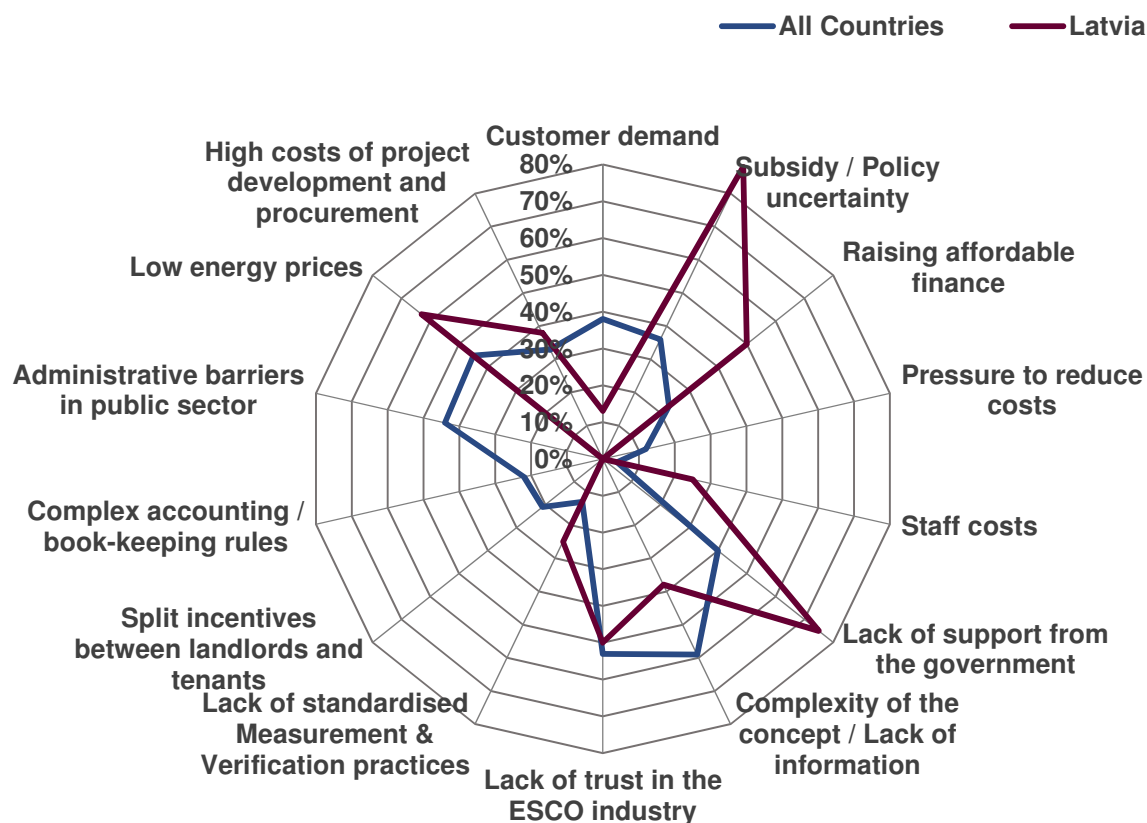


In terms of measurement of EPC project-related energy savings, a specified M&V process is the main tool in both Latvia as well as other EU countries; 75% of EPC providers and facilitators in Latvia said they use this tool. Automated metering is on average slightly more frequently used in Europe than in Latvia, but the difference is quite small (20% in the rest of the EU compared to 13% in Latvia).

4.6 EPC market barriers

The most important barriers identified are the following: subsidy and policy uncertainty, lack of trust from the clients, reluctance to acquire debt, high risk level of financial investment in territories with low economic activity that increases loan interest rates, low energy prices, bankability of the projects and opportunity to rise affordable finance, lack of standardised contracts and M&V practices, public procurement rules that are not supporting the use of EPC in the public sector (in the private sector there are no public procurement rules for EPC projects consequently increasing ESCOs’ transaction costs; in the public sector there are no rules, procedures and criteria in place), availability of long-term financing for ESCOs (long-term commercial financing continues to be a major barrier because banks are reluctant to lend against long-term energy efficiency projects; ESCOs, typically small, cannot borrow to further their business), lack of information about and complexity of the concept (both at policy level and at the level of residents/owners).

Figure 11. What are the main barriers to EPC business, based on the activities of the last 12 months? (Percentage of responses of providers and facilitators, Sept 2017)



Latvian EPC providers and facilitators identified some of the same barriers to EPC business as their European counterparts. General lack of trust in the ESCO industry and lack of governmental support are the main barriers identified by both local and European respondents. However, in Latvia subsidy and policy uncertainty is the biggest problem (88%), along with low energy prices. In Latvia most of the projects have been implemented in the residential sector where grants have been used to co-finance part of the investments needed for comprehensive building renovation. As support schemes for apartment building renovation were discontinued for over 2 years between 20014 and 2016, some of the potential projects were frozen and business activities stopped overall. Also, low heating energy tariffs make projects less profitable.

4.6.1 Regulatory and administrative barriers

Most of the EPC projects in Latvia have been implemented in the residential and lighting sectors for private clients. Besides the pilot projects in the public sector, no other EPC projects in this sector have been carried out, for different reasons, from lack of knowledge to regulatory and administrative barriers. According to the Latvian legislation, service contracts in the public sector can be up to 5 years long; if they need to be longer a public-private partnership (PPP) contract form is necessary. With PPP, each contract needs to be negotiated with the Ministry of Finance of Latvia and off government balance sheet records have to be

ensured with EUROSTAT. This adds complexity and administrative costs to small projects to such extent that it is no longer viable for clients and EPC providers to develop such projects and more “standard” contracting forms are preferred. There are no recognised EPC templates and there has been no EPC process for public projects.

EPC is used in deep renovation of buildings in the private residential sector, where the decision making process for multi-family residential buildings is currently a very slow process demanding too much time and resources from ESCOs. The practice is that at least 75% of the total apartment owners should agree on voted decisions. Therefore, house owners that do not obtain quorum are automatically voting against every investment decision.

4.6.2 Structural barriers

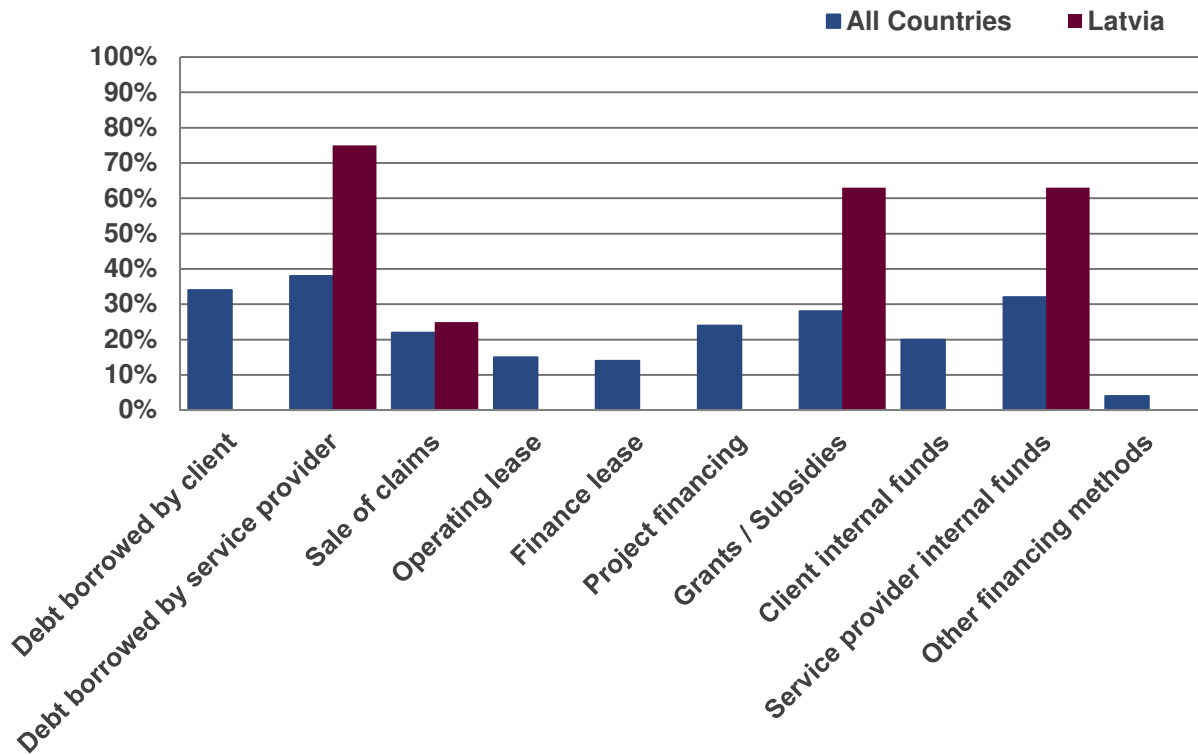
Public budgeting rules discourage savings. The legal and administrative requirements for EPC generally suffer from the lack of standardisation (i.e. there is no “typical” type of contract and ESCOs have no experience in tendering for the public sector). Different experts and parties are involved during the preparation stage and the implementation stage of EPC projects. Lawyers, procurement specialists, politicians, engineers and project managers in municipalities are not familiar with the concept as such. There is a lack of recognised EPC templates and examples of EPC projects in the public sector.

4.6.3 Financial barriers

All respondents from Latvia indicated that obtaining financing for an EPC project is difficult. In addition, energy costs are relatively cheap and many energy efficiency projects depend on additional grants and support available. In the residential sector one of the major barriers has been the delay of the EU structural funds support programme for energy efficiency measures in buildings. The programme was stopped for over two years from 2014 to 2016. Many ESCOs lack their own capital to obtain bank loans and attract long-term financing. The questionnaire results show that sale of receivables is not well-known or widely used so far. At the moment there is no other financial institution besides LABEEF that would offer the opportunity to do so, thus this option is not used.

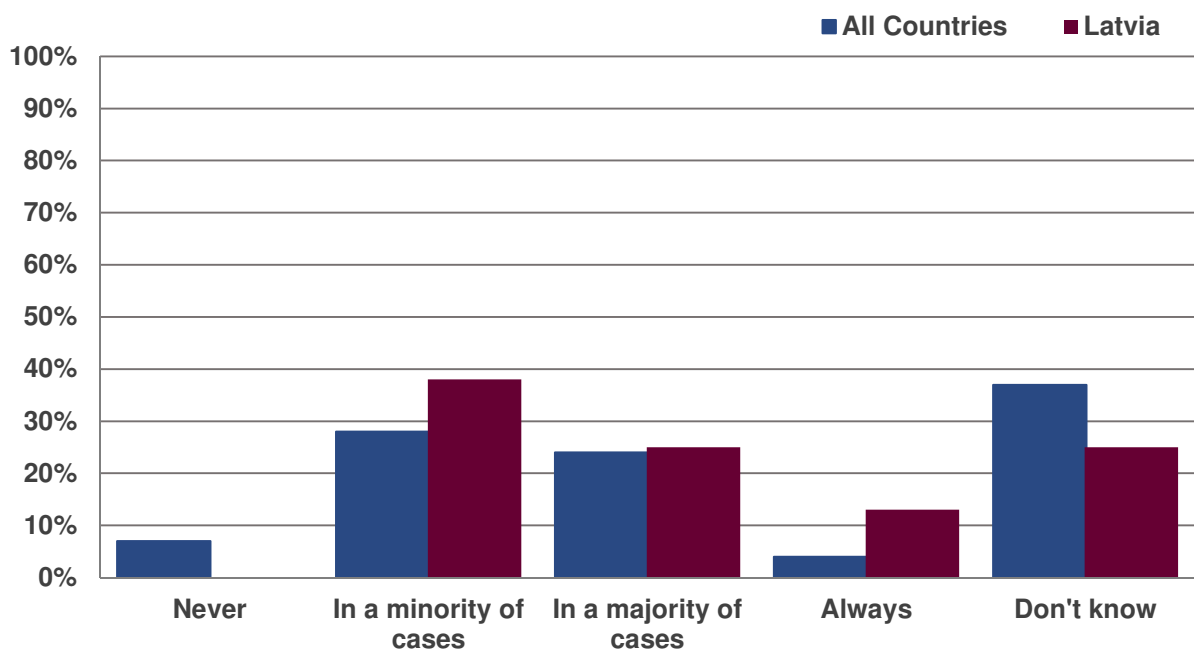
4.7 EPC financing

Figure 12. How are the EPC projects you are involved in financed? (Percentage of responses of providers and facilitators, Sept 2017)



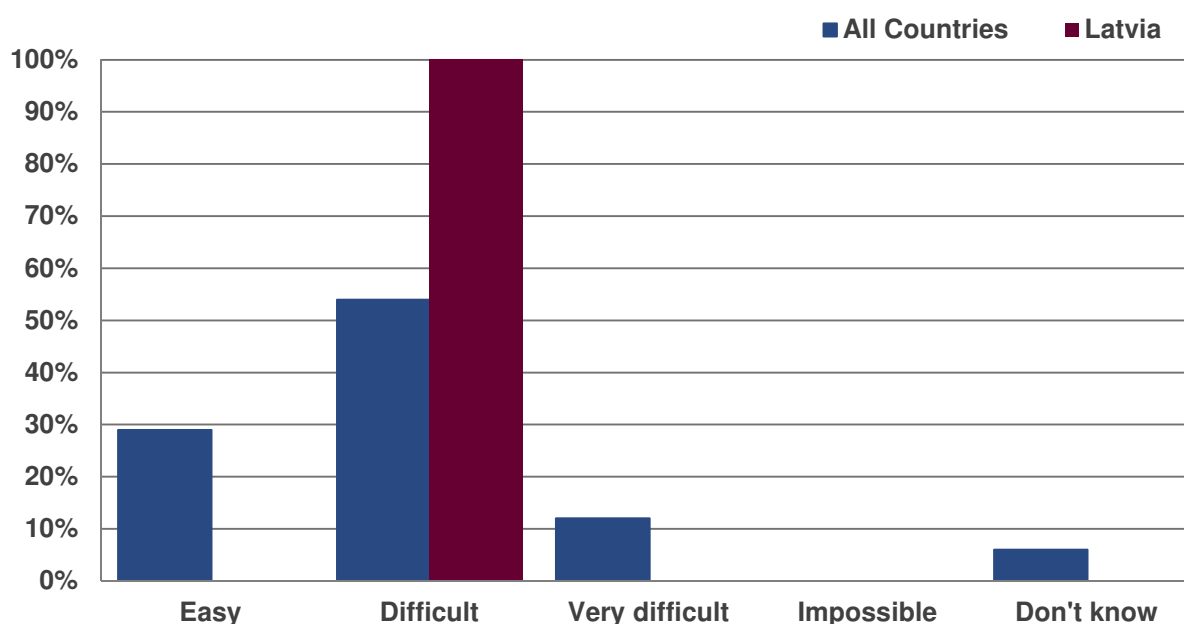
Loans borrowed by the service provider (75%) are by far the main tool for financing EPC projects in Latvia, followed by own capital and grants/subsidies. In EU countries other financing options are available.

Figure 13. In your experience, is sale of claims (sale of receivables) accepted as the main collateral for EPC projects? (Percentage of responses of providers and facilitators, Sept 2017)



Even though 25% of respondents agree that in most cases it is possible, 38% of respondents said otherwise: that is possible only in a minority of cases; 25% don't know. The results show that it is not a well-known concept and is not often used so far. European EPC providers and facilitators indicated a rather minor share of sale of receivables in their contracts (28%) while 24% of EU EPC providers and facilitators use sale of receivables in most projects. Almost 40% of EU respondents didn't know either, which indicates that it is not a solution they use.

Figure 14. Do you believe that obtaining affordable finance for an EPC project is easy?
(Percentage of responses of providers and facilitators, Sept 2017)



Responses of EPC providers and facilitators in Latvia show that they believe obtaining financing for EPC projects is difficult compared to their European counterparts; however, over 50% of them also believe obtaining financing for an EPC project is difficult.

4.7.1 ESCO financing

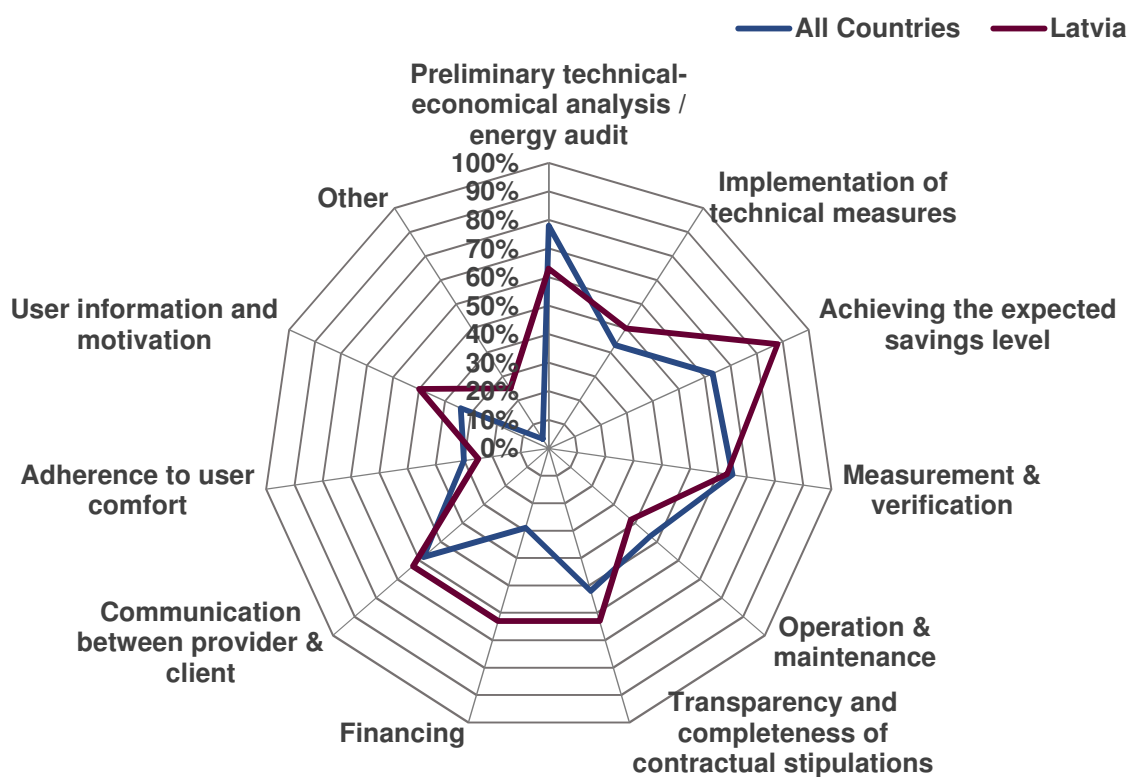
ESCOs in Latvia usually are financed with debt and equity financing similarly to most companies in Latvia. At the moment the mechanism that will allow re-financing EPC projects is under implementation. LABEEF was established in order to overcome the lack of capital experienced by ESCOs. The fund was established over a year ago and is financed by the EBRD. At the moment commercial banks are not considering any special conditions and loans for EPC projects. ALTUM – a state-owned development finance institution – is planning to introduce loans for EPC projects and ESCOs.

4.7.2 Client financing

Until now ESCO companies have been providing the financing for projects, but as some of the municipalities are looking for options to tender the renovation of a portfolio of public buildings using EPC, client financing, in this case municipal financing, could soon be possible.

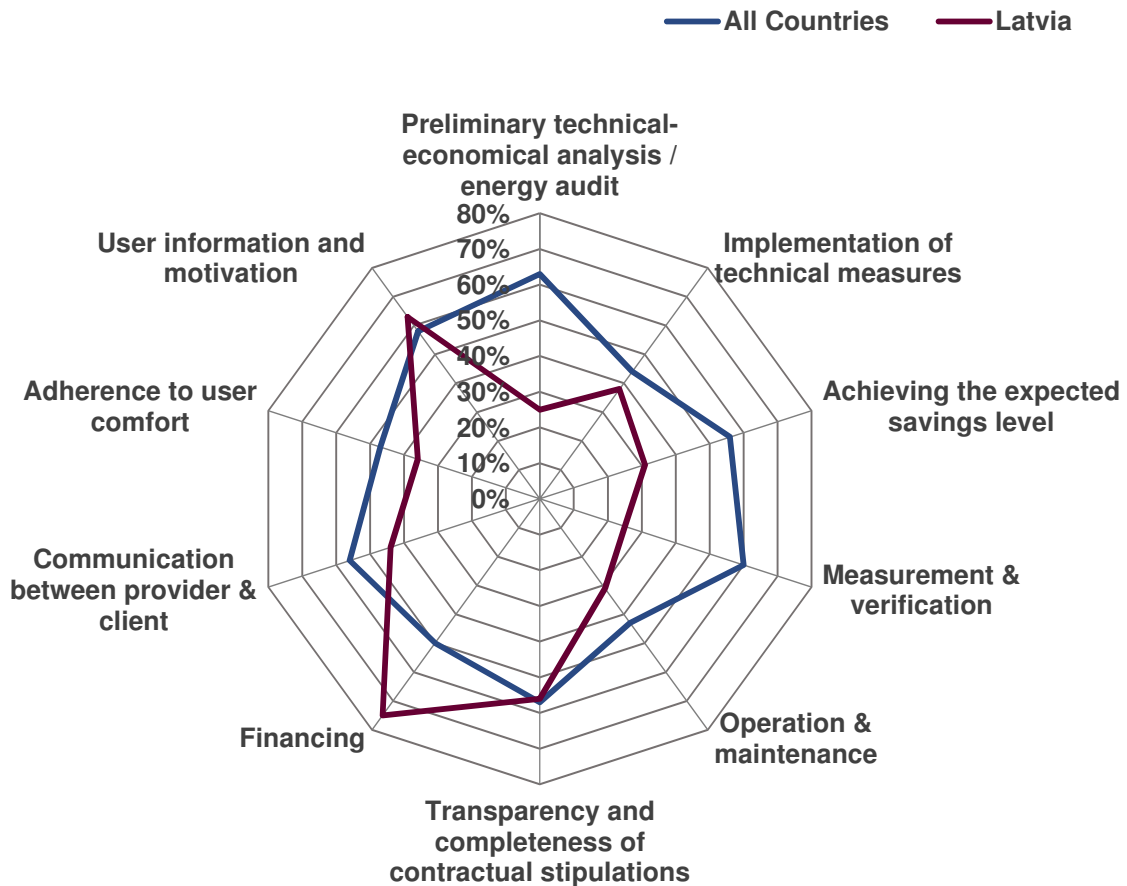
4.8 EPC quality determinants

Figure 15. What are the most important determinants of quality in EPC projects? (Percentage of responses of providers and facilitators, Sept 2017)



When identifying major determinants of quality in EPC projects, respondents from Latvia and other European countries are in overall agreement with each other. Latvian EPC providers afford greater importance to achieving the expected savings level and to financing than their European counterparts. On the other hand, preliminary technical/economic analyses are deemed less important by Latvian respondents compared to European EPC providers.

Figure 3 In which areas is quality improvement most needed in EPC project preparation and implementation? (Percentage of responses of providers and facilitators, Sept 2017)



Note: respondents were asked to rank each determinant using the following options: “not needed”, “needed”, “strongly needed” and “don’t know”. An indicator was created by assigning a weight of 0%, 50% and 100% to “not needed”, “needed” & “strongly needed” respectively, and dividing by the number of responses. When “don’t know” was selected, the answer was excluded from the calculation of the indicator.

Latvian EPC providers and facilitators generally see fewer needs for improvement in financing of EPC projects than their European counterparts. Biggest differences in perceived need of improvement between both groups of respondents were identified in measurement and verification and in preliminary technical/economic analyses, with Latvian EPC providers and facilitators seeing less need for improvement than their European counterparts. Latvian respondents identified financing as the most important determinant of quality of EPC projects, which might be related to lack of grants and support for energy efficiency projects.

5 ENERGY SUPPLY CONTRACTING MARKET

5.1 ESC market actors

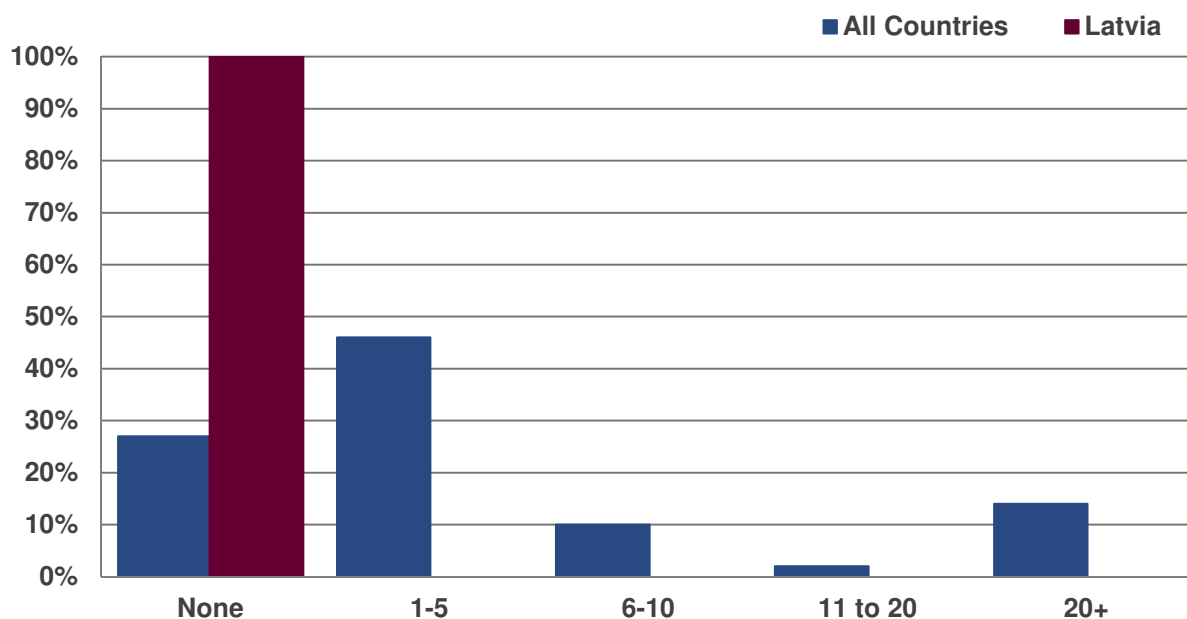
The term “Energy Supply Contracting” is not widely used in Latvia. Many energy utility companies provide energy to clients, but so far they have not been involved in energy efficiency projects working with energy end-users. Only lately with the Energy Efficiency Law of Latvia stipulating obligations to electric utility companies to save energy on the side of the consumers, new services are under development.

For many years investments have been made to improve energy production. Only lately district heating and electric utility companies have started to rethink their business models and begun to provide advice to consumers regarding the implementation of energy efficiency measures.

5.2 ESC market developments

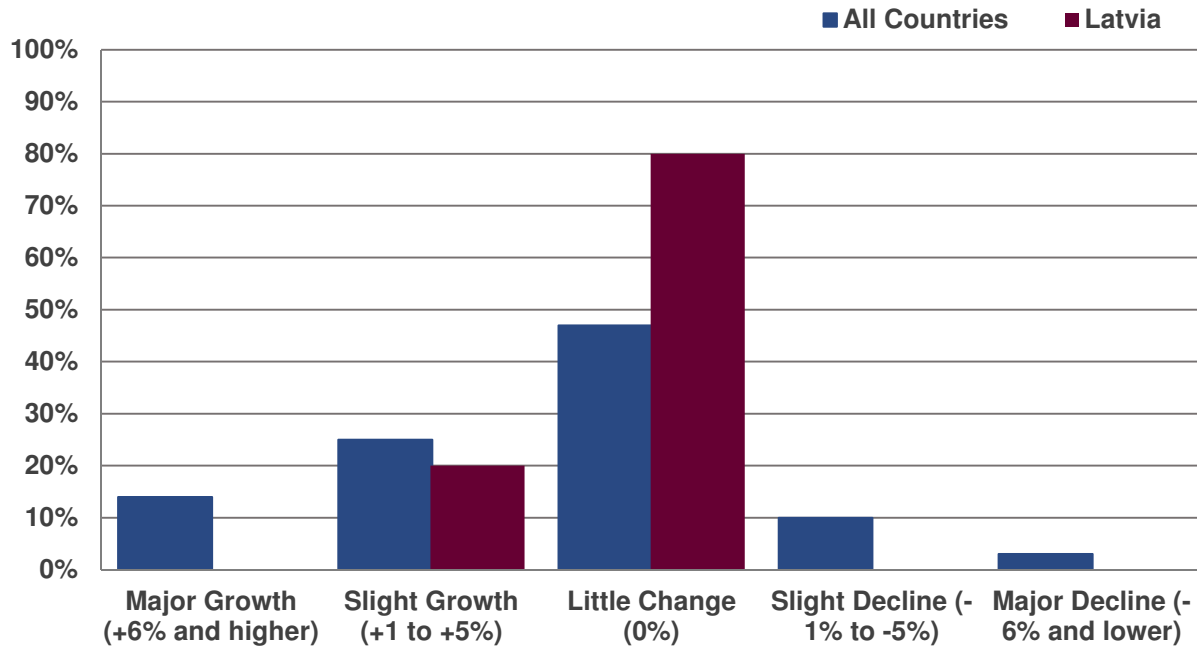
As shown by answers, Latvian EPC facilitators and providers have not been involved in ESC projects in the last 12 months. This could be due reasons that the concept as such is not known and recognized in Latvia.

Figure 17. How many ESC projects (that have reached the contract signature stage) has your organisation initiated / become involved in in the last 12 months? (Percentage of responses of providers and facilitators, Sept 2017)



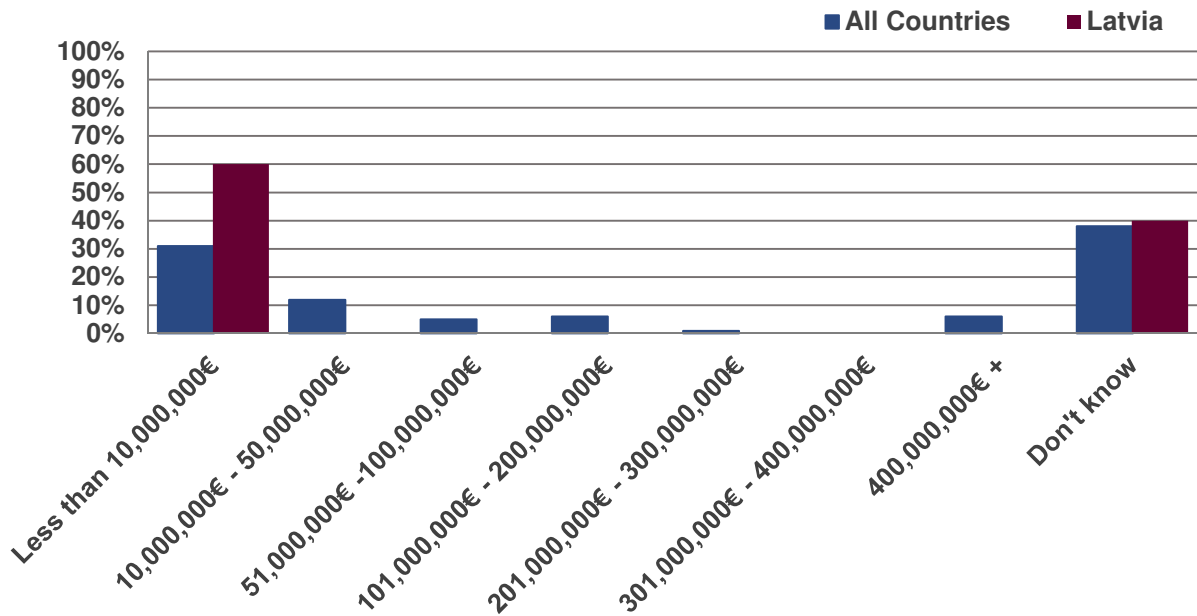
There is a clear separation of energy supply and EPC as with ESC most of the respondents understood a simple energy supply contract even though this could include some energy efficiency improvements.

Figure 4 In the last 12 months your ESC orders have seen (Percentage of responses of providers and facilitators, Sept 2017)



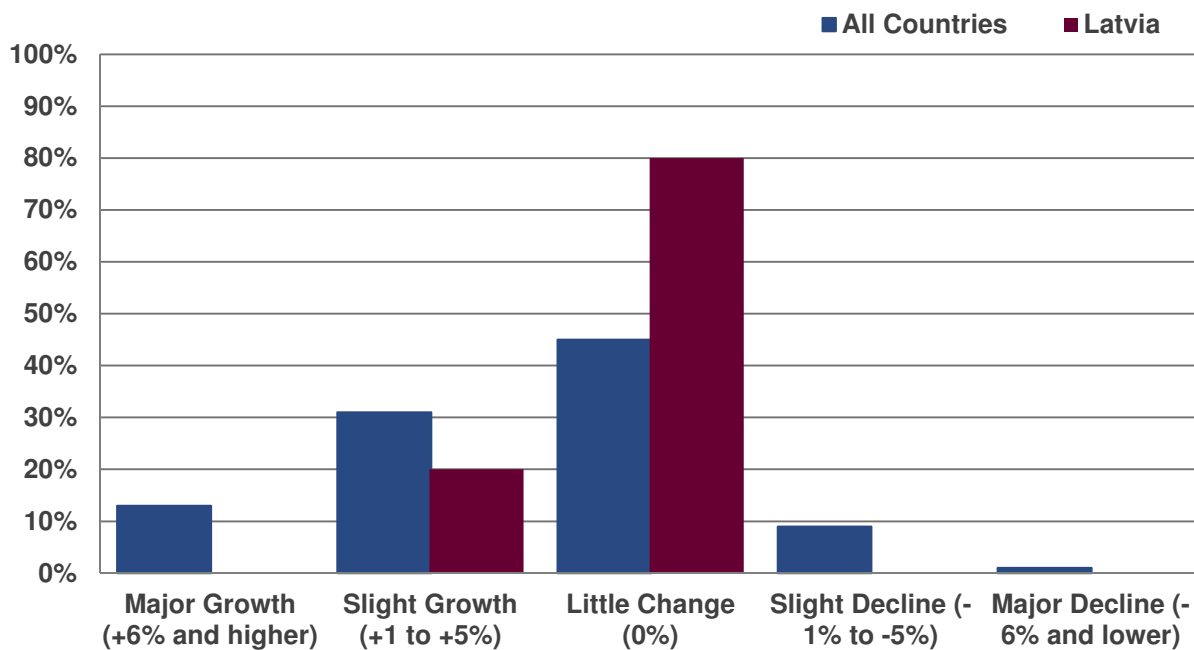
Almost all respondents in Latvia (80%) replied they have experienced little change in their ESC orders in the last 12 months, which is similar to the experiences of European EPC providers and facilitators, who mainly reported stagnation of ESC orders in their respective countries. European respondents (20%) also reported growth of ESC orders between 1% and 5%. As shown by answers in Figure 17, Latvian EPC facilitators and providers were not involved in ESC projects last year.

Figure 19. How much revenue do you think the ESC market in your country generated in 2016? (Percentage of responses of providers and facilitators, Sept 2017)



Sixty percent of Latvian EPC providers and facilitators replied that the ESC market was worth up to EUR 10,000,000 and 40% don't know. Respondents from other EU countries who made an estimate most frequently (31% of cases) replied the ESC market in their country in 2016 did not exceed EUR 10,000,000 either.

Figure 20. In the last 12 months, the ESC market in your country has seen (Percentage of responses of providers and facilitators, Sept 2017)

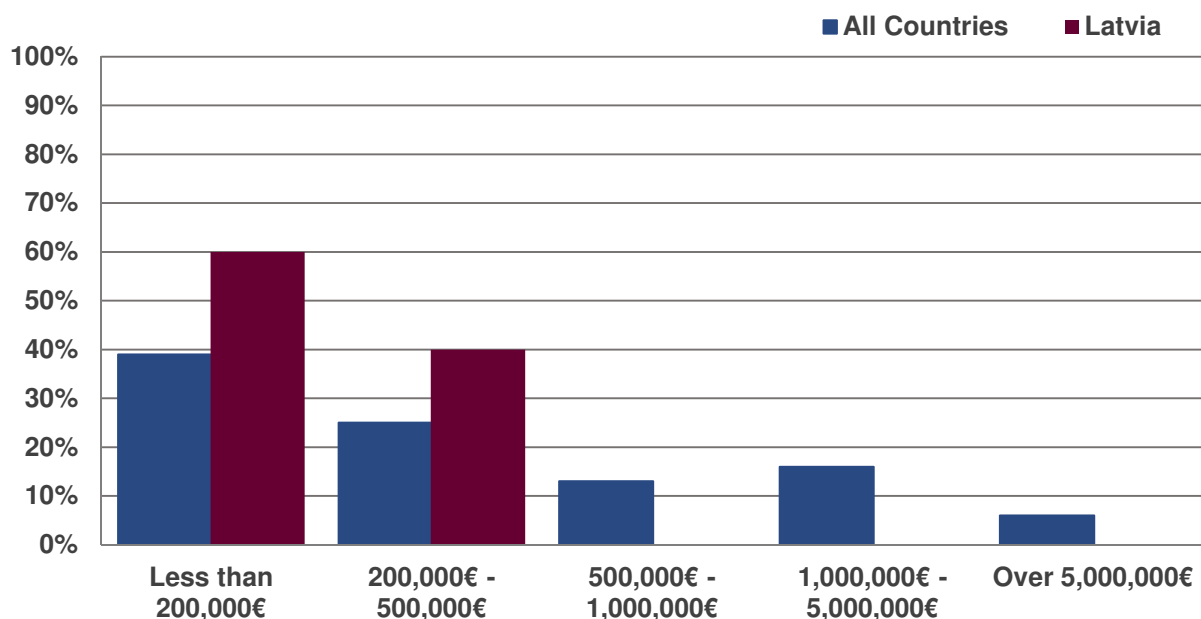


Latvian EPC providers and facilitators have seen little change (80%); 20% perceive slight growth in the market. European respondents expressed greater trust in their markets with 13% of them considering their respective markets to be growing by more than 6% and the majority of the respondents (76%) seeing either slight growth or status quo.

5.3 ESC business models

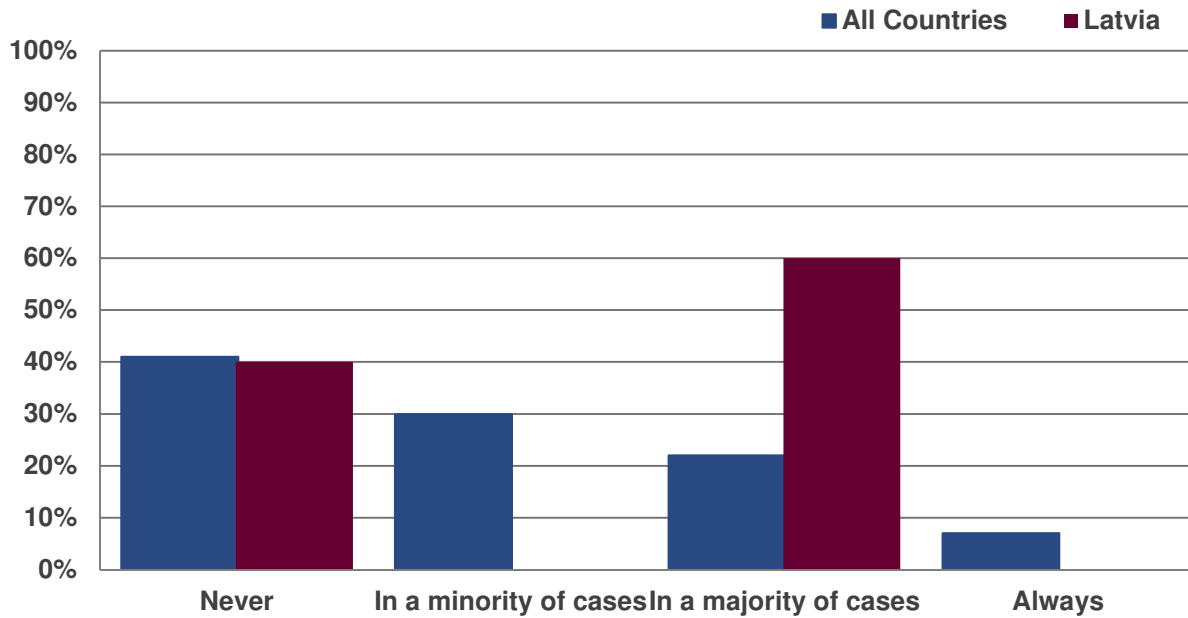
The ESC concept as such is not widely known and ESC is rarely used because more traditional energy supply contracts and business models have been used for years. Even if many projects include an energy efficiency component, the projects do not specify this in their contracts. There is quite clear understanding on EPC as the most important guiding principles are defined in the Energy Efficiency Law of Latvia, but there is no definition or broader understanding regarding ESC.

Figure 21. What is the most common overall value of the ESC projects you are involved in? (Percentage of responses of providers and facilitators, Sept 2017)



Sixty percent of ESC projects in Latvia are in the smallest category (measured by value of total investments) with the value of projects not exceeding EUR 200,000. The remaining 40% of Latvian ESC projects are in the category between EUR 200,000 and EUR 500,000 with none of the projects exceeding the value of EUR 500,000. ESC projects in other European countries as reported by their respective EPC providers and facilitators are more evenly spread between all categories, some of them (6%) even of value over EUR 5,000,000. Nevertheless, almost 40% of ESC projects in other European countries are small-scale projects as well, under EUR 200,000.

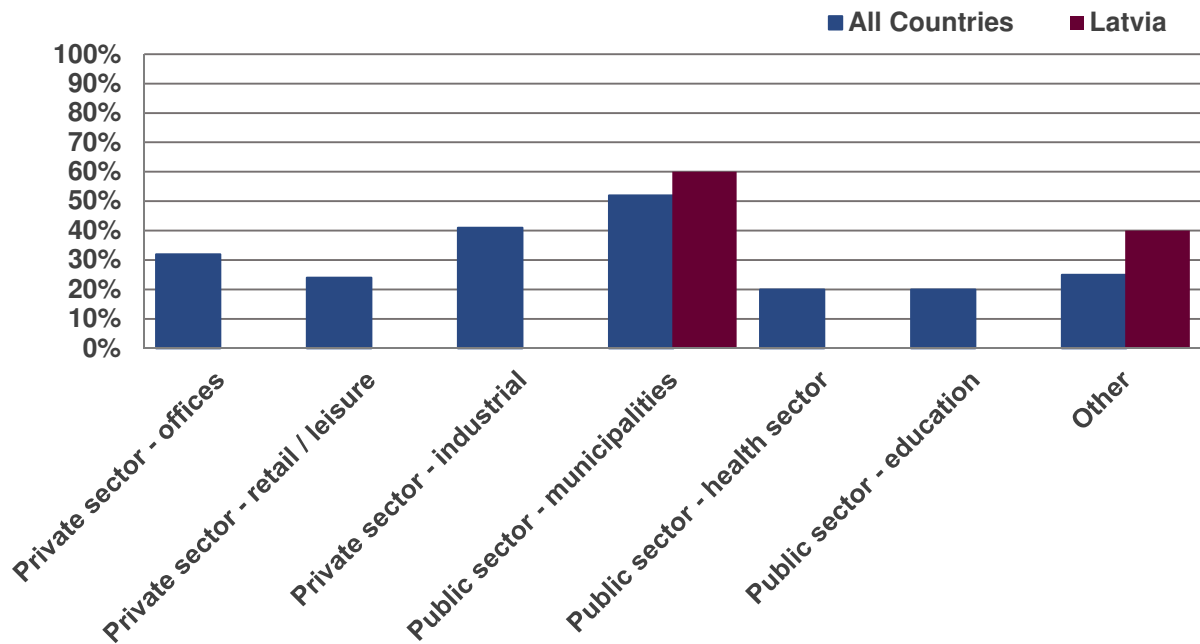
Figure 52. In the ESC projects you are involved in, were payments per unit of energy delivered in combination with payments per unit of energy saved (from installed energy efficiency measures)? (Percentage of responses of providers and facilitators, Sept 2017)



According to Latvian respondents, payments per unit of energy were delivered in combination with payments per unit of energy saved in the majority of cases (60%) or never (40%). This is slightly different from other countries where, according to responses, for more than 20% of respondents this arrangement works in the majority of cases and for a few of them (7%) this is the permanent settlement. However, for the majority of respondents from Europe (slightly above 40%), payments per unit of energy are not delivered in combination with payments per units of energy saved.

5.4 ESC market sectors

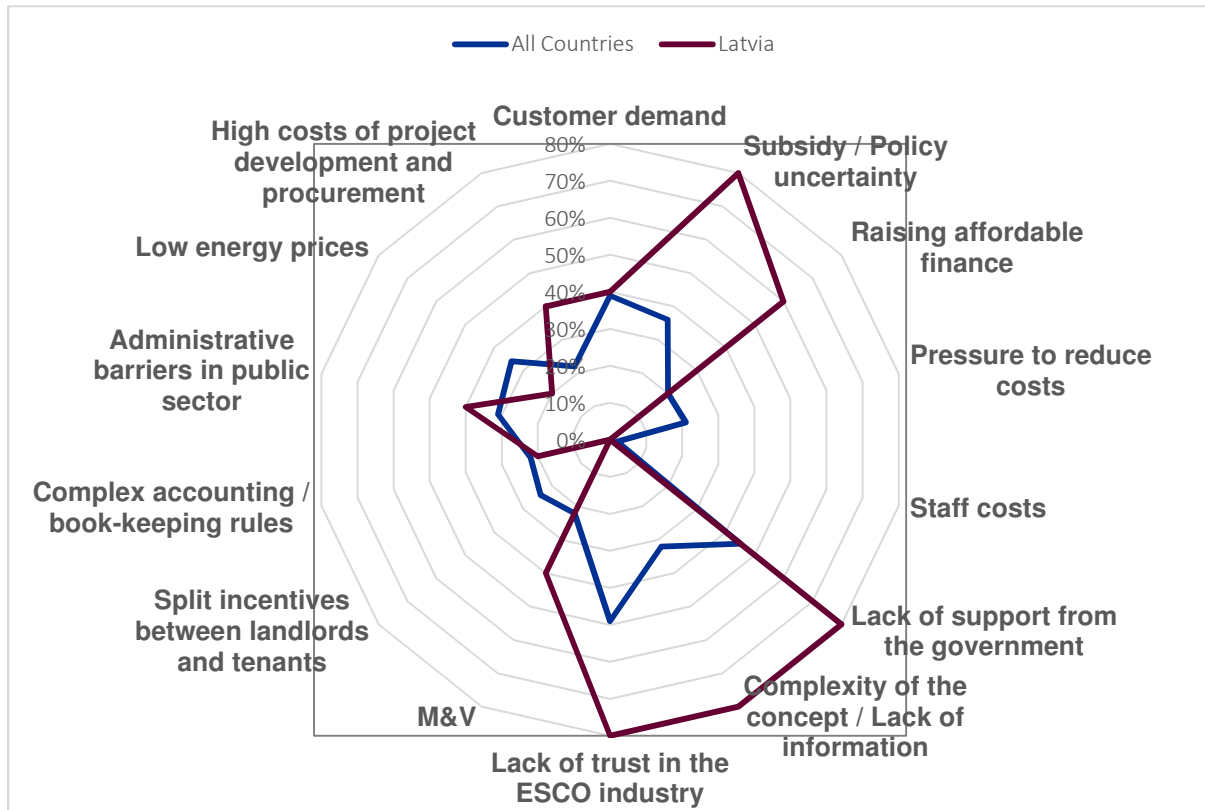
Figure 23. Which sectors do your ESC clients generally come from?



Similarly to other EU countries, the main sector that ESC clients in Latvia come from is the public sector, but ESC clients in other EU countries are more evenly spread among other sectors. One of the explanations might be the fact that many district heating companies and other energy utility companies sometimes also provide some energy efficiency improvement measures for energy end-users.

5.5 ESC market barriers

Figure 6 What are the main barriers to the ESC business based on the activities of the last 12 months? (Percentage of responses of providers and facilitators, Sept 2017)



Latvia EPC providers and facilitators clearly identified four major barriers: subsidy and policy uncertainty, lack of support from the government, complexity of the concept and lack of information, and lack of trust in the ESCO industry. European respondents are similarly mainly concerned with lack of trust in the ESCO industry as well as low customer demand being the main barriers in the ESC market.

5.5.1 Regulatory and administrative barriers

Potential ESCOs in the sector include existing construction companies, house maintenance companies, installation companies, new entrepreneurs, and district heating (energy) companies that have expressed an interest. However, energy supply is almost always organized by bigger district heating companies. In this situation it is hard to include energy efficiency services for a specific energy user as the energy tariffs are regulated by the Public Utilities Commission. Smaller heating supply systems are not regulated; thus, an additional administrative burden is not imposed on thermal supply companies which are more flexible in offering energy efficiency services. On the other hand, those companies are small and therefore lack capital.

5.5.2 Structural barriers

Regarding energy supply, district heating companies have received grants and support to improve their system efficiency and renew the installed capacities. As installed capacities have been renewed, they expect the usual amount of energy sales and are not particularly

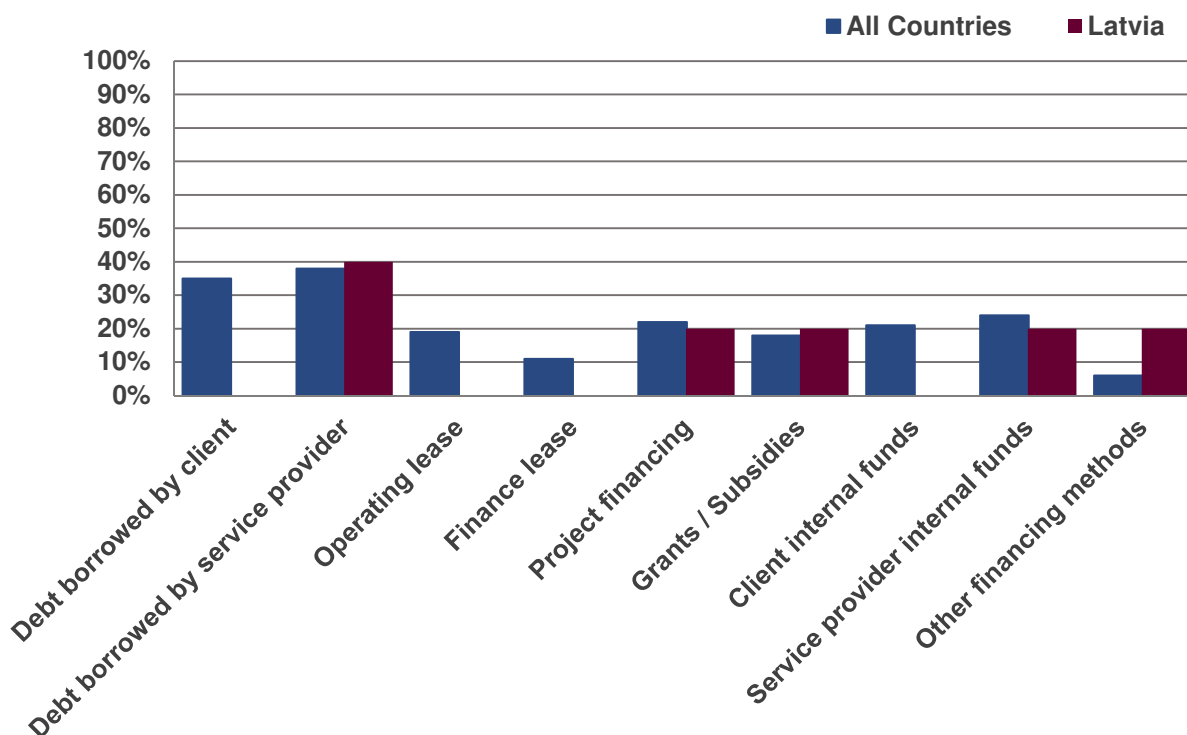
interested in supplying energy efficiency services. In general, there is lack of knowledge and examples of ESC projects in the public sector and well-established and agreed ESC contract and documentation examples.

5.5.3 Financial barriers

Similarly to EPC providers, smaller and more flexible companies are interested in trying out new business models like ESC, but such companies face problems in financing such projects due to lack of capital. Bigger companies like energy utility companies, on the other hand, face administrative and regulatory barriers because they are regulated by the Public Utilities Commission.

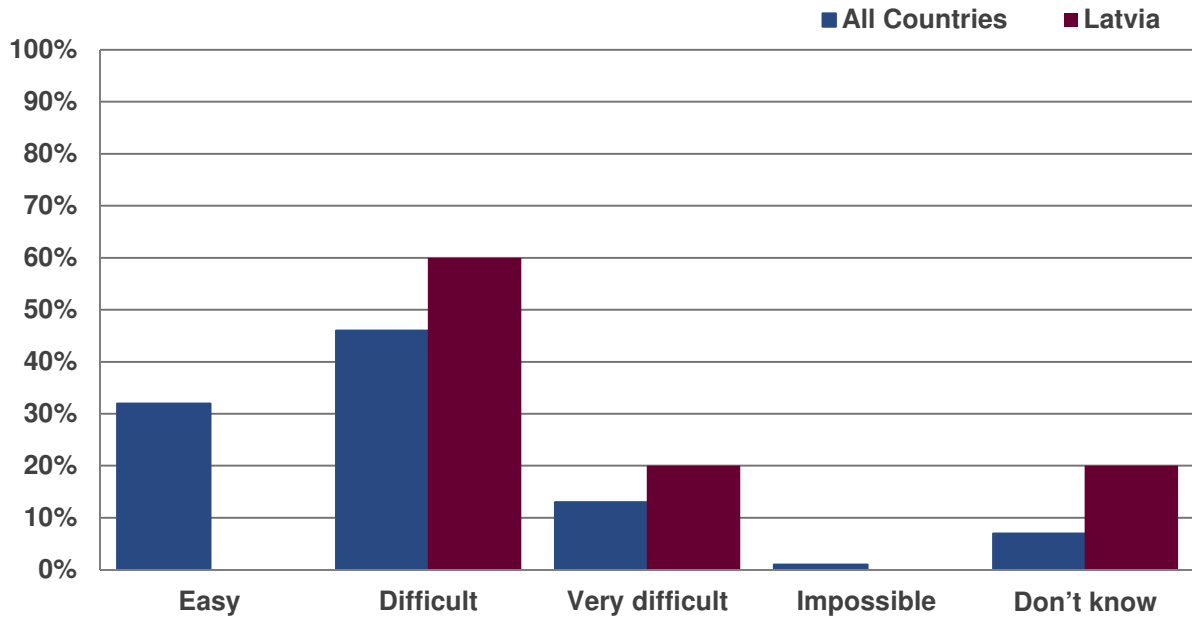
5.6 ESC financing

Figure 25. How are the ESC projects you are involved in financed? (Percentage of responses of providers and facilitators, Sept 2017)



Debt borrowed by the service provider is a major source of financing of ESC projects in Latvia, an option chosen by 40% of respondents. Other sources include project financing, grants, internal funds and other financing methods. In other EU countries debt borrowed by client or service provider are the most popular options. Other ways of financing are also used.

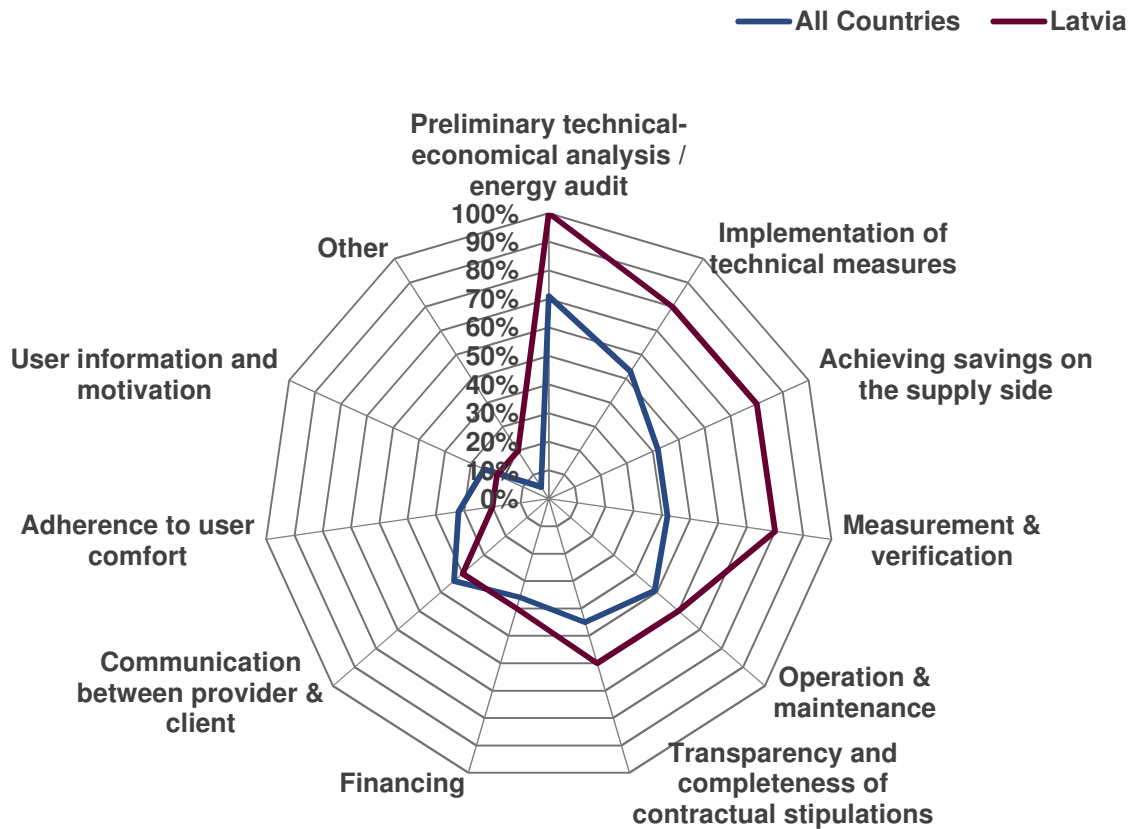
Figure 26. Overall, do you consider that obtaining affordable finance for an ESC project is (Percentage of responses of providers and facilitators, Sept 2017)



Similar to EPC projects, Latvian EPC providers and facilitators find it to be difficult to get ESC projects financed. 60% of Latvian respondents replied that it is difficult and 20% – very difficult. An equal number of respondents (20%) replied they do not know which shows they have not often dealt with ESC projects. EU respondents mainly find it difficult to get ESC projects financed (46% of all answers) but around a third of them probably did not face great challenges for they stated it to be easy. Financial institutions often apply similar conditions to different types of projects and are mainly concerned about liquidity and creditworthiness of the ESC providers and clients, having less concern about the technical aspects of the ESC projects.

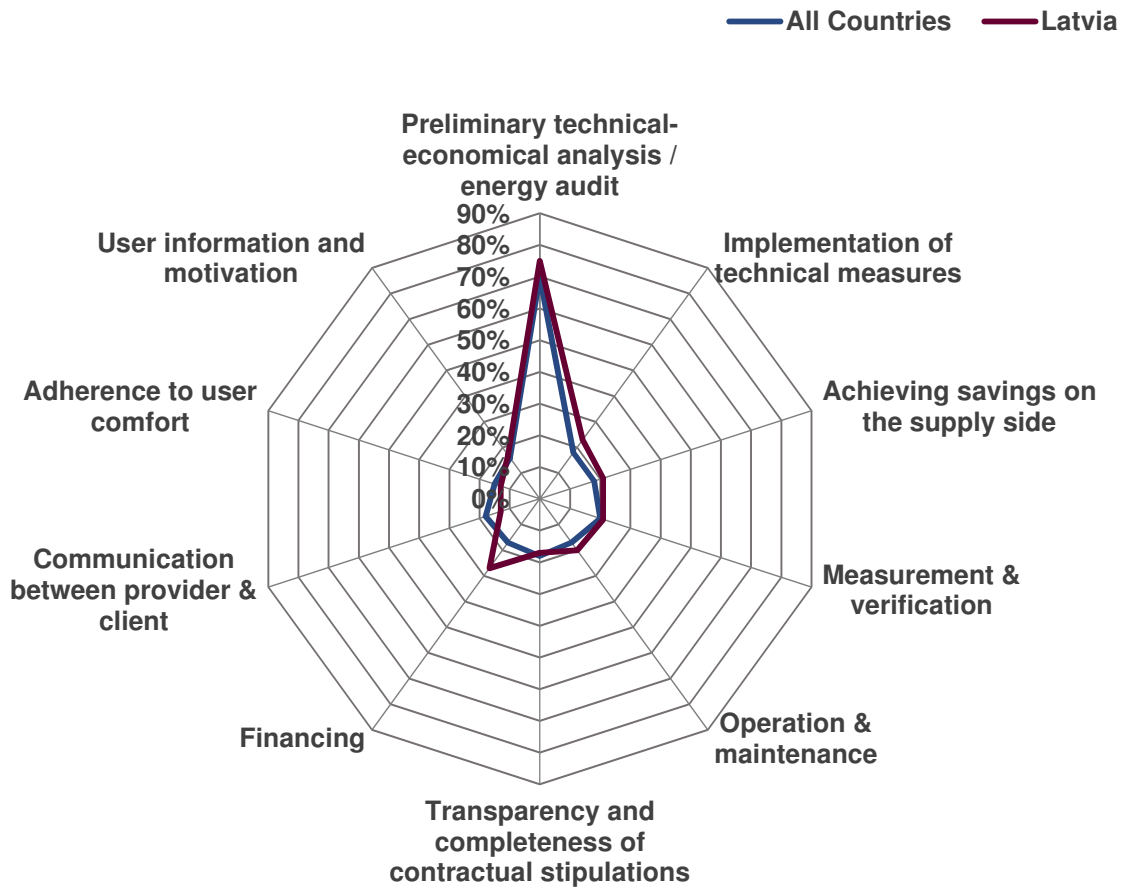
5.7 ESC quality determinants

Figure 27. In your opinion, what are the most important determinants of quality in ESC projects? (Percentage of responses of providers and facilitators, Sept 2017)



Both Latvian EPC providers and facilitators and their European counterparts clearly identified preliminary technical and economic analyses, achieving savings, implementation of technical measures and M&V in energy supply as the most important determinants of quality in ESC projects.

Figure 28. In which areas is quality improvement most needed in ESC project preparation and implementation? (Percentage of responses of providers and facilitators, Sept 2017)



Regarding necessary quality improvements, respondents from Latvia and EU EPC providers and facilitators are in complete agreement, emphasising the need for improvement in preliminary technical and economic analyses. Other areas are of less importance according to all respondents.

6 OTHER ENERGY EFFICIENCY SERVICES

There are different energy efficiency services on the market. Energy auditing, HVAC and regular boiler inspections and EPC are prescribed by legislative acts. Thus, clear definitions and regulatory framework are given. Other related services have been developed by companies or required by clients. Large energy consumers and companies are obliged by the Energy Efficiency Law to introduce energy management systems or to perform energy audits. Thus, companies have begun to offer energy management and monitoring services, for example, building maintenance companies have introduced energy management services for their clients that would reduce energy costs. Thanks to the Energy Efficiency Directive, energy utility companies have begun to provide advice to energy end-users.

The obligation to conduct energy audits in large enterprises are laid down in Recommendations for energy audits in large enterprises available on the website of the Ministry of Economics at:






https://www.em.gov.lv/lv/nozares_politika/energoefektivitate_un_siltumapgade/energoefektivitate/obligati_energoauditi_lielajos_uznemumos/ (not available in English).

The Ministry of Economics publishes a list of large enterprises that have to conduct energy audits. The list of large enterprises is published on the website of the Ministry of Economics at:




https://em.gov.lv/lv/nozares_politika/energoefektivitate_un_siltumapgade/energoefektivitate/obligati_energoauditi_lielajos_uznemumos/

Legislation on industrial energy audits has been transposed into the Energy Efficiency Law of Latvia available in Latvian and English at: <https://m.likumi.lv/doc.php?id=280932>

At the moment it is applicable to enterprises activities of which include:

-  mining and quarrying (NACE Rev. 2, type of activity B);
-  manufacturing (NACE Rev. 2, type of activity C);
-  electricity, gas, steam and air conditioning supply (NACE Rev. 2, type of activity D);
-  water supply; sewerage; waste management and remediation activities (NACE Rev. 2, type of activity E);
-  construction (NACE Rev. 2, type of activity F).

The enterprise shall notify the Ministry of Economics about:

-  the date of approval of the energy audit report;
-  the energy auditor company or energy auditor who carried out the energy audit;
-  the identified energy efficiency measures and the corresponding calculated energy savings.

If the enterprise has introduced a certified energy management or environmental management system (ISO 50001 or ISO 14001), it shall send a letter to the Ministry of Economics, indicating the system certification or recertification date. Until January 30 of each year, the Ministry of Economics shall publish a list of enterprises that have conducted energy audits or have been certified according to ISO 50001 or ISO 14001.

Until March 1 of each year, the energy auditor shall submit a report to the Ministry of Economics on the industrial energy audits performed during the previous calendar year. The report shall include information regarding:

- the number of industrial energy audits performed;
- fields of industrial activities according to the statistical classification of economic activities (NACE Rev. 2), in enterprises of which an industrial energy audit has been performed;
- the identified priority energy efficiency measures;
- the assessed potential of energy savings.

Energy auditing in buildings is regulated by the Law on the Energy Performance of Buildings. In June 2013, regulations pursuant to the Law on the Energy Performance of Buildings were issued:

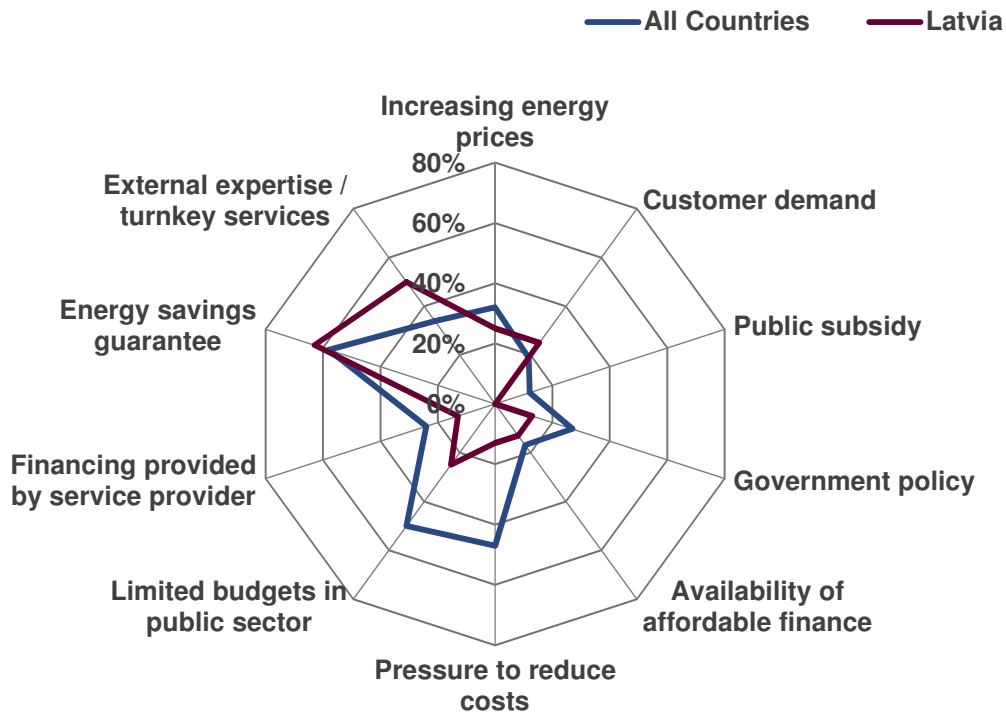
- Cabinet Regulation No. 348 of 25 June 2013 “Regulations Regarding the Methodology for Calculating the Energy Performance of Buildings”;
- Cabinet Regulation No. 383 of 9 July 2013 “Regulations Regarding the Energy Certification of Buildings”;
- Cabinet Regulation No. 382 of 9 July 2013 “Regulations Regarding the Independent Experts in the Field of Energy Performance”.

7 RECOMMENDATIONS FOR MARKET DEVELOPMENT

In recent years energy efficiency has been one of the priorities and an important policy topic; however, only now EPC is starting to be considered among the options and possible models for energy efficiency projects. The current market is still very small. Structural funds for energy efficiency in buildings helped the industry to emerge. But, since structural fund programmes were discontinued for more than two years (from 2014 to 2016) and in recent years ESCOs experienced lack of long-term financing for their projects, many EPC projects have been stopped. More specific barriers depend on the sector. A lot of EPC projects have been developed in the residential sector but energy efficiency projects in buildings are associated with a long payback period; therefore, financial incentives should be provided. As municipalities and governments do not have the funding to address the housing problem comprehensively, public funding is to be mixed with private investments. Development of sustainable and long-lasting financial instruments like energy performance contracting could be used to attract private investments in the sector, yet ESCO companies often are small and medium-sized and thus have difficulties to borrow the money.

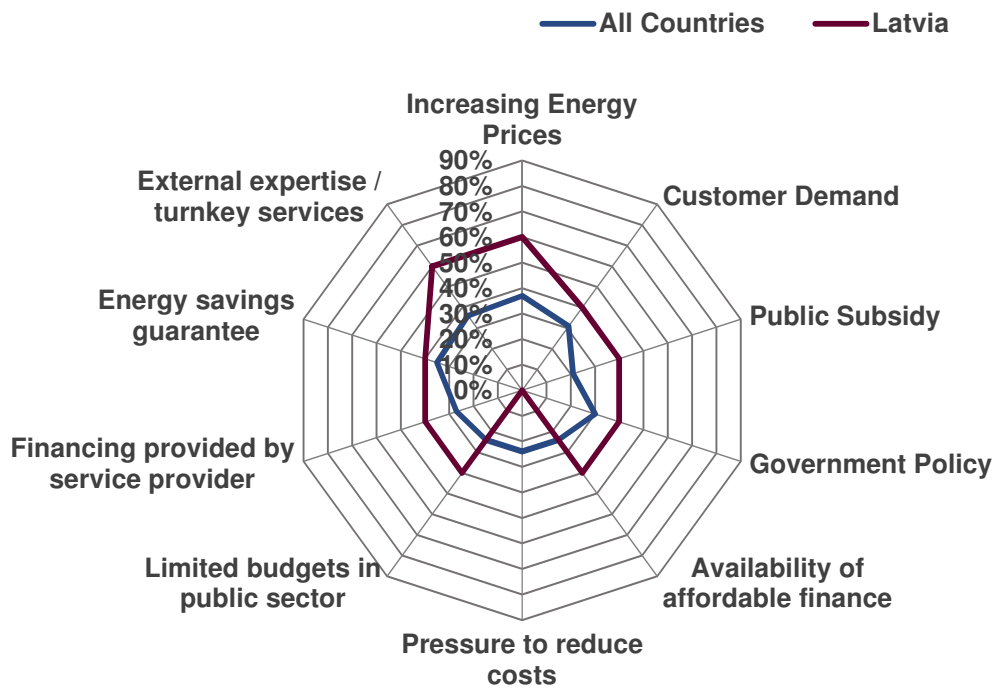
The most common barriers for ESCO projects were defined as follows: subsidy and policy uncertainty, lack of government support, low energy prices, bankability of the projects and opportunity to raise affordable finance, and lack of standardised M&V practices. During interviews several other important issues were raised such as mistrust from the clients and public procurement rules that are not supporting EPC use in the public sector.

Figure 29. What are the main drivers of the EPC business based on the activities of the last 12 months? (Percentage of responses of providers and facilitators, Sept 2017)



According to the Latvian EPC providers and facilitators, energy savings and external expertise are the main EPC business drivers. Other aspects that were more important for other EU countries, such as limited budgets in the public sector and pressure to reduce costs, were deemed to be of less importance by their Latvian counterparts.

Figure 30. What are the main drivers of the ESC business based on the activities of the last 12 months? (Percentage of responses of providers and facilitators, Sept 2017)



While respondents from EU countries did not express any strong opinions on significant drivers of the ESC business, Latvian respondents identified public subsidy, external expertise/turnkey services, energy savings guarantee, limited budgets in the public sector, increasing energy prices and availability of affordable finance as the main drivers of the ESC market last year. These are generally confirmed by European respondents as well, with somewhat lesser emphasis on all aspects.

Actions listed in this chapter are meant to help overcome the barriers of EES market development in Latvia identified in Table 22 below. The actions involve stakeholders and are listed in Table 3 below. It is clear that these activities interrelate with each other and therefore must be taken together, not separately.

Table 2. Main EES market barriers

Market barrier	EES affected
1 Subsidy and policy uncertainty	EPC
2 Mistrust from clients	EPC
3 Reluctance to finance debt; high risk level of financial investments in territories with low economic activity that increases loan interest rates; low energy prices; bankability of the projects and opportunity to raise affordable finance	EPC
4 Lack of standardised contracts and M&V practices	EPC, ESC

5	Public procurement rules that are not supporting the use of EPC in the public sector; in the private sector there are no public procurement rules for EPC projects consequently increasing ESCOs' transaction costs; in the public sector there are no rules, procedures and criteria in place	EPC, ESC
6	Availability of long-term financing for ESCOs (long-term commercial financing continues to be a major barrier because the banks are reluctant to lend against long-term energy efficiency projects; ESCOs, typically small, cannot borrow to further their business)	EPC, ESC
7	Lack of understanding and the complexity of the concept (both at policy level and at the level of residents/owners)	EPC, ESC

The action plan is summarised in Table 3 below.

Table 3. Actions to overcome market barriers

Response to barriers	Actions	Who should act	Target groups	Description
1	Discussions, debate and networking	ESCOs and their clients, municipalities willing to use EPC	Decision-makers (Ministry of Economics, ALTUM, Latvian Association of District Heating Companies, Latvian Association of Local and Regional Governments, Ministry of Environment and Regional Development)	The objective is to promote the EPC method as one of the governmental strategic goals in energy and growth policy
2	Seminars, visits to ongoing projects, articles for the general public	ESCOs, municipalities, Ministry of Economics, ALTUM, building management companies, district heating companies	Residents, municipality officials, politicians	The objective is to promote EPC by demonstrating actual projects, their quality and benefits
3	Supporting the forfeiting institution (LABEEF) and creating project pipelines	ESCOs, municipalities, banks, ALTUM	ESCOs	The objective is to develop the secondary market
4	Agreement between LABEEF and ESCOs, banks and governmental institutions on model contracts and guidelines	ESCOs, municipalities, Ministry of Economics, LABEEF	ESCOs, municipalities, Ministry of Economics, LABEEF	The objective is to develop standardised contracts and M&V practices

	for M&V			
5	Model contracts and procurement guidelines; Certification of EES	Municipalities, ESCOs, Latvian Association of Local and Regional Governments	Municipalities, ESCOs, Latvian Association of Local and Regional Governments, Ministry of Economics, Ministry of Finance, Public Procurement Monitoring Office	Public procurement rules which are not supporting EPC use in public sector. In the private sector there are no necessary public procurement rules for EPC projects, consequently increasing ESCOs' transaction costs. In the public sector there are no rules, procedures and criteria in place. Certification of EES
6	Supporting forfeiting institution (LABEEF)	LABEEF, ESCOs, banks	LABEEF, ESCOs, banks	The objective is to create the opportunities to re-finance EPC projects
7	Discussion, debate and networking	APES, EPC and ESC providers	Decision-makers (e. g. Ministry of Economics, Ministry of Finance, etc.)	The objective is to promote the EPC method as one of the governmental strategic goals in energy and growth policy

7.1 Regulation and standardisation

At the moment the EPC market lacks standardisation in all of the following areas: contracts and M&V guidelines, public procurement rules for the development of EPC in the public sector, tendering in the public sector, decision making process in the residential sector regarding EPC projects for multi-family buildings, and financing models for EPC projects in general.

Standardization could be one of the solutions that could help companies lower their costs and allow financial institutions/banks to bundle the projects and finance much smaller projects in this way.

Acceptance of the EPC model in general and the creation of the demand for EPC are also important. The policy must secure against the possibility for utilities and ESCOs to cherry pick the most profitable energy efficiency measures without considering the need for deep renovation.

7.2 Financial instruments

As for all other energy efficiency projects as well ESCOs have been using available subsidy programmes and grants available. For example, many EPC projects for multi-apartment buildings have been implemented and EU structural funds have been used for energy efficiency projects.

As of 2017, support for energy efficiency projects in the industrial sector has been available and EPC can be used to implement energy efficiency measures.

As said before, EPC projects are very rare in the public sector due to procurement rule restrictions and the novelty of the concept. Four municipalities are working to procure the first EPC project for their buildings at the moment.

Energy efficiency investments are still perceived as complicated and risky with high transaction costs. ESCOs in Latvia usually are small and medium-sized enterprises, and commercial banks are reluctant to provide long-term financing for EE projects. Latvian Baltic Energy Efficiency Fund was established with the aim to provide long-term financing for EE projects. Projects implemented by more experienced private ESCOs have changed the attitude towards EPC but dissemination of information, education and networking remain of great importance in explaining and promoting the EPC model.





8 CERTIFICATION OF ENERGY EFFICIENCY SERVICES

8.1 General framework for certification of products and services

The main certification body in Latvia is the Latvian National Accreditation Bureau (LNAB). For example, competence certification of independent experts/energy auditors is performed by a competence verification institution – a certification authority which is authorized by LNAB in accordance with laws and regulations governing compliance assessment and in accordance with the Standard LVS EN ISO/IEC 17024:2012 "Conformity assessment. General requirements for bodies operating certification of persons". Companies that can conduct energy audits of large energy consumers and companies are certified directly by LNAB.

8.2 Certification of products and services in the energy sector

Energy efficiency requirements and energy services providers are regulated by different legislative acts. The EU Directive on Energy End-Use Efficiency and Energy Services was transposed into the Energy Efficiency Law of Latvia, which defines energy efficiency requirements. The main legally defined EES are

-  Energy auditing of buildings – a certification system of individuals (an independent building professional should obtain energy auditor certification to be able to perform energy audits of buildings);
-  Energy auditing for large energy consumers and companies – a certification system for companies that conduct energy audits for large companies and energy consumers;
-  HVAC and boiler inspection – certification of individuals doing energy performance tests for boilers and CHP plants;
-  Energy management for companies and municipalities following ISO 50001 certification for companies.

8.2.1 Certification of energy efficiency services

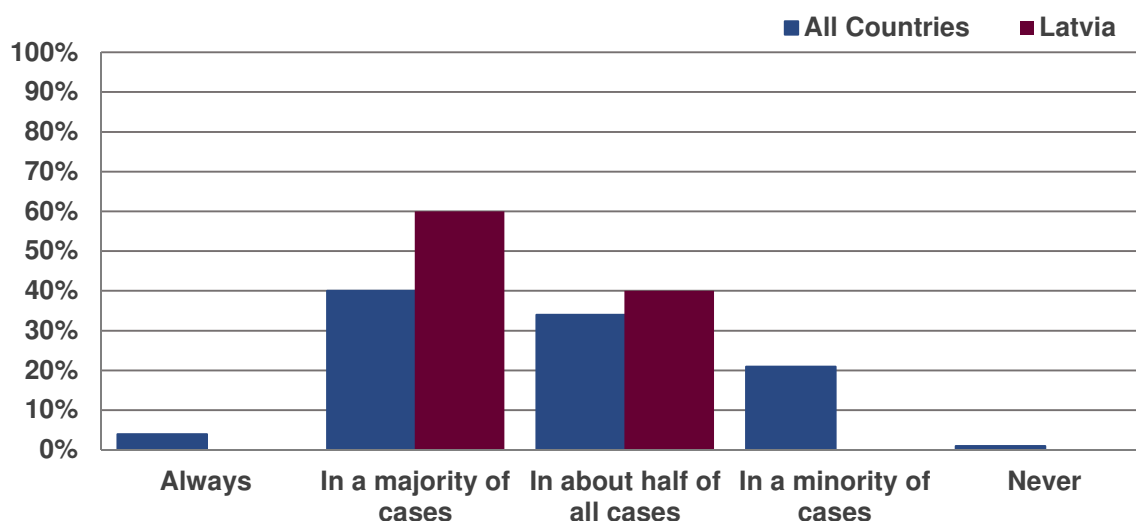
Until now ESCOs have not been distinguished as a special business type and currently there is no certification of ESCOs and their services. Although the EPC market is quite small, ALTUM (a state-owned development finance institution) is considering the possibility of establishing specific criteria for ESCOs and creating an ESCO register.

Within Sunshine and Accelerate Sunshine projects, a standardised scheme (standardised EPC contracts, M&V forms, guidelines etc.) for energy efficiency projects in buildings is currently being developed.

Some voluntary schemes like passive house certification, RBEAM have been used in some energy efficiency projects in Latvia, but both certification procedures are not widely used and recognized.

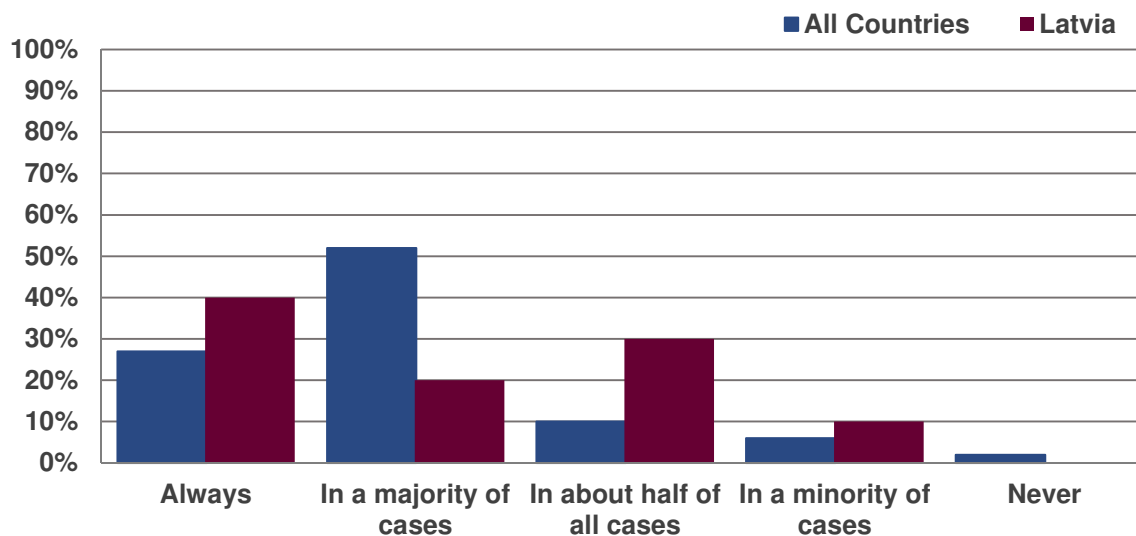
The following pages summarise the responses to the QualitEE survey regarding the development of a quality assurance scheme for energy efficiency services.

Figure 31. In your experience, is there lack of trust in EPC/ESC service providers? (Percentage of responses of providers and facilitators, Sept 2017)



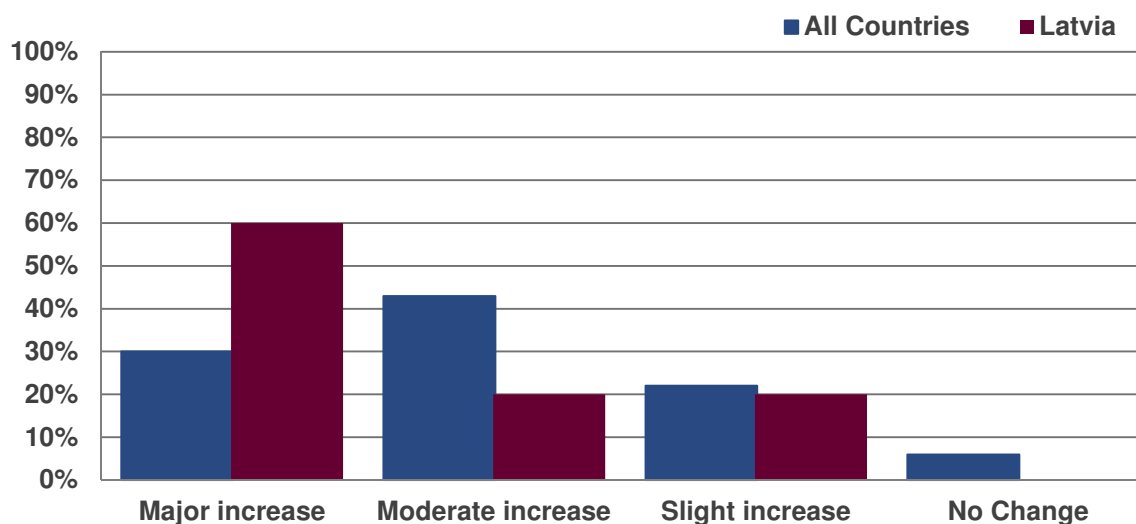
Sixty percent of Latvian respondents indicate lack of trust during most of their projects and 40% indicate lack of trust in about half of all cases. In comparison, 40% of EU respondents replied there is lack of trust in EPS/ESC services in most cases. The answers show prevailing lack of trust is still one of the major challenges of the market.

Figure 32. In your experience, do well defined procurement specifications increase the quality level of EPC/ESC services? (Percentage of responses of providers and facilitators, Sept 2017)



Forty percent of Latvian respondents replied that well-defined procurement specifications always increase the quality of services, and 20% replied that it is mostly the case; a third of Latvian respondents replied that they do in about half of the cases. Even greater support was indicated by other EU respondents, with 82% of them finding procurement specifications to be helpful in all or at least in most projects.

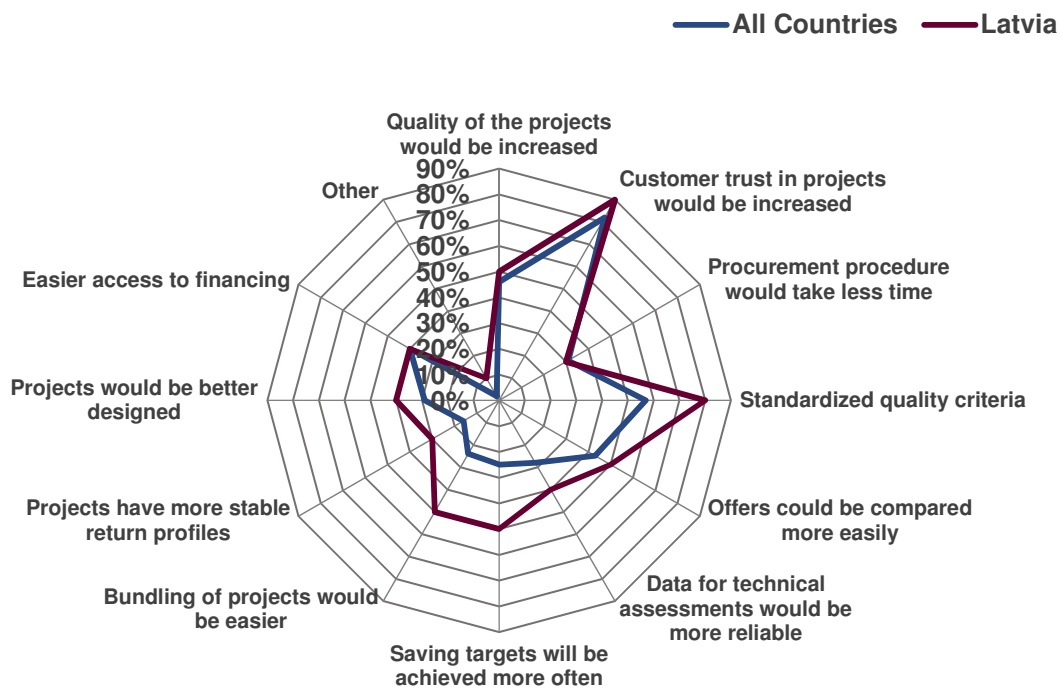
Figure 33. To what extent would a quality assurance scheme increase client trust in EPC/ESC services and providers? (Percentage of responses of providers and facilitators, Sept 2017)



The majority of surveyed Latvian EPC providers and facilitators (60%) responded that the impact would be major increase and 20% expected a moderate increase of trust while the EU respondents have differing opinions whether the impact would be major or only slight. None of the Latvian respondents and only 6% of those from Europe believe that quality assurance schemes would have no impact. Interviews with energy services providers carried out by the

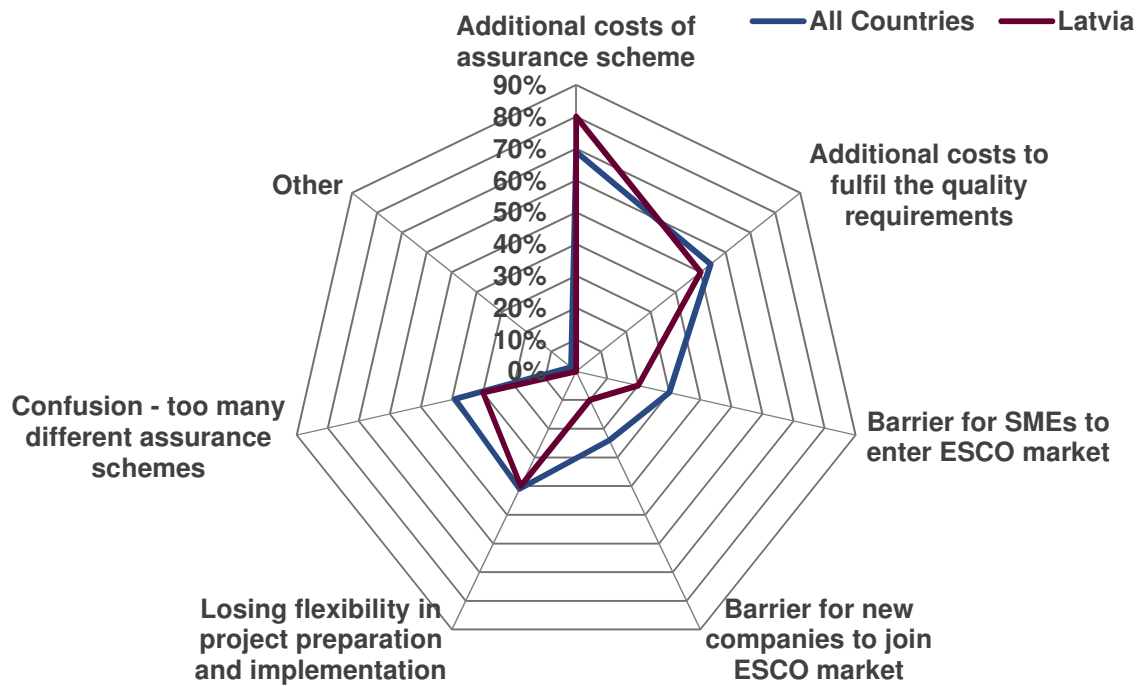
authors highlighted that many “conventional energy efficiency projects” lack clear procedures for measuring and verifying energy savings, for distinguishing between the responsibilities of different parties, for cases when energy saving targets are not reached. These very important points are often missing in procurement, construction and service agreements.

Figure 34. In your opinion, what would be the added value of a quality assurance scheme like this? (Percentage of responses of providers and facilitators, Sept 2017)



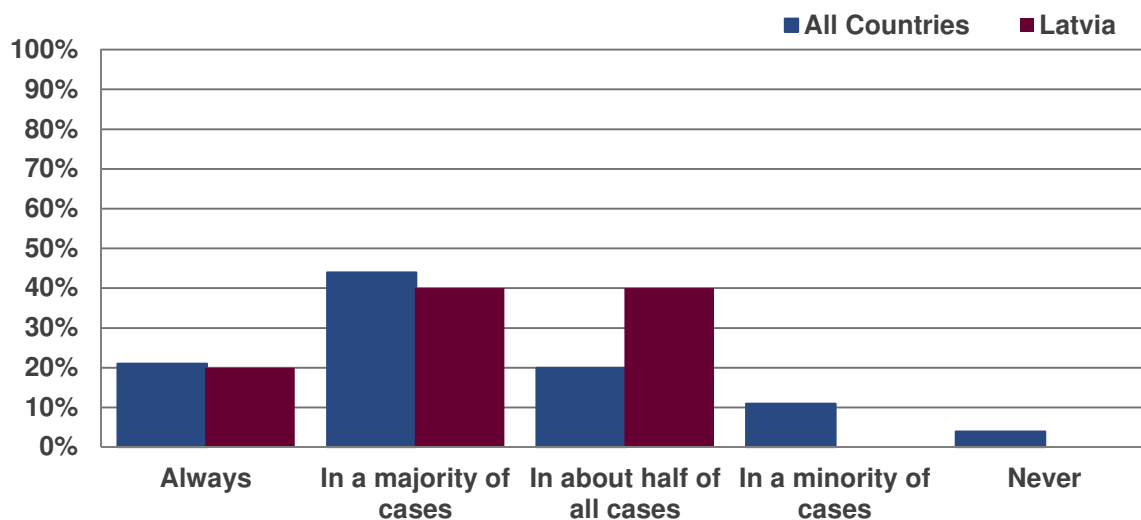
In general Latvian and All Countries respondents agreed on the added values of a quality assurance scheme. All agreed that the most beneficial features would be the increased customer trust and standardised quality criteria. Latvian respondents believed that savings targets would be achieved more often and bundling of projects would be easier.

Figure 35. In your opinion, what drawbacks or barriers might be created by a quality assurance scheme like this? (Percentage of responses by providers and facilitators, Sept 2017)



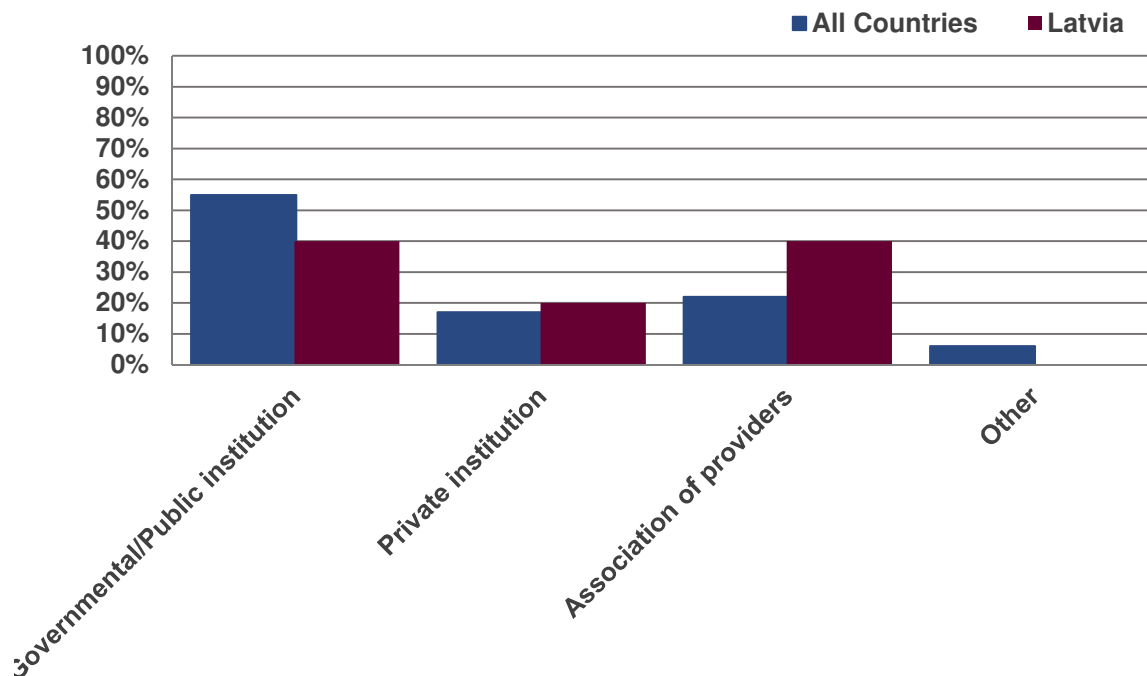
Regarding the challenges of a quality assurance scheme, the answers of respondents from Latvia and other countries were aligned. All agreed that a quality assurance scheme could add additional costs to projects and can prevent new companies (especially SMEs) from becoming an ESCO. Additional costs were seen as the main drawback to a quality assurance scheme. Besides cost-related concerns, not many EPC providers and facilitators expressed concerns regarding other issues.

Figure 36. Would you prefer implementing a project which is subject to quality assurance over a project without quality assurance? (Percentage of responses of providers and facilitators, Sept 2017)



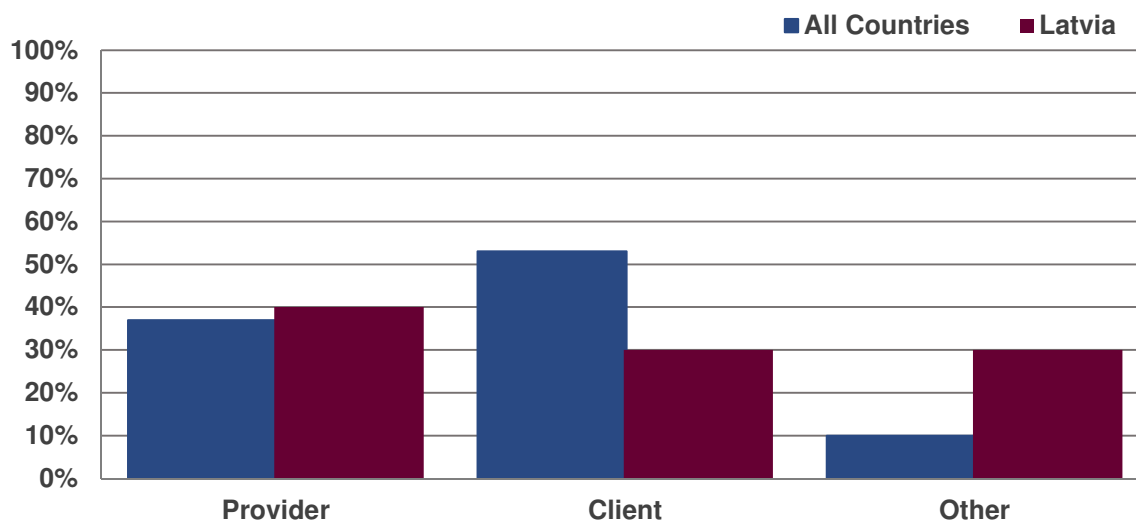
EPC providers and facilitators generally indicated support to the implementation of quality assurance schemes by replying that in most cases they would prefer projects subject to quality assurance. Answers of Latvian respondents were more in the middle (40% of them preferred projects with quality assurance in most cases and 40% half the time) indicating less clarity on the issue while over 20% of European respondents clearly declared their fondness of quality assurance schemes. However, there are no Latvian respondents who would never want project with quality assurance, while 4% of EU respondents would prefer implementing a project without quality assurance.

Figure 37. Which would be the most respected body to issue a quality assurance label or certification for EPC/ESC services in your country? (Percentage of responses of providers and facilitators, Sept 2017)



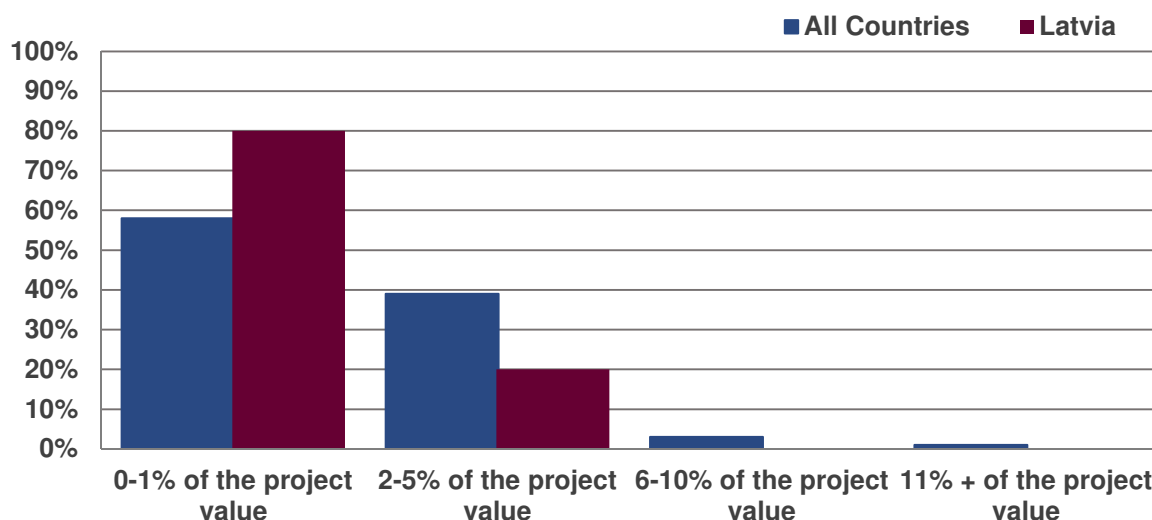
All respondents agreed on public institutions being the most respected body to issue quality assurance certification for EPC/ESC services. Trust in public institutions is significant in Latvia, where 40% of respondents would choose this kind of body, as well as in Europe. Association of providers would also be a fairly respected body (25% of European and 40% of Latvian respondents).

Figure 38. Who should pay for the quality assurance of EPC/ESC projects? (Percentage of responses of providers and facilitators, Sept 2017)



Latvian EPC providers and facilitators are split in their opinion on who should pay for quality assurance of projects, with 40% replying it should be the provider, 30% replying it should be the client and 30% of replies choosing others. European respondents in general consider the client to be the one to pay (53%) but also support financial involvement of the provider (37%).

Figure 39. What would be a viable fee for external quality assurance of an EPC/ESC project? (Percentage of responses of providers and facilitators, Sept 2017)



The majority of both Latvian (80%) and European (58%) respondents agreed that a viable fee for quality assurance would be up to 1% of the value of a particular project while 20% of Latvian respondents think it should be a bit higher – between 2% and 5%. There are no significant differences between the answers of Latvian and European EPC providers and

facilitators. Very few respondents from other EU countries think the fee should be higher than 6% or even higher than 11% of the project value.

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