Capacity building of regional suppliers' network

Market research of office building design, construction and management

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Introduction

The objective of office building design, construction and management market research is to collect and analyse the information from this particular target market with a view to green public procurement.

This green public procurement (GPP) criteria set addresses the procurement process for office buildings, including their design, site preparation, construction, servicing and ongoing management. For the purposes of the criteria, the product group "Office buildings" shall comprise buildings were mainly administrative, bureaucratic and clerical activities are carried out.

An office building is, moreover, defined as being – a building whose primary function is to provide space for administrative, financial, professional or customer services. The office area must make up a significant majority of the total building's gross area. The building may also comprise another type of spaces, like meeting rooms, training classrooms, staff facilities, or technical rooms.

This criteria set contains recommendations that apply to both the renovation of existing buildings and the construction of new buildings. It addresses the most significant environmental impacts related to office buildings which are related to greenhouse gas emissions from energy consumption during the use of the building and resource use to manufacture construction materials.

In general, the criteria focus on an office building as a system rather than individual components. It should be noted that separate GPP criteria are available that can be used for the procurement of various building components. Components of relevance for which there exist EU GPP criteria include: wall panels, combined Heat and Power (CHP) systems, water-based heating systems, indoor lighting, taps and showerheads, toilets and urinals. The GPP criteria do not cover parking areas that are located outside of the building's physical footprint or curtilage. While these criteria have been specifically developed for office buildings, many of the requirements could also be used as a reference for the procurement of other types of building.

For both core and comprehensive criteria, it must be borne in mind that the procurement of office buildings is a particularly complex issue which necessarily results in the fact that, for both core and comprehensive levels of ambition, the inclusion of green criteria does require - when compared to standard solutions - increased expertise, verification effort and, at least for some of the criteria and depending on the procurement route and the experience of the design team and contractors, higher upfront costs.

GPP is a voluntary instrument. There are however some EU Directives that define the mandatory requirements for the public procurement in general and specifically of the housing sector and energy generation. Mandatory requirements are also set by the national policy targets addressing energy efficiency, climate change and promotion of the GPP. Energy and climate policy targets always include a CO_2 emissions reduction to a certain level. Some

procurement areas, for example, office building design, construction and management, are on the high priority list to reduce CO_2 emissions.

This market research consists of several parts, which together forms a specific product market report. Market research consists of analyses of the legal and political framework, as well as formulating requirements for improvement. This study provides answers to questions that lead to conclusions, based on market research results.

EU GPP criteria are used in this market research because in such a way it's possible to compare the results of market research among other participating countries. However, the national regulation framework is significant, as it may be different in different EU member states.

Environmental impact of office building design, construction and management and the key GPP criteria

Evidence gathered from office buildings across Europe indicates that their most significant environmental impacts are related to energy use during their use. The most significant contributors are lighting, heating, cooling and ventilation. Their relative importance primarily varies according to the thermal efficiency of the building and the climatic zone in which it is located. This highlights the importance of taking into account the overall energy performance of a building, which could include the potential to generate cleaner energy.

The production of construction products is responsible for the next most significant environmental impacts. These relate to the resources used and the emissions and ecosystem impacts associated with raw material extraction, processing and transportation. Resource use is influenced by the amount of waste generated during product manufacturing, construction on-site and demolition processes, which can be significant as a proportion of the overall material flows on a construction site.

A related consideration in the case of large-volume, high-weight construction materials are impacts relating to the transportation of aggregates (natural, recycled or secondary) to production sites. Transport of these materials is typically by lorry, which results in fuel-related emissions that are generally greater than or equal to those for the production of such materials. If these materials are moved over distances greater than 25 km, the resulting emissions can contribute significantly to the environmental impacts of the production phase for the main building elements.

Office building design, construction and management effects on environment and corresponding GPP criteria:

Key Environmental Impacts	**GPP Approach**
Primary energy consumption and associated greenhouse gas emissions during use of and travel to and from the building	Design and construction to achieve high energy efficiency performance and low associated CO_2 emissions
Depletion of natural resources, embodied	Installation of high efficiency and renewable

energy and emissions associated with the manufacturing and transportation of building materials	energy technologies which make use of site-specific opportunities to reduce energy consumption and CO_2 emissions level
	Design and specification to reduce the embodied impacts and resource use associated with construction materials
Waste generation during site preparation. construction, use and demolition of the building	Design, specification and site management to minimise construction and demolition (C&D) waste and to use building products or materials with a high recycled or re-used content
Deterioration in indoor air quality due to emissions of hazardous substances from building products and the intake of particulate air pollution from the external environment	Specification of fit-out and finishes that minimise hazardous emissions to indoor air
Pollution of the local environment and deterioration of local air quality due to emissions from vehicles used to travel to and from the building	Ventilation design in order to ensure healthy air and minimise the intake of external air pollution
Water consumption during use of the building	Specification and installation of water saving technologies
Global warming potential, acidification, exploitation of renewable and non-renewable primary energy resources eco-toxicity, human toxicity, eutrophication, abiotic resource depletion and water consumption , use of secondary and re-used materials and waste material flows	Installation of physical and electronic systems to support the ongoing minimisation of energy use, water use and waste arisings by facilities managers and occupiers
	Implementation of staff travel plans to reduce transport-related fuel use and CO_2 emissions, including infrastructure to support electric vehicles and cycling

Regulatory framework of the of office building design, construction and management

This section provides information on EU and corresponding national legislation that is relevant for office building design, construction and management.

Whilst GPP is a voluntary instrument, it is important to highlight that other pieces of EU legislation exist which regulate the environmental performance of office buildings with binding obligations. The construction and refurbishment of buildings in an energy and resource efficient way is an important policy objective for Europe. The recast Energy Performance of Buildings Directive, the Renewable Energy Directive and the Energy Efficiency Directive together set out requirements for buildings that contribute towards ambitious EU targets for energy efficiency and renewable energy generation by 2020. Moreover, these policy instruments also require the public sector, in the first place through the

procurement of refurbishment and new-build projects by central government, to lead the way in delivering efficiency improvements and in deploying cleaner forms of energy generation.

Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC on energy efficiency. For example, Article 6 of the Energy Efficiency Directive 2012/27/EU states that the Member States shall ensure that central governments only purchase products, services and buildings with a high energy-efficiency performance insofar that it is consistent with cost-effectiveness, economical feasibility, wider sustainability, technical suitability and sufficient competition. This directive has been implemented into Latvian legislation through Law on the Energy efficiency of Buildings and Energy Efficiency Law.

Directive 2010/30/EU of the European Parliament and of the Council of 19 May 2010 on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products. In Latvia this Directive has been implemented into Latvian legislation through the Law on the Energy Performance of Buildings Additionally, regulations subject to the Law on the Energy Performance of Buildings have been adopted:

- 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”.

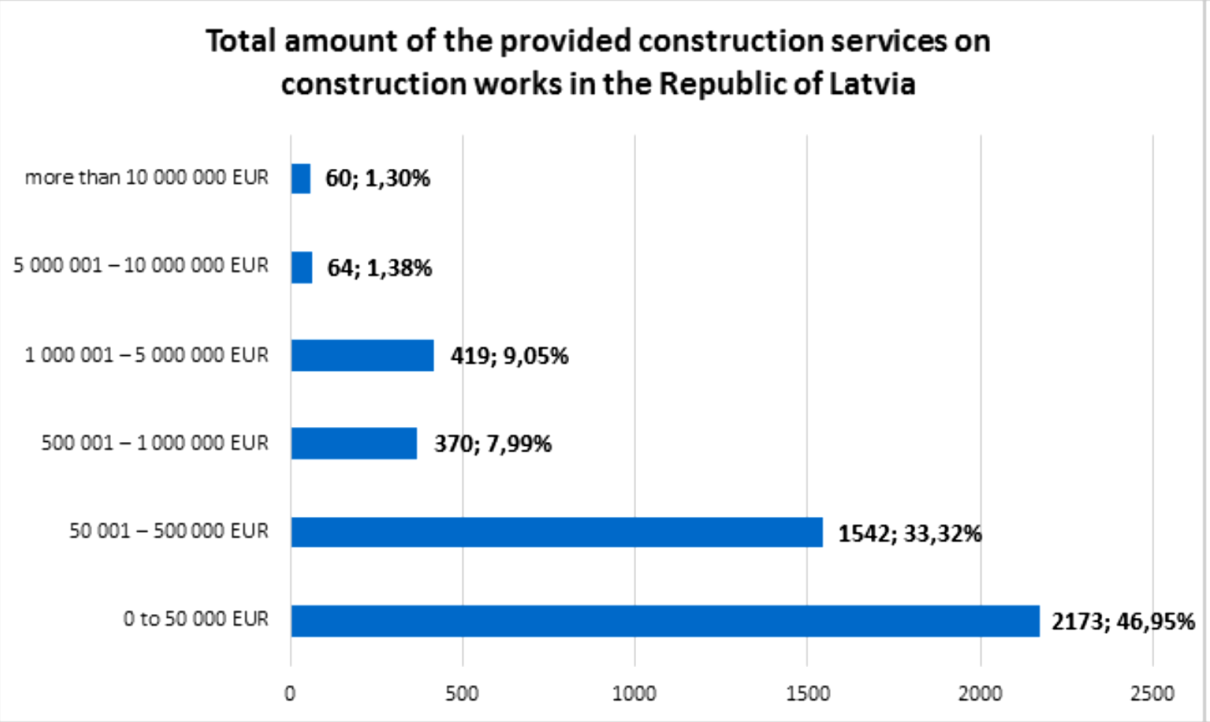
Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE) Directives 2002/96/EC on waste electrical and electronic equipment and 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment are designed to tackle the fast increasing waste stream of electrical and electronic equipment and complement European Union measures on landfill and incineration of waste.

Market analyses

In order to assess the situation in the Latvia’s building market and its compliance with the GPP criteria and willingness to offer such works in public procurement a meeting with market participants was arranged on October 4, 2016. Overall, 65 companies were invited to the meeting. However, only 5 (Menerga Baltic, R&R Grupa, DAW Baltica, Ltd, DAW Baltica, Skonto Būve , SIA “ARCHE”) responded and attended the meeting.

In this case, building market includes design, site preparation, construction, servicing and ongoing building management. According to the State Revenue Service, there are more than 25 thousand construction service providers in Latvia (including 16 thousand legal entities). At the same time, there are 5 210 active construction merchants that are registered in the Construction Merchant Register in Latvia.

Nevertheless, many of them are still very small businesses. Distribution of construction merchants by total amount of the provided construction services can be seen here:



Construction and building sector, in general, is one of the biggest economic sectors in Latvia. According to the data from the Central Statistical Bureau (CSB), in 2015 the construction sector accounted for 7% of the Latvia's GDP, employed 8% of the country's employees, and created added value of GDP in the amount of 1,382 million EUR (6.4%).

As the positive element in the green building sector, we can recognise that in 2010 Latvian Sustainable Building Council (LSBC) was founded. It is a private initiative to increase the sustainability of the built environment in Latvia and is a member of the World Green Building Council (WGBC). Additionally active role in the promotion of environmental construction is also played by the Passive House Latvia, which designs but also consults and trains specialists in the energy efficient housing development.

Data from Procurement monitoring bureau demonstrates that construction works (45000000-7) are the single biggest sector of the total public procurement – 28% (see Table 1). According to official information in 2015 out of total (2505 procurements), only 8% (206) have mentioned they include GPP criteria.

Table 1. Total number and amount of procurements in 2015

Procurement system	Nr. of procurements		Total costs in EUR (without VAT)	
	Total	including GPP	Total	including GPP
Procurement monitoring bureau	2 505	206	521 544 737	58 582 999

According to the data from Procurement monitoring bureau most of the construction works over the last years are done by the following companies:

- BMGS, Ltd

- Arčers, Ltd
- Re & Re, Ltd
- Skonto būve, Ltd
- Merks, Ltd
- Abora, Ltd
- Binders, Ltd

According to the national legislation, all new public sector buildings will have to be near-zero energy consumption from 2019. Therefore participants at the consultation meeting suggested the construction should be part of the compulsory GPP processes. From the October discussion with the sector representatives, we can conclude that there is only a few experts and companies which could fully comply with the GPP criteria for the office buildings and even they have a limited practical experience. Therefore there is a need for better education and training in this sector. However, institutions, where procuring for the design and / or construction of the office buildings according to the GPP criteria cannot ask for the extended experience but rather should focus on the educated staff.

EU legislation that is relevant to Office building design, construction and management

EU legislation act	Requirements	Affected products
DIRECTIVE 2010/31/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 19 May 2010 http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010L0031&from=en LV: Law On the Energy Performance of Buildings http://likumi.lv/doc.php?id=253635	on the energy performance of buildings (recast)	
DIRECTIVE 2010/30/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010L0030&from=EN LV: Law On the Energy Performance of Buildings http://likumi.lv/doc.php?id=253635	on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products (recast)	
Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:en:PDF LV: http://likumi.lv/doc.php?id=253635	on energy efficiency	
DIRECTIVE 2009/28/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 April 2009 amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=en LV: http://likumi.lv/doc.php?id=108834	on the promotion of the use of energy from renewable sources and amending and subsequently	
Directive 2010/31/EC of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (recast) http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:en:PDF	on a Community energy-efficiency labelling programme for office equipment (recast version)	Establishes the rules for the Community energy efficiency labelling programme for office equipment (hereinafter referred to as the Energy Star programme) as defined in the Agreement.

Directive 2009/28/EC of the European Parliament and of the Council http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=en	on the promotion of the use of energy from renewable sources	
Directive 2002/96/EC Directive 2002/96/EC Of The European Parliament And Of The Council of 27 January 2003 http://eur-lex.europa.eu/resource.html?uri=cellar:ac89e64f-a4a5-4c13-8d96-1fd1d6bcaa49.0004.02/DOC_1&format=PDF	on Waste Electrical and Electronic Equipment (WEEE)	Tackle the fast increasing waste stream of electrical and electronic equipment and complement European Union measures on landfill and incineration of waste.
Directive 2002/95/EC Directive 2002/95/EC Of The European Parliament And Of The Council of 27 January 2003 http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32002L0095&from=en	on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment	Dictates that Member States shall ensure that, from 1 July 2006, new electrical and electronic equipment put on the market does not contain lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE).
REACH Regulation (1907/2006) and LSD 2008 Green Public Procurement Office IT equipment Technical Background Report http://ec.europa.eu/environment/gpp/pdf/tbr/office_it_equipment_tbr.pdf LV: Chemical Substances Law http://likumi.lv/doc.php?id=47839	On new regulatory framework for the collection of information on the properties of chemicals on the European market, and also for future restrictions on their use	The restrictions provide a procedure to regulate that the manufacture, placing on the market or use of certain dangerous substances shall be either subject to conditions or prohibited.