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| <b>Dissemination level</b> |   |   |
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| PU                         | Public  |   |
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## Table of contents

|   |    |
|---|----|
| Table of contents.....  | 2  |
| List of tables .....  | 3  |
| Summary.....  | 4  |
| 1. Introduction .....   | 5  |
| 2. Legal framework.....   | 6  |
| 2.1. EU public procurement legislation.....                           | 6  |
| 2.2. Environmental aspects in EU public procurement legislation ..... | 9  |
| 2.3. Current situation in EU countries.....                           | 10 |
| 2.4. Technical and quality standards.....                             | 11 |
| 3. Procedures, tools and methodologies.....                           | 13 |
| 3.1. GPP procedure step by step .....                                 | 13 |
| 3.2. EU GPP Toolkit.....  | 14 |
| 3.3. EU GPP criteria for furniture .....                              | 15 |
| 3.4. Other GPP tools or methodologies.....                            | 16 |
| 4. Other environmental information.....                               | 20 |
| 4.1. Ecolabelling .....   | 20 |
| 4.2. Ecodesign.....   | 21 |
| 5. Discussion and conclusions.....                                    | 25 |
| References.....   | 27 |



## List of tables

|   |    |
|---|----|
| Table 1. Summary of European legislation on public procurement. ....                                | 8  |
| Table 2. Status of the National GPP Actions Plans <sup>1</sup> . ....                               | 11 |
| Table 3. Status of GPP in some EU countries (Source: IHOBE, 2014). ....                             | 11 |
| Table 4. European technical and quality standards for urban furniture. ....                         | 12 |
| Table 5. Aspects covered by EU GPP criteria for furniture (Source: European Commission, 2008b)..... | 16 |
| Table 6. Eco-labels applicable to furniture products. ....  | 21 |



## Summary

This deliverable shows a state-of-the-art on green public procurement (GPP) and its implications related to the urban furniture sector. A technical update and novelties identified in this area are provided within three content blocks:

1. The legal framework on GPP, including legal and standard requirements applicable to urban furniture.
2. Procedures, tools and methodologies available for GPP.
3. Environmental information related to urban furniture, including life cycle assessment studies, ecodesign practices and ecolabelling.



## 1. Introduction

According to the communication of the European Commission on Green Public Procurement (GPP), GPP can be defined as: “a process whereby public and semi-public authorities seek to procure goods, services, works and contracts in special sectors with a reduced environmental impact throughout their life cycle when compared to goods, services, works and contracts in special sectors with the same primary function that would otherwise be procured” (European Commission, 2008a). The main objective of the LIFE FUTURE project is to develop a tool, the so-called Green Urban Furniture Tool or GUF Tool, which allow public authorities to perform an accurate and simplified environmental analysis of urban furniture in order to facilitate GPP.

As a starting point to achieve this objective, the situation of the urban furniture sector related to GPP was evaluated before submitting the proposal of the LIFE FUTURE project. One year after, preparatory action A1 was conducted to compile a state-of-the-art on GPP and its implications related to the urban furniture sector, in order to provide a technical update and identify whether any legal or regulatory change has taken place to date, as well as to review the position of public authorities in European countries with regard to GPP. Moreover, an updated review was conducted on methodologies, tools and studies dealing with GPP and environmental evaluation of urban furniture products.

To this end, an active search for related information was performed through different websites on the internet, technical articles, books, doctoral theses, and so forth. Relevant information was compiled and then organised around three main blocks, which cover: (1) the legislation on GPP and standards applicable to urban furniture; (2) the procedures, tools and methodologies currently available for GPP; and (3) other relevant environmental information on urban furniture, including ecodesign practices and ecolabelling.

This deliverable provides a synthesized review of this information, which constitutes the basis for the proper development of the remaining actions.



## 2. Legal framework

### 2.1. EU public procurement legislation

EU policy actions regarding public procurement have as the main objective to promote the EU internal market through public procurement, establishing conditions to ensure that public contracts are awarded on an equal basis and without any discrimination. In fact, one of the EU principles in this regard is the fight against fraud and corruption by promoting transparency. Nevertheless, a legal loophole existed for a long time regarding the possibility, the suitability and the manner of including environmental aspects in the different bidding specifications: object of the contract, selection of contractors, technical specifications, award criteria and special performance conditions.

The first EU initiatives for GPP appeared during the nineties. In 1997, the Treaty of Amsterdam was the first to consider the need for integrating sustainable development into EU policies and actions, but it did not define how this could be applied to public procurement (European Commission, 1997). In 2001, the European Commission published an Interpretative Communication on the Community Law applicable to public procurement, which proposed possibilities to include environmental considerations in public procurement (European Commission, 2001a). This led to a pronouncement on the manner in which EU Member States could incorporate environmental criteria while respecting the Community Law of the European Court of Justice. In 2003, the Communication on Integrated Product Policy of the EU recommended the establishment by Member States of GPP Action Plans to steer the market towards more sustainable products (European Commission, 2003), which would be reiterated later in the 2004 KOK Report “Facing the challenge. The Lisbon strategy for growth and employment” (The High Level Group, 2004).

In 2004, the first European Directives clarifying how environmental clauses could be integrated in public procurement were approved: Directive 2004/17/EC and Directive 2004/18/EC. The core principles of these Directives were transparency, equal treatment, open competition, and sound procedural management. They were designed to achieve a procurement market being competitive, open and well regulated.

However, economic, social and political developments and current budgetary constraints have made it necessary to reform the rules established in the above Directives, firstly to make them simpler and more efficient for public purchasers and companies and secondly to provide the best value for money for public purchases, while respecting the principles of transparency and competition. Hence, the European Commission issued in 2011 proposals to amend Directives 2004/17/EC and 2004/18/EC, as well as for the adoption of a Directive on concession contracts. The new Directives were adopted by the EU on 2014: Directive 2014/24/EU, Directive 2014/25/EU and Directive 2014/23/EU.

The reform of Directives on public procurement has introduced new elements in four main areas:

1. Higher efficiency, more eProcurement and easier participation for SMEs. The new rules, including a new electronic self-declaration for bidders, pave the way for the digitalisation of public procurement, which will considerably increase the efficiency of the public



procurement system. By limiting the turnover requirements and introducing the option of dividing tenders into lots, it is now easier for SMEs to bid on public contracts. Moreover, the new electronic self-declarations will primarily benefit SMEs.

2. Modernising public services and slashing administrative burden. Simpler procedures for contracting authorities will open up the European public procurement market and promote the free movement of goods and services, allowing public authorities to obtain better value for money. Greater flexibility of the new legislation includes also the possibility of choosing the best quality-price ratio (value for money) because Member States are free to eliminate price as the sole award criterion. Moreover, in order to encourage innovation in public administration, contracting authorities can cooperate with a company (selected in a competitive tender procedure) to develop an innovative product, which does not exist on the market. New rules on concessions will increase competition allowing Member States to achieve better value for money when mobilising private capital and know-how to complement public resources and enable new investment in public infrastructure.
3. Addressing societal challenges through public procurement. By using their purchasing power to choose socially responsible goods, public authorities can set a positive example and encourage enterprises to make wider use of social standards in the management, production and provision of services. Fresh opportunities have also been opened up for public authorities to spur eco-innovation by using new award criteria in contract notices that place more emphasis on environmental considerations.
4. Preventing corruption: Creating a culture of integrity and fair play. The new Directives set the proper framework for the prior publication of tenders, clear and unbiased technical specifications, equal treatment of bidders in all stages of the process, and objective evaluation of tenders.

Environmental issues has gained more attention in the new Directives, which include rules intended to facilitate better integration of environmental considerations into procurement procedures. In fact, GPP is increasingly understood as a key tool to contribute to sustainable development. The “2030 Agenda for sustainable development” of the United Nations includes among its specific goals to promote public procurement practices that are sustainable, as a measure to ensure sustainable consumption and production patterns (European Commission, 2015).

Table 1 compiles the European legislation on public procurement.



Table 1. Summary of European legislation on public procurement.

| Legislation          | Scope   |
|----------------------|---|
| Directive 71/305/EEC | Council Directive 71/305/EEC of 26 July 1971 concerning the coordination of procedures for the award of public works contracts.<br>Public works contracts. Environmental aspects are not considered.  |
| Directive 77/62/EEC  | Council Directive 77/62/EEC of 21 December 1976 coordinating procedures for the award of public supply contracts.<br>Public supply contracts. Environmental aspects are not considered.   |
| Directive 92/50/EEC  | Council Directive 92/50/EEC of 18 June 1992 relating to the coordination of procedures for the award of public service contracts.<br>Public service contracts. Environmental aspects are not considered.  |
| Directive 93/37/EEC  | Council Directive 93/37/EEC of 14 June 1993 concerning the coordination of procedures for the award of public works contracts.<br>Public works contracts. Environmental aspects are not considered.   |
| Directive 93/36/EEC  | Council Directive 93/38/EEC of 14 June 1993 coordinating the procurement procedures of entities operating in the water, energy, transport and telecommunications sectors<br>Public supply contracts. Environmental aspects are not considered.  |
| Directive 2004/17/CE | Directive 2004/17/EC of the European Parliament and of the Council of 31 March 2004 coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors.<br>Procurement procedures for specific sectors. Environmental aspects are considered.  |
| Directive 2004/18/CE | Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts.<br>Public works contracts, public supply contracts and public service contracts. Environmental aspects are considered. |
| Directive 2014/23/EU | Directive 2014/23/EU of the European Parliament and of the Council of 26 February 2014 on the award of concession contracts.<br>Concession contracts.   |
| Directive 2014/24/EU | Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC.<br>New rules for GPP are considered.<br>Public works contracts, public supply contracts and public service contracts.<br>New rules for GPP are considered.                                 |
| Directive 2014/25/EU | Directive 2014/25/EU of the European Parliament and of the Council of 26 February 2014 on procurement by entities operating in the water, energy, transport and postal services sectors and repealing Directive 2004/17/EC.<br>Procurement procedures for specific sectors. New rules for GPP are considered.                               |





## 2.2. Environmental aspects in EU public procurement legislation

The new rules in current Directives on public procurement are intended to facilitate better integration of environmental considerations into procurement procedures. Public authorities will be able to require that bidders not only comply with environmental obligations, but also deliver goods fulfilling the requirements of environmental labels. In addition, they can ask bidders to enhance environmental factors when producing goods or to integrate environmental costs in an offer based on a life-cycle cost approach.

The new rules dealing with environmental aspects in public procurement includes (European Commission, 2014):

### 1. Horizontal clause to ensure the respect of environmental legislation:

- In the performance of public contracts enterprises have to comply the applicable EU, international and national environmental obligations.
- An enterprise which does not respect these environmental obligations can be excluded from the tender procedure.
- The enterprise that has submitted the best tender may be not awarded the contract if the tender does not comply with these environmental obligations.
- A tender has to be rejected where it is abnormally low in relation to the works, supplies or services because it does not comply with these environmental obligations.

### 2. Defining environmental criteria for a contract with the help of ecolabels:

- The new rules allow public authorities to refer to a specific label or eco-label, such as the EU Ecolabel or other environmental labels (see Section 4.1), when laying down the environmental characteristics of the works, goods or services they wish to purchase. These labels ensure that the product fulfils predefined environmental requirements based on objectively verifiable criteria.
- All the requirements obtain the concerned label must be linked to the specific works, goods or services to be purchased (i.e., they must characterise them). If the label includes requirements related to the enterprise itself or its policy in general, the label cannot be referred to by the public purchaser. In this case, reference can only be made to the specific requirements of the label linked to the purchased works, goods or services.
- Labels must be laid down in a transparent procedure by independent bodies in which all relevant stakeholders (government bodies, consumers, manufacturers, distributors and non-governmental organisations) can participate.
- The label has to be based on objective and non-discriminatory criteria and available to all interested parties.
- If an enterprise has been unable to obtain the label on time, equivalent labels or other means of proof must be accepted by public purchasers.

### 3. Requirements for production process:

- Public authorities can consider all factors of the production process, provision or trading, even where such factors do not form part of the material substance of the product. For



example, when technically describing the products or services they want to purchase, they may require that they do not involve toxic chemicals or are produced/provided using energy-efficient machines. Public authorities may also decide that the contract will be awarded to the enterprise offering the products/services which meet these conditions in the best possible way; or they may favour the product which is of fair trade origin. Public authorities can assess value for money on the basis of environmental aspects.

#### 4. Life-cycle costing to include internal costs and costs related to environmental externalities:

- The new rules promote a life-cycle costing approach in order to include all costs over the life cycle of a work, supply or service contract. This means internal costs as well as external costs related to environmental factors.
- Internal costs include costs for research and development, production, transport, consumption of energy, maintenance and end-of-life disposal.
- Externalities may include the emission of greenhouse gases and pollution caused by the extraction of raw materials used in the product or caused by the product itself or its manufacturing. Costs related to environmental externalities can only be taken into account if their monetary value can be determined and verified. If no common EU method exists for the calculation of life-cycle costs, methods can be established at national, regional or local level. However, they have to be general (in the sense that they should not be exclusively designed for a single specific public procurement procedure), be objective and the data required can be provided with reasonable effort by enterprises.

### 2.3. Current situation in EU countries

In 2003, the European Commission in its Communication on Integrated Product Policy (European Commission, 2003) encouraged Member States to draw up National Action Plans for GPP to steer the market towards more sustainable products. These National GPP Action Plans should include an assessment of the existing situation and ambitious targets for the next years, specifying the measures to achieve them. The National GPP Action Plans are not legally-binding but provide political impetus to the process of implementing and raising awareness of GPP. They allow Member States to choose the options that best suit their political framework and the level they have reached.

Table 2 shows the current situation of the National GPP Actions Plans in EU countries as of November 2014. A comprehensive overview of the situation in each EU Member States can be found in the document National GPP Action Plans (policies and guidelines)<sup>1</sup>.

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<sup>1</sup> National GPP Action Plans: [http://ec.europa.eu/environment/gpp/action\\_plan\\_en.htm](http://ec.europa.eu/environment/gpp/action_plan_en.htm)



Table 2. Status of the National GPP Actions Plans<sup>1</sup>.

| Status  | Countries  |
|---|--|
| National Action Plan or equivalent document adopted | Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Ireland, Italy, Latvia, Lithuania, Malta, Netherlands, Poland, Portugal, Slovakia, Spain, Sweden, UK |
| No existing National Action Plan                    | Estonia, Greece, Hungary, Luxembourg, Romania  |

Table 3 summarizes the current situation regarding GPP in some EU countries, including the percentage of public bids with environmental criteria and priority aspects, such as GPP targets or products.

Table 3. Status of GPP in some EU countries (Source: IHOBE, 2014).

| Country     | % GDP for public procurement | Bidding with environmental criteria | Priority aspects: targets & products   |
|-------------|------------------------------|-------------------------------------|--|
| Austria     | 16%                          | 60%                                 | Under definition.  |
| Denmark     | 19%                          | 50%                                 | Computer equipment, cleaning products, recycled paper.   |
| Finland     | 16%                          | 50%                                 | n/a  |
| France      | 16%                          | 30%                                 | Vehicles, construction, wooden products.   |
| Germany     | 17%                          | 70%                                 | n/a  |
| Italy       | 12%                          | 30%                                 | Energy efficiency and recycled material content in products.   |
| Netherlands | 21%                          | 50%                                 | In 2010, 100% GPP in Central Government and 50% in other public authorities.   |
| Spain       | 13%                          | 30%                                 | n/a  |
| Sweden      | 20%                          | 80%                                 | n/a  |
| UK          | 17%                          | 70%                                 | Construction, catering, textiles, waste, paper and printing, energy, energy consumables and equipment, furniture, transport. |

## 2.4. Technical and quality standards

Technical and quality standards may also be used as criteria in public procurement procedures to ensure that purchased products meet certain requirements such as durability, reparability,



fitness for use or ergonomics. Table 4 shows relevant technical and quality standards for different categories of urban furniture products.

*Table 4. European technical and quality standards for urban furniture.*

| <b>Product category</b>           | <b>Technical and quality standards</b>   |
|-----------------------------------|--|
| Street furniture products         | <p>EN 581-1 Outdoor furniture - Seating and tables for camping, domestic and contract use - Part 1: General safety requirements.</p> <p>EN 581-2 Outdoor furniture - Seating and tables for camping, domestic and contract use - Part 2: Mechanical safety requirements and test methods for seating.</p> <p>EN 581-3 Outdoor furniture - Seating and tables for camping, domestic and contract use - Part 3: Mechanical safety requirements and test methods for tables.</p>  |
| Recreational and leisure products | <p>EN 16630 Permanently installed outdoor fitness equipment - Safety requirements and test methods.</p> <p>EN 14877 Synthetic surfaces for outdoor sports areas – Specification.</p> <p>EN 14904 Surfaces for sports areas - Indoor surfaces for multi-sports use – Specification.</p> <p>EN 15330-1 Surfaces for sports areas - Synthetic turf and needle-punched surfaces primarily designed for outdoor use - Part 1: Specification for synthetic turf surfaces for football, hockey, rugby union training, tennis and multi-sports use.</p> <p>EN 15330-2 Surfaces for sports areas - Synthetic turf and needle-punched surfaces primarily designed for outdoor use - Part 2: Specification for needle-punched surfaces.</p> <p>EN 14384 Pillar fire hydrants.</p> |
| Traffic management products       | <p>EN 12966 Road vertical signs - Variable message traffic signs.</p> <p>EN 12899-1 Fixed, vertical road traffic signs - Part 1: Fixed signs.</p> <p>EN 12899-3 Fixed, vertical road traffic signs - Part 3: Delineator posts and retroreflectors.</p> <p>EN 12899-4 Fixed, vertical road traffic signs - Part 4: Factory production control.</p> <p>EN 12899-5 Fixed, vertical road traffic signs - Part 5: Initial type testing.</p> <p>EN 13422 Vertical road signs - Portable deformable warning devices and delineators - Portable road traffic signs - Cones and cylinders.</p> <p>EN 1790 Road marking materials - Preformed road markings.</p> <p>EN 12899-2 Fixed, vertical road traffic signs - Part 2: Transilluminated traffic bollards (TTB).</p>         |



## 3. Procedures, tools and methodologies

### 3.1. GPP procedure step by step

GPP is a systematic process that should be done step by step. The GPP procedure includes the following steps<sup>2</sup>:

1. Achieve political and management support:
  - Develop a green procurement policy for the institution or company.
  - Have it approved by the municipal council or companies' senior management.
  - Choose a green title to communicate the policy to the internal staff and the outside world.
2. Assess the actual procurement needs:
  - Decide on the products or services that actually require procuring.
  - Describe the requirements in a functional manner so that alternatives are not excluded.
3. Define the subject matter:
  - The subject matter of a contract relates to the products, services or works to be procured.
  - Purchasers are free to describe the environmentally friendly products or performance-based products.
4. Define technical specifications:
  - Technical specifications describe the market contact and establish minimum compliance criteria.
  - The application of environmental criteria helps to save resources and energy as well as reducing waste and pollution. Example criteria can be obtained from the EU GPP toolkit (see Sections 3.3 and 3.4), the EU energy label or other environmental labels like the EU Ecolabel (see Section 4.1).
5. Define award criteria:
  - Determine award criteria (e.g., higher ecological efficiency) and their importance when evaluating the tenders.
  - The award criteria must relate to the contracts subject matter.
  - Describe how the calculation of the life cycle cost will take place and how important it is as a criterion.
6. Set contract performance clauses:

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<sup>2</sup> Green ProcA: <http://gpp-proca.eu/>



- Use contract performance clauses as a way of setting further relevant energy efficiency or environmental conditions for the green contract.

#### 7. Award the contract:

- From all offers fulfilling the technical specifications, the contract will be awarded to the “the most economically advantageous tender” based on the results from the life cycle cost calculation tool used and the degree of compliance with the award criteria.

The European Commission has recently published a fully revised third edition of the “Buying Green! A handbook on green public procurement” (European Commission, 2016), which addresses all the steps required for GPP under the current public procurement legal regime. It also includes sector specific recommendations for buildings, food and catering services, road transport vehicles and energy-using products. The European Commission also published in 2012 a collection of good practices on GPP (European Commission, 2012), which compiles a series of examples of the implementation of GPP throughout different EU Member States. These examples illustrate how European public authorities have successfully launched ‘green’ tenders, and provide guidance for others who wish to implement GPP.

### 3.2. EU GPP Toolkit

The European Commission provides a GPP Toolkit<sup>3</sup> designed for use by public purchasers and by GPP trainers. It consists of 3 independent modules:

1. Action Plans for GPP. The first module provides strategic and economic information in order to raise the political support for GPP. The guidance sets out, robustly, a case as to why decision makers should set up a GPP strategy. It provides them with a simple yet effective methodology to develop an Action Plan for gradually introducing GPP within the organisation.
2. Legal module. The second module includes legal guidance, providing clear examples of how and where to integrate environmental criteria into the public procurement process while fully respecting the current European public procurement legislation. The guidance follows the various stages of a public procurement process and explains how best to integrate environmental criteria at each stage: (1) definition of the subject matter; (2) description of the minimum technical specifications which all bids need to comply with; (3) selection criteria related to the capacity of bidders to perform the contract; (4) award criteria on the basis of which the contracting authority will compare the offers; and (5) contract performance clauses to be included in the contract. This module clarifies and complements the guidance already provided by the European Commission in its Handbook “Buying Green” (European Commission, 2016).
3. EU GPP criteria. The third module is specifically designed for purchasing officers and includes concrete examples of environmental criteria which can be readily introduced in

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<sup>3</sup> GPP Toolkit: [http://ec.europa.eu/environment/gpp/toolkit\\_en.htm](http://ec.europa.eu/environment/gpp/toolkit_en.htm)



tender documents. Examples of criteria have been established for the priority product and service groups identified as most suitable for "greening" under GPP.

### **3.3. EU GPP criteria for furniture**

The EU GPP criteria are developed to facilitate the inclusion of green requirements in public tender documents. While the adopted EU GPP criteria aim to reach a good balance between environmental performance, cost considerations, market availability and ease of verification, public authorities may choose, according to their needs and ambition level, to include all or only certain requirements in their tender documents.

The European Commission has already published GPP criteria for 15 different product or service groups, while criteria for other groups are currently under revision. EU GPP criteria for furniture were published in 2008 (although they are currently under revision), and these comprise criteria for both indoor and outdoor furniture (which cover urban furniture). Two sets of criteria are presented:

- Core GPP criteria, which address the most significant environmental impacts, and are designed to be used with minimum additional verification effort or cost increases.
- Comprehensive GPP criteria, which are intended for use by authorities who seek to purchase the best environmental products available on the market, and may require additional administrative effort or imply a certain cost increase as compared to other products fulfilling the same function.

Both the core and comprehensive criteria are in turn divided into specifications (or compulsory criteria) and award criteria (or voluntary criteria that may represent additional points for products complying with them). The proposed criteria are based on existing ecolabel sources and are focused on the materials most commonly used for the manufacture of furniture: wood and wood-based materials, metals, plastics, and so forth (Table 5). Criteria are also provided for coating and adhesives/glues used in the assembly of the product and for packaging. It should be noted that EU GPP criteria are also accompanied by the information to be provided by bidders in order to verify the fulfilment of GPP criteria.



Table 5. Aspects covered by EU GPP criteria for furniture (Source: European Commission, 2008b).

|                       | <b>Core GPP criteria</b>  | <b>Comprehensive GPP criteria</b>  |
|-----------------------|---|--|
| <b>Specifications</b> | <ul style="list-style-type: none"> <li>• Wood and wood-based materials</li> <li>• Plastic parts</li> <li>• Surface coating of wood, plastic and/or metal parts</li> <li>• Adhesives and glues</li> <li>• Packaging materials</li> <li>• Durability, reparability, fitness for use and ergonomics</li> </ul> | <ul style="list-style-type: none"> <li>• Wood and wood-based materials</li> <li>• Preservatives</li> <li>• Plastic parts</li> <li>• Surface coating of wood, plastic and/or metal parts</li> <li>• Adhesives and glues</li> <li>• Polyurethane foams</li> <li>• Packaging materials</li> <li>• Durability, reparability, fitness for use and ergonomics</li> </ul> |
| <b>Award criteria</b> | <ul style="list-style-type: none"> <li>• Raw material/Sustainable forest management</li> <li>• Recycled materials content</li> <li>• Textiles</li> <li>• Ecolabel criteria for padding materials</li> </ul>   | <ul style="list-style-type: none"> <li>• Sustainable forest management</li> <li>• Recycled materials content</li> <li>• EU GPP criteria for textiles</li> <li>• Organically produced cotton or other natural fibres (for textiles)</li> <li>• Recycled fibres (for textiles)</li> <li>• Ecolabel criteria for padding materials</li> </ul>                         |

### 3.4. Other GPP tools or methodologies

Other tools, methodologies and projects on GPP are listed below:

#### TOPTEN<sup>4</sup>

TOPTEN is a consumer-oriented online search tool, which presents the best appliances in various product categories: cars, household appliances, lighting, office equipment, and so forth. The key criteria are energy efficiency, impact on the environment, health and quality. This communication tool helps to show how our energy consumption causes climate change and what we can do personally to reduce our impact. It is also a powerful instrument to influence manufacturers.

It was launched in 2000 in Switzerland and, since then, fifteen additional European national TOPTEN sites have been established, thanks to the European IEE-projects Euro-Topten, Euro-Topten Plus, Euro-Topten Max and the current Horizon 2020 project Topten ACT. Each Topten website provides a selection of best appliances from the energy point of view.

TOPTEN information targets consumers (pictures, functions, price, no complex calculation, for products available locally in their country) and large buyers. It is rigorous and transparent (the

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<sup>4</sup> TOPTEN: <http://www.topten.eu/>





selection methodology is explained online), independent from producers and commercial distributors. It relies on neutral tests and analysis of independent institutions, labels and on standardized declarations of manufacturers (e.g. EU Directives for household appliances).

#### PRO-EE – Public Procurement boosts Energy Efficiency<sup>5</sup>

PRO-EE aims to improve energy efficiency through sustainable public procurement. For this purpose, PRO-EE brought together producers and consumers, implemented energy-efficient GPP procedures in local administrations, and organised training for municipalities' procurement staff. At the same time, five pilot cities set up integrated energy efficiency action plans, which included the involvement of stakeholders and awareness-raising campaigns for citizens.

Energy efficiency plans provide systematic ground for sustainable procurement. To develop energy efficiency plans, the methodology designed in PRO-EE recommends two steps: the so-called Climate Scan, which corresponds with a state-of-the-art evaluation of activities already being carried out, followed by identification of activities and measures that the local authority can take up within its own competences. A PRO-EE-Toolkit is provided to public authorities in order to support them for embedding procurement in energy plans.

#### LEAP – Local Authority Environmental Management Systems and Procurement<sup>6</sup>

LEAP was a European LIFE Project that was aimed at developing a set of tools and guidance to public authorities to facilitate effectively integrating GPP as part of an environmental management system, while respecting community competition rules and the internal market and encouraging wider uptake of EMAS within Europe. The tools provided by LEAP are focused on centralizing the purchase and facilitating the acquisition of green products by considering the environmental requirements throughout the whole life cycle of products.

#### PROMISE – Green Procurement in Local Authorities<sup>7</sup>

PROMISE was a European project that provided guidelines and recommendations of technical criteria to be considered when purchasing goods/services or when dealing with different projects where energy has an important role. Its main objective was to provide persons in charge of purchasing goods and services with a reference tool to reduce environmental impacts, energy consumption or seek the possibility of including renewable energy based on some technical criteria in order to promote good environmental practices.

#### PROCURA+ - European Sustainable Procurement Network:<sup>8</sup>

PROCURA+ is a network of more than 40 European public authorities that connect, exchange and act on sustainable and innovation procurement. Their combined knowledge and experience allow them to provide advice, support and publicity to any public authority that wants to implement sustainable and innovation procurement. PROCURA+ prepared a manual

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<sup>5</sup> PRO-EE: <http://www.pro-ee.eu/>

<sup>6</sup> LEAP: <http://www.leap-gpp-toolkit.org/>

<sup>7</sup> PROMISE: <http://promise.energyprojects.net/>

<sup>8</sup> PROCURA+: <http://www.procuraplus.org/>



that provides: practical implementation advice, presenting guidance on how sustainability concerns can be integrated into the procurement process; a model for developing and managing the process; and purchasing criteria for six high-priority product groups (construction, IT equipment, cleaning products, food, buses and electricity). Any European public authority can join PROCURA+, both to demonstrate its commitment to sustainable procurement and to make use of the practical resources offered.

#### GreenLabelsPurchase – making a greener procurement<sup>9</sup>

GreenLabelsPurchase was a European LIFE project to promote the increased use of energy labels in the procurement process of public authorities, the tertiary sector, industry and SMEs. The main objectives of this project were increase awareness and understanding of energy labels to simplify GPP and to break down barriers for introduction of labelling tools. The target products included in the project were computers, household appliances, lights, vehicles, building components and green energy. The development of the project focussed on a cross country analysis regarding the legal and practical experiences with green procurement. Almost 100 case studies and good practices were compiled and can be searched by keywords on the project website.

#### SMART SPP – Innovation through sustainable procurement<sup>10</sup>

SMART SPP was a European project aimed to promote the introduction of new, innovative low carbon emission technologies and integrated solutions onto the European market. This was achieved by encouraging early market engagement between public authority procurers and suppliers and developers of new innovative products and services in the pre-procurement phase of public tenders. The project specifically focused on the following products and services: lighting systems (LED indoor and outdoor (street) lighting), electric vehicles systems (charging points and cars) and vending machines.

SMART SPP developed a standard approach to pre-procurement of emerging technologies, including guidance on managing the risks in pre-procurement, assessing the financial benefits (life-cycle costing), and calculating and communicating the CO<sub>2</sub> savings. Tools (e.g., a tool for calculating life cycle costs and CO<sub>2</sub> emissions), tender documents, manuals and training sessions were also developed to assist in building the capacity of public authorities who wish to use pre-procurement to purchase emerging technologies.

#### GreenProcA – Green Public Procurement in Action<sup>2</sup>

GreenProcA project aims to promote GPP by providing information in the seven participating countries, including assistance and instructions on how to start and maintain GPP and institutional training courses or networking events. It also provide a database of GPP best practices. GreenProcA members collaborate with international and national public sector networks, associations of cities or procurement platforms. GreenProcA builds upon the results of the precursor European project Buy Smart Plus.

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<sup>9</sup> GreenLabelsPurchase:

<https://ec.europa.eu/energy/intelligent/projects/en/projects/greenlabelspurchase>

<sup>10</sup> SMART SPP: <http://www.smart-spp.eu/>



### LIFE+ Building-SPP – Capacity Building in SPP<sup>11</sup>

The main objective of LIFE+ Building-SPP project was to develop and implement activities that lead to the promotion and integration of sustainable procurement practices in the municipalities of Portugal and Greece. This was done by supporting public authorities in the implementation of a purchasing strategy in line with its environmental and social policies and promoting the cooperation between public authorities and suppliers. A key task of this project was the development of a network for central or local public authorities for the exchange of best practices, training and information on sustainable procurement activities.

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<sup>11</sup> LIFE+ Building-SPP: <http://www.building-spp.eu/>



## 4. Other environmental information

In 2001, the Green Paper on Integrated Product Policy was published (European Commission, 2001b). This serves to harmonise the tools for the environmental improvement of products and services in the EU via legislative, economic, social and environmental instruments. Regarding environmental instruments the promotion of a life cycle approach was highlighted.

A life cycle approach implies that everyone in the whole chain of a product's life cycle, from cradle to grave, has a responsibility and a role to play, taking into account all the relevant impacts on the economy, the environment and the society. This approach enables product designers, service providers, government agents and individuals to make choices for the longer term and with consideration of all environmental media (i.e., air, water and land). Life cycle approaches avoid shifting problems from one life cycle stage to another, from one geographic area to another and from one environmental medium (for example air quality) to another (for example water or land).

Many decisions in practice are already based on the life cycle approach; e.g., consumer purchasing decisions via ecolabels or company reports on environmental and social issues, business design of products and services via life cycle assessments studies and/or ecodesign practices.

This section compiles relevant environmental information related to urban furniture in terms of ecolabelling and eco-design practices.

### 4.1. Ecolabelling

In order to ensure that enterprises deliver products in line with high environmental standards, public authorities can request that the products fulfil the requirements of an ecolabel, such as the EU Ecolabel, national ecolabels or other environmental labels (see Section 2.2). These labels attest that the product fulfils predefined environmental quality requirements based on objectively verifiable criteria that are adopted by a procedure in which government bodies, consumers, manufacturers, distributors and environmental organisations have had the possibility to participate (EN ISO 14024:2000).

Table 6 compiles European international and national ecolabels that may be relevant for urban furniture products. It should be noted that EU GPP criteria for furniture are based on some of these ecolabel sources (see Section 3.3).



Table 6. Eco-labels applicable to furniture products.

| <b>Ecolabel</b>   | <b>Environmental criteria for product groups related to furniture</b>   |
|---|---|
| EU Ecolabel <sup>12</sup>   | Wooden furniture<br>Indoor and outdoor paints and varnishes   |
| Blue Angel (German ecolabel) <sup>13</sup>                                      | Low-emission furniture and slatted frames made of wood and wood-based materials<br>Low-emission wood products and wood-based products<br>Low-pollutant paints and varnishes<br>Compostable plant containers and other moulded parts<br>Low-noise waste-glass containers for noise-sensitive areas<br>Returnable transportation packagings<br>Products made from recycled plastics |
| Nordic Swan (Nordic ecolabel) <sup>14</sup>                                     | Furniture and fitments<br>Outdoor furniture and playground equipment<br>Durable/resistant wood for outdoor use<br>Adhesives   |
| NF Environment (French ecolabel) <sup>15</sup>                                  | Furniture<br>Paints, varnishes and similar products   |
| AENOR Medio Ambiente (Spanish ecolabel) <sup>16</sup>                           | No ecological criteria for furniture or related products  |
| Distintiu de garantia de qualitat ambiental (Catalonian ecolabel) <sup>17</sup> | Wood products<br>Products from compostable material<br>Recycled materials (tyres, plastics, etc.)   |
| Other EU national ecolabels   | There are other national ecolabels in EU (e.g., Polish, Hungarian, Slovak, Czech, Austrian, Dutch) but they do not have environmental criteria translated to English  |

## 4.2. Ecodesign

Ecodesign is a methodology that serves to include environmental aspects in the design and/or redesign of products. The eco-design process is integrated in the design and development of products with the main objective of reducing the environmental impact of the products during

<sup>12</sup> EU Ecolabel: <http://ec.europa.eu/environment/ecolabel/products-groups-and-criteria.html>

<sup>13</sup> Blue Angel: <https://www.blauer-engel.de/en/products/home-living/wood-products>

<sup>14</sup> Nordic Swan: <http://www.nordic-ecolabel.org/criteria/product-groups/?p=2>

<sup>15</sup> NF Environmental: <http://www.ecolabelindex.com/ecolabel/nf-environnement-mark-norme-francaise>

<sup>16</sup> AENOR Medio Ambiente: <http://www.aenor.es/aenor/certificacion/mambiente/productosyservicios.asp#.VzBjdeRvkQQ>

<sup>17</sup> Distintiu de garantia de qualitat ambiental: <http://web.gencat.cat/ca/tramits/tramits-temes/Distintiu-de-garantia-de-qualitat-ambiental-00004?category=>



their entire life cycle, from the extraction of raw materials to the end of their useful life. It does not modify the basic design process, but it complements through the inclusion of environmental criteria that must receive the same attention as the rest of the traditional design aspects.

The implementation of ecodesign strategies and actions is currently compulsory for energy-related products as established by the Ecodesign Directive (European Commission, 2009), but it could be extended in the future to other products. Hence, ecodesign strategies and actions are being widely developed for different types of products. Below are presented a series of ecodesign actions which can be applied to the different life cycle stages of urban furniture products (IHOBE, 2014).

#### 1. Selection of low-impact materials:

- Use wood from local forestry plantations.
- Do not use wood from protected species.
- Evaluate the use of alternative materials other than wood.
- Avoid using halogenated flame retardants.
- Use low-toxicity biodegradable lubricants.
- Use materials and production processes associated with low-energy consumption.
- Use recycled polymers.
- Use recyclable polymers.
- Use polymers without hazardous additives.
- Use cement that contains recovered materials in the raw meal preparation.
- Use cement that contains recovered by-products added during the milling.
- Use cement that contains pozzolans or lime added during the milling.
- Use concrete that contains recovered materials.
- Use concrete that contains aggregates with recovered materials.
- Use concrete that contains chemical additives.
- Use recycled metals.
- Use recyclable metals.
- Select metals according to their environmental impact.
- Select polymers according to their environmental impact.
- Use coatings with a low organic solvent content.
- Use recovered and/or recycled wood.
- Use boards with low formaldehyde emissions.
- Use wood and boards with low VOC emissions.
- Use wood and wood fibres from sustainable sources.



2. Reduction of materials usage:

- Design the components in order to minimize the consumption of materials.
- Use lighter materials.

3. Selection of environmentally efficient production techniques:

- Design components with flat and simple shapes.
- Reduce wood sawing operations.
- Use low-impact surface treatments.
- Design the product in order to minimize the number of production stages.
- Avoid the use of adhesives or additives that contain heavy metals and their compounds.
- Use reused solvents.
- Use adhesives for assembly that do not contain toxic or hazardous substances.
- Use adhesives that do not contain alkylphenol ethoxylates, alkylphenols or halogenated solvents.
- Use adhesives with a low VOC content.
- Use wood conservation treatments with a low environmental impact.

4. Optimization of product packaging:

- Optimise packaging design.

5. Optimization of distribution:

- Optimise transport logistics.
- Select suppliers close to the product manufacturing plant.

6. Reduction of the environmental impact in the use stage:

- Design solutions that prevent graffiti and posters.
- Design solutions that prevent leachates in waste bins and containers.
- Use surface treatments that facilitate maintenance.
- Inform the user regarding the correct use and maintenance of the product.
- Design the product to facilitate cleaning.
- Design the product to reduce maintenance needs.

7. Optimization of the life cycle:

- Design the product considering its whole life cycle.
- Design the product with criteria of durability.
- Harmonise the useful life of the individual components.
- Modular design of products.



- Use the lowest possible number of references in manufacture.
- Offer spare parts to the user.
- Request environmental information from suppliers.
- Use appropriate materials according to product use.
- Design solutions against vandalism.
- Design compact and robust products.
- Design the product in order that wear and tear is concentrated on replaceable parts.

8. Optimization of the end-of-life system:

- Inform the user about the end-of-life possibilities of the product.
- Provide the user with information on the materials used in the product.
- Provide information on the assembly and dismantling of the product.
- Use materials being compatible for recycling in products composed of various materials.
- Minimise the number of materials and components.
- Facilitate dismantling of the product components.
- Eliminate coatings of metallic surfaces.
- Use plastic parts marked with the material identification code.
- Use recyclable materials.
- Design the product in order to facilitate the separation of the different materials.

9. Optimization of the function:

- Optimise the functionality of the product.
- Offer leasing and rental services instead of sale.
- Design multifunctional products.
- Design the product with accessibility and ergonomic criteria.
- Design the product with a well-integrated aesthetics into the urban environment.





## 5. Discussion and conclusions

GPP is aimed at satisfying the needs of the public procurers and end consumers via the acquisition of products that provide the greatest possible benefits for the environment and society. LIFE FUTURE project aims to promote GPP, focusing on urban furniture. The project will allow public procurers to overcome the difficulties they encounter when including environmental clauses in calls for tenders and assessing the offers received. To this end, an online tool, the so-called GUF Tool, will be developed and validated during the project, which will guide public procurers throughout the whole tender process, thanks in particular to a simplified environmental analysis of urban furniture products and the definition of GPP criteria to be taken into account.

As a starting point to achieve this objective, preparatory action A1 was conducted to compile a state-of-the-art on GPP and its implications related to the urban furniture sector. Relevant information was compiled and then organised around three main blocks: (1) the legislation on GPP and standards applicable to urban furniture; (2) the procedures, tools and methodologies currently available for GPP; and (3) other relevant environmental information on urban furniture, including ecodesign practices and ecolabelling. The present deliverable provides a synthesized review of this information, which will constitute the basis for the development of the GUF Tool and the other remaining actions.

As a first result, it can be found that the legal framework on public procurement has not changed during the last year; i.e. any legal or regulatory change has taken place from the date on which project proposal was submitted to the present. The legal framework is currently established by Directive 2014/24/EU and Directive 2014/25/EU. These provide new rules to facilitate better integration of environmental considerations into procurement procedures, which include:

- Horizontal clause to ensure the respect of environmental legislation.
- Defining environmental criteria for a contract with the help of ecolabels.
- Requirements for production process, mainly focused on fair trade origin or no toxic chemicals.
- Life-cycle costing to include internal costs and costs related to environmental externalities.

All these rules will be integrated into the GUF Tool developed in the project, as well as during the execution of the remaining actions. Moreover, a regulatory monitoring is being performed since the beginning of the project and will continue until project end in order to identify any legal or regulatory change that could affect the project and its outcomes.

Moreover, an updated review was conducted on methodologies, tools and studies dealing with GPP and environmental evaluation of urban furniture products. A GPP procedure step by step was presented herein. A key step of this procedure is the definition of technical specifications to be incorporated in tender documents, including environmental criteria. International technical and quality standards were compiled, since these can be used to set criteria related to durability, reparability, fitness for use or ergonomics.

The GUF Tool will also provide environmental criteria for urban furniture products, which will be based on the EU GPP criteria developed by the European Commission. EU GPP criteria



for furniture are based on existing ecolabels and focused on the materials most commonly used for furniture manufacturing. These GPP criteria comprise both specifications (compulsory criteria) and award criteria (that may represent additional points for products complying with them), and they are also accompanied by the information to be provided by bidders in order to verify their fulfilment. EU GPP criteria may be complemented in the project with extra award criteria based on ecodesign strategies and actions for urban furniture.

Other tools and methodologies for GPP were also identified and analysed, but most of them are focused on energy supply and energy-related products; e.g., cars, household appliances, lighting, office equipment, and so forth. Conversely, no prior experiences were found related to GPP of urban furniture. Nonetheless, although focused on other products, previous GPP experiences can be interesting in general terms for the LIFE FUTURE project, and networking activities are foreseen in order to share knowledge and identify collaboration opportunities.

It should be highlighted that the GUF Tool is expected to be based on a life-cycle costing approach in order to evaluate both internal costs of products (i.e., costs for materials, production, transport, maintenance and end of life) and costs related to environmental externalities (i.e., costs related to environmental impacts caused by the products' life cycle). Costs related to environmental externalities can only be taken into account if their monetary value can be determined and verified. At the moment, no common EU methods exist for the calculation of all life-cycle costs related to the project scope, but it will be monitored during project in order to identify and integrate new reliable methods as they emerge. Meanwhile, alternative methods may be used instead.



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LIFE14 ENV/ES/000703

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