

GREEN (PUBLIC) PROCUREMENT IN PRACTICE - METHODS AND TOOLS FOR THE SUCCESSFUL IMPLEMENTATION

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ABSTRACT

Nowadays we hear more and more in the media about climate change, CO₂ emissions, environmental protection and sustainability. These expressions should be given a meaning and recommendations should be provided for authorities, companies, and individuals to take action. The topic of this article is green procurement, a tool that is to be used to reach sustainable consumption patterns, to further innovation, and to create a market to eco-technologies. Green procurement means that procurers take environmental issues into account when buying goods or services. The goal is to reduce the impact of procurement on the environment (CO₂ emissions, toxic material, amount of waste, etc.) and human health. Buying green is one of the most active and most demonstrative ways to protect the environment, and it is a tool that every individual, public authority, and private company can use to cooperate in tackling climate change. Procuring green and energy efficient products and learning how to decide whether a product is environmental friendly or not creates more awareness among people, helps giving the expression “sustainable consumption” a meaning, and shows the actions that can be done for it. In this article we will focus mainly on public authorities and private companies. The green procurement concept needs to be promoted and supported by a toolkit (with guidelines, ready-to-use criteria, and calculation tools for several product groups) that makes implementation easier. We would like to develop a consulting, educational, and auditing system that would be suitable for introducing green public procurement in Hungary effectively.

Keywords: green procurement, sustainable consumption, toolkit, public procurement

INTRODUCTION

The European Union spends 17% of its GDP on public procurement (*GPP Europe*, 2010). This financial power should definitely support environmental goals. For this reason the European Commission is committed to the implementation of green public procurement (GPP) in each Member State.

GPP means that contracting authorities and entities take environmental considerations into account when tendering products and services.

The aim of GPP is to reduce the impact of procurements on the environment and human health. The possible benefits of GPP are manifold. First of all with the implementation of GPP public authorities can set an example for both the commercial sector and households. It is also true that if public authorities take environmental issues seriously in their everyday practice it becomes easier for them to expect environmentally friendly acts from the public sector. GPP can also be a

tool for raising environmental awareness. Furthermore, its economic benefits are considerable. By including more and more environmental criteria in the call for tenders, contracting authorities can influence the market by raising the demand for environmentally friendly goods and services. That can increase competition and reduce prices in the field of environmental technologies. This aspect is commonly said to be the most important advantage, although influencing the market of “green” goods is rather a long term perspective. Another long term benefit of GPP is that it drives innovation.

The efficient use of GPP can lead to major changes at contracting authorities too. Administrations can use the occasion of implementing GPP for making internal procedures more efficient by reconsidering the general process of procurement. And the most important and commonly doubted benefit of green public procurement is that it often leads to savings. The competitiveness of green products is based on quality and innovation. For this reason the products and services that meet the criteria for greening are the ones that use the most recently released technologies, which often have advantages like energy saving. These products’ whole life cycle costs are proven to be lower than average products’. In addition to these advantages, a political aspect can also be added: a visible focus on greening the procurement will likely result a positive judgment of the government in charge.

Private procurers like companies or citizens are not restricted by administrative requirements and of course the limitations on spending taxpayers’ money are not valid for them. The regulations described in the next chapter don’t affect them, but the criteria setting section and the other technical specifications are very useful. Nowadays it is becoming more and more important for companies in the competitive sector to stand out from the crowd. Thus it is worth taking action for environmental protection in connection with CSR or simply demonstrating environmental awareness. The products and services that meet the “green” criteria are usually top quality and represent the latest technical trends. This means that there is a major saving potential in their usage. Together, positive public judgment and the financial savings can result in a better position in the market, a competitive edge. Green procurement is an obvious tool, because it is one the most active and most demonstrative ways of environmental protection.

The concept of green procurement can be used in a wide range of product groups, but it should be admitted that some groups are more suitable for “greening” than the others. For example research, advertising, and auditing services rarely contain environmental aspects, but for furniture and IT there is a great possibility to make the industry greener.

In the Take-5 Study (*Boumer et al., 2006*), which was finished for the European Commission in May 2006, researchers reported on the current state of GPP in Europe. They highlighted seven Member States that use GPP very effectively. They are called the “green-7” (Austria, Denmark, Finland, Germany, Netherlands, Sweden, and the UK) Based on this study, a list of product groups was collected (*Table 1*).

Table 1

Product groups most suitable for “greening”

Product groups most suitable for “greening”	
Cleaning products and services	Construction works
Horticultural services	Construction products (including heating/cooling/lighting appliances)
Medical devices – pharmaceuticals	Furniture and other manufactured goods
(Electrical) machinery - communication equipment	Paper, printed matter, printing services
Energy	Transport and communication services
Sewage- and refuse-disposal services	Chemical products, rubber, plastic
Sanitation and environmental services	Food products and beverages, Restaurant services
Transport equipment	Architectural, construction, installation and related consultancy services
Office machinery (computers/monitors/printers/copiers)	

Source: *Bower M et al.*, 2006

Actions of the EU

Environmental protection is one of the key priorities of the European Union, so several actions have already been taken in connection with GPP. The table below shows the most important parts of the legal framework and policies (*Table 2*).

Table 2

Actions undertaken by the EU in connection with GPP

Year	Actions
2001	The European Commission accepted the usability of environmental criteria in public procurements (Helsinki bus case). Sixth Environmental Action Program European Sustainable Development Strategy (SDS)
2003	IPP Communication on Integrated Product Policy: encouragement for the Member States to develop their national GPP action plans by the end of 2006
2004	EU Directives on public procurement aiming to clarify, simplify and modernize existing European legislation on public procurement-bases of GPP 2004/18/CE 2004/17/CE
2006	Renewed EU Sustainable Development Strategy: the EU Member States decided to aim to achieve an average level of GPP equal to the current level of the best performing Member States by 2010.
2008	Action plan on sustainable production and consumption and sustainable industrial policy- the main point of the action plan is to improve the energy and environmental performance of products and encourage their uptake by consumers based on eco-design requirements and labeling schemes. (ie. Energy Labeling Directive, Energy Star Regulation, Ecolabel Regulation) This will be the base of harmonized public procurement: one level of the labeling classes will be set under which the public authorities would not be allowed to procure.

Source: selection from the EU GPP site

How to use GPP?

Implementation into the call for tenders

One of the biggest barriers to implementation of GPP is that people leading the procurement process often don't know what kind of environmental criteria they should set and where to insert it into the process. For this reason they sometimes opt to ignore the whole concept. This section will describe the 5 stages of a call for tender in which environmental criteria can be inserted. In each member state EU policies are to be integrated, so there might be minor differences in the procurement law, but basically the below described concepts are valid in each member state.

The first way is to describe *the subject of the procurement* as environmental friendly. For example a contracting authority can state that it would like to buy recycled paper, but they can't state that they would like to buy Blue Angel labeled paper, because that would be discriminative.

By defining *the technical specifications*, public authorities have the opportunity to include a wide range of environmental performance standards. This regards calls for tenders both above and below the threshold value. It is also possible at this stage to ask for environmentally friendly production methods. The production method criteria should be strongly linked to the subject of the contract and the life-cycle of the product should be taken into consideration. For example suppliers can be asked to deliver electricity that comes full or partly from renewable resources. Contracting authorities should also allow and encourage innovative solutions. For example instead of describing a complex heating system they could just set the temperature they would like to have in the building and with this they would encourage innovative and new technologies. In the specification part of the documentation, contracting authorities can use the specifications for eco-labels. Usually the criteria of the ISO Type I labels can be copied and pasted into the call for tender. The ISO 14024 Type I environmental labeling is "a voluntary, multiple-criteria based, third party program that awards a license that authorizes the use of environmental labels on products indicating overall environmental preferability of a product within a particular product category based on life cycle considerations". So it is legally correct to use the eco-label criteria, but public authorities can't require having the eco-label itself, because that would be discrimination against the products that don't have the label. As long as providers can prove their adherence to the criteria they should be accepted.

The selection criteria relates to the bidder and whether they have the necessary financial and technical competence for performing the contract. The exclusion grounds can only relate to the person of the bidder and not the performance. Where national law allows it (not in Germany), a purchasing officer could mention that companies will be excluded who have been convicted by a final judgment for non-compliance with environmental legislation when exercising their profession. The "selection criteria" part of the call for tender gives limited possibilities for setting environmental criteria, but, for example, the contracting authorities can ask from the bidders of certain work and service contracts to take several environmental management actions for the duration of the contract to prove their

ability to carry out the project. In that case companies that are EMAS or ISO14001 (more information on this in the next chapter) certified should be accepted, but other proofs should also be accepted to avoid discrimination. The above possibility to require an environmental management system (or actions) is not valid for supply contracts. Having an environmental management system might say something about the environmental performance of the company, but it does not necessarily describe the environmentally friendly characteristics of the product that is the original subject of the tender.

There are two possible ways of choosing *the award criteria*. The purchasing officer can either choose the bid with the lowest price or “the economically most advantageous offer”. In the second case, a series of award criteria should be developed that include the price, environmental, and other criteria. For example a contracting authority could add extra points to a bidder that proved that 20% of the electricity that it supplied came from renewable sources. The weighting rate should be defined in the call for tender. According to European legislation, even positive discrimination toward bidders from a given region or country is strictly forbidden. And the last stage of the call for tender also allows some environmental criteria to be added. *The performance clauses* should not be connected with technical specifications or selection criteria and they have to be known by the bidders from the beginning of the process. A good example would be to ask the successful bidder to deliver the goods by rail and not by trucks or setting requirements in connection with packaging, waste management, or the education of colleagues.

GREEN PROCUREMENT TOOLKIT

In the next part we would like to show the main barriers mentioned in relevant literature and based on our experiences with local authorities and companies applying green procurement in Germany, we would like to present our methods to provide solutions for these problems. Our green procurement toolkit is specially designed for Hungary, and it is suitable for the use of public authorities and private companies as well (*Table 3*).

Table 3

Barriers of green procurement and recommended solutions

Barrier	Recommended Solution (toolkit)
Lack of technical knowledge	Performance criteria collection
Perception of financial burden	Calculation tool
Lack of management/political support/engagement	Awareness, training, motivation
Market barriers	Communication

The toolkit is meant to be easy-to-use and understand so that implementing green procurement does not result in a lot of extra paperwork and new tasks for procurement officers. The new practice needs careful implementation and user-

friendliness because the officers' commitment is crucial to the success of green procurement systems.

Lack of technical knowledge

We highlighted the possibilities for including environmental criteria above, but it is not exactly easy to set such criteria, especially because procurement officers are usually jurists, or at least not experts in the fields of technology and science. At times they have major difficulties developing procurement criteria. This problem can be solved by the strong cooperation of environmental experts and procurers. Thus, we are developing a so-called performance criteria collection that contains the technical specification of environmental friendly product alternatives for the following product groups:

Energy consuming products

- IT, household, vehicles...

Material consuming products

- Paper, textiles, detergents...

Services

- Cleaning, gardening, construction.

The product groups were chosen based on the most suitable products for "greening" and on the suspected needs of a public authority or a company. The criteria is based on ISO type I eco-labels and the EcoDesign Directives of the EU. Standards are useful in public procurement specifications as they are clear, non-discriminatory and developed on a consensus basis. For certain products and services, national eco-labeling criteria and the EU Flower were applied. These labels take into account the main environmental impact of products and services, are compatible with market principles, and allow products to be easily identified. The eco-label criteria are established on the basis of scientific information and through wide stakeholder consultation and be accessible to all interested parties.

Simplified and comprehensive procedure

The performance criteria for each product consists of four categories. These are: energy consumption, lifetime, noise emission, and "other" environmental criteria. The performance criteria collection has two basic versions. One of them is the simplified procedure and the other is the comprehensive procedure. The simplified procedure contains basic minimum criteria (inserted in the technical specification of the call for tenders), according to the EU EcoDesign Directives. These criteria must be fulfilled by the product or it gets excluded from the procurement process. The comprehensive procedure means that there are more criteria based on Eco-label criteria. These are more difficult to fulfill, and at this point the innovation driver function of green procurement starts working. The criteria are target criteria and points can be awarded for better performance (maximum for meeting all the requirements) *Table 4* is an example of a comprehensive criteria set for refrigerating devices.

Table 4

Example of a performance sheet in case of comprehensive procedure

1.	Product details	Minimum criteria	Target criteria
	Model: _____		
	Storage volume: Refrigerator _____ Liter		
	Freezer _____ Liter		
	Climate Class (N, SN, ST, T): _____		
2.	Energy Consumption		50
2.1	Annual energy consumption (based on standard tests): _____ kWh		
	< 200 kWh/year		<input type="checkbox"/> 25
2.2	Energy efficiency		
	Energiaosztály A+ (EEI<42)	<input type="checkbox"/>	
	Energiaosztály A++: (EEI < 30)		<input type="checkbox"/> 25
3.	Durability		20
3.1	Warranty period		
	2 years	<input type="checkbox"/>	
	Longer than 2 years		<input type="checkbox"/> 5
3.2	Guarantee services (without surcharge)		
	2 years	<input type="checkbox"/>	
	More than 2 years		<input type="checkbox"/> 10
3.3	Parts and service available		
	For at least 8 years	<input type="checkbox"/>	
	For at least 12 years		<input type="checkbox"/> 5
4.	Noise level		10
	LWAd ≤ 40 dB(A)		<input type="checkbox"/> 10
5.	Environmental criteria		20
	Packaging made of at least 80 % recycled material		<input type="checkbox"/> 20
	All minimum criteria fulfilled?		
	Total score for target criteria		_____
	Maximum score		100

Source: Based on Buy Smart toolkit

It is up to the procurers to decide which category has greater importance for them, so they can set the maximum points of the award criteria of energy consumption, lifetime, noise emission, or other environmental criteria. These four maximum points should add up to 100, because this value is used in the evaluation process (to be described below).

Perception of financial burden

Higher initial investments and tight budgets are often are the first problems. It has been proven that GPP does not cause major cost increases for public authorities. This is proved by several studies, but the most recent ones are conducted by

McKinsey for Germany and PricewaterhouseCoopers for the “green7” countries. Both of them highlight the fact that, despite possibly higher procurement costs, products and services cost less for public authorities over their whole life-cycle.

The first study was conducted specially for Germany by the McKinsey & Company Inc. at the behest of the German Ministry of Environment. It concluded that in Germany the total value of public procurement is more than 50 billion Euro per year. This means that the public sector has a significant market share in most public-related business lines. In the area of constructions, rehabilitation, IT, hardware, electric equipment, and transportation the public authorities’ market share is around 10%, but in the server market, for example, they have 20% and they cover 50% of the buses sold in Germany. Altogether the CO₂ emission (and CO₂ equivalents) of the public sector was around 42 megatons in 2006 and about 30% of this could be avoided by 2020 with environmentally friendly products that are even now available, according to the McKinsey investigation.

The green house gas emission of the public sector, nearly 43 megatons, is enormous, but it is only 4% of all Germany’s emissions. 23.5 megatons of CO₂ comes from the energy demand of public buildings; schools for example, emit 6.7 mt CO₂. The transportation sector causes 5.7 mt of CO₂ emissions, and out of this 3.1 mt are caused by short distance public transport. The rest comes from business trips, police, and public utility and waste companies. The electricity used by the pumps of water treatment generates 7.6 mt CO₂.

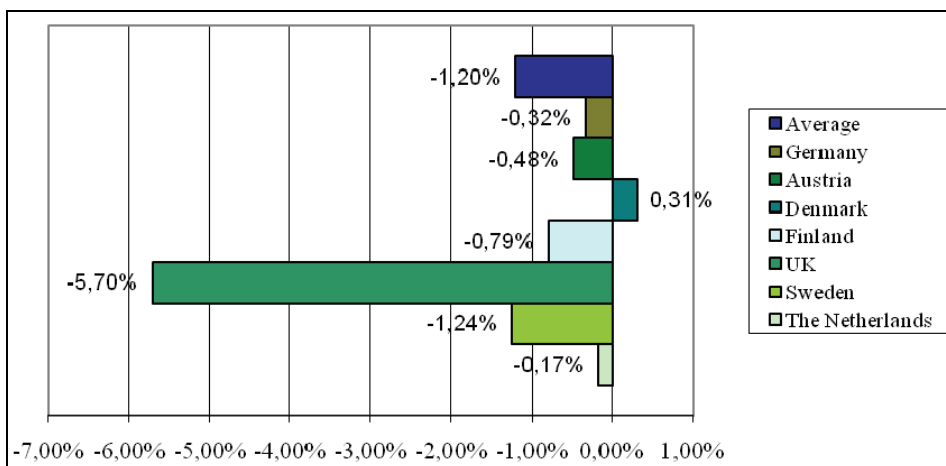
According to McKinsey about 30% (6.4 mt CO₂) of these emissions could be abolished without any specific prevention plans just by using the most modern technologies presently available in the market. McKinsey also states that a further 16% (5.7 mt CO₂) can be saved with the following policies. With construction and renovation about 3.7 mt CO₂ can be saved, which means that this area has the biggest saving potential. The study also calculated that a 120 Million Euro investment could reduce costs by 210 Million Euros by 2020 if the lifecycle of products were taken into consideration. This money should be invested in, for example, building renovation and hybrid buses, because the greatest savings can be achieved in the field of construction and transport.

From the analysis it is clearly visible that greening policies can cut CO₂ emissions significantly.

PricewaterhouseCoopers has carried out a study on a collection of statistical information on GPP in the EU and found that, contrary to common perception, GPP can also lead to decreases in costs for the purchasing organization rather than increases (*Figure 1*). When using a Life Cycle Costing (LCC) approach in calculating the financial impact of GPP, the outcome is that the average financial impact of GPP within the G7 countries is about -1% in 2006/2007. This means that, although the use of environmental criteria in procurement procedures can lead to higher direct purchasing costs, it can result in an average decrease of overall costs for public organizations of around 1%. The reason behind this is that higher purchasing prices of green goods are compensated by lower operating costs. The study also indicates that there are two main product groups leading to cost reductions through GPP: construction and transport.

Figure 1

The financial affects of GPP



Source: *The value of green study*, 2009

In 2009 the social and economic impact of the implementation of GPP was investigated in Hungary, and the study stated that GPP would not cause significant cost increases considering the life-cycle costs.

Calculation tool

To calculate the costs and to evaluate the tenders we developed a calculation tool that compares different products. The comparison is based on energy cost, maintenance costs, the cost of purchasing, and the scores (points) reached by the environmental target criteria.

By the evaluation process the relevant technical data of the product (e.g. annual energy consumption, size, useful lifetime), the purchasing price (including the additional costs, e.g. transfer), the annual maintenance costs, and the annual energy costs should be added into the calculation tool. The result will give a life-cycle cost for the useful lifetime of the product. In this case we do not define the life cycle of the product according to the classical “cradle to cradle” definition for practical reasons. At this point, the calculation tools are ready for energy consuming products only. In the case of these products the difference between the purchasing costs and the energy costs should be highlighted to promote energy saving products. For this reason, and because it is quite expensive to carry out a LCA for all product groups in this exceptional case, we consider the simplification of the life-cycle definition acceptable. This point of the calculation needs further development in the future.

In the simplified procedure, the ranking of products is based on life-cycle costs. The best economic offer is the product that’s life cycle cost is the lowest.

In the comprehensive procedure, additional data should be added to the above-mentioned calculation tool. These are the points achieved by the target criteria and

the weighting share of life-cycle costs and environmental criteria. European legislation recommends that the maximum weighting share of environmental criteria should be 45%, so that cost effectiveness is still dominant while spending public money. If the calculation tool is used by a private company it is possible to give different shares depending on the preferences in their purchasing policy (Table 5).

The combination of the scores for LCC and environmental criteria results in a “best economic offer” row of the calculation tool (Table 6).

Table 5

Example of LCC calculation

	Offer 1		Offer 2	
Manufacturer	Samsung		Indesit	
Model	RL23THCSW1		BAAAN13V	
Technical specifications				
Number of appliances to be purchased [number]	1	n	1	n
Storage volume of the refrigerator/refrigerator compartment [liter]	164	1	217	1
Storage volume of the freezer/freezer compartment [liter]	63	1	113	1
Storage volume of the other compartments (if present) [liter]	0	1	0	1
Energy Consumption (based on standard test results) [kWh/year]	233.0	kWh/year	200.0	kWh/year
Appliance useful lifetime, for LCC analysis [year]	10	year	10	year
Discount rate [%]	10	%	10	%
Purchasing Prices (according to the offer)				
Purchasing price per appliance [Ft/appl.]	74500	Ft/appl.	85000	Ft/appl.
Installation price per appliance including accessories [Ft/appl.]	0.00	Ft/appl.	0.00	Ft/appl.
Transport [Ft/appl.]	3000	Ft/appl.	3000	Ft/appl.
Total purchasing price per appliance [Ft/appl.]	77500	Ft/appl.	88000	Ft/appl.
Total purchasing price for all appliances [Ft]	77 500	Ft	88 000	Ft
Appliance annual maintenance costs				
Hourly fee for the maintenance [Ft/hour]	200000	Ft	2000.00	Ft
Workload for maintenance per appliance [min/appl. year]	15	min/appl. year	15	min/appl. year
Annual maintenance and standard services cost per appliance [Ft/appl. year]	500.00	Ft/appl. year	500.00	Ft/appl. year
Total maintenance cost of appliances per year	500.00	Ft	500.00	Ft
Energy cost per year				
Energy price [Ft/kWh]	50.00	Ft/kWh	50.00	Ft/kWh
Energy consumption per year per appliance [KWh/year]	233.00	kWh/year	200.00	kWh/year
Total energy cost per appliance per year [Ft/year]	11 650.00	Ft/year	10 000.00	Ft/year
Annual operational costs				
Annual operational cost per appliance [Ft/appl. year]	12 150.00	Ft/appl. year	10 500.00	Ft/appl. year
Total annual operational costs [Ft/year]	12 150.00	Ft/year	10 500.00	Ft/year
Total annual operational cost per liter of net volume [Ft/liter year]	53.524	Ft/liter year	31.818	Ft/liter year
Life Cycle Cost calculation (LCC)				
Economic period considered [years]	10,0	year	10,0	year
LCC per appliance [Ft]	152 156	Ft	152 517	Ft
LCC per liter of net volume [Ft/l]	670	Ft/liter	462	Ft/liter
LCC for all appliances [Ft]	152 156	Ft	152 517	Ft

Source: based on Buy Smart toolkit

Table 6

Example of the best economic offer calculation

	Offer 1		Offer 2	
Manufacturer	Samsung		Indesit	
Model of refrigerating appliance	RL23THCSW1		BAAAN13V	
Evaluation of the Performance Sheet				
Compliance to mandatory minimum criteria [No=0, Yes=1] When complying to mandatory criteria and no target criteria requested [Yes = 2]	1		1	
Total score of the target criteria on energy consumption (max 50)	25	n	50	n
Total score of the target criteria on durability (max 35)	20	n	15	n
Total score of the target criteria on noise (max 10)	10	n	10	n
Total score of the target criteria on environmental performance (max 5)	20	n	20	n
Total score of the optional target criteria	75	n	95	n
Weighting share of the target environmental criteria	45.0	%	45.0	%
Total score of the target criteria	34	n	43	n
Life Cycle Cost				
Appliance useful lifetime, for LCC analysis (year)	10	y	10	y
Discount rate for LCC assessment (%)	10	%	10	%
Life Cycle Cost (Ft)	152 156.49	Ft	152 517.95	Ft
Guarantee services without surcharge (if foreseen) (years)	3	y	2	y
Annual operational and maintenance costs per appliance (Ft/appl.)	12 150	Ft/appl.	10 500	Ft/appl.
LCC for the lifetime, considering the period of guarantee services without surcharge (Ft)	121 941	Ft	134 294	Ft
Weighting share of the LCC (see Notes)	55.0	%	55.0	%
Best economic offer considering the Life Cycle Cost	2		1	

To sum up, the possibly higher purchasing costs are compensated by the lower operating costs, but still some benefits of sustainable procurement cannot be expressed in monetary terms.

Despite the above-mentioned financial savings, political commitment is necessary to defend long-term and non-financial benefits.

Lack of management/political support

Senior public sector officials often have low awareness of the importance of GPP and sustainability issues. Without a strong strategic focus and an organizational

policy that promotes GPP (with time and money), the integration level of environmental aspects will remain low. Not even a high level of commitment to national targets is always a guarantee of success. Often there is a low level of understanding of the concept that creates an *'implementation gap'* or conflict between policy and practice. Even a high level commitment via policies and targets can become weaker by the time it reaches the purchasing officials. At this stage, sustainability issues are often forgotten and "best value" is easily translated into lowest price. The "best value" approach is not an alternative to an environmentally sustainable procurement but one element of comprehensive procedure.

Sometimes personal barriers can cause problems too. Employees' lack of awareness of environmental problems and their protests against new solutions call for self-assessment within the organization and for changes in attitude.

To avoid the above-mentioned problems, training materials should be developed for procurers that help raise awareness and engagement of all colleagues within the organization. In addition, training would provide an opportunity to transform the toolkit usage into a competence of the procurers and develop it into an everyday routine.

A follow-up of the works done by the procurers in a half-year period should be reviewed with an information-collecting and consultation session. Yearly audits are also recommended to keep the concept going and help further development.

The final point of green procurement is communication. Green procurement relies on innovative standards, so it can be difficult to find suppliers able to provide the necessary products or services. Market research and the widespread communication of the intentions and about implementation of green procurement are indispensable. Communicating needs far in advance can help suppliers prepare products that meet the criteria. Good communication is crucial to achieve all the benefits of green procurement: to set an example, to influence the market by raising the demand for environmental friendly goods and services, to increase the competition, and to reduce prices in the field of environmental technology.

CONCLUSION

According to an EU directive, all Member States should have developed a National GPP Action Plan by 2006. Only Bulgaria, Estonia, Greece, Ireland, Romania, and Hungary still do not have an action plan.

Our aim is to remove this failure and to help Hungarian public authorities and companies implement green procurement and begin a more sustainable operation. Our toolkit was developed based on the analysis of European practices and experiences with GPP in Germany. We tried to address all possible obstacles and took Hungary's specific conditions into account.

Our intention is to test the described green procurement toolkit by Hungarian public authorities and companies and further develop the system according to the needs and preferences of everyday procurement practice. A next study should report on the first results of the implementation by 'early bird' participants.

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