

BUY SMART

Green Procurement for Smart Purchasing

Training module: Building components



Building sector and GP – particularities



High investment costs (new build, reconstruction, major renovation).

Long lifetime of a building as a built structure and of built-in construction products (e.g. facade, windows).

Shorter lifetime of elements and devices, which comprise technical support building systems (e.g. boiler, a/c unit).

Complexity – a building is a constitution of numerous components, which need to be carefully coordinated.

Interdependence – a change in one component or its property can significantly influence performance of other components and entire building.

Supported by:

Intelligent Energy  Europe

Building sector and GP – wider aspects

Economic and social framework

(global, national and local level; market development; competitiveness; general social standard; workplaces; security of supply; etc.).

Long-term environmental impact

(transport, materials, energy, emissions, waste).

Influence on end-users

(operational and maintenance costs; health and hygiene aspects; comfort; productivity; etc.).



Supported by:

EU Building sector in numbers



Range: 21 billion m²

Annual level of activities:

- new construction 1%
- demolition 0,5%
- renovation 1,8%

Fact: 40% of final energy demand, 36% of CO₂ emissions, almost 50% of waste.

Expenses in the public sector: 40% for products and services related to buildings.

Supported by:

Intelligent Energy  Europe



Estimation by International Energy Agency (IEA):

- new construction:

long-term energy saving potential 70-75%;

- renovation of existing building stock:

energy saving potential 55-80%, depending on the building type, its present condition and geographic location.

EU Building sector - GP-related **legislation**



- Construction Products Directive (“CPD”; 89/106/EEC)
- Directive on the Energy Performance of Buildings (“EPBD”; 2002/91/EC)
- Directive on energy end-use efficiency and energy services (“ESD”; 2006/32/EC)
- Directive on the promotion of the use of energy from renewable sources (2009/28/EC)
- Directive establishing a framework for the setting of ecodesign requirements for energy-related products (“Eco-Design”; 2009/125/EC)
- Recast of the EPBD (2009 -> 2010)

Supported by:

Intelligent Energy  Europe



EU Energy Efficiency Action Plan (2006):

“... 20% reduction in energy consumption by 2020. The Action Plan includes measures to improve the energy performance of products, buildings and services, to improve the yield of energy production and distribution, to reduce the impact of transport on energy consumption, to facilitate financing and investments in the sector, to encourage and consolidate rational energy consumption behaviour and to step up international action on energy efficiency.”

But, the fact is:

Current dynamics points to only 11% of energy savings until 2020 instead of planned 20%.

EU Building sector - GP-related documents



“Simplification” of the EU EEAP;
concentrating on fewer, but more effective measures:

“7 Measures for 2 Million New EU Jobs”
(European Commission; draft: 2009)

- Content related to buildings:

2nd measure, **highest priority**:

Energy Refurbishment of 15 million EU buildings

(>>> thermal insulation, windows, EE appliances)

- Expected **results**:

To save 66 million tones of CO₂ annually, and create
300.000 direct and 1.1 million indirect working places.

Supported by:

Intelligent Energy  Europe

Building sector and procurement



This is certainly **not** green procurement:

„The best offer will be selected according to the following set of criteria:”

No.	CRITERION	SHARE
1	Lowest price	100%

Supported by:

Intelligent Energy  Europe

Building sector and procurement

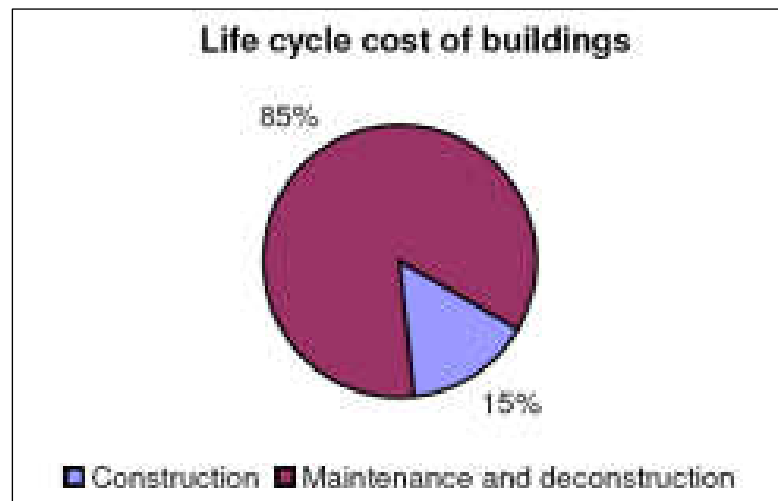


And this is **not** how procurement should be done in the building sector:

Procurement items:

No.	Item:	Quantity:
1	House; 150 m ²	2 pcs.

Because on an average the fact is that:



Supported by:

Building sector and **Green Procurement**



Possible and relevant in all phases and at all stages:

- Planning
- Construction
- Operation and Maintenance
- Demolition



Supported by:

Intelligent Energy  Europe

Building sector and GP: Logical Steps



0. Identification of actual needs.
1. Definition of required energy and environmental properties.
2. Clear specification of procurement items, preparation of call for tenders including technical specifications (base and target values) – definition of awarding criteria.
3. Life-cycle cost analysis (LCC) of received offers.
4. Evaluation of offers based on 2 and 3.
5. Final selection of economically most viable offer.

Building sector and GP: Classification of Criteria - option 1



Qualitative; e.g.:

- references regarding planning of low-energy houses
- required transport and construction procedures
- use of certain calculation methods

Quantitative; e.g.:

- thermal characteristics of building materials
- building energy certificate class
- duration of product's technical lifetime

Combined

Supported by:

Intelligent Energy  Europe

Building sector and GP: Classification of Criteria - option 2

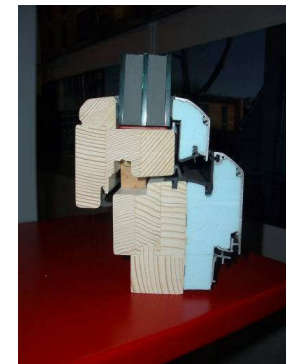


On the level (at the stage) of planning and/or construction

(references, procedures, methods, ...)

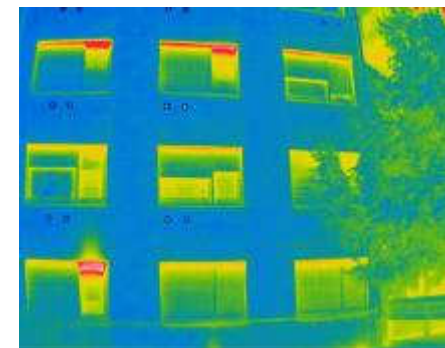
On the level of characteristics of materials, products and systems

(thermal conductivity, content of chemicals, operating efficiency, ...)



On the level of overall building energy and environmental properties

(heat demand, final energy consumption, CO₂ emissions, ...)



Supported by:

Intelligent Energy  Europe

Building sector and GP: **Indicators** for the “green scenario”



Energy efficiency class

(A, B1, B2, ...)

Use of renewable sources of energy

(type, % of demand coverage, ...)

LCC – costs in the building lifetime

Environmental and health factors

(emissions, materials used, ...)

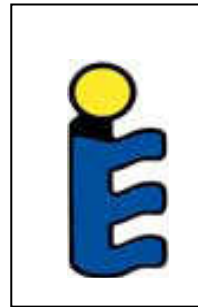
Supported by:

Intelligent Energy  Europe

Building sector and GP: (Indirect) use of Labels



EU Eco-Label
(ecological
materials ...)



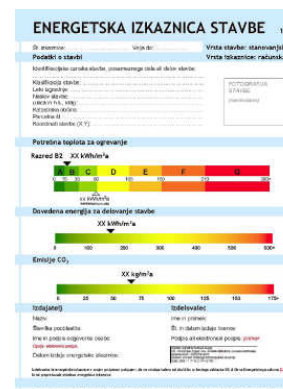
Solar Keymark
(solar thermal
systems ...)



NaturePlus
(sustainable materials ...)



Various national
labels ...



Energy certificate
(NOT a “classical”
green label!) ...

Use of energy labels



The procurement legislation allows:

- The use of the criteria of every label – national or voluntary
- The choice of products which are more expensive in purchase but less expensive than other in the useful life
- The choice of products which are more expensive over the useful life but which have environmental impacts which meets the environmental aims of the institution

The procurement legislation prohibits:

- ⚡ The use of randomized criteria which are not back grounded in the tendering institution
- ⚡ The use of national labels in international call for tenders
- ⚡ The use of voluntary labels in all call for tenders

Supported by:

Intelligent Energy  Europe

Building sector and GP: Supporting **Tools** needed



Guidelines

for preparation of calls for tender with accompanying information, technical background, examples etc.

Performance sheets

with selected pre-defined criteria (must and target values) and awarding rules.


Calculation tools

for LCC analysis and identification of best economic offer.

Supported by:

Intelligent Energy  Europe

Building sector and GP: Supporting Tools - Example





BUY SMART
Green Procurement for Smart Purchasing

Procurement and Climate Protection

Guideline for procurement of building components and systems with criteria of energy efficiency and environment

Building components

Supported by 

www.buy-smart.info

1. Initial Conditions - Construction of a new building / reconstruction of an existent building		Must	Target
1.1	Multidisciplinary project / design team available	<input type="checkbox"/>	
1.2	References of the project team regarding energy- and environment-conscious design/retrofit of buildings	<input type="checkbox"/>	
1.3	Proof of technical qualification of the contractor	<input type="checkbox"/>	
1.4	Proof that the contractor company has previously not violated environmental regulations or professional rules	<input type="checkbox"/>	
1.5	Other		
2. Building Energy-related Criteria		Must	Target
2.1.	Overall energy performance of the building		
	energy efficient construction	<input type="checkbox"/>	
	low-energy / passive house construction		<input type="checkbox"/>
2.2.	Specific annual heat demand; Q_{nh}		
	15 % less than regulation value or appropriate class (please insert) from national energy certificate	<input type="checkbox"/>	
	25% less than regulation value or < 15 kWh/m ² a (PassivHaus criteria + corresponding calculation method) or appropriate class (please insert) from national energy certificate		<input type="checkbox"/>
2.3.	Delivered energy; Q		
	15 % less than regulation value	<input type="checkbox"/>	
	25 % less than regulation value		<input type="checkbox"/>

Supported by:



Building sector and GP: What next?



With the purchase of energy-efficient building materials, components and systems (or even when new construction or an integral renovation of buildings is in question) only one part of saving potentials can be opened up. To a large extent real practical results lie in the hands of **building users and building managers**. This includes **regular maintenance and suitable patterns of use** (behavioral aspects). Even technically most advanced building components can not provide expected (and pre-calculated) results if not used and maintained in an appropriate manner.

Supported by:

Intelligent Energy  Europe

European Project to promote Green Procurement:

„Buy Smart - Green Procurement for Smart Purchasing“

www.buy-smart.info

Supported by:

Intelligent Energy  **Europe**

Project Summary



Objective:

- promote, implement and further develop the procurement of energy efficient products

Target groups:

- private and public institutions

Approach:

- collaboration with e-procurement platforms and trade associations

Output:

- information through guidelines, performance sheets and calculation tools
- consultations, in-house consultations, training events, pilot projects
- good practice database with at least 200 examples
- information about energy labels and new labelling schemes

Consortium:

- 8 well-experienced institutions in 7 EU member states
-

Supported by:

Intelligent Energy  Europe

Objective



The objective of Buy Smart is to promote, implement and further develop the procurement of energy efficient products (office equipment, household appliances, lighting, green power, building components, vehicles) in private and public institutions.

Supported by:

Intelligent Energy  Europe

Expected results



Buy Smart is expected to:

- promote green procurement among decision makers in private businesses and public administrations
- raise awareness and knowledge about energy and environmental labels
- provide easy access to green criteria and tools for professional purchasers
- improve the knowledge base for political decision makers to enable them to choose the right measures to make green procurement more successful

Supported by:

Intelligent Energy  Europe

Partners & Contact



8 partners from 7 European countries:

- Germany: Berliner Energieagentur B.&S.U. mbH
- Austria: O.Ö. Energiesparverband
- Italy: ENEA
- Slovenia: ZRMK
- Latvia: Ekodoma
- Czech Republic: SEVEn
- Sweden: Energikontor



Internet: www.buy-smart.info

Coordinator: Vanessa Hübner
Berliner Energieagentur GmbH
e-mail: v.huebner@berliner-e-agentur.de

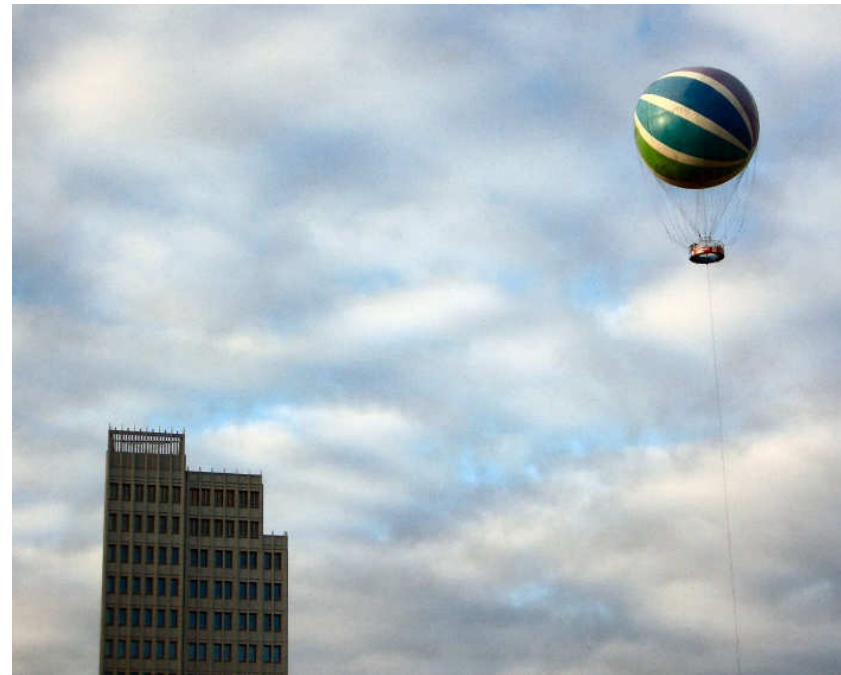
Supported by:

Intelligent Energy  Europe

Standard tendering scheme



- Guidelines
- Performance Sheets
- Calculation Tools
- Consulting
- Good practice examples
- Pilot projects



Supported by:

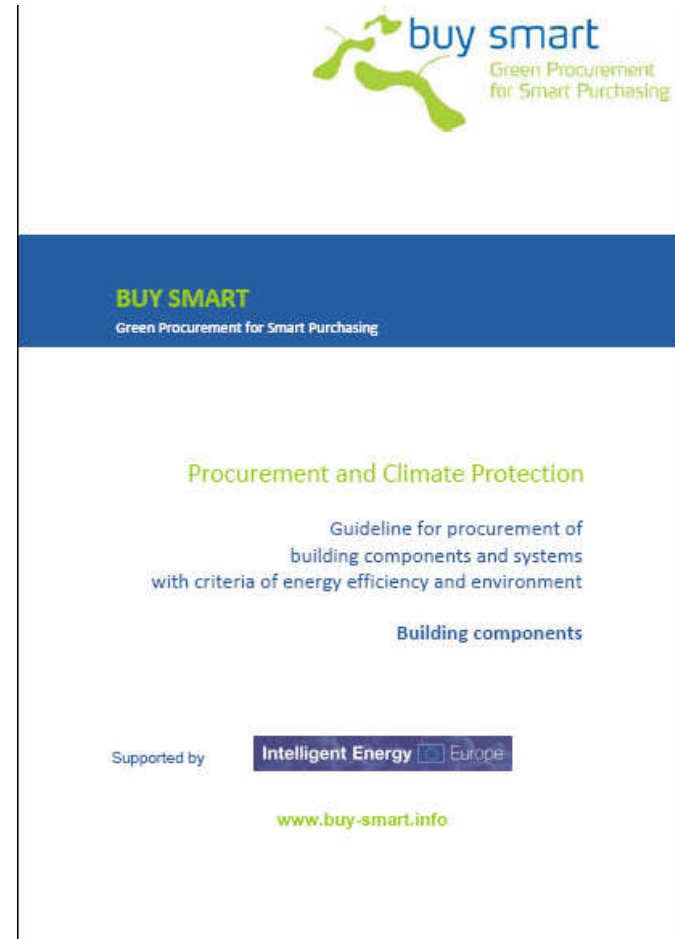
Intelligent Energy  Europe

Standard tendering scheme



Guidelines:

- Competition and procurement law
- Technical Background
- Specific Criteria
- Labels



Supported by:



Standard tendering scheme

- Performance Sheets
- Simplified / comprehensive procedure
- Combination of
 - Must-criteria
 - Target criteria
- Bidder has to
 - Fill in completely
 - Sign for correctness
- Result:
 - Number of target-points
 - Check must-criteria



Simplified procedure

- Only considering minimum requirements
- Minimum requirements have to be fulfilled

Comprehensive procedure

- weighting environmental criteria versus life cycle costs
- Procedure consists of:
 - performance sheet with additional target-criteria
 - calculation tool life-cycle-costs
 - evaluation tool best economical offer

Contact



www.buy-smart.info

Supported by:

Intelligent Energy  Europe