Public Consultation on Sustainable Buildings

The European Commission is preparing a Communication on Sustainable Buildings. To this end, the Commission wishes to consult European citizens and stakeholders to get additional input to the policy development.

Questions marked with an asterisk * require an answer to be given.

INSTRUCTIONS FOR THE RESPONDENTS

Please read carefully the background document before filling in the questionnaire. The background document contains all the elements to fully understand the scope and content of the questions. Only one reply per individual or organisation is accepted. The questionnaire needs to be filled in on-line in one single session. This means that the respondent cannot save incomplete questionnaires. We strongly recommend first saving the questionnaire text as a pdf file, in order to examine the questions and elaborate the replies before starting an on-line session. To do so, the respondent needs to click "Download PDF version" (upper-right corner of the screen). Please note that you will only have 90 minutes to fill in the questionnaire and that if you have not been able to fill it all in and save it within this time frame, the session will automatically expire and the replies will be lost. This is why it is so important to prepare the answers in advance, before starting to work on-line.
Enjoy the questionnaire and thank you for your input!

Part 1: Your profile

I am answering on behalf of a company or organization

Please enter the country where your headquarters are located.
*

- AT - Austria
- BE - Belgium
- BG - Bulgaria
- CY - Cyprus
- CZ - Czech Republic
- DE - Germany
- DK - Denmark
- EE - Estonia
- EL - Greece
- ES - Spain
- FI - Finland
- FR - France
- HU - Hungary
- IE - Ireland
- IT - Italy
- LT - Lithuania
- LU - Luxembourg
- LV - Latvia
- MT - Malta
- NL - Netherlands
- PL - Poland
- PT - Portugal
- RO - Romania
- SE - Sweden
- SI - Slovenia
- SK - Slovak Republic
- UK - United Kingdom
- Other

If your answer is "Other", please specify (maximum 500 characters)

Please enter the name of your company or organization

*

Please enter your e-mail address

*

Please select the option which best describes your organization *

- ( ) National
- ( ) EU-wide operating company
- ( ) National Industry or Trade association
- ( ) EU-wide Industry or Trade association
- ( ) Research institution
- ( ) National environmental or social non-governmental organisation
- ( ) EU-wide environmental or social non-governmental organisation
- ( ) Intergovernmental organisation
- ( ) Other

If your answer is "Other", please specify (maximum 500 characters)

Your company is predominantly involved in the following sector *

- ( ) Construction product manufacturer
- ( ) Construction company
- ( ) Building developer
- ( ) Designer/architect
- ( ) Property owner
- ( ) Other

If your answer is "Other", please specify (maximum 500 characters)

Please indicate the number of employees in your company *

- between 1 and 49
- between 50 and 249
- 250 and more

Your industry or trade association is predominantly involved in the following sector *

- Construction products
- Construction
- Building development
- Design/architecture
- Property owner
- Other

If your answer is "Other", please specify (maximum 500 characters)

Unless you specify otherwise, your contribution will be published on the Commission's website. Please indicate here if you wish your contribution to be anonymous. *

- You can publish this contribution as it is.
- Please make this contribution anonymous, on the grounds that such publication would harm my/our legitimate interests.

Part 2 : Questionnaire

A. Concept of sustainable buildings

Many different types of resources are used in the life cycle of a building. Energy consumption in the use phase has already received a lot of attention and policies at EU as well as at national levels are in place to tackle this.

1. Apart from energy consumption in the use phase, in your view, which of the following aspects and their related environmental impacts should be in focus to improve the environmental performance of buildings?

	Important	Somewhat important	Not important at all	I do not know
Material use for producing construction products *	○	○	○	○
Material use on the construction site *	○	○	○	○
Material use in the use stage of the buildings (maintenance, replacement) *	○	○	○	○
Water use for manufacturing construction products *	○	○	○	○
Water use on the construction site *	○	○	○	○
Water consumption in the use phase of a building *	○	○	○	○
Energy use for manufacturing construction products *	○	○	○	○
Energy use on the construction site *	○	○	○	○
Energy use on the deconstruction/demolition site *	○	○	○	○
Durability of construction products and components *	○	○	○	○
Flexibility of the building design, i.e. being able to use the building for different /changing functions and needs *	○	○	○	○
Deconstruction and recyclability, i.e. assuring that material can be recycled at the end of its lifetime in the building *	○	○	○	○
Use of recycled material in the construction product/building *	○	○	○	○

Management of construction and demolition waste *	○	○	○	○
Other (please use textbox directly below to explain your own suggestion that you are ranking on this line):	○	○	○	○

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

B. Problems to tackle

2. Demand for better environmental performing buildings and construction products

2A. In your view, what is the current demand for better environmental performance in the following areas? For different kinds of buildings, the distinction is made between new and existing buildings.

	High	Moderate	Low	I do not know
Public buildings (New buildings) *	○	○	○	○
Public buildings (Existing buildings) *	○	○	○	○
Private buildings excluding residential ones (New buildings) *	○	○	○	○
Private buildings excluding residential ones (Existing buildings) *	○	○	○	○
Residential buildings (New buildings) *	○	○	○	○
Residential buildings (Existing buildings) *	○	○	○	○
Construction products *	○	○	○	○
Other (please use textbox directly below to explain your own suggestion that you are ranking on this line):	○	○	○	○

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

2B. In your view, without any new policy or initiatives to stimulate better environmental performance, what is the likely future demand for environmental performance in the following areas?

	High	Moderate	Low	I do not know
Public buildings (New buildings)*	○	○	○	○
Public buildings (Existing buildings)*	○	○	○	○
Private buildings excluding residential ones (New buildings)*	○	○	○	○
Private buildings excluding residential ones (Existing buildings)*	○	○	○	○
Residential buildings (New buildings)*	○	○	○	○
Residential buildings (Existing buildings)*	○	○	○	○
Construction products*	○	○	○	○
Please refer here to the "other" suggestion that you described in the text box under question 2A:	○	○	○	○

2C. In your opinion, what would be the appropriate level of intervention to increase demands for better environmental performance in the following areas?

a: Beyond EU
b: EU
c: National
d: Regional/Local
e: Market
f: No need for intervention
g: I do not know

	a	b	c	d	e	f	g
Public buildings (New buildings)*	○	○	○	○	○	○	○
Public buildings (Existing buildings)*	○	○	○	○	○	○	○
Private buildings excluding residential ones (New buildings)*	○	○	○	○	○	○	○
Private buildings excluding residential ones (Existing buildings)*	○	○	○	○	○	○	○
Residential buildings (New buildings)*	○	○	○	○	○	○	○
Residential buildings (Existing buildings)*	○	○	○	○	○	○	○
Construction products*	○	○	○	○	○	○	○
Please refer here to the "other" suggestion that you described in the text box under question 2A:	○	○	○	○	○	○	○

3. Availability of indicators and data

In order for designers, engineers, businesses, consumers and policy makers to be informed about the resource use and, thus, of the environmental impact of a construction product or a building, data (mostly numerical information) on many levels are needed. This data has to be of good quality and this in turn requires consistent indicators, which "sets the rules" for how the data should be produced, of equally good quality. An indicator in this case does not have a number attached to it but it sets clear definitions, with boundary limits, for how to measure, calculate or assess something for which one wants to produce data. It is the data which is then presented in numerical form.

3A. Has your organisation performed or required a Life Cycle Assessment (LCA) or used information from an LCA [i] in relation to construction products or components?

*

[i] Life cycle assessment or Life cycle analysis is a technique to assess the environmental impacts associated with all stages of a proudct's life time (i.e. from raw material extraction, material processing, manufacturing, distribution, use, repair, maintenance, disposal or recycling).

- NO
- YES using one system for LCAs
- YES using more than one system for LCAs

If yes, which one(s)?

*

3B. Has your organisation used a scheme for the assessment of the environmental performance of a building? *

- NO
- YES using one scheme
- YES using more than one scheme

If yes, which one(s)?

*

3C. How would you assess the availability of good quality indicators and data in the following areas?

	Good	Moderate	Bad	I do not know
LCAs for construction products *	○	○	○	○
Indicators/methods for building product LCAs *	○	○	○	○
Input data to LCAs *	○	○	○	○
Indicators for the environmental performance of buildings *	○	○	○	○
Data on the environmental performance of buildings *	○	○	○	○
National indicators for resource flows related to buildings. E.g., indicators for material consumption, waste generation etc. *	○	○	○	○
National data on resource flows related to buildings. E.g., data on material consumption, waste generation, etc. *	○	○	○	○
Other (please use textbox directly below to explain your own suggestion that you are ranking on this line):	○	○	○	○

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

3D. In your opinion, what would be the appropriate level of intervention to improve the availability of good quality indicators and data in the following areas?

a: Beyond EU
b: EU
c: National
d: Regional/Local
e: Industry
f: No need for intervention
g: I do not know

	a	b	c	d	e	f	g
LCAs for construction products*							
Indicators/ methods for construction product LCAs*							
Input data to LCAs*							
Indicators for the environmental performance of buildings*							
Data on the environmental performance of buildings*							
National indicators for resource flows related to buildings*							
National data on resource flows related to buildings *							
Please refer here to the "other area" you described in the text box under question 3C:							

4. Systems to communicate environmental performance of construction products and buildings

-Construction products-

Environmental performance declarations (EPDs) represent a tool which manufacturers of construction products can use to communicate the environmental performance of their products. An environmental performance declaration presents the results of a life cycle assessment, typically environmental impacts of a product, to actors in the value chain (e.g. product supply chain of products, architects, designers and builders). A range of voluntary schemes for the declaration of the environmental performance of construction products exists. The methods as well as the

indicators that these schemes are based on however differ between each other.

Depending on your previous answers under question 3, a set of follow up questions follow in question 4. Only the relevant follow up questions will be asked and you will therefore not see all questions from 4A to 4M.

4A. Please explain why you have chosen not to work with a system for environmental performance declarations (EPDs) for construction products?

	Major reason	Minor reason	Not a reason	I do not know
Do not need it *	○	○	○	○
Lack of information *	○	○	○	○
Lack of training *	○	○	○	○
Too much effort *	○	○	○	○
Too costly *	○	○	○	○
No appropriate system exists *	○	○	○	○
Other reason (please use textbox directly below to explain your own suggestion that you are ranking on this line):	○	○	○	○

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

4B. Based on your general experience, to what extent do you agree with the following statements regarding possible consequences of working with environmental performance declarations for construction products?

a: I totally agree
b: I agree to a large extent
c: I only partially agree
d: I do not agree
e: I do not know

	a	b	c	d	e
It gives the producer a better understanding of the production process, its resource flows and environmental impacts *	○	○	○	○	○
It gives the value chain in general a better understanding of the advantages and disadvantages of different material and production options *	○	○	○	○	○
It opens up new market possibilities *	○	○	○	○	○
It is costly *	○	○	○	○	○
Appropriate information is hard to find *	○	○	○	○	○
It requires a lot of training *	○	○	○	○	○
It requires a lot of effort *	○	○	○	○	○
It requires a lot of knowledge *	○	○	○	○	○
Other consequence (please use textbox directly below to explain your own suggestion that you are ranking on this line):	○	○	○	○	○

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

4C. Please explain why you have chosen to work with only one system (as opposed to several) for environmental performance declarations (EPDs)?

	Major reason	Minor reason	Not a reason	I do not know
Do not need more than one system. The one used is imposed by government.*				
Do not need more than one system. The one used is imposed by clients.*				
Do not need more than one system. The one used has been chosen for other reasons than being imposed by government or clients.*				
More information would be necessary *				
More training would be necessary*				
Too much effort to work with more than one system*				
Too costly to work with more than one system*				
Other reason (please use textbox directly below to explain your own suggestion that you are ranking on this line):				

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

4D. Why have you used more than one system for the environmental performance declarations for construction products?

	Major reason	Minor reason	Not a reason	I do not know
Different systems are demanded by different clients*	○	○	○	○
Changing demands from clients have made us change system*	○	○	○	○
Legislations differ between countries where we sell our products and this forces us to use different systems*	○	○	○	○
Changing legislation have made us change system*	○	○	○	○
In order to learn and gain experience *	○	○	○	○
Other reason (please use textbox directly below to explain your own suggestion that you are ranking on this line):	○	○	○	○

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

4E. Based on your experience, to what extent do you agree with the following statements regarding possible consequences of working with different systems (as opposed to one system) for environmental performance declarations for construction products?

a: I totally agree
b: I agree to a large extent
c: I only partially agree
d: I do not agree
e: I do not know

	a	b	c	d	e
It gives the producer an even better understanding of the production process, its resource flows and environmental impacts*					
It gives the value chain in general an even better understanding of the advantages and disadvantages of different material and production options*					
It opens up new market possibilities*					
It is costly*					
Appropriate information is hard to find*					
It requires a lot of training*					
It requires a lot of effort*					
It requires a lot of knowledge*					
Other consequence (please use textbox directly below to explain your own suggestion that you are ranking on this line):					

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

4F. In your opinion, what would be the appropriate level of intervention to address the following situations?

a: Beyond EU

b: EU

c: National

d: Regional/Local

e: Industry

f: No need for intervention

g: I do not know

	a	b	c	d	e	f	g
Different reporting schemes for environmental performance declarations (EPDs) for construction products *							
Different national reporting requirements on environmental performance of construction products *							
Other (please use textbox directly below to explain your own suggestion that you are ranking on this line):							

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(maximum 500 characters)

-Buildings-

Several voluntary schemes for the assessment of the environmental performance of buildings exist on the market. Their scope and target groups can differ and they use different indicators and methods between each other.

4G. Please explain why you have chosen not to work with a scheme for the assessment of the environmental performance of buildings?

	Major reason	Minor reason	Not a reason	I do not know
Do not need it *				
Lack of information *				
Lack of training *				
Too much effort *				
Too costly *				
No appropriate scheme exists *				
Other reason (please use textbox directly below to explain your own suggestion that you are ranking on this line):				

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(maximum 500 characters)

4H. Based on your general experience, to what extent do you agree with the following statements regarding possible consequences of working with a scheme for the assessment of environmental performance of buildings?

a: I totally agree
b: I agree to a large extent
c: I only partially agree
d: I do not agree
e: I do not know

	a	b	c	d	e
It gives the designer/developer/builder a better understanding of the environmental impacts of different options *	○	○	○	○	○
It gives stakeholders like investors, public authorities, private persons and organisations in general a better understanding of the environmental impacts of different options *	○	○	○	○	○
It opens up new market possibilities *	○	○	○	○	○
It is costly *	○	○	○	○	○
Appropriate information is hard to find *	○	○	○	○	○
It requires a lot of training *	○	○	○	○	○
It requires a lot of effort *	○	○	○	○	○
It requires a lot of knowledge *	○	○	○	○	○
Other statement (please use textbox directly below to explain your own suggestion that you are ranking on this line):	○	○	○	○	○

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

4J. Please explain why you have chosen to work with only one scheme (as opposed to several) for the assessment of the environmental performance of buildings?

	Major reason	Minor reason	Not a reason	I do not know
Do not need more than one scheme. The one used is imposed by government.*				
Do not need more than one scheme. The one used is imposed by clients.*				
Do not need more than one scheme. The one used has been chosen for other reasons than being imposed by government or clients.*				
More information would be necessary*				
More training would be necessary*				
Too much effort to work with more than one scheme*				
Too costly to work with more than one scheme*				
Other reason (please use textbox directly below to explain your own suggestion that you are ranking on this line):				

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

4K. Why have you used more than one scheme for the assessment of the environmental performance of buildings?

	Major reason	Minor reason	Not a reason	I do not know
Different schemes are demanded by different clients *				
Changing demands from clients have made us change scheme *				
Legislations/requirements differ between countries where we operate and this forces us to use different systems *				
Changing legislation/requirements have made us change scheme *				
In order to learn and gain experience *				
Other reason (please use textbox directly below to explain your own suggestion that you are ranking on this line):				

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

4L. Based on your experience, to what extent do you agree with the following statements regarding possible consequences of working with different schemes (as opposed to one system) for the assessment of the environmental performance of buildings?

a: I totally agree
b: I agree to a large extent
c: I only partially agree
d: I do not agree
e: I do not know

	a	b	c	d	e
It gives the designer/developer/builder an even better understanding of the environmental impacts of different options *	○	○	○	○	○
It gives stakeholders like investors, public authorities, private persons and organisations in general an even better understanding of the environmental impacts of different options *	○	○	○	○	○
It opens up new market possibilities *	○	○	○	○	○
It is costly *	○	○	○	○	○
Appropriate information is hard to find *	○	○	○	○	○
It requires a lot of training *	○	○	○	○	○
It requires a lot of effort *	○	○	○	○	○
It requires a lot of knowledge *	○	○	○	○	○
Other statement (please use textbox directly below to explain your own suggestion that you are ranking on this line):	○	○	○	○	○

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

4M. In your opinion, what would be the appropriate level of intervention to address the following situations?

a: Beyond EU
b: EU
c: National
d: Regional/Local
e: Industry
f: No need for intervention
g: I do not know

	a	b	c	d	e	f	g
Different reporting schemes for the environmental performance of buildings *							
Different national reporting requirements on environmental performance of buildings *							
Other (please use textbox directly below to explain your own suggestion that you are ranking on this line):							

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

5. Material management

The construction and demolition waste in Europe makes up about a third of our total generated waste. Waste management is highly diverse across Member States and recycling rates range from almost nothing to close to 100%. Estimates indicate that overall recycling of the construction and demolition waste in the EU is below 50%.

5A. Regarding construction and demolition waste, which of the following areas do you believe are currently sufficiently dealt with in the supply chain? Which areas would need to be improved, in your view?

	Great improvements needed	Small improvements needed	Sufficiently dealt with	I do not know
Recycled material in construction products*	○	○	○	○
Disassembly of construction products (taking apart construction products into parts suitable for reuse or recycling)*	○	○	○	○
Recyclability of sorted building materials*	○	○	○	○
Identification and sorting of construction and demolition waste*	○	○	○	○
Competence of work force at construction and/or demolition site*	○	○	○	○
Design for deconstruction of buildings (considering already at the design stage how to take apart a building at the end of its life time, into parts that can be reused or recycled)*	○	○	○	○
Other area (please use textbox directly below to explain your own suggestion that you are ranking on this line):	○	○	○	○

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

5B. What would be the appropriate level of intervention to address those areas for which you consider improvements are needed?

a: Beyond EU
b: EU
c: National
d: Regional/Local
e: Industry
f: No need for intervention
g: I do not know

	a	b	c	d	e	f	g
Recycled material in construction products*	○	○	○	○	○	○	○
Disassembly of construction products (taking apart construction products into parts suitable for reuse or recycling)*	○	○	○	○	○	○	○
Recyclability of sorted building materials*	○	○	○	○	○	○	○
Identification and sorting of construction and demolition waste*	○	○	○	○	○	○	○
Competence of work force at construction and/or demolition site*	○	○	○	○	○	○	○
Design for deconstruction of buildings (considering already at the design stage how to take apart a building at the end of its life time, into parts that can be reused or recycled)*	○	○	○	○	○	○	○
Please refer here to the "other area" you described in the text box under question 5A:	○	○	○	○	○	○	○

6. Increasing built space

The built space per person is steadily increasing in Europe and this directly impacts resource use.

6A. In your view, what are the major reasons for the increasing demand of built space per person?* (maximum 500 characters)

C. Policy options

7. Measures on assessment framework for the environmental performance of buildings

To stimulate the construction of better environmental performing buildings, some kind of an assessment of buildings, which evaluate and communicate their environmental performance, can be used. Several voluntary schemes for this already exist on the market. Their coverage is usually limited in their geographical scope as well as in the kind of buildings that they target. Affordability can be an issue and thereby often, but not necessarily, excludes most residential buildings. These schemes generally use different indicators and methods and this results in outputs which are not comparable.

To partly improve this situation, general guidance from the EU regarding which areas to include in such assessments (when using existing or future assessment schemes) could be provided.

A step further could be a harmonised EU-wide framework for the assessment. It would have a limited number of agreed core indicators (an indicator describes exactly what and how something should be measured/modelled and eventually reported), to be used either as part of other schemes or on its own and it could provide a cost effective tool for most kinds of buildings. Once such a system has been established and experience and data have been gathered, benchmarks could be identified. Benchmarks would be specific values set to all or some of the indicators used, which would be considered representing good environmental performance. These could later on be coupled to future policies aiming at stimulating the construction of better environmental performing buildings.

7A. In your view, how effective would the following policy options at EU level be to support the increased uptake of better environmental performing buildings?

	Effective	Somewhat effective	Not effective	I do not know
General guidance regarding resource use areas to include in existing and new schemes for the assessment of the environmental performance of buildings*	○	○	○	○
A voluntary European framework consisting of core indicators*	○	○	○	○
A voluntary European framework consisting of core indicators and, eventually, a set of benchmarks*	○	○	○	○
A mandatory European framework consisting of core indicators*	○	○	○	○
A mandatory European framework consisting of core indicators and, eventually, a set of benchmarks*	○	○	○	○
No change in EU policy*	○	○	○	○
Other policy option not listed above (please use textbox directly below to explain your own suggestion that you are ranking on this line):	○	○	○	○

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(maximum 500 characters)

7B. Do you think that the overall benefits of implementing these options will outweigh their costs?

	Not at all	Slightly	Significantly	I do not know
General guidance regarding resource use areas to include in existing and new schemes for the assessment of the environmental performance of buildings *				
A voluntary European framework consisting of core indicators *				
A voluntary European framework consisting of core indicators and, eventually, a set of benchmarks *				
A mandatory European framework consisting of core indicators *				
A mandatory European framework consisting of core indicators and, eventually, a set of benchmarks *				
No change in EU policy *				
Please refer here to the "other area" you described in the text box under question 7A:				

7C. Do you have any quantitative information concerning the benefits and costs of implementing these options? Please send this to **ENV-SUSTAINABLE-BUILDINGS-EXT-FORWARD@ec.europa.eu** stating which question and option in the questionnaire your contribution is responding to.

8. Measures to stimulate demand for better environmental performing buildings

Public authorities account for approximately 20 % of the European GDP, which makes them an important driver of demand. Using Green Public Procurement (GPP) to increase demand for more environmentally friendly products, services and works have been repeatedly recognised in European policy. In the case of buildings, certain obligations for public authorities to buy "green" (better environmental performing products) according to predefined criteria could be considered. This could be further supported by setting mandatory or voluntary GPP targets (e.g. X% of public procurement of buildings should be procurement of better environmental performing buildings). Another alternative could be to use EU regional policy to further spread the uptake of GPP. E.g., the use of GPP criteria could be a condition to receive funding from EU structural and regional funds for a particular project. If a European framework to assess the environmental performance of buildings was in place, it could furthermore serve as a basis for GPP criteria development.

The application of life cycle costing (LCC) methods could further stimulate a holistic approach in purchasing decisions. Such methods take all kinds of costs during a building's life time into account. Thereby, running costs and costs for maintenance and renovation become just as important as the upfront cost in the purchase decision.

8A. In your view, how effective would the following policy options at EU level be to stimulate demand for better environmental performing public buildings?

	Effective	Somewhat effective	Not effective	I do not know
Mandatory GPP (going beyond energy efficiency) for all or certain type of buildings (e.g. schools), based on European criteria *	○	○	○	○
Voluntary GPP (going beyond energy efficiency) for all or certain type of buildings (e.g. schools), based on European criteria *	○	○	○	○
Mandatory targets for the extent of GPP of buildings by public authorities *	○	○	○	○
Voluntary targets for the extent of GPP of buildings by public authorities *	○	○	○	○
Training of relevant authorities in how to use GPP in the area on buildings *	○	○	○	○
Increasing the use of GPP of buildings (going beyond energy efficiency) in future EU regional policy *	○	○	○	○
EU-wide life cycle costing (LCC) methods for buildings for GPP *	○	○	○	○
No change in EU policy *	○	○	○	○
Other policy option not listed above (please use textbox directly below to explain your own suggestion that you are ranking on this line):	○	○	○	○

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

8B. Do you think that the overall benefits of implementing these options, for public buildings, will outweigh their costs?

	Not at all	Slightly	Significantly	I do not know
Mandatory GPP (going beyond energy efficiency) for all or certain type of buildings (e.g. schools), based on European criteria *	○	○	○	○
Voluntary GPP (going beyond energy efficiency) for all or certain type of buildings (e.g. schools), based on European criteria *	○	○	○	○
Mandatory targets for the extent of GPP of buildings by public authorities *	○	○	○	○
Voluntary targets for the extent of GPP of buildings by public authorities *	○	○	○	○
Training of relevant authorities in how to use GPP in the area on buildings *	○	○	○	○
Increasing the use of GPP of buildings (going beyond energy efficiency) in future EU regional policy *	○	○	○	○
EU-wide life cycle costing (LCC) methods for buildings for GPP *	○	○	○	○
No change in EU policy *	○	○	○	○
Please refer here to the "other area" you described in the text box under question 8A:	○	○	○	○

8C. Do you have any quantitative information concerning the benefits and costs of implementing these options? Please send this to **ENV-SUSTAINABLE-BUILDINGS-EXT-FORWARD@ec.europa.eu** stating which question and option in the questionnaire your contribution is responding to.

A range of further initiative could be considered for both the public and private consumers:

The energy performance of buildings directive introduces energy certificates, which are mandatory since 2006 for buildings to be

sold or rent. The recast directive introduces the development of a voluntary common EU certification scheme for the energy performance of non-residential buildings, currently under development.

An EU-wide label or certificate linked to an easy to use, transparent and cost effective assessment framework with a wider environmental coverage could draw the attention of both public and private consumers to further aspects of a better environmental performing building. The label would communicate the environmental performance of the buildings in a straightforward way to the consumer and would thus enable the interested consumer to make an informed purchase decision.

One could also imagine voluntary agreements on minimum environmental performance of buildings, either based on a European framework for the assessment of the environmental performance of buildings or some other indicators.

If combined with other lighter approaches such as awareness campaigns where e.g. architects would help consumers understanding different options, impacts could improve further.

A European Eco-label for buildings (or certain categories of buildings), awarded to the very best buildings, is an approach to raise the demand for buildings in the top end of the environment performance spectra. This is done by setting the requirements on the environmental performance high. Applications are entirely voluntary but can attract interest as a way of creating a positive image. Again, criteria underpinning the requirements could be based on a European framework to assess the environmental performance of buildings.

Financial incentives to clients (purchasers, developers, private consumers) to invest in better environmental performing buildings (construction or refurbishment) represent another way of stimulating demand. Financial barriers have been identified as one of the key obstacles with respect to energy efficiency improvements in buildings, and are likely to be similar in the case of a broader scope of the environmental performance. A key concern is the direct perceived benefit to the client of making such investments. In the case of energy efficiency, the benefit comes in terms of reduced consumption of energy in the long-term and hence of the related reduced energy costs. Since the benefits for better environmental performing buildings are best visible along the entire life cycle, it becomes more difficult to grasp such ‘environmental’ benefits from a client perspective.

8D. In your view, how effective would the following policy options at EU level be to stimulate demand for better performing environmental public buildings?

	Effective	Somewhat effective	Not effective	I do not know
Label/Certification providing information on environmental performance of buildings, based on a European framework *	○	○	○	○
Voluntary agreements on minimum environmental performance of buildings *	○	○	○	○
Awareness raising campaign where e.g. architects help clients understanding different options in terms of environmental performance *	○	○	○	○
European Eco-label for buildings (awarded to best environmental performers) *	○	○	○	○
Provide guidance to Member States on financial incentives (e.g. tax breaks, preferential loans) *	○	○	○	○
No change in EU policy *	○	○	○	○
Other policy option not listed above (please use textbox directly below to explain your own suggestion that you are ranking on this line):	○	○	○	○

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

8E. Do you think that the overall benefits of implementing these options, for public buildings, will outweigh their costs?

	Not at all	Slightly	Significantly	I do not know
Label/Certification providing information on environmental performance of buildings, based on a European framework *	○	○	○	○
Voluntary agreements on minimum environmental performance of buildings *	○	○	○	○
Awareness raising campaign where e.g. architects help clients understanding different options in terms of environmental performance *	○	○	○	○
European Eco-label for buildings (awarded to best environmental performers) *	○	○	○	○
Provide guidance to Member States on financial incentives (e.g. tax breaks, preferential loans) *	○	○	○	○
No change in EU policy *	○	○	○	○
Please refer here to the "other policy option" you described in the text box under question 8D:	○	○	○	○

8F. Do you have any quantitative information concerning the benefits and costs of implementing these options? Please send this to **ENV-SUSTAINABLE-BUILDINGS-EXT-FORWARD@ec.europa.eu** stating which question and option in the questionnaire your contribution is responding to.

8G. In your view, how effective would the following policy options at EU level be to stimulate demand for better performing environmental private buildings (residential and non-residential)?

	Effective	Somewhat effective	Not effective	I do not know
Label/Certification providing information on environmental performance of buildings, based on a European framework*	○	○	○	○
Voluntary agreements on minimum environmental performance of buildings*	○	○	○	○
Awareness raising campaign where e.g. architects help clients understanding different options in terms of environmental performance*	○	○	○	○
European Eco-label for buildings (awarded to best environmental performers)*	○	○	○	○
Provide guidance to Member States on financial incentives (e.g. tax breaks, preferential loans)*	○	○	○	○
No change in EU policy*	○	○	○	○
Other policy option not listed above (please use textbox directly below to explain your own suggestion that you are ranking on this line):	○	○	○	○

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

8H. Do you think that the overall benefits of implementing these options, for private buildings (residential and non-residential), will outweigh their costs?

	Not at all	Slightly	Significantly	I do not know
Label/Certification providing information on environmental performance of buildings, based on a European framework *	○	○	○	○
Voluntary agreements on minimum environmental performance of buildings *	○	○	○	○
Awareness raising campaign where e.g. architects help clients understanding different options in terms of environmental performance *	○	○	○	○
European Eco-label for buildings (awarded to best environmental performers) *	○	○	○	○
Provide guidance to Member States on financial incentives (e.g. tax breaks, preferential loans) *	○	○	○	○
No change in EU policy *	○	○	○	○
Please refer here to the "other policy option" you described in the text box under question 8G:	○	○	○	○

8J. Do you have any quantitative information concerning the benefits and costs of implementing these options? Please send this to **ENV-SUSTAINABLE-BUILDINGS-EXT-FORWARD@ec.europa.eu** stating which question and option in the questionnaire your contribution is responding to.

9. Measures on assessment and reporting scheme for the environmental performance of construction products

Environmental performance declarations (EPDs) represent a tool which manufacturers of construction products can use to communicate the environmental performance of their products. The fact that a producer provides an EPD for a product does not necessarily warrant a better environmental performance. The strength of it relies in the way it presents, typically environmental impacts of a product, to actors in the value chain (e.g. supply chain of products, architects and designers). It could also be envisaged to request complete EPDs or parts thereof as a condition for placing a product on the market.

The information included in an EPD comes from a so called life cycle analysis (LCA). The aim of such analysis is to take into account all related environmental impacts of the complete life cycle of the product and the material it is made up of.

Currently, different systems for environmental performance declarations exist across the EU. With different indicators and methods in place, results are generally not comparable.

9A. In your view, how effective would the following policy options at EU level be to support the development of better environmental performing construction products?

	Effective	Somewhat effective	Not effective	I do not know
Mandatory EU environmental product declarations (EPDs). Declarations would be complete in the sense that they would cover all relevant environmental impacts. *	○	○	○	○
Voluntary EU environmental product declarations (EPDs). Declarations would be complete in the sense that they would cover all relevant environmental impacts. *	○	○	○	○
Mandatory EU environmental product declarations (EPDs). Declarations would be limited in the sense that they would cover only a selected set of environmental impacts. *	○	○	○	○
Voluntary EU environmental product declarations (EPDs). Declarations would be limited in the sense that they would cover only a selected set of environmental impacts. *	○	○	○	○
Develop a common EU database for EPDs for buildings products *	○	○	○	○
Support the use of EPDs and software tools to provide information on the environmental performance of construction products to e.g. architects and builders *	○	○	○	○
No change in EU policy *	○	○	○	○
Other policy option not listed above (please use textbox directly below to explain your own suggestion that you are ranking on this line):	○	○	○	○

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

9B. Do you think that the overall benefits of implementing these options will outweigh their costs?

	Not at all	Slightly	Significantly	I do not know
Mandatory EU environmental product declarations (EPDs). Declarations would be complete in the sense that they would cover all relevant environmental impacts. *				
Voluntary EU environmental product declarations (EPDs). Declarations would be complete in the sense that they would cover all relevant environmental impacts. *				
Mandatory EU environmental product declarations (EPDs). Declarations would be limited in the sense that they would cover only a selected set of environmental impacts. *				
Voluntary EU environmental product declarations (EPDs). Declarations would be limited in the sense that they would cover only a selected set of environmental impacts. *				
Develop a common EU database for EPDs for buildings products *				
Support the use of EPDs and software tools to provide information on the environmental performance of construction products to e.g. architects and builders *				
No change in EU policy *				
Please refer here to the "other policy option" you described in the text box under question 9A:				

9C. Do you have any quantitative information concerning the benefits and costs of implementing these options? Please send this to **ENV-SUSTAINABLE-BUILDINGS-EXT-FORWARD@ec.europa.eu** stating which question and option in the questionnaire your contribution is responding to.

10. Measures to ensure the availability of data for life-cycle analysis (LCA)

Many construction product manufacturers produce a range of products. Preparing environmental performance declarations and doing life cycle analyses for all products may be challenging for a small business as conducting these analyses requires a lot of

knowledge. Moreover, different data sets and methods to calculate environmental impacts exist and this results in different LCA results, which create a complex situation for many companies.

10A. In your view, how effective would the following policy options be to ensure good quality LCA data?

	Effective	Somewhat effective	Not effective	I do not know
Further development of the European Life-cycle Database (ELCD)*	○	○	○	○
Common platform to share existing and future LCA data*	○	○	○	○
No change in EU policy*	○	○	○	○
Other policy option not listed above (please use textbox directly below to explain your own suggestion that you are ranking on this line):	○	○	○	○

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

10B. Do you think that the overall benefits of implementing these options will outweigh their costs?

	Not at all	Slightly	Significantly	I do not know
Further development of the European Life-cycle Database (ELCD)*				
Common platform to share existing and future LCA data*				
No change in EU policy*				
Please refer here to the "other policy option" you described in the text box under question 10A:				

10C. Do you have any quantitative information concerning the benefits and costs of implementing these options? Please send this to **ENV-SUSTAINABLE-BUILDINGS-EXT-FORWARD@ec.europa.eu** stating which question and option in the questionnaire your contribution is responding to.

11. Measures to ensure the availability of national data on resource flows related to buildings

Data for the use of resources such as materials, water, energy and land for the built environment but also for waste generation and management are incomplete and do not serve to compare countries or to detect clear trends. Different indicators (clear definitions for how to measure, calculate or assess something for which one wants to produce data) on national level are sometimes used, while reporting mechanisms for data collection and control vary.

11A. In your view, how effective would the following policy options be to ensure good quality data to be collected and reported at national level?

	Effective	Somewhat effective	Not effective	I do not know
Establish indicators to be used at national level when collecting data*				
Require data collection at national level*				
No change in EU policy*				
Other policy option not listed above (please use textbox directly below to explain your own suggestion that you are ranking on this line):				

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

11B. Do you think that the overall benefits of implementing these options will outweigh their costs?

	Not at all	Slightly	Significantly	I do not know
Establish indicators to be used at national level when collecting data *	○	○	○	○
Require data collection at national level *	○	○	○	○
No change in EU policy *	○	○	○	○
Please refer here to the "other policy option" you described in the text box under question 11A:	○	○	○	○

11C. Do you have any quantitative information concerning the benefits and costs of implementing these options? Please send this to **ENV-SUSTAINABLE-BUILDINGS-EXT-FORWARD@ec.europa.eu** stating which question and option in the questionnaire your contribution is responding to.

12. Measures to use construction material more efficiently

Frameworks to assess the environmental performance of either buildings or construction products should take a holistic approach and ideally cover all significant environmental aspects. This includes issues related to material efficiency and the increased use of secondary construction materials. Similarly, green public procurement criteria based on a holistic approach would cover the same issues. If these instruments became more widespread, the inclusion of secondary material aspects could give an important contribution to the reduction of primary material use in the sector.

A functioning market where enough feed at competitive prices is available is essential for the sector to invest in processing recycled material. Confidence could be further enhanced by applying quality standards for recycled material or construction products partly made thereof.

Mandatory targets exist for the recycling of construction and demolition waste, formulated in the Waste Framework Directive. Voluntary targets in waste reduction are in place at national and local levels in some member states and have seen collective efforts being made towards substantially less waste being created or disposed of. A more direct approach would be to divert waste from landfill, either by banning construction and demolition waste being landfilled or by substantially increasing landfill taxes.

Parts of the construction sector are actively working towards increased recycling. Collaborations within supply chains, for a certain construction product or across materials are emerging. E.g., synergies can be sought for horizontal activities such as collection and sorting.

Another business approach which may successfully promote efficient material management is when developers and builders provide a function rather than a product (e.g. square meters of office space as opposed to an office building). Instead of selling the building, they keep the ownership and with that also the responsibility for maintenance and necessary refurbishment.

12A. In your view, how effective would the following policy options at EU level be to improve the efficiency of use of construction materials?

	Effective	Somewhat effective	Not effective	I do not know
Recommend Member States to require some kind of an end of life assessment in order to grant a building permit *				
Include aspects such as "design for deconstruction" and the "use of recyclable and/or recycled materials" in assessment frameworks for buildings. *				
Include aspects such as "design for deconstruction" and the "use of recyclable and/or recycled materials" in assessment systems for construction products. *				
Include aspects such as "design for deconstruction" and the "use of recyclable and/or recycled materials" in GPP criteria *				
Support markets for secondary construction materials *				
Introduce quality standards for secondary construction materials *				
Set targets for management of construction and demolition waste *				
Support voluntary agreements on reduction of construction and demolition waste *				

Ban landfill of construction and demolition waste*				
Recommend increased taxes for the landfill of construction and demolition waste*				
Support collaboration along supply chain for sustainable material and waste management*				
Stimulate business models where developers/builders keep the ownership and responsibility for maintenance and upgrading of the building*				
No change in EU policy*				
Other policy option not listed above (please use textbox directly below to explain your own suggestion that you are ranking on this line):				

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

12B. Do you think that the overall benefits of implementing these options will outweigh their costs?

	Not at all	Slightly	Significantly	I do not know
Recommend Member States to require some kind of an end of life assessment in order to grant a building permit*				

Include aspects such as "design for deconstruction" and the "use of recyclable and/or recycled materials" in assessment frameworks for buildings.*				
Include aspects such as "design for deconstruction" and the "use of recyclable and/or recycled materials" in assessment systems for construction products.*				
Include aspects such as "design for deconstruction" and the "use of recyclable and/or recycled materials" in GPP criteria*				
Support markets for secondary construction materials*				
Introduce quality standards for secondary construction materials*				
Set targets for management of construction and demolition waste*				
Support voluntary agreements on reduction of construction and demolition waste*				
Ban landfill of construction and demolition waste *				
Recommend increased taxes for the landfill of construction and demolition waste*				
Support collaboration along supply chain for sustainable material and waste management*				
Stimulate business models where developers/builders keep the ownership and responsibility for maintenance and upgrading of the building*				
No change in EU policy*				

Please refer here to the "other policy option" you described in the text box under question 12A:				

12C. Do you have any quantitative information concerning the benefits and costs of implementing these options? Please send this to **ENV-SUSTAINABLE-BUILDINGS-EXT-FORWARD@ec.europa.eu** stating which question and option in the questionnaire your contribution is responding to.

13. Measures to use buildings more efficiently

The overall trend in Europe is still that of increasing built space, requiring increasing amount of resources. Restricting space per person is difficult but positive examples of how to use public buildings more efficiently could be put forward to serve as inspiration. Different approaches on how to use buildings more efficiently already exist, such as considering empty buildings before building new, designing buildings in a flexible manner so that once the original function is not needed anymore, the building can relatively easily serve a new function (e.g. an office being transformed into apartments) and stimulate multiple use of buildings (e.g. different activities at different parts of the day or week).

13A. In your view, how effective would the following policy options at EU level be to stimulate more efficient use of public buildings?

	Effective	Somewhat effective	Not effective	I do not know
Include the efficient use of buildings (e.g. using empty or flexible or multi-purpose buildings) in assessment schemes or add this aspect to GPP criteria.*				
Platform to share best practice on how to use buildings more efficiently*				
Support training of relevant actors*				
No change in EU policy*				
Other policy option not listed above (please use textbox directly below to explain your own suggestion that you are ranking on this line):				

Please explain/describe here the "other" suggestion that you have in mind and which you have ranked in the last row of the previous matrix:

(between 1 and 500 characters)

13B. Do you think that the overall benefits of implementing these options will outweigh their costs?

	Not at all	Slightly	Significantly	I do not know
Include the efficient use of buildings (e.g. using empty or flexible or multi-purpose buildings) in assessment schemes or add this aspect to GPP criteria.*				
Platform to share best practice on how to use buildings more efficiently*				
Support training of relevant actors*				
No change in EU policy*				
Please refer here to the "other policy option" you described in the text box under question 13A:				

13C. Do you have any quantitative information concerning the benefits and costs of implementing these options? Please send this to **ENV-SUSTAINABLE-BUILDINGS-EXT-FORWARD@ec.europa.eu** stating which question and option in the questionnaire your contribution is responding to.

D. Further contacts

14. Are you available to provide further clarifications with regard to some of your replies, in case it is necessary (your e-mail address and phone number provided in the questionnaire will be used for this purpose)?*

- YES
- NO