

Tackling climate change through public procurement

- Results of the DEEP Project

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I Introduction

Communities all over the world are facing dramatic consequences of climate change. “Anthropogenic warming and sea level rise would continue for centuries due to the time scales associated with climate processes and feedbacks.” (IPCC 2007, p. 14)

Even under the most optimistic forecasts, temperatures across the globe are set to rise by 1.8°C by the end of the 21st century¹. However, without urgent action, temperatures could rise much faster (4°C by the end of the 21st century²), resulting in serious impacts world-wide such as increased extreme natural events (floods, storms, droughts) and increased vulnerability of industries, settlements and societies especially in coastal and river flood plains.

By far the biggest cause of climate change is our excessive consumption of energy, and our reliance on fossil fuels such as oil, coal and gas, leading to carbon dioxide (CO₂) emissions. If we are to limit the potentially catastrophic impacts of climate change huge reductions need to be made to these emissions.

1.1. The role of local governments

So what can be done? Immediate action is required by all actors at all levels, and local governments have a key role to play. Through their ownership of buildings and their purchases of electricity and energy consuming products, local governments can make a major contribution to reducing emissions of CO₂.

- **Improving the energy efficiency of the public building stock** – 40% of energy in Europe is consumed within non-industrial buildings. Simple renovations and standards for new buildings can lead to huge energy efficiency improvements, and through this also save money.
- **Buying green electricity** – as major consumers of electricity (6-7% of the whole European market), the purchasing of electricity from renewable energy sources can lead to significant reductions in CO₂ emissions (up to 18% of the Kyoto commitments), and act as a major spur to the development of new capacity.
- **Buying energy efficient products** – public authorities purchase a huge range of products which consume energy – from computers to buses, from light-bulbs to refrigerators. For all these products, for little or no extra cost many alternatives are now available on the market which consume far less energy than standard products.

Not only is there a considerable potential for making CO₂ reductions, but also to make financial savings. Energy costs money – the more efficient the buildings, IT products, vehicles you use, the less money you need spend on fuel and electricity. Once the full life-cycle costs (LCC) are taken into account – purchase price, usage costs (energy & water consumption, maintenance etc.) and disposal – it is often very clear that the energy efficient option is the cheapest. This is particularly so within the construction field – the initial construction costs will make up only a fraction of the total costs associated with running and finally demolishing a building.

¹ IPCC (2007): A report of Working Group I of the Intergovernmental Panel on Climate Change, Summary for policymakers, Temperature Change (°C at 2090-2099 relative to 1980-1999), B1 scenario (likely range 1,1-2,9 degrees Celsius), p. 14

² IPCC (2007): A report of Working Group I of the Intergovernmental Panel on Climate Change, Summary for policymakers, Temperature Change (°C at 2090-2099 relative to 1980-1999), A1FI scenario (likely range 2,4-6,4 degrees Celsius), p. 14

“Over the lifetime of a building, the construction costs are unlikely to be more than 2-3% of total costs, but the costs of running a public service will often constitute 85% of the total. On the same scale, the design costs are likely to be 0.3-0.5% of the whole life costs, and yet it is through the design process that the largest impact can be made on the 85% figure.”

Improving Standards of Design in the Procurement of Public Buildings, Office of Government Commerce (OGC), UK

I.2. Addressing the challenges

Despite these clear facts, not nearly enough is currently being done at any level of government to take advantage of these opportunities and achieve serious reductions in CO₂ emissions. Although a large number of public authorities from right across Europe are taking the lead in introducing powerful measures to improve energy efficiency and reduce emissions, they remain the exception. The large majority of public authorities could still do considerably more to pursue such reductions through their procurement actions.

Furthermore, the good experiences which do exist are not being communicated effectively enough across Europe to other authorities who could benefit. Firstly, this leads to the considerable duplication of work, with many authorities facing the same challenges but independently working on solutions, not effectively building on experiences and tools from elsewhere. Secondly in the experience of the project partners the most effective way to convince decision-makers in public authorities of the potential benefits of specific measures and strategies is to present clear case studies demonstrating the benefits that have been achieved elsewhere.

A number of specific challenges can be identified in the pursuit of CO₂ reductions through public procurement:

- Levels of awareness and understanding within public authorities of the potential for both cost and CO₂ emission savings is generally low, despite increasing political support of the concept
- Most public authorities do not have the resources to employ the expertise required to set appropriate energy efficiency standards within procurement processes
- Procurement decisions are still largely taken on the basis of lowest purchase/investment price, without considering LCC
- Organisational policies, where these exist, tend to be rather vague commitments, not providing a robust enough framework for effective implementation
- Good practices that are happening around Europe are not being effectively communicated to allow others to benefit from these experiences

It is within this context that the DEEP project was developed, with the aim of addressing these challenges.

I.3. The DEEP project – practical assistance

The activities of the DEEP project can be broken down into four areas:

1. The **development of tools** to assist public authorities in achieving CO₂ reductions through procurement
2. **Awareness raising activities** in the regions of Athens (Greece), Barcelona (Spain) and Cremona (Italy)
3. The strengthening of the **exchange of good practice** across Europe through the Procura⁺ Campaign
4. Developing **policy recommendations** for national and European decision-makers on promoting CO₂ reductions through public procurement

A brief description of the deliverables in each of these areas is presented below. Then in Section II more in-depth information is provided.

I.3.1 Tools development

As noted above, many public authorities across Europe lack sufficient expertise to effectively implement CO₂ reduction through public procurement. With regards to buildings, knowledge of appropriate energy efficiency standards and techniques is rarely available internally. For many authorities even tendering for electricity is not yet standard, let alone for green electricity. For IT products, again, appropriate knowledge of energy consumption standards and market availability is often lacking.

→ ***Development of simple purchasing criteria for construction and renovation work, the purchase of green electricity, and IT products***

The project partners developed sets of procurement criteria/guidelines which could be copied directly into public tendering documents. These criteria are available individually on the project website (and included below in section XXXX).

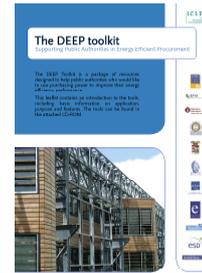


The structural barriers within organisations also needed to be addressed. Policies relating to energy efficient procurement are rarely in place in European public authorities, and where they do exist they are often expressed in rather vague commitments without providing concrete targets, assigning responsibilities or defining actions.

Furthermore, there is little experience in the integration of LCC approaches into public procurement. Additionally, many public authorities are simply unaware of how much energy they are consuming and where it is consumed.

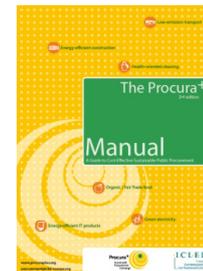
→ **Development of the DEEP Energy Efficient Procurement Toolkit**

A toolkit was developed containing a guidance document on the drafting and implementation of an energy efficient policy, a tool for using LCC in public procurement and accompanying introductory powerpoint presentations (one aimed at decision-makers, and one at procurers), and a tool for making a self-assessment of energy consumption in public buildings. The toolkit also contains the simple purchasing criteria developed



→ **Revision of The Procura⁺ Manual – A guide to cost-effective sustainable public procurement**

Both the newly developed purchasing criteria and the DEEP Toolkit were also integrated into a revised version of The Procura⁺ Manual. The Manual provides further simple purchasing criteria for other high-priority product groups, together with more general guidance on the implementation of sustainable procurement within the European regulatory framework. An attached CD-ROM contains many further tools, more detailed information on the product groups covered, a series of case studies, and other useful information. The first edition was published in 2004



All the tools developed by the project are available on the project website at:

www.iclei-europe.org/deep

1.3.2 Awareness raising activities

In addition to general dissemination at the European level, it was decided to also undertake intensive awareness raising activities at the regional level involving the regional authority project partners as the drivers – the Local Union of Municipalities & Communities of Attiki (Athens), The Province of Barcelona, and the Province of Cremona. The project focused on southern European countries. As there has been less activity in this field in Spain, Italy and Greece up to now it was felt these areas would provide a good potential for improvement. It was also decided to build on the reputation and strong communication potential of authorities considered leaders in the field of sustainability within the countries concerned. For each region a series of publications and events were held differentiated according to the target group and objective of each.

1.3.3 Building good practice exchange – the Procura⁺ Campaign

The effective exchange of best practice – what works, what doesn't work, costs involved, useful tools and sources of information – between public authorities across Europe is seen as a critical development in the effective mainstreaming of public efforts to address CO₂ emission reductions through public procurement – as it is in all areas of local sustainability.

Authorities can not only learn from each other and avoid duplicating work, but for internal political reasons it is often useful to have someone from another authority to support the arguments of the local “champion”.

The project has used the framework of the Procura⁺ Campaign to work towards this. Procura⁺ is an initiative designed to help **support** public authorities across Europe in implementing Sustainable Procurement – and help **promote** their achievements.



The Campaign was established in 2004 by ICLEI to help drive the mainstreaming of sustainable public procurement throughout Europe. Through participating in the Campaign, public authorities can contribute to a growing international movement and help bring about real change on the market.

Participants in the Campaign can draw on a wide body of expertise from many different European countries through an active exchange network. Advice can also be sought directly from ICLEI and a number of expert National Partner organisations.

More on the Campaign can be found at www.procuraplus.org

I.3.4 Developing policy recommendations

Throughout the project – through the expert roundtables and follow up consultation, through discussions between the partners, through regular contact with public authorities and other stakeholders – a number of conclusions could be drawn on how best to support the promotion of sustainable construction and green electricity through public procurement.

A policy recommendations document has been produced as a result. For each of the areas (green electricity, and energy performance in buildings) the report includes a status overview followed by an examination of current positive developments and opportunities. The principle barriers are then assessed before the suggestion of a wide range of policy options. These covered both framework conditions, together with more specific individual support activities. These recommendations are again available on the project website, with a summary provided below.

I.4. The development of the DEEP deliverables

A strong emphasis within the DEEP project was put on bringing in as much relevant external expertise in the development of the deliverables as could be achieved.

For the key deliverable of the project – procurement guidance and criteria for public construction works, and the purchase of green electricity – three expert roundtables were held: In St Denis (France) on green electricity, in Florence (Italy) on sustainable building materials, and in Bolzano (Italy) on energy performance in buildings.

At these roundtables between 20-30 experts participated, covering all relevant stakeholder groups – public authorities, environmental and market experts, policy-makers and industry – to provide balance to the discussions. A considerable amount of post-workshop consultation was also carried out through one-to-one meetings and telephone conferences.

For the development of the DEEP Energy Efficient Procurement Toolkit, a number of existing tools and policies were examined, and considerable effort was put into assessing the usability of the tools in the different countries represented within the project.

All experts contacted within the project were also asked to contribute to the final development of the policy recommendations.

I.5. DEEP – practical information and project partners

The DEEP project partners bring a wealth of different European experience to the project. Special attention was paid to a North-South balance to ensure the suitability of the criteria in different climate conditions. The following organisations form the project consortium:

- IFZ- Interuniversity Research Centre (Austria),
- Auxilia (France),
- Energy-Environment-Local Development-EPTA (Greece),
- Università di Reggio Calabria, DASTEC (Italy),
- Ecoserveis (Spain),
- Diputació de Barcelona (Spain),
- Local Union of Municipalities & Communities of Attiki (Greece),
- Provincia di Cremona (Italy),
- Växjöhem AB (Sweden),
- ESD (United Kingdom)

DEEP is co-ordinated by ICLEI – Local Governments for Sustainability.

More information about DEEP is available on the project's web site:

<http://www.iclei-europe.org/deep>.

Or contact ICLEI by email: procurement@iclei-europe.org.

Or by phone: +49-761/36892-0



“ Guidelines on sustainable construction

The following is a summarised version of the final set of guidelines produced by the DEEP project on sustainable construction. A more detailed (and much longer) document, including some specific information on implementation has also been prepared.

Both documents have now been published within the Procura⁺ Manual, and the DEEP Energy Efficient Procurement Toolkit. They are also available on the project website (www.iclei-europe.org/deep), and the Procura⁺ Campaign website (www.procuraplus.org).



II.1. Key environmental impacts

Impact		Approach
<ul style="list-style-type: none"> The consumption of energy for heating, cooling, ventilation, hot water, and electricity, and resulting CO₂ emissions 	→	Ensure high energy efficiency standards Encourage the use of localised renewable energy sources (RES) ³
<ul style="list-style-type: none"> The consumption of natural resources 	→	Encourage the use of sustainably harvested resources
<ul style="list-style-type: none"> Emission of toxic substances during the production or disposal of building materials leading to air and water pollution 	→	Encourage the use of non-toxic building materials
<ul style="list-style-type: none"> Negative health impacts on building users due to building materials containing toxic substances 	→	Encourage the use of non-toxic building materials

II.2. Procura⁺ Guidelines

Given the very different national regulatory frameworks and other conditions across the EU, it is not possible to set universal standards to be used in the procurement of building construction works in all circumstances. Instead a series of concrete guidelines have been developed providing alternative approaches which may be used. The public authority wishing to use these guidelines will need to determine which alternative is most appropriate for their situation. The guidelines principally apply to the energy performance of buildings and the use of sustainable building materials.

A great deal of further information on this topic and the guidelines developed can be found in the detailed chapter on building construction/renovation in the attached CD-ROM (also available for download at www.procuraplus.org). It is advisable to study this more detailed chapter before beginning activities.

³ “Localised RES” means RES generating capacity within the building site itself (e.g. solar panels, biomass boilers, wind turbines etc.)

II.2.1 Thematic sections

These guidelines are split into 5 thematic sections:

1. Energy consumption
2. Use of renewable energy sources (RES⁴)
3. Use of sustainable building materials
4. Monitoring and user aspects
5. Experience of the architect

In each section a number of **alternative (sometimes complementary) approaches** are presented for addressing the main issue.

II.2.2 Construction process

Furthermore the guidance indicates where in the construction process the tendering criteria can be applied. Either:

- A) Preliminary design/architects' competition
- B) Tendering of the building construction
- C) Tendering of the building services – “Building services” are: heating, ventilation, air conditioning and refrigeration (HVACR). A specialist building services company may be contracted to design and install (and sometimes maintain) these services for the building.

The above mentioned tendering stages have been identified as the most common stages of procurement in the European building sector. However, this scheme may vary, both in terms of the exact stages gone through and the number of competitive tendering rounds. **If there is only one tendering round including all stages, all approaches and criteria should be addressed in this tendering stage.**

II.2.3 Tendering stages

Each proposed option also indicates where in a specific tendering procedure the criteria should be inserted.

In many cases the criteria are designed for inclusion in the **Technical Specifications** for the work to be carried out – i.e. they set minimum standards which the bidding companies must meet.

⁴ RES: Renewable Energy Sources. The following energy sources are considered as RES:

- Solar energy:
 - Passive
 - Active (thermal, electrical)
- Biomass (wood, energy plants, biogas)
- Environmental and process heat (heat pumps, heat recovery)
- Geothermal power
- Small water power stations

Some criteria are designed for use in the **Award/evaluation stage**, where different offers which meet the minimum standards are compared. At this stage environmental performance can be used as one of the evaluation criteria, together with other aspects such as price. The weighting given to the environmental performance criteria suggested below must be determined by the contracting authority, but it is recommended that this is at least 10-20%. In some cases several environmental performance criteria could be introduced at the award/evaluation stage (e.g. for net energy consumption (option 1.A.2) and use of solar panels (2.A.1) during the architects' competition). The award points given in the options below are simply examples to be used for guidance.

II.2.4 Renovation work

The criteria presented below are designed to be used for both the construction of new buildings and also major renovation work. The procedure and tendering stages followed for renovation work will again vary across Europe, and also depending on the type of renovation work. This must be taken into account in defining where to include the criteria. Criteria, which are not applicable for renovation work, are clearly mentioned below.

II.2.5 Numbering of the Options

The options presented below are numbered to indicate which thematic issue is being addressed (the first digit), and which stage of the construction process they should be applied at (the second digit). The last number is to differentiate between different options covering the same thematic area and to be used at the same stage.

i.e. Option 1.A.1 relates to Energy consumption (number 1), and should be used during the preliminary design/architects' competition (letter A).

Option 3.B.2 relates to the use of sustainable building materials (3), and should be used during the tendering for the building construction.

For further notes on the implementation of each Option please see the detailed chapter in the attached CD-ROM.

A – Preliminary design/architects competition

1. Energy Consumption

1.A.1 Minimum standards for net energy demand

Specifications/ minimum standards: Net energy demand must not exceed X

(Optional) evaluation/award criteria: Additional points awarded for net energy demand better than the minimum standard

Example:

- 10 (out of 100) points will be awarded to the offer with the lowest net energy demand, for other offers every 1% increase in consumption reduces the number of points by 1%.
- 90 (out of 100 points) will be awarded for other aspects including price

1.A.2 - Competition around net energy demand

Evaluation/award criteria: Additional points awarded for net energy demand

Example:

- 10 (out of 100) points will be awarded to the offer with the lowest net energy demand, for other offers every 1% increase in consumption reduces the number of points by 1%.
- 90 (out of 100 points) will be awarded for other aspects including price

<p>1.A.3 – Minimum standards for U-Values and/or shape/volume ratio</p> <p>Specifications/ minimum standards</p> <ul style="list-style-type: none"> The shape to heated gross volume ratio must not exceed X. <p>Contract conditions</p> <ul style="list-style-type: none"> The U-Values must not exceed X. <p>(Optional) evaluation/award criteria: Additional points awarded for shape/volume ratio (Not applicable for renovation projects)</p> <p><i>Example:</i></p> <ul style="list-style-type: none"> 10 (out of 100) points will be awarded to the offer with the best shape/volume ratio, for other offers every 1% increase in ratio reduces the number of points by 1%. 90 (out of 100 points) will be awarded for other aspects including price
<p>1.A.4 – COMPETITION AROUND SHAPE/VOLUME RATIO</p> <p>Evaluation/award criteria: Additional points awarded for shape/volume ratio (Not applicable for renovation projects)</p> <p><i>Example:</i></p> <ul style="list-style-type: none"> 10 (out of 100) points will be awarded to the offer with the best shape/volume ratio, for other offers every 1% increase in ratio reduces the number of points by 1%. 90 (out of 100 points) will be awarded for other aspects including price
<p>2. Use of RES</p>
<p>2.A.1 – Minimum use of solar power</p> <ul style="list-style-type: none"> Specifications/minimum standards: A minimum of X% of net energy/hot water/space heating/cooling/electricity demand must be provided by X solar panels
<p>5. Experience of the architect</p>

<p>5.A.1 – Selection based on experience with sustainable building design</p> <p><i>Selection criteria:</i> The architect must have sufficient past experience with sustainable building design. Each applicant is required to submit a 2-page document outlining past experience in the following areas (indicative list):</p> <ul style="list-style-type: none"> • Energy efficient construction design. Including if available specific energy demand per m² space including heating, cooling, lighting for a previous construction • Airtightness and air exchange systems with heat recovery • The use of RES and co-generation • Bioclimatic architecture, to achieve energy efficiency, thermal and optical comfort, avoiding mechanical systems, e.g. light supply with daylight systems • Use of LCA tools in design • Use of sustainable building materials • Achievement of good indoor air quality standard
<p>5.A.2 – Compulsory use of LCA tool during design</p> <p>Contract condition: In carrying out the design work ...<Insert name of selected LCA tool> ... must be used.</p>

B – Tendering for the building construction
1. Energy Consumption

1.B.1 - Competition around U-Values – evaluation on price and U-Values

Evaluation/award criteria; Additional points awarded for U-Values

Example:

- 10 (out of 100) points will be awarded to the offer with the best U-Values, for other offers every 1% increase in U-Values reduces the number of points by 1%.
- 90 (out of 100 points) will be awarded for other aspects including price

3. USE OF SUSTAINABLE BUILDING MATERIALS

3.B.1 – Exclusion of certain materials

Specification/minimum standard: The tenderer must declare that the following materials/substances will not be used in the construction:

- Recycled timber not accompanied by test documents from an independent third party that they contain no hazardous substances (as defined by national regulations).
- Products which contain hydrofluorocarbons (H-FKW)
- Products which contain sulphurhexafluoride (SF₆)
- Indoor paints and varnishes with a content of solvents⁵ higher than
 - for wall paints (according to EN 13300): 30 g/l (minus water)
 - for other paints with a spreading rate of at least 15 m²/l at a hiding power of 98% opacity: 250 g/l (minus water)
 - for all other products (including paints that are not wall paints and that have a spreading rate of less than 15 m²/l, varnishes, woodstains, floor coatings and floor paints, and related products): 180g/l (minus water).

⁵ Solvents are volatile organic compounds (VOCs) with a boiling point of 250 °C maximum.

- All virgin wood from forests and plantations shall originate from forests and plantations that are managed so as to implement the principles and measures aimed at ensuring sustainable forest management.
In Europe, the principles and measures referred to above shall at least correspond to those of the Pan-European Operational Level Guidelines for Sustainable Forest Management, as endorsed by the Lisbon Ministerial Conference on the Protection of Forests in Europe (2-4 June 1998). Outside Europe they shall at least correspond to the UNCED Forest Principles (Rio de Janeiro, June 1992) and, where applicable, to the criteria or guidelines for sustainable forest management as adopted under the respective international and regional initiatives (ITTO, Montreal Process, Tarapoto Process, UNEP/FAO Dry-Zone Africa Initiative).

Verification for timber:

Where virgin wood from certified forests or plantations is used, the applicant shall provide an appropriate certificate(s), for example the FSC (Forest Stewardship Council) Label, together with supporting documentation showing that the certification scheme correctly assesses the above-mentioned principles and measures of sustainable forest management.

For virgin wood from forests that are not certified as being from sustainably managed forests or plantations, the applicant shall provide the appropriate declarations, charter, code of conduct or statement, verifying that the above requirements are met.

3.B.2 – Minimum quantity of sustainable building materials

Specifications/ minimum standards: The tenderer must declare that a minimum of X% of materials to be used in construction (by value) must be produced in compliance with the standards underlying a Type 1 ecolabel according to ISO standard 14024.

Verification: Products carrying a type 1 ecolabel will be deemed in compliance of these criteria. Alternatively credible documentation that the standards of a given type 1 ecolabel are met will also be accepted.

(Optional) evaluation/award criteria: Additional points awarded for the percentage of materials used in construction (by value) produced in compliance with the standards underlying a Type 1 ecolabel according to ISO standard 14024, above the minimum standard set in the specifications.

Example:

- 5 (out of 100) points will be awarded to the offer with highest percentage, for other offers every 1% decrease in percentage decreases the number of points by 1%.
- 95 (out of 100 points) will be awarded for other aspects including price

3.B.3 – Competition around the use of sustainable building materials

Evaluation/award criteria: Additional points awarded for the percentage of materials used in construction (by value) produced in compliance with the standards underlying a Type 1 ecolabel according to ISO standard 14024.

Example:

- 5 (out of 100) points will be awarded to the offer with highest percentage, for other offers every 1% decrease in percentage decreases the number of points by 1%.
- 95 (out of 100 points) will be awarded for other aspects including price

4. Monitoring and end user aspects
<p>4.B.1 – Compulsory blower door test</p> <p>Specifications/ minimum standards: Where mechanical ventilation is included in the building, the winning bidder must ensure that a Blower Door Test is carried out at ...<Insert appropriate building stage>.... This must be repeated until the appropriate standard is achieved</p>

C – Tendering for the building services
1. Energy Consumption
<p>1.C.1 –Minimum standards for primary/final energy consumption</p> <p>Specifications/ minimum standards: Final/primary energy consumption must not exceed X</p> <p>(Optional) evaluation/award criteria: Additional points awarded for final/primary energy consumption better than the minimum standard</p> <p><i>Example:</i></p> <ul style="list-style-type: none"> • 10 (out of 100) points will be awarded to the offer with the lowest energy consumption, for other offers every 1% increase in consumption reduces the number of points by 1%. • 90 (out of 100 points) will be awarded for other aspects including price

1.C.2 – Competition around primary/final energy consumption

Evaluation/award criteria: Additional points awarded for final/primary energy consumption

Example:

- 10 (out of 100) points will be awarded to the offer with the lowest energy consumption, for other offers every 1% increase in consumption reduces the number of points by 1%.
- 90 (out of 100 points) will be awarded for other aspects including price

2. Use of RES

2.C.1 – Minimum percentage of localised RES

Specifications/ minimum standards: A minimum of X% of (primary, final or net) energy consumption must be provided by localised renewable energy sources.

(Optional) evaluation/award criteria: Additional points awarded for the percentage of (primary, final or net) energy consumption provided by localised renewable energy sources, above the minimum standard set in the specifications.

Example:

- 10 (out of 100) points will be awarded to the bid with highest percentage, for other bids every 1% decrease in the offer reduces the number of points by 0.5.
- 90 (out of 100 points) will be awarded for other aspects including price

2.C.2 – Competition around percentage of localised RES

Evaluation/award criteria: Additional points awarded for the percentage of (primary, final or net) energy consumption provided by localised renewable energy sources.

Example:

- 10 (out of 100) points will be awarded to the bid with highest percentage, for other bids every 1% decrease in the offer reduces the number of points by 0.5.
- 90 (out of 100 points) will be awarded for other aspects including price

4. Monitoring and end user aspects

4.C.1 – Regular book keeping

Specifications/ minimum standards: An independent company must be contracted to provide a regular bookkeeping service for the first three years, who will provide the building manager with monthly figures on energy consumption for heating, cooling, ventilation, hot water, and electricity

4.C.2 – Energy consumption display panel

Specifications/ minimum standards: A display panel must be installed prominently in the building indicating daily energy consumption for the whole building.

4.C.3 – Training session for building manager

Specifications/ minimum standards: A training session must be given to the building manager on the energy efficient use of the building following completion of construction/renovation.

II.3. Further ideas



Infrastructure – Provide adequate (preferably) existing technical and social infrastructure as basis for urban development.



Life cycle costs – In almost all cases, running and maintenance costs by far exceed construction costs. Considering construction costs only therefore means higher financial efforts during the life span. Ask for life cycle costs.

Alternative cost models (e.g. third party financing, energy performance contracting) offer ways to overcome the gap between construction costs and life cycle costs.



User involvement – User behaviour plays a crucial role in the energy and ecological performance of buildings. Facilitate user involvement starting in the first project stages, especially for the renovation of residential projects.



Renovation work – Force renewal of the existing building stock, hereby achieving highest savings of energy, material, land, technical and social infrastructure.



Reuse of wasteland – Encourage the recycling of wasteland (e.g. brownfield sites) for new construction.



Site density – Minimise land use by encouraging high site density, but also considering architectural and social aspects.



Microclimate and site design – Look at climatic and topographic aspects in all project stages, especially in the project development and the design stage.



Indoor quality - Thermal comfort, daylight or good lighting systems, humidity and noise control are fundamental requirements for occupant comfort.



Sewage and rainwater management – Ecological sewage systems (reuse of wastewater, water saving armatures, etc) and the use of rainwater may also affect financial savings as well as ecological aspects.



Integral planning – Sustainable construction relies on a continuous dialogue and co-operation between all actors involved in the design and construction process as well as in the use and maintenance of the building.



III Purchasing criteria for green electricity

The following is a summarised version of the final set of purchasing criteria produced by the DEEP project on green electricity. A more detailed document has also been prepared.

Both documents have now been published within the Procura⁺ Manual, and the DEEP Energy Efficient Procurement Toolkit. They are also available on the project website (www.iclei-europe.org/deep), and the Procura⁺ Campaign website (www.procuraplus.org).



III.1. Key environmental impacts

Impact	Approach
<ul style="list-style-type: none"> The generation of energy from fossil fuels being responsible for the vast majority of greenhouse gas emissions world-wide. 	→ Increase the share of electricity from renewable sources
<ul style="list-style-type: none"> The electricity generating industry accounting for a significant proportion of such emissions as the large majority of electricity is still produced by the burning of coal or gas. 	→ Seek a genuine increase in green electricity going beyond national support schemes (= ‘additionality’)

Other approaches to reducing environmental impacts include purchasing energy efficiency services together with electricity, carrying out awareness raising activities, and excluding nuclear power. To allow smaller green electricity suppliers to participate in the bidding process, the call for tenders might be divided into partial lots.

III.2. Procura⁺ Key Criteria - Electricity

The Procura⁺ criteria for green electricity cover a number of aspects:

- Compliance with the EU definition of renewable energy sources (RES)** – as defined in *Directive 2001/77/EC*.
- Preference for non-hydro RES**– given the local environmental concerns relating to hydro schemes, and the quantity of existing large hydro plants, the Procura⁺ criteria encourage alternative RES.
- Additionality** – to further encourage the construction of new RES capacity the Procura⁺ criteria require a certain portion of the delivered electricity to come from “new” plants.

Green Electricity purchases

Subject matter: Purchase of electricity with a certain percentage from renewable sources and new RES generating capacity, and with a preference for non-hydro RES

Specifications:

a) At least 50% of the supplied electricity must come from renewable energy sources (RES-E) as defined by EU Directive 2001/77/EC.

Verification: Guarantees of Origin must be provided by a credible independent third party that certifies the origin of the electricity, and that it has not already been sold elsewhere. Such Guarantees of Origin should be issued by competent bodies designated by the Member States according to EU Directive 2001/77/EC (art. 5).

b) 30% of the electricity from renewable sources must be from “new” renewable plants. Plants will be so-defined if they came into operation less than 7 years before the publication of this tender. Alternatively, this condition is met, if the tenderer commits to bringing into operation a new RES-E plant within two years from the start of the contract period, leading to an overall capacity of 30% (RES-E from ‘new’ plants) of the supplied electricity

Verification: The supplier must provide credible proof that this criterion is met

Award phase:

The contract will be awarded to the tender applicant with the highest score of points, to be allocated according to the following scheme:

1. Additional RES: 10 points (out of 100) – points awarded for electricity offered generated by eligible RES above the minimum requirement.
2. “New” RES plants: 5 points (out of 100) – points awarded for electricity generated by “new” RES plants above the minimum requirement.
3. Preference for non-hydro RES: 5 points (out of 100) – points awarded for the proportion of the RES supply coming from non-hydro sources
4. Other: 80 points (out of 100).

Verification: The supplier must provide credible proof that these criteria are met. For award criterion 1 Guarantees of Origin must be demonstrated through the means indicated in the specifications.

Contract conditions:

The contracting authority reserves the right to carry out a random check to verify that the contract is being performed in accordance with the original offer.

Implementation notes



Specification a: The authority may of course choose to request more than 50% as a minimum. Where supply is not deemed sufficient to achieve 50% a lower target should be specified.



Specification a, verification: All EU countries are legally obliged to set up Guarantee of Origin schemes. In countries where this is not yet the case a temporary alternative would be for the supplier to provide independent verification that a corresponding quantity of electricity has been generated from so-defined renewable sources, e.g. a tradable certificate from an independent issuing body such as RECS



Specification b: If the supplier commits to bringing new plants into operation, this must be clearly included in the contract, and a suitable penalty must be incurred for non-compliance.



Award scheme: The exact point scheme used and the aspects considered will depend on the authority.



Contract conditions: If the contracting authority is suspicious that the criteria are not being met during the running of the contract, it may wish to employ an independent auditor to verify their claims.

III.3. Further ideas



Requesting energy efficiency services from the electricity supplier is increasingly common and is an effective way to further reduce environmental impacts. If you wish to include this in either the

specifications or award phase it must also be clearly mentioned in the subject matter.



To allow also small green electricity suppliers to participate in the bidding process, the call for tenders could be divided into partial lots.



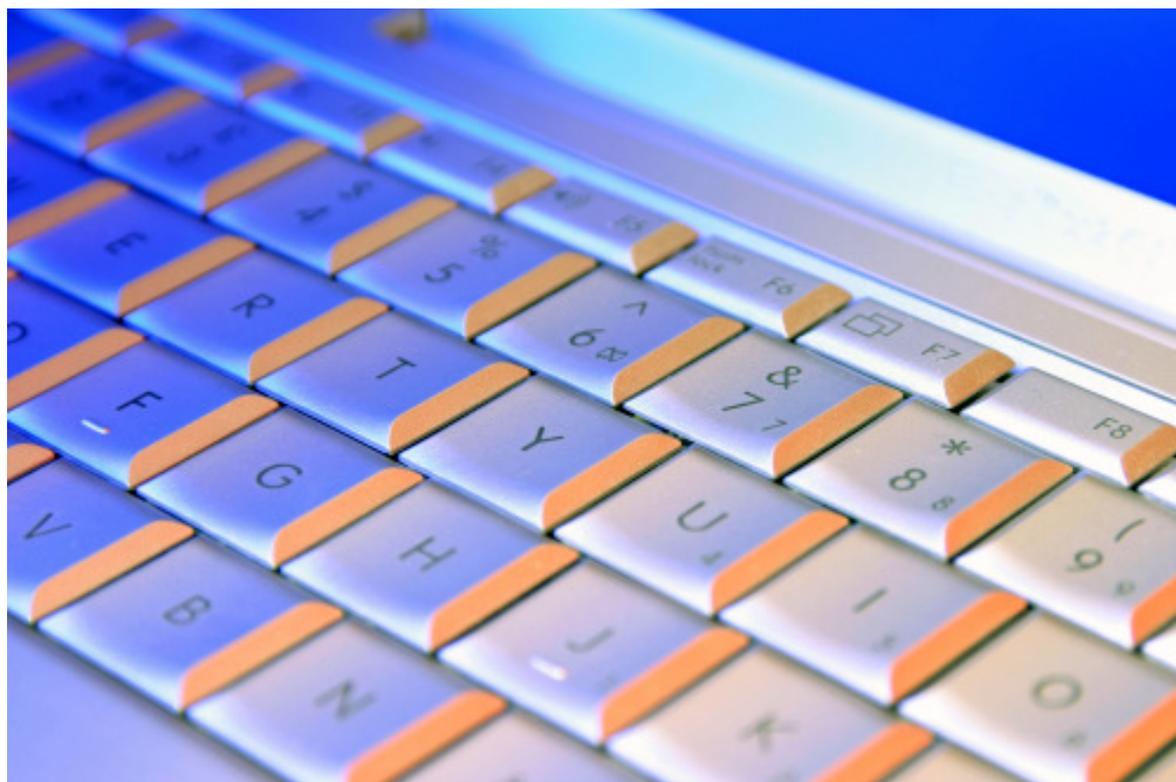
To help push through implementation, having a policy commitment to combating climate change for example, can greatly assist.



The most effective way to ensure nuclear energy is not included in the energy mix offered is to indicate this in the subject matter, e.g. "*Purchase of electricity with 50% from renewable sources and excluding nuclear power*"



Awareness raising events/campaigns on environmental issues, such as energy efficiency, can also be requested of the supplier. If you wish to include this in either the specifications or award phase it must also be clearly mentioned in the subject matter.



IV Purchasing criteria for IT products

The following is a summarised version of the final set of purchasing criteria produced by the DEEP project on IT products. A more detailed document has also been prepared.

Both documents have now been published within the Procura⁺ Manual, and the DEEP Energy Efficient Procurement Toolkit. They are also available on the project website (www.iclei-europe.org/deep), and the Procura⁺ Campaign website (www.procuraplus.org).



IT equipment, as dealt with here, encompasses a range of different product groups including: desktop PCs and laptops (notebooks), monitors, printers, photocopying machines, multifunctional devices (MFDs¹), scanners and fax machines.

IV.1. Key environmental impacts

Impact	Approach
<ul style="list-style-type: none"> The consumption of electricity and resulting CO₂ emissions 	→ Purchase energy efficient models

Other impacts include damage to human health and the environment caused by certain hazardous substances included, generation of large quantities of waste, emissions of electromagnetic radiation and noise.

Approaches to reducing such impacts include setting limits for substances, and emissions, encouraging a prolonged lifetime, ensuring take-back and recycling at the end of the useful life, limiting packaging, and ensuring effective training. More innovative approaches include considering lean- (or thin-) client systems

IV.2. Procura⁺ Key Criteria – IT equipment

The Procura⁺ key criteria for IT product purchases focus on:

- **Energy performance:** The newly updated Energy Star standards for computers and imaging equipment (covering printers, photocopiers, MFDs, scanners), (both included in the CD-ROM) can currently be met by 25-35% of products on the market. Most product-labelling bodies already (or will soon) unify energy performance requirements around these standards. As such they provide a highly straightforward, ambitious, and also market friendly set of requirements, which can be used as minimum standards.

Direct purchase of IT products

¹ Multifunctional devices (MFDs) combine several functions (like printing, copying, faxing and scanning) in a single device.

Subject matter: *Purchase of environmentally friendly PCs (or printers, MFDs etc. as appropriate)*

Specifications: *All products offered must meet the latest Energy Star standards for energy performance, available at www.energystar.gov, or equivalent.*

The Energy Star label will be accepted as proof of compliance, as will reliable technical documentation provided by the supplier that the criteria are met.

Implementation notes



Specifying standards: There is no requirement to specify exact limits in the tender documents – referring to product label standards is fine as long as the ecolabel meets certain conditions (see Chapter III). The standards themselves are relatively complex and technical (especially for imaging equipment), but have been attached in the CD-ROM for information.



Verification: Both the specifications and the award criteria have been developed in line with product labelling standards. Most products offered will carry the label however other forms of proof must be accepted.

IV.3. Further ideas



Limit the use of mercury in monitor backlights



Ensure the long life of your product by requiring long guarantees, the availability of spare parts, and the easy upgradability of machinery



Make sure the product is easy to disassemble and recycle at the end of its useful life



Set limits for electromagnetic emissions



Limit noise emissions



Cut down on the amount of paper and ink your IT products use. Specify that devices are suitable for recycled paper and are equipped with the duplex function. Limit the use of substances such as cadmium, lead, chromium or mercury in ink. Cartridges should also be refillable



Provide simple training to users on how to save energy using their IT devices



Consider switching to a “lean client system”, where processing and programmes are concentrated in one central server



Think about buying a multi-functional device (MFD) which combines several functions (printing, copying, faxing, scanning) in a more efficient way

For many of these issues, the easiest way to set specific demands is to use the criteria behind the product labels displayed below. Some possible purchasing criteria are included in the detailed chapter on IT products included in the attached CD-ROM.

IV.4. Relevant product labels



European Flower
PCs, laptops
www.eco-label.com



Nordic Swan
PCs, copying machines,
printers, fax machines and
MFDs
www.svanen.nu/Eng/default.asp



German Blue Angel
PCs, notebooks, monitors,
printers, copiers, MFDs
www.blauer-engel.de/englisch/navigation/body_blauer_engel.htm



Energy Star
PCs, monitors, printers,
copiers, MFDs, fax machines,
and mail machines, scanners
www.energystar.gov



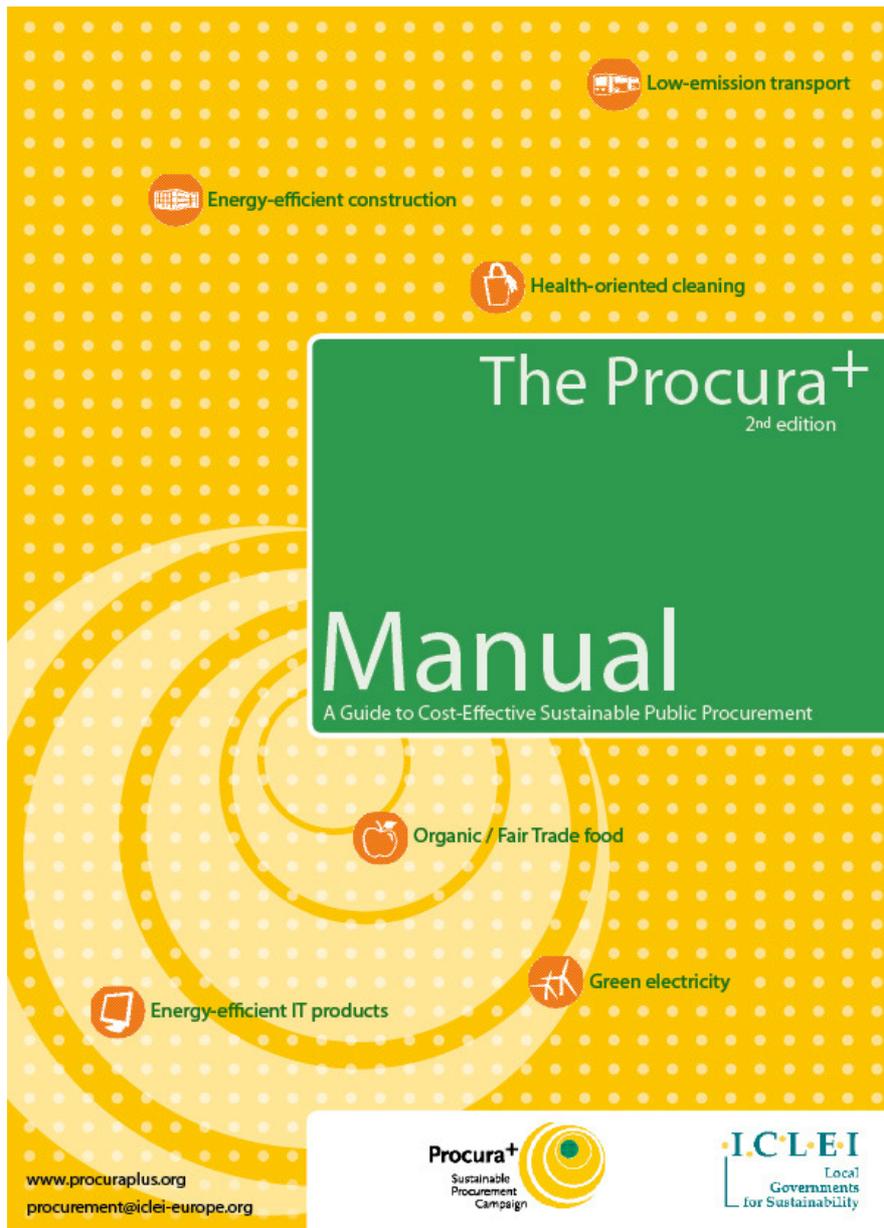
Group for Energy Efficiency Appliances (GEEA)
PCs, monitors, printers,
copiers, mailing machines,
MFDs, scanners
www.efficient-appliances.org



TCO
PCs, notebooks, printers,
monitors
TCO:
www.tcodevelopment.com

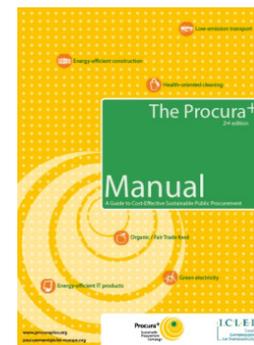


EPEAT (Electronic Product Environmental Assessment Tool)
www.epeat.net



V The Procura+ Manual

The revised *Procura⁺ Manual – A guide to cost-effective sustainable public procurement* is one of the principle deliverables of the DEEP project. It is available for download on the project website (www.iclei-europe.org/deep), or the Procura⁺ Campaign website (www.procuraplus.org). Hard copies can also be ordered free-of-charge through procurement@iclei-europe.org.



The Manual is available in English, French, German, Italian, Greek and Catalan.

It has been designed to provide clear, easy-to-understand guidance on how to implement sustainable procurement in practice. It has been prepared by people with years of direct experience in working in public sector procurement, and in how to integrate sustainability considerations.

It is based upon the first Procura⁺ manual, written and printed in 2004. The manual is designed to provide practical implementation advice, presenting guidance on how sustainability concerns can be integrated into the procurement process, providing both a model for developing and managing the process, and actual purchasing criteria for six high-priority product groups (construction, IT equipment, cleaning products, food, buses and electricity) which are legally compliant and can be inserted directly into tendering documents.

These product groups were selected following a detailed discussion process within the RELIEF project⁶ for a number of reasons:

- The most significant environmental impacts through the product life-cycle
- The availability of cost-effective environmentally preferable solutions
- The importance of the product within the typical public authority budget

The manual also acts as the implementation guide for authorities participating in the Procura⁺ Campaign. Any European public authority can join Procura⁺, both to demonstrate your commitment to sustainable procurement and to make use of the substantial practical resources the Campaign provides

V.1. The contents of the manual

The Manual contains the following information:

- **How to integrate sustainability into procurement** – clear guidance on how to integrate sustainability criteria into tendering – from the subject matter, to technical specifications, selection and award criteria, and contract clauses – see Chapter III.
- **Information on the cost of sustainable procurement** – an introduction to the concept of Life-Cycle Costing, and advice on how to keep costs down – see Chapter IV.
- **How to manage sustainable procurement: The Milestone process** – a simple implementation model, based on a typical management cycle for ensuring the systematic inclusion of sustainability concerns in procurement – see Chapter V.
- **Key purchasing criteria** – a small set of clear purchasing criteria, focusing on the most important environmental and social impacts, which any public authority can use directly

⁶ www.iclei-europe.org/relief

in the procurement of six key product groups - construction, IT equipment, cleaning products, food, buses and electricity – see Chapter VI.

- **Guide to monitoring performance** – a straightforward approach to monitoring your sustainable procurement actions, based around the Procurement Scorecard concept – see Chapter V, Section 2.1.3.

V.2. The CD-ROM

The manual also comes with a CD-ROM (attached to the back cover⁷) which contains a great deal of further useful information:

1. The printed manual in pdf
 - Allowing you to share the manual with as many colleagues as you wish, and have immediate electronic access to the guidance provided
2. Case studies
 - **Best practice examples** – a series of successful examples of sustainable procurement from around Europe to act as inspiration.
3. Detailed product information
 - **Detailed information on six key product groups** – more detailed information on implementing sustainable procurement for the six key product groups covered in the printed manual
4. A series of implementation tools
 - **Developing a sustainable procurement policy** – a tool providing guidance on how to prepare a sustainable procurement policy to support your day-to-day activities. Developed within the LEAP project.
 - **Identifying internal barriers to sustainable procurement** – a tool to help you systematically identify and address internal barriers to the implementation of sustainable procurement. Developed within the LEAP project.
 - **Energy efficient procurement** – a series of tools to improve the energy efficiency of your procurement actions, including preparing an energy efficiency policy, a tool for life-cycle costing, and a self-audit tool for public offices. Developed within the DEEP project.
 - **Fair Trade in procurement** – The Buy Fair Guide, offering advice on how to purchase Fair Trade products
 - **The Procurement Scorecard** – A Blank Procurement Scorecard in Excel (as introduced in Chapter V, Section 2.1.3) for monitoring sustainable procurement implementation

⁷ The information on the CD-ROM is also available for download on the project and Procura⁺ websites: www.iclei-europe.org/deep or www.procuraplus.org

- **Frequently asked questions (FAQ)** – A set of answers to some of the most frequently asked questions about sustainable procurement

- 5. A set of important reference documents
 - A collection of important EU Directives and other documents

- 6. Contact information
 - Further information on ICLEI and the contributors to the manual
 - Information on how to join Procura⁺, including an application form and the conditions of participation

The DEEP toolkit
Supporting Public Authorities in Energy Efficient Procurement

The DEEP Toolkit is a package of resources designed to help public authorities who would like to use purchasing power to improve their energy efficiency performance.

This leaflet contains an introduction to the tools, including basic information on application, purpose and features. The tools can be found in the attached CD-ROM

ifz
EPTA
Diputació Barcelona
Ajuntament de Barcelona
e
VozelTermi
esd
Intelligent Energy - Europe

VI The DEEP Energy Efficient Procurement Toolkit

The DEEP Toolkit is a package of resources designed to help public authorities who would like to use purchasing power to improve their energy efficiency performance.

The toolkit is available online at the project website (www.iclei-europe.org/deep), but was also published as a six-page leaflet with an attached CD-ROM containing all tools. Hard copies can be ordered from procurement@iclei-europe.org.

The section below is an adapted version of the text which appears in the Toolkit leaflet.



The DEEP tools have been designed to help public authorities:

- *Develop an energy efficient procurement policy, and implement it across the organisation;*
- *Establish Life-Cycle Costing and train procurement staff in its application;*
- *Assess current performance and identify some basic and low-cost energy efficiency measures.*
- *Implement energy efficient procurement for construction works, electricity and IT product purchases*

VI.1. Energy efficient procurement

Energy efficient procurement applies to the design, construction and management of buildings, the procurement of energy using equipment, such as heating systems, vehicles and electrical equipment, and also to the direct purchase of energy, e.g. electricity. It includes practices such as life-cycle costing, the setting of minimum energy efficiency standards, use of energy efficient criteria in the tendering process, and measures to promote energy efficiency across organisations.

Energy efficient procurement offers public authorities, and their communities, social, economic and environmental benefits:

- By using energy more efficiently, public authorities will reduce unnecessary costs, and **save money**. As the market price of energy increases, so will the financial benefits of energy efficiency.
- Energy efficient goods, such as light bulbs, have a longer lifetime and are of higher quality than their cheaper alternatives. Purchasing them will **reduce valuable time and effort** involved in frequently replacing equipment.
- Reducing their CO2 emissions as a result of energy efficient procurement will help public authorities **minimise their contribution to climate change**.

- Energy efficient procurement requires **transparent and rational decision-making** which contributes to good governance.

VI.2. The DEEP tools

VI.2.1 Putting a Policy in Place

With so many actors involved in procurement, it is important that a coherent policy is established that defines the commitment of your authority, and explains the roles and responsibilities of those affected by the policy. Developing an energy efficient procurement policy requires a number of steps, from gaining senior level support through to communicating the policy across the organisation.

The policy itself, however, is only one side of the story. For the policy to be effective and to ensure it operates across the institution, there are many organisational measures that should be taken. These include actions such as establishing tendering protocols, or establishing life-cycle costing in the organisation. Each supporting mechanism will require an implementation plan that includes communication and training and monitoring.

- 1) **TOOL 1: The Energy Efficient Procurement Policy Guide** takes you through each of the key steps. It is a PDF document that contains three parts:
 - Firstly it outlines the key steps involved in **developing a policy** – from initiation and target setting through to stakeholder consultation, setting this activity in the context of the latest EU legislation in this area.
 - Secondly, it describes the tasks and methods that you will need to employ to **make the policy operational**, and
 - Finally it includes an organisational assessment matrix to help you **monitor the process** overall.

VI.2.2 Life Cycle Costing

Traditionally, public procurers favour products and services that have the lowest purchase price. However, if usage costs (such as energy consumption) are also considered, energy efficient models and construction projects often prove cheaper over the lifetime, as well as reducing CO₂ emissions.

Life-cycle costing is a powerful method for assessing the true cost of different options over the lifetime to ensure that public money is spent most wisely.

TOOL 2: Life Cycle Cost Analysis Tool – this tool allows you to compare the life-cycle costs of different products by analysing the expenses which are not usually factored into initial cost comparisons. These include energy and water consumption, maintenance and

replacements. In addition, the LCCA Tool allows you to compare the CO₂ impacts of different products.

The tool is aimed at procurement and/or energy management staff and requires very little technical knowledge. It has three elements:

- The tool itself – an **Excel based spreadsheet** in which you can enter the necessary information to make a reliable cost comparison
- A basic PowerPoint introduction and accompanying Word document on **How to use the LCCA Tool**
- An **LCC Guide for Senior Level Staff** – a PowerPoint presentation that focuses on the benefits of Life-Cycle Costing, aimed at informing/convincing senior administrative and political staff. It is purposely short and simple, recognising the time limitations of the target audience. The presentation is likely to be used by a proponent of Life-Cycle Costing, such as someone involved in developing the sustainable procurement policy, or by someone with responsibility for energy management

VI.2.3 Self-assessment of Energy Consumption

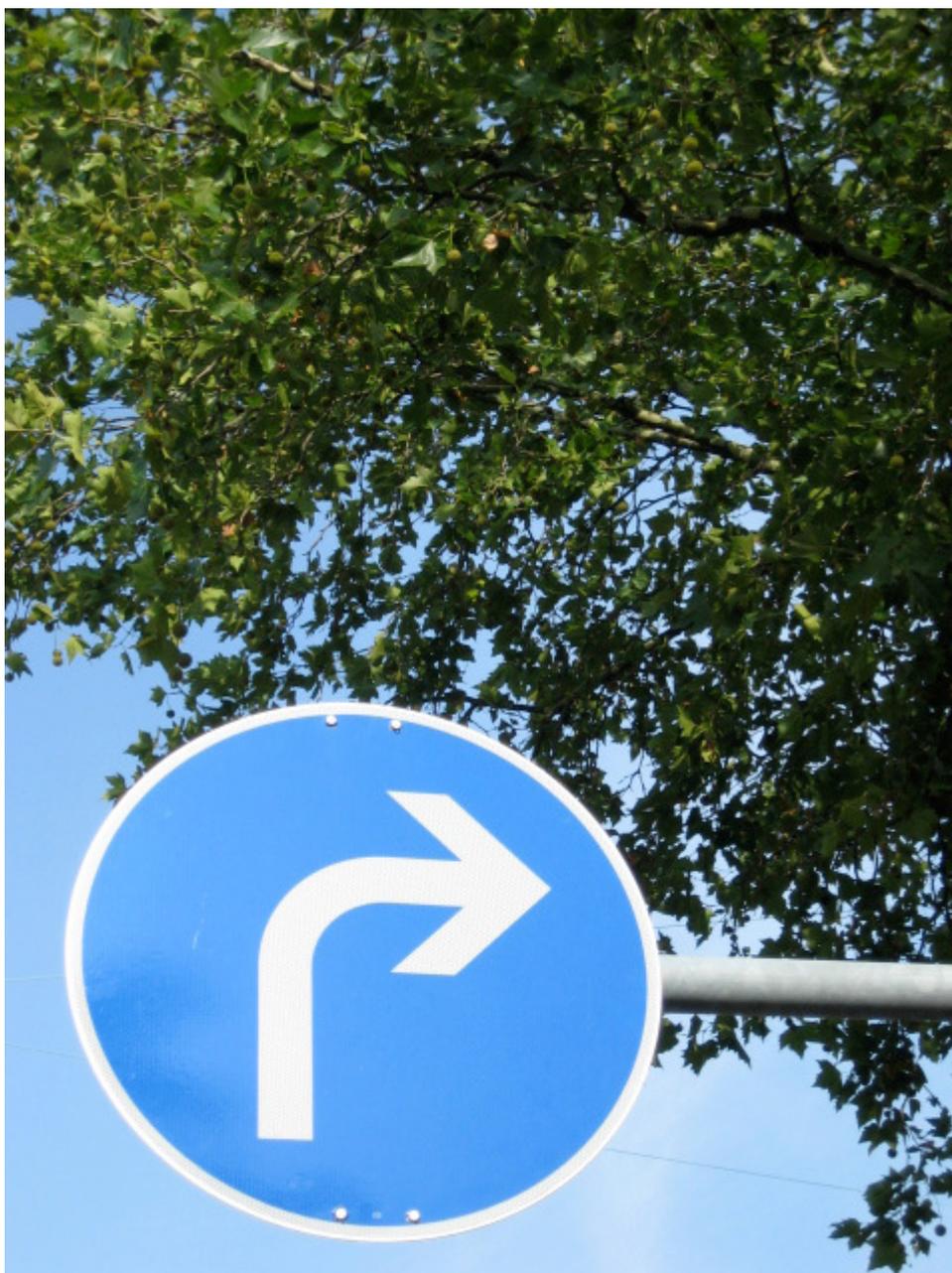
Energy auditing is a recommended process for identifying measures to improve the energy performance of buildings. However, in addition to consulting a qualified energy auditor, it is worth undertaking your own assessment of current energy performance. This has a double purpose of both identifying the simplest and lowest cost opportunities and thus increasing the value of the professional audit and, secondly, raising awareness during the process of conducting the self-assessment itself.

TOOL 3: SASEATO – this Excel based tool includes a simple Walk-round survey, a basic assessment of your highest energy consumption areas and an inventory to examine the impacts of appliances on energy consumption. It includes some basis suggestions on improving energy performance that should be carried out prior to undertaking any higher investment measures.

VI.2.4 Simple purchasing criteria

For a procurer, knowing what energy efficiency standards to set when tendering for products or construction works can be difficult, as they likely do not have technical knowledge in this area.

TOOL 4: Simple energy efficiency purchasing criteria – this comprises a set of simple criteria in pdf format which can be inserted into your tenders for IT products together with guidance on sustainable construction projects, and criteria for purchasing green electricity.



VII Policy recommendations

Throughout the project – through the expert roundtables and follow up consultation, through discussions between the partners, through regular contact with public authorities and other stakeholders – a number of conclusions could be drawn on how best to support the promotion of sustainable construction and green electricity through public procurement.

The section below is the Executive summary of the policy recommendations produced within the DEEP project. The full document is available on the project website at: www.iclei-europe.org/deep

Reducing emissions of greenhouse gases caused by the burning of fossil fuels for energy has jumped to the top of the international policy agenda given the indisputable reality of Climate Change. Furthermore, substantial concerns exist in Europe regarding the security of its energy supply, and the need to reduce reliance on imported resources.

Against this backdrop the promotion of energy efficiency and the use of renewable energy sources (RES) in the building sector (responsible for around 40% of Europe’s final energy consumption) is a key priority. As major consumers of electricity and major contractors of building construction works, with a purchasing power of 14 to 16% of EU Gross Domestic Product (GDP), public authorities can contribute significantly to achieving EU targets in this field. Whilst there are some good examples of local authorities across Europe that have successfully tendered for electricity from renewable electricity sources (RES-E), as well as for energy efficient construction, the numbers that are using their purchasing power in this way remain very modest.

The DEEP project (www.iclei-europe.org/deep) aims to promote energy efficient public building construction and the public purchasing of green electricity. The project has produced guidelines to assist public authorities in meeting these aims through their procurement actions. In multiple expert workshops a number of policy recommendations for European and national decision-makers have also been developed on promoting the procurement of green electricity, sustainable building materials, and energy performance in public buildings in Europe. These recommendations are presented in this document.

VII.1. Green electricity

Two recent European legislative actions should provide a strong stimulus to increasing purchases of green electricity by public authorities. Firstly, the Directive on the promotion of electricity from renewable energy sources (RES-E – or “green electricity”) has been a key driving force behind the generation and distribution of green electricity. Secondly, the “Single Market Directive” 2003/54 provides the framework for the liberalisation of European electricity markets, allowing customers a choice in selecting their supplier, for example a green electricity supplier.

However the market share for RES-E up to now remains fairly limited, and full liberalisation has still not been achieved in many countries.

The main barriers to the widespread purchasing of green electricity by European public authorities are as follows:

- ❑ **No level playing field** – energy markets remain economically distorted in favour of traditional fossil fuels, meaning the price of green electricity often remains simply too high
- ❑ **Continued limited competition** – the number of potential suppliers of green electricity remains limited in many countries, with monopoly conditions in production, supply and regulation still often prevalent. Cross-border trade also remains low.
- ❑ **Few functioning valid Guarantee of Origin schemes** – in many countries appropriate systems for guaranteeing that electricity stems from RES are still not in place or functioning effectively
- ❑ **Lack of information** – public authorities often have little knowledge about how to purchase green electricity, with little guidance available. In many cases public authorities also do not tender electricity supply but rather stick to the local utilities, despite a legal obligation to tender publicly

To address these barriers a number of recommendations can be made for European and national policy makers. These are divided into those regarding framework/market preconditions for the greater public purchase of green electricity, and support measures which could be taken to further promote such purchasing:

VII.1.1 Framework/market preconditions:

- ❑ Stronger drive for unbundling of transmission and distribution networks
- ❑ Level the playing field vis-à-vis fossil fuels
- ❑ Fund Research and Development of RES
- ❑ Harmonisation of support schemes for RES.
- ❑ Transparency through Guarantees of Origin (GoO)

VII.1.2 National/European support measures:

- ❑ Strategic promotion of public procurement of RES
- ❑ Invest in capacity building for public authorities
- ❑ Clear and practical information and training on “do’s and don’ts
- ❑ Encourage national and regional governments to be models for RES-E procurement
- ❑ Political (local) support to back RES-E procurement
- ❑ Experience sharing between public authorities
- ❑ ‘Additional’ benefits through the promotion of ‘recent’ hydro plants or alternative RES plants

VII.2. Sustainable construction

Potential reductions in greenhouse gas emissions regarding to buildings are not limited solely to improvements in their energy efficiency. It is also necessary to consider the materials used in construction (considering both the energy used in their manufacture and their impact on the durability of the building), the use of RES within the building itself (e.g. solar panels, biomass boilers), and of course the behaviour of users – it is possible for procurers to address all these aspects in public building construction projects.

The key European development in recent years in the Energy Performance of Buildings Directive (EPBD - 2002/91/EC), adopted to contribute to improving the energy performance of buildings in Europe, with four requirements to be implemented by the Member States:

- General framework for a methodology of calculation of the integrated performance of buildings
- Setting of minimum standards in new and existing buildings
- Energy certification of buildings
- Inspection and assessment of heating and cooling installations.

However, the Directive leaves it open to each Member State both the calculation method used for energy performance and the minimum standards to be met, . This means that it is highly challenging to create common European approaches particularly given the variety of calculation approaches now in use. Furthermore, implementation of the Directive has been rather slow in many countries.

The main barriers to the promotion of sustainable construction standards through public procurement are:

- ❑ **Slow response to implementing the EPBD** - leading to a delay at the local level, where guidance from national or regional level is awaited to empower various actors, such as local authorities.
- ❑ **Complexity of setting appropriate standards, and lack of expertise in public authorities** - it is a complex matter to insert standardised basic green criteria in building/construction for local authorities, with many having little or no experience in the area.
- ❑ **Energy certificates** – approaches to labelling the energy efficiency of buildings again vary from country to country and are often set up in a way not very usable by public authorities.

There are additionally a number of specific barriers hindering attempts to set European wide standards for sustainable construction:

- ❑ **Differing national calculation methods and standards** – as such no single methodology, indicator or performance benchmark can be set applicable across Europe.
- ❑ **Different climatic zones** – with an obvious impact on the setting of universal minimum standards
- ❑ **Lack of a universally valid Life-Cycle Assessment construction tool** – A simple LCA assessment tool could potentially be highly useful for public procurers. However currently such tools are only applicable at a national or regional level, and also often require a fair amount of technical expertise to apply.

- ❑ **Local/national differences in availability and sustainability of materials used** – causing difficulties in giving universal advice on sustainable building materials.
- ❑ **Complexity of procurement for the construction sector, and national differences** – providing problems in setting guidelines applicable within all different procedural arrangements.

Again, the recommendations for European and national policy makers are divided into those regarding framework/market preconditions and support measures which could be taken to further promote the inclusion of sustainability concerns in public construction works:

VII.2.1 Framework/market preconditions

- ❑ Unifying indicators and calculation methodologies across Europe

VII.2.2 National/European support measures

- ❑ Formalise basic European guidelines / principles for sustainable construction for use by all European local authorities
- ❑ Harmonisation of tools assessing environmental quality and human health in buildings
- ❑ Invest in capacity building for public authorities
- ❑ Experience sharing between public authorities
- ❑ Disseminate information on new building-relevant products
- ❑ Develop a European recycling policy
- ❑ Standardise and improve European training of building design teams
- ❑ Invest in capacity-building for professionals



VIII Regional dissemination activities

As well as communicating the results of the actions to a wide international audience through the extensive networks of the project partners, it was also decided to put a strong focus on in-depth regional dissemination.

For local authorities there is typically regularly routine contact with other authorities in the region (often co-ordinated by the regional authority). As such this project has sought to make use of these channels to develop self-sustaining momentum towards energy efficient procurement at the regional level.



For this purpose three regional authorities were brought into the project as partners to lead these activities:

- Local Union of Municipalities & Communities of Attiki (TEDKNA)
- The Province of Barcelona (Diputació de Barcelona - DIBA)
- The Province of Cremona, Italy (Provincia di Cremona)

Each partner was selected on the basis of their influence at the regional level and activity/interest in the area of energy efficiency. A number of events and publications were planned by each partner specifically tailored to the needs of the region. As much as possible, the three regional partners

VIII.1. Athens, Greece

The main objective of the dissemination activities of TEDKNA was to inform the local authorities on the activities of the project and to promote the environmental criteria for public buildings that have been developed in the framework of DEEP. In this framework, the dissemination plan of TEDKNA consisted of the following activities:

- 3 seminars and workshops aimed at awareness raising, discussion and training
- Printed material and newsletters

Energy-Environment-Local Development (EPTA) provided constant support for TEDKNA, including drafting written information, translation, and numerous direct visits to municipalities in the region to further introduce the project.

Each of the above-mentioned activities is described in detail below.

Awareness-raising seminar

On June 16th, 2006 TEDKNA organised an informational event on DEEP aiming at raising awareness in Greek Municipalities towards the direction of adopting energy efficiency measures in Municipal buildings. The event was organised in Titania hotel, Athens. Almost 25 Municipal employees, as well as some Mayors from Municipalities that are members of TEDKNA participated to the event. In this event, the main presentations were on the DEEP project, on the Procura⁺ Campaign and on the EU Directive 2002/91 on the energy performance of buildings. More specifically the most important points of the discussion (roundtables) on the new criteria that were being developed were presented, as well as the

high significance of continuous dissemination which will lead to the adoption of energy efficiency measures by the Municipalities. An energy expert from the Greek Centre of Renewable Energy was invited to present to the representatives of the Municipalities the new EU Directive on the energy performance on buildings.

Training Seminar

In addition to this informational event, a training seminar was organised by TEDKNA on March 30th, 2007 targeting to representatives of Local Authorities. The event focused on the criteria that have been developed for electricity, building materials and energy efficiency of public buildings. The DEEP objectives and expected positive impacts at local level have also been highlighted. In addition, instructions for developing an adequate policy for greening public procurement were given. The event took place at TEDKNA's premises and 20 persons attended, among which key persons that are involved in the promotion of DEEP's results within TEDKNA's network of Municipalities.

Workshop

TEDKNA organised for the project a final workshop that took place on June 29th, 2007 in Titania hotel. The final event focused on the promotion of both energy efficiency measures in buildings and green procurement in the public sector. Interested stakeholders from Local and National Administration were invited, as well as the General Secretary of the Ministry of Development for a welcome speech. The event was split in two sections: The first was dedicated to the energy performance of buildings and the materials used, with speakers from the Ministry of Development, the Technical Chamber of Greece and the Centre of Renewable Energy Sources. The second was on procurement and the Procura⁺ Campaign, with speakers from EPTA and the regional DEEP partners, Diputacio de Barcelona and Provincia di Cremona, who were also invited to attend the event and present their results. Although the target of the workshop was 40 attendants, 70 people - most of which from Local Authorities - participated.

Printed material

Within the duration of the DEEP project, several of the promotional publications (introductory DEEP leaflet, the second DEEP Update and the leaflet on the Procura⁺ Campaign) were translated into Greek, printed and distributed to TEDKNA's members.

Additionally three newsletters were developed by TEDKNA and are available on its website. The newsletters covered both developments within the project together with further information on the EPBD Directive in Greek implementation. They were used to promote the seminars and workshops held. All of the three issues of the newsletters were distributed to TEDKNA's members not only via e-mail, as well as in hard copy at the events that TEDKNA organised for the promotion of the project.

These publications ensured the high profile of the project within the region was maintained throughout the project period.

Due to the relatively low levels of awareness within the region an additional explanatory leaflet on the EPBD Directive was printed by TEDKNA in order to demonstrate that energy efficiency in buildings is a priority for the EU. The aim of this action was to spread information on the important role of the public sector regarding the energy efficiency in

buildings. Finally, a small one-page presentation on DEEP was printed. All of the material produced was distributed to the attendants of the events organised by TEDKNA.

Future perspectives

Following the completion of DEEP, TEDKNA is willing to go further with the implementation of energy efficiency measures in municipal buildings. After having taken the initiative of performing detailed energy audits in two City Halls (Aigaleo and Nea Penteli) in order that cost-effective energy measures are identified and proposed to the Local Authorities, TEDKNA plans to implement the proposed measures so as to achieve high energy efficiency of the particular buildings. In addition to Aigaleo and Nea Penteli, other Municipalities are also interested in participating in such an initiative, though the main barrier still remains the lack of funds. Consequently, TEDKNA is currently trying to find funding opportunities for such measures through the Community Support Framework, as energy efficiency is one of the key sectors identified for the next years.

Based on the experience gained through DEEP, TEDKNA wishes to involve a number of Local Authorities in this action that are interested in implementing energy efficiency measures and apply the DEEP tools in various Municipal buildings so that their energy saving potential is highlighted. As a second step, detailed energy audits will be conducted and based on the results specific measures will be proposed to the Authorities in order to improve the energy efficiency of the buildings

VIII.2. Barcelona, Spain

The following activities were carried out by the Diputació of Barcelona (DIBA):

- A conference on sustainable construction
- 2 seminars on energy efficient construction and green electricity
- The translation of the Procura⁺ Guide into Catalan
- A number of presentations at regional events and articles published in regional newsletters
- Full internet access to all project deliverables

Sustainable construction conference

On 5 October 2006 a **conference** was held within the DEEP project in Barcelona on Sustainable Construction – Challenges and Opportunities for Municipalities. The conference, attended by 109 participants from across the region, was aimed at raising awareness of the concept of sustainable construction among relevant municipal actors (both elected and technical staff), presenting best practice on the topic, and disseminating the results and outputs of the DEEP project. Feedback from participants indicated that they were extremely satisfied with both the organisation of the event and the information presented, and a number of participants have signed up to join the later project seminars.

Seminars on energy efficient construction and green electricity

On 15 March 2007 a **seminar** was hosted for 83 technical staff from local authorities. This seminar had a detailed discussion (using a roundtable format), principally on the topics of green electricity, the use of RES within buildings, and building energy management.

On 27 June 2007 a **final seminar** was hosted for 85 technical staff from local authorities, focussed on energy efficiency in buildings and the use of sustainable building materials and also to launch the Catalan version of the Procura⁺ Manual a copy of the book was given to each of the participants and speakers. It was originally proposed that 25 participants should be targeted for each of these seminars, however interest was so great in the topic following the successful conference and other dissemination actions that it was decided to substantially extend the actions. As such costs for the seminars were consequently slightly higher.

Procura⁺ Manual in Catalan

It was originally proposed that a distinct **book** would be produced in Catalan, in order to more closely meet the needs of dissemination within the region, by producing a simpler publication directly outlining the project results. However, due to the revisions in the style of the Procura⁺ manual into a simpler, more practical guide, it was felt that there was no longer a need for a separate publication.

Therefore, in agreement with the Commission it was decided that the book due to be produced on the results of the project, should actually be a fully translated Catalan version of the Procura⁺ Manual.

1,600 copies have been produced (100 more than the original proposal). These books have been disseminated to all local authorities in the province: mayors, councillors and high level technicians. Furthermore, internal dissemination to DIBA Procurement departments have also been conducted. Procura⁺ City Members: Council of Barcelona and Council of Barcelona have also received several copies of the Manual to disseminate it internally among procurement staff. Procura⁺ National Partner Ecoinstitut has also received Manuals to disseminate them.

Internet access to project results and event material

A webpage on DEEP is hosted in the in Diputació de Barcelona website including all the DEEP tools: <http://www.diba.cat/otc/deep/eines.asp>. Additionally all presentations from the conference and seminars together with other relevant documents are available for download from DIBA's website:

Future perspectives

DIBA has already **directly implemented** a number of the results of the DEEP project:

1. **Criteria on Construction/Rehabilitation of Public Buildings have been incorporated into the Technical Specifications Model** of the Technical Office of Co-operation, and have been followed by 10 building projects. The Technical Specifications been uploaded in internet as a reference document for Local authorities: <http://www.diba.cat/pdfs/Plecs6.pdf>

2. **The tender award criteria of the Technical Office of Co-operation** have been modified to incorporate DEEP Criteria on energy demand reduction, efficiency of building services (heating and cooling), renewable energy sources incorporation and Energy saving measures.

Beyond this, the DEEP project has provided a great deal of stimulus to the uptake of energy efficient procurement and the purchasing of green electricity in the region.

The seminar held on energy efficiency and RES was very highly valued by the participants (over 80 attended, rather than the planned 25), particularly with regards to green electricity as there had previously been no seminar at the topic. At least two public authorities have committed to begin the purchasing of green electricity following local elections in September 2007.

The guidelines on sustainable construction developed within DEEP were directly used as a reference to review the existing Technical Specifications of DIBA's Technical Office of Co-operation. These Technical Specifications are used both internally in the Diputació and externally by other authorities in the region. The Technical Office of Co-operation is working now on a second update of the Technical Specifications to both include the final DEEP criteria and to adapt SASEATO and LCCA tools to its particular needs.

The Procura⁺ Manual has also been very well received regionally. At the launching seminar in June most local authority participants indicated their intention to begin applying the manual after the Summer break, considering it to be both highly practical and easy to apply.

VIII.3. Cremona, Italy

DEEP dissemination activities were co-ordinated with the implementation of all the other activities carried out by the administration for the promotion of GPP. In particular, the dissemination plan foresaw co-ordination with the project "At School of GPP" and the activities of the regional working group on GPP established within the Regional Association of Local Agenda 21.

The dissemination plan had three target groups: local authorities; suppliers; other stakeholders (NGOs, chambers of commerce, schools, citizens etc.). The aim was: to introduce the DEEP project and the value of the project outputs; raise awareness among purchasers, suppliers and the general public about the concept of addressing energy efficiency through procurement; and present potential market opportunities.

The following activities were carried out:

Creation of an online exchange facility on the project's website

(http://www.provincia.cremona.it/servizi/ambiente/gpp_net/?ss=16&sv=82&sa=305)

The web-page contains a general description of the projects and the activities carried out, a collection of all products realised so far, and contact details for receiving input and questions from the public.

Regional seminar directed to local authorities.

The Seminar took place in Milan at the Regional Administration premises on the 20th November 2006, with 17 participants. It introduced the project's objectives to other local authorities and also initiated a dialogue with the regional administration in order to share actions and aims in the field of energy efficiency promotion.

Newsletter for provincial employees

The foreseen three numbers of the Newsletter were produced and distributed via e-mail to provincial employees, but also to other interested actors the Province of Cremona is in contact with via the local authorities networks it co-ordinates (National Working Group on GPP; Regional Working Group on GPP). The newsletter is also published on the dedicated web pages. The newsletters were published in months 22 and 26 and 30.

Informative leaflet for suppliers

The leaflet illustrates DEEP objectives and serves the purpose of involving suppliers in the efforts towards the promotion of energy efficiency practices. It was distributed in electronic format before the first regional workshop (see below), 150 printed copies were distributed at the GPP National Forum (Cremona, 10th-11th May 2007)

Informative booklet on expected results of the DEEP project

The booklet explains why local authorities should make an effort for the promotion of energy efficiency and gives practical advice on the contribution that different actors can give to the promotion of energy efficiency. The electronic version is available on the dedicated web-pages, while 200 printed copies were distributed at the GPP National Forum (Cremona, 10th-11th May 2007).

Three Regional Workshops

The first regional workshop directed at suppliers was held on the 28th of February 2007 in Cremona at the premises of the Professional Engineers Association, with 51 people attending.

The second regional workshop was held on the 11th May in Cremona in occasion of the GPPnet Forum with the title "Energy Efficiency in Public Buildings". DEEP project results were presented and compared with other local experiences. 40 people attended the workshop.

The third regional workshop took place in Turin on the 8th of June within the biennial of eco-efficiency (5th-9th June 2007). The workshop was organised in collaboration with the Province of Torino and the Regional Environmental Protection Agency of Piemonte with the scope of enhancing dissemination of DEEP also within the neighbour Region of Piemonte. 24 people attended the workshop. Participants were mainly representatives of local authorities and the discussion focused on the implementation of DEEP criteria for the purchase of renewable energy. DEEP toolkit was distributed to participants.

Simplified Guidelines for local authorities

Simplified guidelines in Italian on how to implement developed criteria within the regional context were produced in month 30. The guidelines are available on the website and have been sent via e-mail together with a presentation letter to: 68 participants of GPP Regional Working Group; 107 Schools of the Province; 34 Energy Forum participants. In addition, printed copies of the guidelines were sent to 115 Municipalities of the Province; members of the National Association of Local Agenda 21 (354) and of the Regional Association of Local Agenda 21 (76) were informed about the possibility of downloading the guidelines and other project's outputs from the provincial website.

Additional dissemination activities

The project results have also been presented at a number of relevant regional events and articles have appeared in several regional and national journals

Future perspectives

Cremona has a well-established network of authorities working on GPP – the GPPnet. As such this provides a perfect forum for disseminating the guidance and tools developed within the project, many participants of which are now considering applying these. It is also being promoted more widely through the Regional Association of Local Agenda 21.

Specifically, and the Municipality of Pavia has invited the Province of Cremona to organise a Common Meeting between Regional Working Groups on Energy and GPP where DEEP project outcomes will be discussed. The meeting will take place in Milan on the 17th September 2007 and will involve 50 local authorities. The focus the meeting will be energy efficiency in public buildings and how to use the DEEP criteria to foster energy efficiency.

The DEEP project is referred to within the Italian National Action Plan for GPP.