

# **Costs and Benefits of Green Public Procurement in Europe**

Part 3 – Potential of GPP for the spreading of new/recently developed  
environmental technologies

Service contract number: DG ENV.G.2/SER/2006/0097r

## **Case study**

Sustainable Procurement of the Public Lighting Service of  
the City of Lille, France

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## Abbreviations

ADEME	Agence de l'Environnement et de la Maîtrise de l'Energie
EDF	Electricité de France
GPP	Green Public Procurement
RES-E	Electricity from Renewable Energy Sources
SEPI	Société Européenne de Promotion et d'Investissements
SEV	Société d'Electricité Vendeville
SMDR	Société matériaux de démolition et de recyclage

# 1. Background information

With over 226 000 inhabitants the City of Lille, together with the associated towns Helemmes and Lommès, is the largest in the North of France. Despite this relatively small population, the City of Lille is part of France's fourth largest metropolitan area called „*Lille Métropole Communauté Urbaine*“ - consisting of Lille and 85 suburban municipalities and comprising more than 1,1 million inhabitants (2005).

The City of Lille, one of the pioneer cities on sustainable development in France, is a signatory to the Charter of European Cities & Towns Towards Sustainability (1995) and to the Aalborg Commitments (2004).

In 2000, Lille became one of the first French cities to implement Local Agenda 21 and since then has undertaken 180 projects and more than 500 activities in the field of sustainable development. Several major campaigns have been carried out in the framework of Agenda21, such as the Water Campaign (2001-2002), the Food Campaign (2003-2004), the Campaign ‘*Lille Ville Nature*’ and in 2007 the Campaign ‘Acting together for a sustainable and fair city’<sup>1</sup>. Lille is integrating sustainable procurement into these campaigns. In 2004 Lille joined ICLEI's European Procura+ Campaign<sup>2</sup> on Sustainable Procurement and since April 2007 has been the Chair of the Campaign.

The most important tender in recent years has been the city's street, façade and passage way lighting which involved the Public Lighting Service of the city of Lille, five bidders and several subcontractors (such as SEPI, SEV, LUMIVER, SMDR). External technical expertise was provided by HEXA Engineering. The contract involved a budget of 35,2 million EUR - 4,4 million EUR per year.

The winning bidder ETDE, is an affiliated company of the Bouygues Construction group with branches all over the world. ETDE/SOSIDEC is active in the field of utility networks construction and services (lighting systems and illumination of buildings), electrical, mechanical and HVAC<sup>3</sup> engineering, facility management real estate (performance of building) and telecommunications. Even though the group was starting to make headway in terms of environmental performance by progressively integrating environmental considerations into its global strategy, the contract signed with Lille was the first real eco-solution developed by ETDE.

Lille's old lighting systems will also be made more energy efficient and transferred to Lille's twinning town in Senegal, Saint-Louis. Local engineers will be taught by Lille's technical services department on how to construct and manage the old lighting system.

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<sup>1</sup> *La Campagne 'agir ensemble pour une ville durable et solidaire'* (2007)

<sup>2</sup> See ICLEI's Procura+ Campaign at: [www.procuraplus.org](http://www.procuraplus.org)

<sup>3</sup> Heating, Ventilating and Air Conditioning

## 2. Information on the product

The City's main objective for this service was to ensure that public lighting be managed in an exemplary manner and achieve the best results possible in terms of energy efficiency and environmental performance. The subject matter of the European tender of the city of Lille was based on the maintenance of the City's street lighting services and the service package included:

- the general maintenance of the whole system
- the reconstruction and replacement of the 300 control boxes and 22,000 lighting units
- the operation of the lighting systems and
- the energy management

ETDE is in charge of the management of the whole service package and the tasks to be carried out by the four subcontractors, which are as follows:

- SEPI and SEV – for the reconstruction works, and
- LUMIVER – for the lighting waste treatment (bulbs, tubes, glass, mercury, metal components) disposal, and
- SMDR – for waste recycling of remaining materials.

The new approach of Lille was to apply green criteria throughout the implementation process and for all different contract components.

Lille's sustainability policy ensured that key objectives of its Agenda 21 were integrated into the tenders. These were, for example, reducing energy consumption and greenhouse gas emissions into the management of its public lighting system. As a result of this ETDE adapted its usual management approach to public lighting to take on board these objectives. Several components of ETDE usual service package were revised to present the new lighting service as a new eco-solution (see section 3). Lille also had a number of social objectives its call for tender, however these are not addressed in this case study.

Lille joined the European GreenLight project<sup>4</sup> after the beginning of the Public Lighting contract was signed. GreenLight is an on-going voluntary programme whereby private and public organisations commit to reducing their lighting energy use, thus reducing polluting emissions. ADEME<sup>5</sup> introduced the programme at a national level.

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<sup>4</sup> GreenLight was launched in February 2000. See online at: <http://www.eu-greenlight.org/>

<sup>5</sup> ADEME is the French Environment and Energy Management Agency.

### 3. The developed new Eco-Solution

Lille was the first city in France to hand over control of its lighting system to a private company and request that this company provide an eco-solution. Lille’s eco-solution comprised the following innovative aspects:

Part 1 – Integration of green criteria throughout the implementation of the tender (see table 1)

Part 2 – Continuous improvement through a ‘Virtuous circle scheme’

Part 3 – New environmental technology tested and applied

Part 4 – Continuous auditing and monitoring system of the strategy and management of the lighting system

#### 3.1 Integration of green criteria throughout the implementation of the tender

From an environmental perspective, the following measures have to date been implemented:

**Table 1: Lille’s ‘green’ lighting service**

Components of the tendered Lighting service	Green components
General maintenance of the installation	<ul style="list-style-type: none"> <li>- Digital public lighting system (management software) to guarantee automatic and flexible lighting service, save time and costs as well as avoid excessive paper use</li> <li>- Use of LPG vehicles for the to limit CO<sub>2</sub> emissions</li> </ul>
Reconstruction and replacement of the asset base	<ul style="list-style-type: none"> <li>- Replacement of the equipment with energy-efficient equipment</li> <li>- Recycling of the old material and reconstruction with recyclable material (98%), such as glass or cast aluminium</li> </ul>
Operation of the lighting systems	Focus on the reduction of the energy consumption: <ul style="list-style-type: none"> <li>- Implementation of power reducers and electronic ballasts<sup>6</sup></li> <li>- Automatic light modulation (dimmer switch)</li> <li>- Reduction of light pollution</li> </ul>
Energy management	<ul style="list-style-type: none"> <li>- 25,7% green energy provided from hydropower, including 16% from small hydro.</li> <li>- Use of solar power in schoolyards and parks is currently being piloted</li> </ul>

#### 3.2 Continuous improvement through a ‘Virtuous circle scheme’

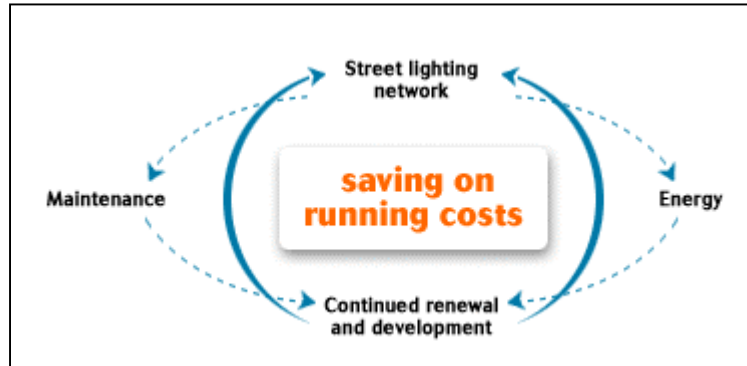
The so-called ‘virtuous circle scheme’ implies that the financial gains through energy saving are continuously reinvested, primarily in the development of new environmental technologies, products and services. ETDE’s approach of managing public lighting services according to the

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<sup>6</sup> Ballasts: an electrical device for starting and regulating fluorescent and discharge lamps

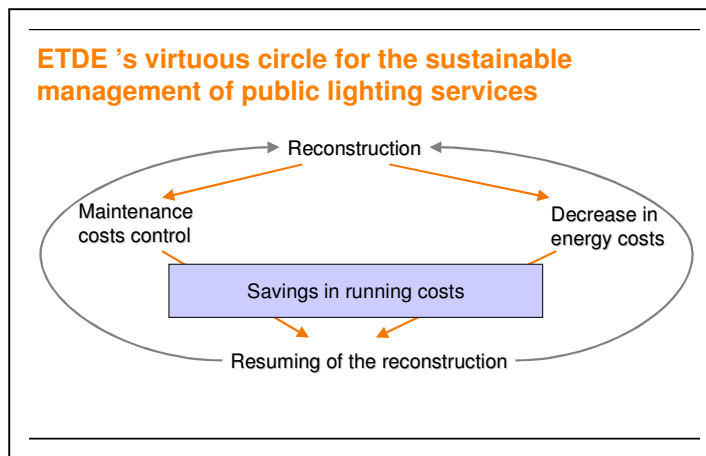
virtuous circle scheme (graphic 1 below), offered high expectations in terms of quickly achieving significant results for the cities involved, especially in terms of cost efficiency and ecology.

**Graphic 1: Virtuous Circle for the management of Public lighting systems**



The Virtuous Circle approach was adapted to take on board environmental considerations following Lille’s tender see graphic 2 below

**Graphic 2: ETDE’s virtues circle model for Lille’s public lighting service**



Over a period of only three years, the investment in the reconstruction of energy-efficient assets already allowed the City to save 32 to 35% of its energy. By the end of the contracting period, Lille will have made more than 40% savings in energy efficiency. In terms of global costs, there are also savings for the City since the budget for public lighting was lowered by 5% in comparison to Lille’s former contract. The average cost per lamp in the previous contract was 210 EUR with the new contract total costs per lamp are 200 EUR.

### 3.3 New technology applied and tested

The new eco-technologies in which ETDE particularly invested are electronic power reducers. At the beginning of the contract period, in November 2004, 360 power reducers developed by

the company Honeywell were already being installed. Electronic ballasts<sup>7</sup>, are being tested and implemented on power values higher than 400 W SHP.

An experiment on solar energy is being carried out. So far, luminaires from photovoltaic solar energy were implemented in some schoolyards and parks. If this experiment proves efficient, their implementation could expand to other sites. For this project ETDE and Lille are working in partnership with L2EP- Lille's Labor for Electrical Power Engineering<sup>8</sup>.

The public lighting system is also being monitored through innovative IT technology. An embedded computing system has been installed in the aerial work platform<sup>9</sup> and in the tracking vehicles, which identify defects in the lighting system, this was implemented at the beginning of 2005. This system allows the City's street lighting services to access and monitor in real time processing the information gathered by the teams such as failures, repairs, modifications of the equipment, etc.

Apart from the technology mentioned above, which ETDE is constantly improving through the virtuous circle model, new eco-technologies are being discussed by the Public Lighting Department of Lille and the service provider. Recent developments and testing of new eco-technologies regard new energy-efficient lamps, new types of ballasts cabinets, wireless, etc.

### **3.4 Continuous auditing and monitoring system**

In order to ensure the interaction between the 3 main aspects of the contract (reconstruction, energy management, and maintenance) and integrate environmental considerations throughout all aspects, a big part of auditing is included in the service package. ETDE thus carries out many surveys to analyse and follow-up the results, plan the next steps of the strategy, or test new products and services and integrate them to the service package. For these auditing tasks, ETDE associated a consulting firm, ProG' HEI<sup>10</sup>.

## **4. The drivers responsible for this new Eco-Solution**

A key driver that laid the ground for the tendering procedure on public lighting was Lille's political commitment to sustainable development in the framework of its Agenda 21 activities. A commitment taken in partnership with 46 associations and several important public institutions, such as the Chamber of Commerce and Industry, ADEME, the Regional Council etc.

In 2001, Lille adopted an integrated approach of sustainable procurement. The growing experience in sustainable procurement eventually led to this important tender on Public Lighting. The Deputy Mayor also wanted Lille to become a lead in the field of sustainable procurement to

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<sup>7</sup> Ballasts: an electrical device for starting and regulating fluorescent and discharge lamps

<sup>8</sup> L2EP - "Laboratoire d'électrotechnique et d'électronique de puissance" – is an inter-university research institute in the fields of electrical power engineering.

<sup>9</sup> Aerial devices used on construction sites to lift the personnel working at height.

<sup>10</sup> ProG'HEI – the Project "Hautes Etudes d'Ingénieur" is a junior enterprise composed of students in Engineering Technologies

do this a big tender needed to be identified and greened and in this case the lighting tender was the next big tender. Lille's also has a charter of for clean construction works. It includes a series of recommendations for the disposal of waste, the use of environmentally friendly packaging and recyclability of material as well as materials that should be avoided. For instance, suppliers are not allowed to use PVC for the lighting envelope.

From the supplier side they knew that environment issues were important to Lille because they were aware of all the commitments made by Lille to sustainable development. This encouraged to try and achieve the best environmental eco-solution as possible in their bid. The tender was also a large amount of money and over a period of 8 years therefore it allowed for a long-term commitment and the enterprise risk for them was therefore reduced. The supplier also stated that as they were allowed them to manage the work could take risks in investment early on in the process. The supplier also stated that they wanted to expand their market and build up a presence in the north of France.

Lille's tender took place in the context of the progressive liberalisation of the energy market<sup>11</sup>. Since July 2004, French local governments are able to choose their electricity supplier and also the origin of the energy they consume. Regarding France's commitments towards the EU to achieve a part of 21% of electricity from renewable sources (RES-E) by 2010<sup>12</sup>, and given the poor share of RES-E consumption in France so far (15% in 2005), the opportunity for local governments to purchase a certain amount of green energy should contribute to achieve these goals. On this subject, Lille was in 2004 one of the first signatories of a national campaign launched by WWF and the Ecological Mayors Association "Ecomaires" to encourage 100 local authorities to a 21% share of RES-E consumption.

Another driver for this new eco-solution was the perspective of the energy certificates scheme, which was to be implemented in 2006 in France. This environmental policy system is based on green and white certificates, which are tradable on the market<sup>13</sup>. In France, these certificates are managed by the French labelling body Observ'ER<sup>14</sup>, who is responsible for the controlling, auditing and certification of producers and buyers.

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<sup>11</sup> The national supplier EDF- Electricité de France- losing his historical monopoly.

<sup>12</sup> Dir. 2004/77/EC of 27. September 2001

<sup>13</sup> Green certificates are documents guarantying that the energy supplied comes from renewable sources, and white certificates that a certain reduction of energy consumption has been achieved.

<sup>14</sup> Observ'er ('Observatoire des Energies renouvelables') is the national representative of the European RECS (Renewable Energy Certification System) organisation.

## 5. The tendering process

Lille's tender, the 'General management and maintenance of the public lighting system'<sup>15</sup>, was published at European level on 19 June 2003 in the European Union Official Journal.

This tender followed a result-oriented approach, offering the bidders a large margin of discretion within defined key objectives. Instead of providing detail about how to do the tender, there was more of a focus on the aims and results. Neither quantitative objectives nor specific thresholds were given, leaving it up to the market to develop solutions. In order to push the market through its full potential, the City of Lille decided to engage and send strong signal to the market.

It is mainly at the evaluation stage (award criteria) that the offers were examined and judged by the tender commission (city of Lille's Department of public lighting, public procurement department and HEXA INGENIERIE).

**Table 2: Key stages Lille's tendering procedure**

Key dates	Introduction of criteria
<p><b>NOTIFICATION</b></p> <ul style="list-style-type: none"> <li>- 24 March 2003: Deliberation n° 03/189 authorising the call for tender</li> <li>- 19 June 2003: Preinformation Notice in the European Official Journal</li> <li>- 29 August 2003: Notice of the Call for Tender</li> </ul> <p><b>PRE-SELECTION</b></p> <ul style="list-style-type: none"> <li>- 16 October 2003: Opening to the Applications -&gt; 8 application files</li> <li>- 12 November: Reunion of the Tender Commission – Selection of the applicants -&gt; 5 bidders selected</li> </ul> <p><b>PREPARATION</b></p> <ul style="list-style-type: none"> <li>- 15 January 2004: Tender documents are being sent to the bidders</li> <li>- 18 February 2004: Night tour of the city to review the public lighting asset base with all the bidders</li> </ul>	<p>Green criteria included in the tender as general goals to achieve.</p>
<p><b>EXAMINATION OF THE OFFERS BY THE TENDER COMMISSION</b></p> <ul style="list-style-type: none"> <li>- 17 March 2004 : Meeting of the Tender Commission – official opening of the offers (5 application files)</li> <li>- 14 April 2004 : meeting of the tender commission – stages report, presentation of the offers, examination of the questions to ask to each bidder</li> </ul> <p><b>INTERVIEWS / DISCUSSIONS STAGE</b></p> <ul style="list-style-type: none"> <li>- 4 May 2004: Reunion of the tender commission – audition of each bidder during 90 min to present the bid and answer questions.</li> </ul> <p><b>AWARDING THE CONTRACT</b></p> <ul style="list-style-type: none"> <li>- 7 July 2004 : the contract is being awarded to the group ETDE/SOSIDEC</li> <li>- 9 September 2004: Notice of the award</li> <li>- 1° October 2004 : Beginning of the contract period for 8 years</li> </ul>	<p>Evaluation of the offers according to the award criteria, including detailed green criteria</p>

<sup>15</sup> 'Maintenance globale et maintien a niveau des ouvrages d'eclairage public'

## **5.1 Developing the green procurement criteria**

Given the level of technical knowledge required to develop the environmental criteria, the two municipal departments, the Department for Public Tenders and the Department for Public Lighting Services, involved in the tendering procedures sought external expert assistance. This was provided by the consultant firm HEXA INGENIERIE, based in Douai, France. HEXA INGENIERIE helped the City Departments develop the green criteria according to the political objectives of the City, addressing issues such as energy efficiency, renewable energy, and reduction of light pollution and use of recycling material. The consultant firm was also part of the tender commission, and hence participated in the examination of the offers provided by the bidding parties.

The aims of the tender were defined in the call for tender, it was up to the bidders to suggest and describe the means of achieving these results. They had therefore to include in their bids a detailed technical document containing the specific technical terms and conditions of the service they wanted to offer.

After submitting their bids, the bidders were also invited, one by one, to technical interviews, to discuss the technical means of the contract with the tender commission. This particular stage of discussion, which took place on the 4th May 2004, was also an opportunity to improve and complete the reviewed offers. Between the publication of the tender and the announcement of the successful bidder was a period of 18 months.

## **5.2 The green procurement criteria**

As previously mentioned, the intention of the City of Lille was to give indications rather than defining specific quantitative specifications. The green criteria that included in the tender were:

- Reduction of the energy consumption
- Optimal use of renewable energies
- Improvement of Life quality: suppressing excessive lighting and light pollution (e.g. by taking off globe lamps, to avoid directing light upwards into the sky)
- Use of recycling materials (lamps, masts, apparatus, wall brackets, etc.)
- Replacement of obsolete materials
- Development of new innovating eco-technologies

As far as the pre-qualification of the suppliers is concerned, the tender commission essentially focused on the experience of the supplier to provide this kind of maintenance services, and no “green” criteria were required to participate in the tendering process.

The bidders were allowed to submit a maximum of two variants of the offer on the condition that they wouldn't exceed the fixed annual budget.

It is only at the evaluation stage on 17 March 2004, that the Tender Commission presented its detailed attribution scheme, including the green award criteria chosen for the evaluation of the bids and the corresponding attributive points (see table 3). The table below is an extract of the

award scheme table used by the Tender Commission to evaluate the results. The original document contained 3 parts (“Reconstruction and commitments to the results”; “Energy”; and “Maintenance and quality of the service”), each of them divided into several sections and subsections. In the table below, only the sections and subsections containing or corresponding to green criteria are appearing, also leaving aside the criteria corresponding to other aspects of sustainable development than the environment<sup>16</sup>.

**Table 3: Green criteria used for the award phase**

<b>Sections and green award criteria used</b>	<b>Points</b>
<b>1. RECONSTRUCTION AND COMMITMENTS TO THE RESULTS:</b>	<b>/140</b>
<ul style="list-style-type: none"> <li>• <b>Reconstruction of the asset base:</b> <ul style="list-style-type: none"> <li>• waste management policy</li> </ul> </li> </ul>	<p><b>/90</b></p> <p>/5</p>
<ul style="list-style-type: none"> <li>• <b>Implementation of innovating and cost-effective equipment with positive impacts on sustainable development:</b> <ul style="list-style-type: none"> <li>• Quality, choice and life-cycle of the equipment</li> <li>• Reduction of light-pollution</li> <li>• Technologic innovation</li> </ul> </li> </ul>	<p><b>/40</b></p> <p>/15</p> <p>/10</p> <p>/15</p>
<b>2. ENERGY</b>	<b>/100</b>
<ul style="list-style-type: none"> <li>• <b>Commitment of the bidder towards the reduction of energy consumption</b> <ul style="list-style-type: none"> <li>• Commitments in terms of kWh consumed /year</li> <li>• Year of implementation of the commitments of consumption in kW</li> <li>• Operation mode of the installations</li> <li>• Critical examination of the existing asset base</li> <li>• Power reduction</li> <li>• Control of the applied power</li> </ul> </li> </ul>	<p><b>/50</b></p> <p>/10</p> <p>/20</p> <p>/7</p> <p>/5</p> <p>/5</p> <p>/3</p>
<ul style="list-style-type: none"> <li>• <b>Commitment of the bidders towards the provenance of the electricity and towards sustainable development</b> <ul style="list-style-type: none"> <li>• Suggestions for handling sustainable development</li> </ul> </li> </ul>	<p><b>/35</b></p> <p>/20</p>
<b>3. MAINTENANCE AND QUALITY OF THE SERVICE</b>	<b>/60</b>
<ul style="list-style-type: none"> <li>• <b>Assistance and attendance on the City’s sustainable development projects</b> <ul style="list-style-type: none"> <li>• integration and environmental considerations</li> <li>• suggestions for communication</li> </ul> </li> </ul>	<p><b>/8</b></p> <p>/4</p> <p>/4</p>
<b>TOTAL</b>	<b>200</b>

<sup>16</sup> As the aim of the tender was to integrate the goals of the City’s Agenda 21 into Public Lighting, the award criteria also contained many ethical and social considerations, i.e. good governance, equity of lighting in the different districts, local development, development aid, etc.

With regards to lamps containing toxic content, the tender documents specify that the supplier had to recycle them according to a specific procedure and to provide justification to the public lighting service.

The main tender document itself did not include any specific targets in the green criteria; however, bidders were directed to a number of related documents e.g. Lille's charter of for clean construction works. They include a series of recommendations for the disposal of waste, the use of environmentally friendly packaging and recyclability of material as well as materials that should be avoided. For instance, suppliers are not allowed to use PVC for the lighting envelope. The bids also had to comply with the local urban planning documents and road regulations as well as the recommendations of the French Agency for Lighting (A.F.E)<sup>17</sup>.

### **5.3 Awarding the contract**

Following the evaluation phase, ETDE was awarded the contract, mainly because sustainability was integrated throughout the whole offer, according to a transversal approach. The strong points of the offer were especially the commitments taken by the service provider towards environmental performance (i.e. achieving 40% of energy savings by the end of the contract, using 25% of renewable energies) and reconstruction.

Following the award phase, the commitments made by the awarded service provider were inserted in the contract as contract clauses.

### **5.4 Contract management**

ETDE is responsible for the management of the public lighting services. This is a public service delegation: the City stays in charge of the public lighting service and owner of the assets but delegates the management function to one private society for the contracting period. During the contracting term, ETDE is responsible for the operation of the whole street lighting systems, the management, and the energy supply (the energy producer being the main national supplier group EDF, at least for the period 2004-2008), the reconstruction of the assets and the replacement of the lamps.

As it was specified in the tender documents, the service provides regularly evaluated and discussed with the City's Department for Public Lighting:

- Regular discussion and continuous evaluation of the results, compliance with the results engagements : correction actions when the results are not satisfying or do not correspond to the City's expectations
- Yearly reports to the City council are undertaken

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<sup>17</sup> The A.F.E (*Agence Francaise de l'Eclairage*) produces recommendations and technical guides on lighting, and among others a collection of general and technical recommendations for the street lighting sector.

In order to encourage the participation of citizens, the actions are also presented at the annual meeting for Saint Lucia's Day, the Feast of Light, where all municipal elected officials and district councils are invited to help choosing the coming year's program.

## **6. Results of the tendering process and the key factors that triggered the market for the Eco-Technology**

The sustainable management of public lighting systems is a complex service package, which represents a new "eco-solution". It is only in response to Lille's tender that the service provider ETDE decided to concentrate its management strategy of street lighting systems on environmental performance, and to transform its existing practices into a new green service package. With a value of 32,5 million EUR and a contract period of over 8 years, the tender presented a very attractive service package, including many components (maintenance, reconstruction, and operation of the systems, energy management) and involving several suppliers and subcontractors. It was certainly a challenge for suppliers to identify the best strategy to modulate the different components in line with the new environmental strategy. ETDE was thus very motivated to be awarded Lille's contract. Apart from the economic advantage of a long term contract for the exclusive management of the whole street lighting, the tender also offered them a key business advantage in the entire north region, at the time the only area of France where they were not yet well positioned.

Three years after the publication of the tender, the public lighting system of Lille is increasingly attracting interest at the national and international level. The good practice example is also prominently showcased in the French National Action Plan on GPP.

The main motivation for Lille to "green" the tender was the potential energy savings to be achieved. Following the first assessment after three years, it is very likely that by the end of the contract, the French city will have made at least 42% energy savings through energy-efficient street lighting. Following their Agenda 21 strategy, including several major campaigns and around 500 activities in the field of sustainable development, this tender definitely strengthened Lille's position as one of the French leading cities in the field of sustainable procurement.

A few French cities, including Lille's neighbouring municipalities, for example, Bondues, Saint-André and Marquette-Lez-Lille, but also cities from other French region, for example, Rouen, Sevrans, Nevers and Fougères have already published similar tenders and signed contracts according to the same approach for the sustainable management of their public lighting systems. Of course, many cities are also interested in purchasing such services, and still are preparing their green tender based on Lille's pioneering approach, for example, the case of Marcq-en-Bareuil and Villeneuve d'Ascq.

Lille's call for tender was setting environmental performance as a priority, and included strategic aims such as the use of renewable energies, a cut in energy consumption, and avoiding light pollution. However, since the tender was result-oriented with generic criteria, the market was free to develop an appropriate offer. The dialogue between the contractor and supplier engaged in the tender process was also a key factor that pushed the market to its full potential, and encouraged the creativity of the bidders.

Even though all of the bidders had made the effort to "green" their offer, ETDE was the one who put more emphasis on environmental performance. It committed to achieving 40% of energy saving by the end of the contract period and to reinvest all the savings into the reconstruction of the assets (and replacement with new energy-efficient equipment), eco-technologies, and into environmental projects in the fields of public lighting (i.e. technology transfer to Senegal or awareness-raising actions).

The contract value was fixed at 4,4 millions EUR per year. According to the contract, potential extra costs caused by the improvement of the service would not be passed on to the City of Lille. ETDE performed Life Cycle Costs analysis to prepare its green offer before the tender, but analysis is being undertaken regularly to allow a continuous improvement in the strategy. At the beginning of the contract period, ETDE in fact had to bear some additional costs - in comparison to its standard management practices -, mainly due to the purchase of renewable energies (small hydro, solar), which are on average 25% more expensive than non-green energy. Concerning the equipment (energy-efficient lamps), the prices are 10 to 20% higher than standard equipment. However, over the medium term, the increase in costs is compensated by the savings made through energy-efficiency measures:

- a reduction of €1,3 million in Lille's running costs from 2005 on ( - 47% of 2004's budget)
- The energy consumption was reduced by more than 30% in average (42 % foreseen by the end of the contract period): from 20,6 M kWh in 2004 to 14,3 M kWh in 2006.

The new eco-solution gave ETDE a temporary advantage on the market, and helped the company obtain the same type of contract for some of Lille's neighbouring municipalities, and positioning itself in northern France. ETDE's strategy was soon replicated by many of its competitors. The example of Lille's contract with ETDE showed clearly that it is possible and profitable for such service provider to focus their strategy on energy efficiency and environmental performance. More and more suppliers are now offering green services for the management of public lighting systems, especially the companies that participated in Lille's tender, and learned from the process. Those companies have since made efforts to adapt and "green" their offers as well.

According to ETDE, the tender and the changes it caused on the public lighting market also had impacts on other sectors. For example, the virtuous circle of energy-efficiency and reinvestment

at the heart of ETDE's offer expanded in the Bouygues group, and the approach is being implemented in lots of their public contracts, such as public building and construction.

According to the virtuous circle of continuous improvement through gains and reinvestments on which the new eco-solution is based, ETDE is continuously investing in new ecotechnologies as well as improving the new technology in use (electronic power reducer; digital lighting system, etc). The department for Public Lighting and the service provider are regularly discussing the possibilities and the availability of new eco-efficient products on the market, and continuously testing new green products and services.

## 7. Barriers and difficulties

No major barriers or difficulties have been mentioned neither by the supplier nor by the public service provider. As a minor difficulty, ETDE spoke from the energy market in Europe: the French national producer EDF has now lost his monopoly and the energy supply has opened to concurrence. Therefore, it is hard for electricity operators to identify their suppliers, to manage the prices etc.

## 8. Outlook

There are now 5 years left until the end of the contracting period (2004-2012). By then, all the lighting equipment will have been replaced by energy-efficient equipment; the City is expecting to have made at least 42% savings in energy consumption for public lighting, in comparison with the reference year of 2004.

There are 7 millions lighting units in France. The electricity used for public lighting represent 1,5 billion kWh a year, that is to say 1,2% of the country's total consumption in electricity.

## 9. Contacts

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## 10. Sources

Meeting in Lille's City hall, 30 May 2007 and interview with:

- Danielle POLIAUTRE, Deputy Mayor for the Quality of Life and Sustainable Development, City of Lille.
- Christophe MONTELMARD, Operation Director in charge of Lille's public lighting, ETDE

- Eric Decaillon, Head of Public Lighting Department, City of Lille

**Internet sources**

<http://www.etde.fr>

<http://www.mairie-lille.fr>