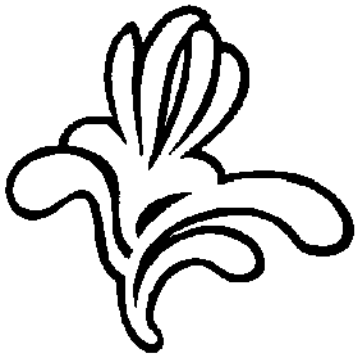
Second Energy Efficiency Action Plan

Brussels Capital Region



29/06/2011

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1. OVERALL CONTEXT OF THE 2ND EEAP

1.1 HIGHLIGHTS OF THE 2ND EEAP

Adopted in 2007, the first Energy Efficiency Action Plan (EEAP) summarised the measures implemented in the Brussels Region to reach the indicative target of achieving energy savings of 9% over a nine-year period (Directive 2006/32/EC on energy end-use efficiency and energy services). It proposed 49 measures in the building sector, the residential, commercial and industrial sectors, the public sector and the transport sector. The second plan is an update of the previous plan.

The Brussels-Capital Region is a densely populated urban area with just over one million inhabitants, characterised by the presence of a large number of commuters working during the day. The regional economy is based primarily on the tertiary sector, with a strong presence of the public sector (regional, national and international institutions). Its energy balance and greenhouse-gas emissions are characterised by a predominance of the building and transport sectors (97% of final energy consumption and 83% of CO_2 emissions).

The first genuine energy and climate policies of the Brussels-Capital Region appeared from 2004 onwards. After an initial period of developing the awareness and experience necessary to make possible solutions credible, in 2009 the BCR adopted an ambitious target of reducing domestic greenhouse-gas emissions by 30% in 2025 as compared to 1990. To achieve this goal, priorities have been defined focussing primarily on the building and transport sectors:

- Building: proactive implementation of the energy performance of buildings (EPB) requirements in the residential and tertiary sectors, including a passive standard for new buildings and low-energy requirements for extensive renovations (different time limits applied in the private and public sectors); energy audits made compulsory and mandatory cost-effective solutions implemented for large buildings; incentives for improving the energy performance of buildings; household support; development of sustainable construction, etc.

- Transport: enhancing of transport plans, promotion of soft modes of transport and public transport improvements, management of parking policy, etc. Moreover, the IRIS II mobility plan should reduce the traffic load by 20% in 2018 as compared to 2001 through a whole series of complementary measures.

In addition, the BCR places particular emphasis on the exemplary role of public authorities:

- In all real estate investments by dint of strict requirements concerning energy and environmental performance and the production of renewable energy;

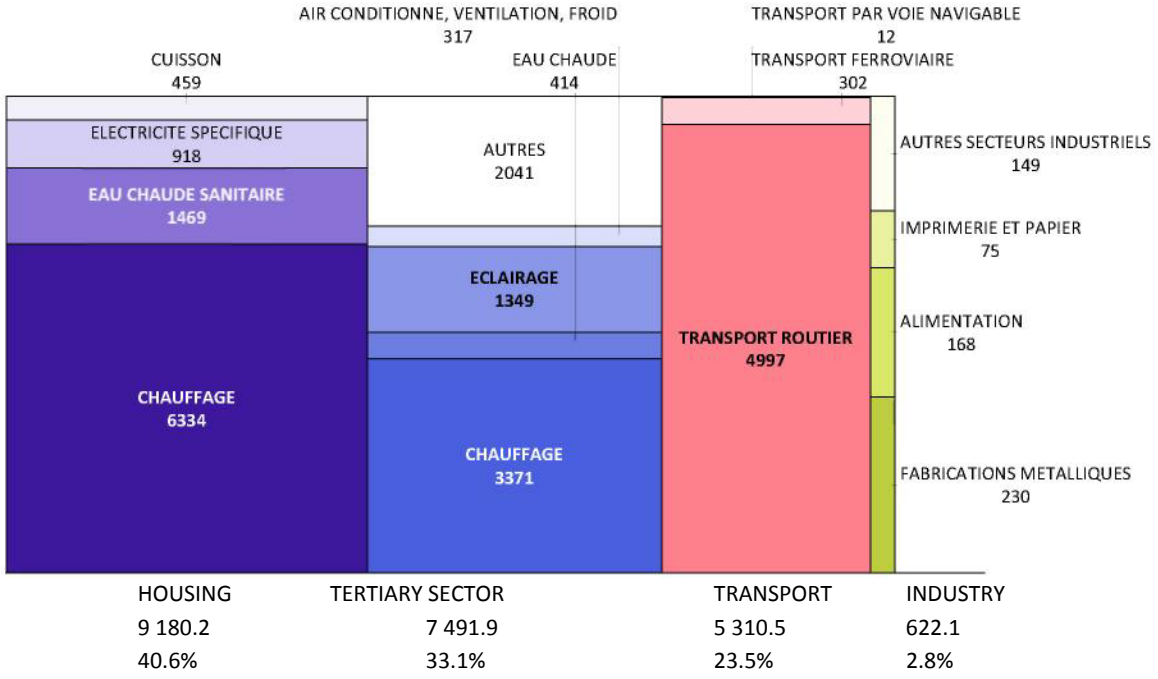
- In the transport sector by enhancing the travel plans of public enterprises and improving the energy performance of the vehicles of public services;

- Through the implementation of a sustainable purchasing policy.

1.2 BRUSSELS CONTEXT OF ENERGY SAVING

1.2.1 Context of energy end-use in the BCR and of its primary energy supply

The following diagram shows the total final consumption of energy in the BCR.



[Key to figure: (top to bottom, left to right) CUISSON = food preparation; ELECTRICITE SPECIFIQUE = specific electricity; EAU CHAUDE SANITAIRE = domestic hot water; CHAUFFAGE = heating; AIR CONDITIONNNE, VENTILATION, FROID = air conditioning, ventilation, cooling, EAU CHAUDE = hot water; AUTRES = other; ECLAIRAGE = lighting; CHAUFFAGE = heating; TRANSPORT PAR VOIE NAVIGABLE = inland waterway transport; TRANSPORT FERROVIAIRE = rail transport; TRANSPORT ROUTIER = road transport; AUTRES SECTEURS INDUSTRIELS = other industrial sectors; IMPRIMERIE ET PAPIER = printing and paper; ALIMENTATION = foodstuffs; FABRICATIONS METALLIQUES = metalworking]

Figure 1: Breakdown of total final energy consumption in the BCR between 4 sectors (Housing, Tertiary, Transport and Industry), GWh. Source: Provisional Energy Assessment of the BCR, 2009, IBGE-BIM

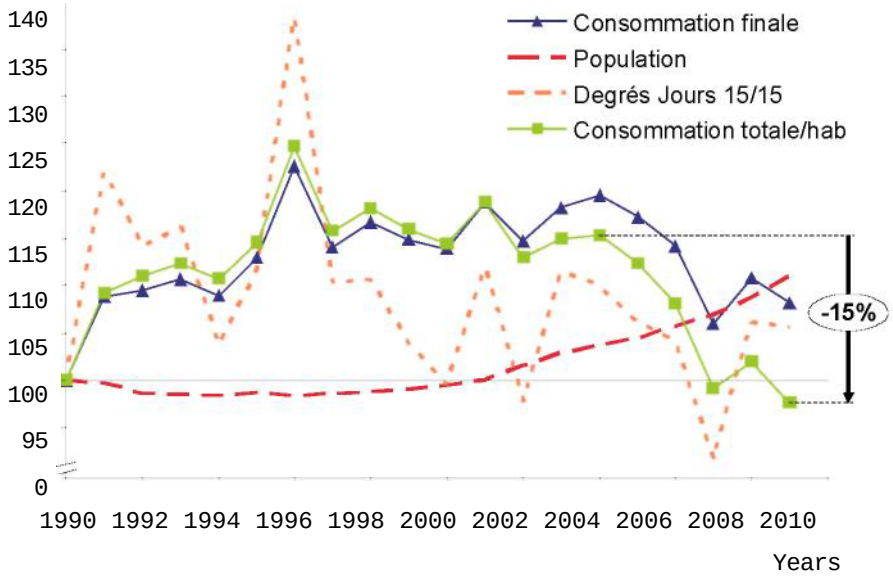
The housing and tertiary sectors, taken together with the transport sector, account for a combined final energy consumption of 97% in the Region. The energy consumption by industry is marginal (3%).

The uses that contribute most to total final energy consumption are:
1) The **heating** of homes and tertiary-sector buildings (44% of total consumption);
2) **Road transport** (22% of total consumption);
3) The **heating of water** in homes (7% of total consumption);
4) **Lighting** in the tertiary sector (6% of total consumption).

The graph below shows the evolution of final energy consumption in the Region (in blue) and the evolution of per-capita final energy consumption in the Region (in green) alongside the evolution of the population (in red) and the evolution of weather conditions, expressed in "day degrees",[1] as compared to the reference year (1990).

[1] The notion of "day degrees" (in grey in the graph) was introduced to allow the amount of heat consumed by a building over a given period of heating to be determined according to weather conditions. A high value means cold winters and vice versa.

Percentage evolution



[Key to figure: (top to bottom): Consommation finale = Final consumption; Population = Population; Degrés Jours 15/15 – Day degrees 15/15; Consommation total/hab = Total per-capita consumption]

Figure 2 Evolution of total final energy consumption and per-capita final energy consumption as compared to the evolution of population and of weather conditions ("day degrees"). Source: Provisional Energy Assessment of the BCR, 2009

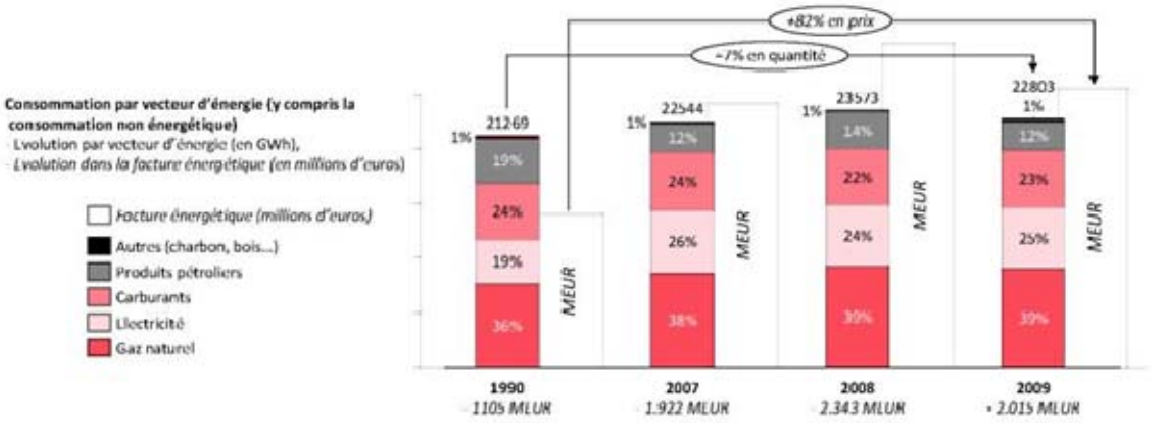
This figure highlights the strong link between the variation in weather conditions and the variation in total final consumption. Indeed, because of the preponderance of heating in overall energy consumption, a colder winter leads directly to increased energy consumption.

Moreover, since housing is responsible for more than 40% of total final consumption, the increase in the number of inhabitants in Brussels in the past (7% between 2004 and 2009) and projected for the future (an estimated 11% increase between 2009 and 2016)[2] is a key variable.

However, as the evolution line indicates, per-capita final energy consumption fell by 15% between 2004 and 2009.

Moreover, the total energy bill has more than doubled over the same period.

[2] Source: Institut Bruxellois de Statistique et d'Analyse [Brussels Institute of Statistics and Analysis], Demographic projections for Brussels, 2010-2020 [2010].



[Key to figure: Consommation par vecteur d'énergie (y compris la consummation non énergétique) = Consumption by energy carrier (including non-energy consumption); Evolution par vecteur d'énergie (en GWh) = Evolution by energy carrier (GWh); Evolution dans la facture énergétique (en millions d'euros) = Evolution of the energy bill (€ million); Facture énergétique (millions d'euros) = Energy bill (€ million); Autres (charbon, bois …) = Other (coal, wood, etc.); Produits pétroliers = petroleum products; Carburants = fuels; Electricité = Electricity; Gaz naturel – Natural gas; +82% en prix - +82% in price; +7% en quantité = +7% in quantity; MEUR = € million]

Figure 3 Evolution of consumption by energy carrier and prices in the BCR

In terms of energy sources, the BCR imports almost all the energy it consumes; the bulk of this energy comes from non-renewable sources, primarily, gas, fuel oil and nuclear power (electricity). Within this mix, there has been a significant decline over the years in the use of petroleum products and an increase in gas consumption (as a partial substitute to fuel oil) and electricity.[3]

As far as renewable energy is concerned, given that the BCR is an urban region, the potential for energy production within it is limited. Reducing energy dependence must therefore essentially be achieved by reducing energy consumption.

Primary energy production by the Brussels-Capital Region stood at 102.5 ktoe in 2009. It is still mainly made up of the recovery of household waste burned in the Neder-over-Hembeek incinerator.

However, the Region's energy policy has led to a remarkable increase in the use of renewable energy sources that continue to be increasingly integrated in this context. In terms of growth since 2000, the output of heat pumps has increased more than fivefold, followed by solar energy(x 4.1) and firewood (x 1.3). This increase should be encouraged in accordance with the urban characteristics of the Brussels Capital City-Region.

1.2.2 The evolution of energy policy in the BCR

The global energy landscape is characterised by the end of the availability of cheap oil and an increase in global energy demand. The need to reduce greenhouse gas emissions, which are responsible for global warming, is a further factor emphasising the absolute need to reduce energy requirements at source.

[3] Buildings account for more than 85% of this electricity, which is being used for increasingly varied purposes (lighting, household appliances, air conditioning, etc.). Since approximately 94% of the electricity consumed in the territory of the Region is imported, this increase exacerbates the BCR's energy dependence. It will therefore be necessary to deal specifically with the problem of household energy consumption.

After the oil shocks of the 1970s, Belgium did not pursue a genuine energy policy until the early 2000s, particularly as regards end-use. It was widely thought at that time that "Rational Energy Use (REU) [was] expensive and not worthwhile". There was great ignorance and many misconceptions about possible technical solutions. Energy distribution was also a monopoly in certain sectors (Electrabel for electricity, Distrigaz for natural gas, etc.). Owing to the lack of enforcement action by public authorities and interest on the part of developers, the level of building insulation was particularly low.

2004-2009: Establishment of a positive and winning dynamic

The BCR's energy policy gained momentum between 2004 and 2009, focusing on the building sector and based on seven areas of development:

1. developing an energy culture;

2. providing specialised technical assistance;

3. the training of experts;

4. creating and demonstrating "success stories";

5. helping to improve the quality of investments;

6. structural changes to the legal framework;

7. developing the energy economy.

To achieve these goals, the budget for energy-related measures increased more than sixfold and the budget for energy grants by more than 11 times between 2004 and 2009.[4]

All energy-related actions implemented in the period 2004-2009 showed that the technical potential was huge and the solutions easy to implement and cost-effective.

On the basis of three large-scale symbolic actions, the Regional Authority was able to lead the way in terms of behaviour and the pro-active management of buildings and investments:

- Since 2005, the **Energy Challenge** [*Défi énergie*] is challenging all citizens, whether tenants or homeowners, to learn how to change their behaviour (without investment), both at home and in travelling around, so as to consume less energy and emit less CO_2.

- The **Local Energy Management Action Programme** [*Programme d'Action Locale pour la Gestion de l'Energie* – PLAGE] aims, over a period of 4 years, to improve energy and building management among managers of public buildings. The first of these Programmes, launched in 2005 in five Brussels municipalities, have already led to a reduction in overall energy consumption in the buildings concerned by 5% to 20%.

- The "**Exemplary Buildings**" [bâtiments exemplaires] call for projects (energy and eco-construction) is a competition which has been held several times since 2007 with the aim of constructing or renovating buildings that are at the forefront in terms of energy and environmental performance. The BCR has so far selected 117 radically different buildings corresponding to 267 000 m² (for new residential and office

[4] The budget increased from € 3.6 million in 2004 to € 24.5 million in 2009. Over the same period, energy grants went up from € 1 to 11 million).

buildings, adoption of the passive standard; for renovated buildings, low or very low energy standard)

Other initiatives complete the picture:

- **Grants** towards high-performance energy investment (€ 11 million/year) and social green loans (zero-interest) for the lowest incomes;
- The development of a method of supporting vulnerable households in managing their energy: the **social energy guide;**
- The establishment of numerous **training courses** for designers and building managers;
- The establishment and strengthening of regional regulations on the **energy performance of buildings.**

The result of this policy is clear: between 2004 and 2009, the Brussels Authority's energy policy, focussing essentially on the building sector, enabled per-capita final energy consumption to be reduced by 15%.

In the area of mobility, policy has focused in this initial period on increasing the supply of sustainable mobility and improved public transport, which has led to a significant increase in the number of passengers using public transport in the region.

2009-2014: transition from isolated initiatives to a new city project

Spurred by the experience and success achieved in the period 2004-2009, the majority in the Regional Parliament, re-elected in mid-2009, has committed itself in the Coalition Agreement to reducing greenhouse gas emissions by 30% in 2025, as compared to 1990.

To achieve this ambitious goal, a number of building-related measures have been taken:

- **Setting an example: since 2010, all construction by public authorities must be passive and any major renovation must achieve low energy**
    - All new regional public investment in real estate has been required since 2010 to meet the passive standard for new constructions and the low-energy standard for renovations;
    - For example, the Brussels Environmental Administration, which had been in negotiations with a developer since 2007 for its new headquarters of more than 16 000 m², signed an agreement in 2009 for a passive and eco-built building for 20 years at market prices. This will be the largest passive building constructed in Europe in 2012-2013.
- **Harnessing the cost-effective potential and imposing clear and ambitious standards for construction from 2015**

- From 2011, non-residential buildings over 3500 m² will undergo an energy audit when their environmental permit is being renewed, the cost effective (i.e. with a payback period of less than 5 years) recommendations of which will have to be implemented.

- From 2012, the PLAGE Programme will be mandatory for large property owners.

- From 2015, the passive standard will be mandatory for all new buildings and large-scale renovations requiring planning permission.

- **Continuation of Initiatives to stimulate demand**

    - "Exemplary buildings" call for projects;

    - PLAGE programme for major institutions: social housing, COCOF, etc.

    - Establishment of a partnership between the public sector and households in order to widen access to funding as much as possible;

    - Establishment of a regional support service for households regarding the choice of works, managing them and putting together a financial dossier;

    - Changing the financial logic in terms of the impact of costs in investment, particularly in the public sector and for renovation work, focussing on the occupancy cost (rent/borrowing costs + energy costs) and not solely on rent and borrowing costs;

    - Establishment of a labelling system for sustainable buildings.

- **Continuation of initiatives to stimulate supply through the <u>Employment-Environment Alliance</u>** [Alliance Emploi-Environnement]. The overall idea of this Alliance is to stimulate the most promising economic sectors in terms of growth and employment and to support them in their transition towards greater sustainability so as to improve the competitiveness of Brussels-based businesses and to increase employment in Brussels, including at the level of low-skilled jobs. Sustainable Construction is the main focal point of this Alliance. Other areas are planned.

- **Development of renewable energy, taking account of the urban context of Brussels:** priority is given to the potential for solar energy (electrical and thermal), taking into account the constraints of an urban area and the orientation of roofs; energy recovery from waste is also being implemented; the potential for wind power is low, particularly given the proximity of Brussels National; the same applies to geothermal energy. There is no hydroelectric potential whatsoever. As far as developing the use of dry biomass is concerned, account must also be taken of air-quality objectives.

- **Developing transport and mobility**, in particular on the basis of the Iris Plan adopted in 2010, which aims to reduce the traffic load by 20% in 2018 as compared to 2001. The major climate-related measures of this Plan include:
    - The development of public transport;
    - Changes to parking policy;
    - Improving the environmental performance of vehicles;
    - Adapting car-related tax systems (when vehicles are first put on the road and subsequent road tax) on the basis of environmental performance.

These policies should not, however, be implemented at the expense of the economic and social life of the region.

From a short-term economic point of view, the Employment-Environment Alliance is based on the fact that environmental issues are an important reservoir of employment and economic growth for the economies that are able to adapt the fastest. Through this project, the Brussels Region is taking advantage of the positive trend in terms of energy to offer its business, its workers and job seekers, especially the low-skilled, to benefit from the new opportunity that is sustainable construction.

In parallel, the ERDF Brussels Sustainable Economy (BSE) project aims to create green economic activity and jobs throughout the BCR[5] by stimulating the most promising environmental sectors (renewable energy, eco-building, waste, water, green chemistry and green and white biotechnology and organic foodstuffs).

From a social point of view, particular attention is given within this general policy to the poorest segments of the Brussels population, to which specific consideration is given[6]:

- They receive a personalized support service: social energy guidance.
- The existence of social green loan, energy grants, and renovation grants combined with a tax credit guarantee them privileged access to finance.
- The amendment of the Brussels Housing Code will enable fuel poverty to be tackled more effectively.

Overall, the Coalition Agreement for the 2009-2014 parliamentary term recognises that the region is at a historical turning point because it is faced with five major challenges:

- the challenge of population growth
- the challenge of employment, training and education
- the environmental challenge
- the challenge of tackling the increasing division of the city
- the challenge of internationalization.

To succeed, the Government has chosen to support economic development and the Brussels quality of life with a major tool: the Regional Sustainable Development Plan. The aim of this Plan is to place sustainable development at the heart of all aspects of regional development policy up to 2020.

[5] The BSE's operations will be concentrated in the Priority Action Area of the ERDF 2007-2013 Operational Programme for the Brussels-Capital, which corresponds to the areas of Brussels in which the most vulnerable districts in socio-economic terms are concentrated.

[6] Many of the people of Brussels live in difficult financial circumstances.More than one in four must make do with income below the poverty risk threshold (€ 899 per month for a single person). Brussels is the region with the highest percentage of its population below the poverty risk threshold. Source: Health and Social Observatory of Brussels-Capital, Report on Poverty in Brussels, 2010

It is also important to bear in mind that energy policy is the engine behind policies related to air quality and climate protection. An ambitious plan integrating air, climate and energy aspects is also being drafted.

Conclusion

Thanks to its vanguard policy, the Brussels-Capital Region is on track to achieve a significant reduction in energy consumption:

- After years of stimulating demand and successful experiences, the BCR is switching up a gear in terms of energy performance by stepping up the momentum for all actors involved in buildings.
- At the same time, the political reluctance to organise mobility in an urban environment is gradually waning, and Brussels is on course to strengthen its means of managing mobility.

Despite the fact that energy consumption and associated CO_2 emissions are still influenced by weather conditions, and despite the growth in its population, which is expected to continue significantly until 2020, Brussels has paved the way towards greater energy restraint without compromising its economic viability.

1.3 REVIEW OF ENERGY SAVING TARGETS AND ACHIEVEMENTS

In 2007, the first EEAP summarised the measures implemented in the Brussels Region to reach the indicative target of achieving energy savings of 9% in 2016 as compared to 2007.

In its Government Statement (2009), the Brussels Government committed itself to reducing the greenhouse gas emissions of the BCR by 30% in 2025 as compared to 1990.

The Iris II Plan (approved in 2010) aims to reduce traffic volumes by 6% in 2015 and 20% in 2018 as compared to 2001.

Today the efforts that have been made under these plans are beginning to bear fruit:

1) Per-capital energy consumption fell by 16% between 2004 and 2009;
2) Greenhouse gas emissions fell by 10% between 2004 and 2009.

These good results are to the credit of the policies pursued in the Brussels Region in the areas of energy, environment and urban renewal and this at different levels: building, neighbourhoods and the city as a whole.

We must now continue these successful efforts in order to push the BCR towards becoming a sustainable city and step up action to achieve this. Projections taking account of additional measures show that the indicative target of 9% of final energy savings will be achieved by 2016, as envisaged by the European Commission and the first EEAP.

2 ENERGY SAVINGS IN END-USE SECTORS

2.1 CRITICAL REVIEW OF OVERALL FINAL ENERGY SAVING TARGETS IN BRUSSELS AND FINAL ENERGY SAVING ACHIEVEMENTS

2.1.1 Overall end-use energy savings targets and progress towards them

Table 1 - Overview of final energy savings from measures under the ESD

	Final energy saving target		*Final energy savings achieved or projected*	
	in absolute terms (e.g. GWh)	*Percentage (%)(compared to ESD reference consumption)*	*in absolute terms (e.g. GWh)*	*Percentage (%)(compared to ESD reference consumption)*
2016 (overall period)	2 199	9%	2 311.50	10%

The forecasts therefore confirm that the target will be reached and even slightly exceeded in Brussels. It is important to note that the calculations were carried out according to a conservative method. Indeed, some measures are not related to a model, i.e. those relating mainly to awareness-raising or information. They could therefore not be included in the evaluation of energy savings, although they do have a certain impact.

In addition, the energy savings target is set in absolute terms. Since the BCR is experiencing a population explosion, this implies an additional effort to meet the increased consumption brought about by this growing population. Ultimately, the per-capita saving thus well exceeds 9% of final energy consumption over the period 2008-2016.

2.1.1.1 Achievement of the 2010 intermediate target

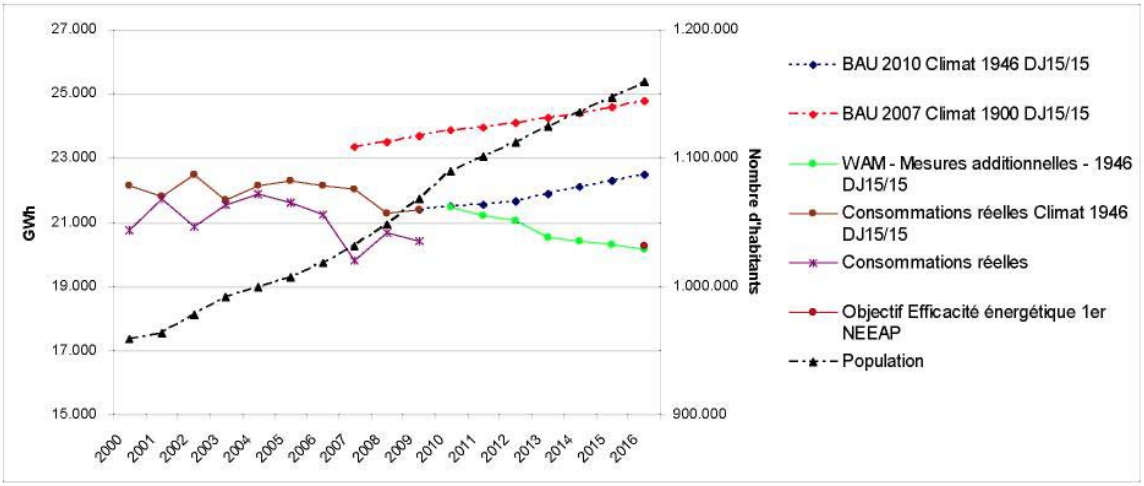
Although no intermediate target has been defined for before the 2016 deadline, the results have been consistent with a reduction target of 1% per year by 2016 since 2007.

2.1.1.2 Expected savings in relation to the 2016

The energy savings expected at the level of final consumption in 2016, assessed on the basis of the bottom-up analysis at 20%, on the one hand, and assessed on the basis of the projection model of the IBGE-BIM, on the other, amount to a total of 2 311.78 GWh, or 105.13% of the target for 2016, i.e. 2 199 GWh.

In the following figure, the scenarios BAU 2007 (in red, with measures implemented until 2005), BAU 2010 (in blue, with measures implemented until 2008) and BAU with additional measures (green) are compared with the real evolution of energy consumption (purple) and the evolution adjusted for climate effects (brown).

The target (red dots) is the one that was set in the first EEAP. This target corresponds to 9% of the average final consumption from 2001 to 2005.



[Key to figure: Nombre d'habitants = Number of inhabitants; Climat = Climate; Mésures additionnelles = Additional measures; Consommations réelles = Real consumption; Objectif Efficacité énergétique 1er NEAAP = Energy Efficiency Target 1st NEEAP; Population =Population]

Figure 4 - Data for final energy consumption, BAU projections, projections with additional measures – Source: IBGE-BIM, 2011

The data clearly show that the BCR will achieve the target of improving energy efficiency by 9% by 2016 as compared to 2007 through its energy savings.

2.2 LIST OF STRATEGIES WITH AN IMPACT ON FINAL ENERGY DEMAND

Several plans and other programmes are already being implemented. We can mention the following:

- The 2002-2010 Plan for the structural improvement of air quality and for combating global warming (the Air-Climate Plan): This plan set out to meet all European and international obligations in terms of air quality, air-pollutant emissions and greenhouse gas emissions. It contained detailed measures relating to road transport, energy (buildings), businesses and domestic activities.
- The first EEAP.
- The Coalition Agreement for 2009-2014 ("A sustainable regional development at the service of the people of Brussels") is the document that sets out the political agenda for the current parliamentary term. Under it, legislation currently being enacted (2009-2014) focuses heavily on energy issues, particularly in terms of their link with climate change. The Coalition Agreement indicates the target of reducing greenhouse gas emissions from the BCR by 30% in 2025 as compared to 1990.
- The Mayoral Pact is a commitment by local authorities to go beyond the targets set by European energy policy in terms of reducing CO_2 emissions through improved energy efficiency and the use and production of cleaner energy .The BCR signed the Mayoral Pact on 10 February 2009.
- The IRIS Plan 2 defines the BCR's mobility policy for the period 2010 to 2018. It aims to curb and rationalise traffic demand, develop public transport and organise urban planning in a manner which focuses on pedestrians, cyclists and public transport. With the objective of reducing traffic volumes by 6% to 10% in 2015 and 20% in 2018, as compared to 2001, it enables CO_2 emissions and other transport pollutants to be reduced.
- Various investment programmes:

- the SDRB (*Société de Développement pour la Région de Bruxelles-Capitale*) is a development company active in the field of economic expansion and urban renewal. It has become a public pioneer in the area of sustainable building;
- the SLRB (*Société du Logement de la Région*) is responsible for social housing. As a long-term investor, the SLRB has made sustainable development a priority in its 2010-2014 Strategic Plan;
- the Housing Fund [*Fonds du Logement*] for the Brussels Capital Region, is an independent body monitored and subsidised by the Region which offers low-interest mortgage loans, mortgage loans for young families, a rental-purchase formula, regional loans for rent guarantees, rental assistance, full information as required, and appropriate support.

- The Employment-Environment Alliance is an important focal point of Brussels Government's Urban Plan, developed to meet both the challenges of climate change and of employment, particularly among young people. The aim is to create high-quality jobs for the people of Brussels in future-oriented sectors and turn Brussels into a model sustainable city.

Other plans are also being drawn up. We can mention the following:

- The Regional Sustainable Development Plan (PRDD), which is the strategic plan that sets targets and priorities for the sustainable development of the BCR.
- The Integrated Air-Climate-Energy, which will follow on from the first Air-Climate Plan by also including an energy component.

2.3 END-USE MEASURES AND FINAL ENERGY SAVINGS

All of the actions taken in Brussels Capital Region are grouped into 33 **measures**, which can themselves be classified according to which **sector** or **category** they belong.

The categories have been defined according to the nomenclature proposed by the European Commission in the final version (19/11/2010) of its "Guide and template for the preparation of the second national energy efficiency action plans."

The table showing the distribution of measures of the Brussels Capital Region between sectors and categories is presented below.

Table 2 - Breakdown of energy efficiency measures in terms of energy end-use by sector and category

No of EAAP2 measure	Title of EEAP2 measure	Name of EEAP2 sector	Category No of measures	Title of category of measures
B.1.	Structural action on demand through the gradual strengthening of EPB regulation requirements: • Inspection of technical installations • Energy certificate • Passive standard for new buildings and low-energy standard for buildings subject to major renovations	Buildings	1	*Regulation* *1.1 Building Codes and Enforcement*

B.2.	Imposition of an energy consumption reduction plan on large consumers (PLAGE: Local Energy Management Action Programme)	Buildings	1	*Regulation*
B.3.	Making the performance of an energy audit mandatory for all non-residential buildings of more than 3 500 m^2 when the environmental permit is renewed	Buildings	1	*Regulation*
B.4.	Energy grants for: • Insulation • Passive construction and low-energy renovation • Heating systems • High-performance household appliances • Means of renewable energy production • Cogeneration, etc.	Buildings	3	*Financial instruments* *3.1. Subsidies*
B.5.	Developing financial support mechanisms for the sustainable renovation of buildings: – Social green loans – Third-party investor - residential – Third-party investor - tertiary sector – Use of the Global Energy Cost Reduction Fund (FRCE) – Occupancy cost logic	Buildings	3	*Financial instruments* *3.3. Loans (soft and/or subsidised)*
B.6.	Action on demand by making the sustainable building sector more dynamic: – Employment-Environment Alliance with the construction sector – Ecobuild Cluster – Specialised training on building design and execution – Expert advice (Sustainable Building Facilitator) for professionals	Buildings	2	*Information and mandatory information measures:* – *Focused information campaigns* – *Information centres* – *Training and education*
B.7.	Development of exemplary buildings – BATEX (with virtually zero consumption and high environmental quality)	Buildings	2	*Information:* *2.6 Demonstration* *(3.1. Subsidies)*
B.8.	Introduction of labelling and certification for sustainable buildings	Buildings	2	*Information:* *2.2. Energy labelling centres*
B.9.	Introduction of a minimum performance threshold for rented homes (by amending the Brussels Housing Code)	Buildings	1	*Regulation:* *1.1 Building Codes and Enforcement*
B.10	Proactive back-up for households in the area of energy and eco-building to improve the quality and comfort in energy terms in their homes	Buildings	2	*Information and mandatory information measures:* *2.3. Information centres*

I.1.	Developing good practices (eco-dynamic business label)	Industry	4	*Voluntary agreements and co-operative instruments:* *4.1. Industrial companies* *4.2. Commercial or institution organisations*
I.2.	Energy savers investment aid	Industry	3	*Financial instruments*
I.3.	Encouraging the emergence of new business models: Brussels Sustainable Economy (BSE)	Industry	2, 4	*Information and mandatory information measures* *Voluntary agreements and co-operative instruments*
E.1.	Organising the energy market and imposing public service obligations	Energy	1, 6	*Regulation* *Energy saving mechanisms and other combinations of previous (sub)categories:* *6.1. Public service obligation for energy companies on energy savings including "White certificates"*
E.2.	Developing renewable energy sources and cogeneration on the basis of Green Certificates	Energy	3	*Financial instruments*
E.3.	Waste recovery	Energy	2	*Information and mandatory information measures* *2.7. Exemplary role of the public sector*
T.1.	Strengthening planning tools on the basis of travel plans for: • Businesses • Activities • Schools	Transport	1 6.2	*Regulation* *Voluntary agreements and co-operative instruments*
T.2.	Internalisation of certain external transport costs and encouraging the purchase of less-polluting vehicles	Transport	2 3	*Information and mandatory information measures* *Financial instruments*
T.3.	Developing environmental management of roads and creating low-emission zones	Transport	1 4	*Regulation* *Voluntary agreements and co-operative instruments*
T.4.	Encouraging soft means of transport	Transport	1 3 4	*Regulation* *Financial instruments* *Voluntary agreements and co-operative instruments*
T.5.	Enhancing the supply and attractiveness of public transport	Transport	1 4	*Regulation* *Voluntary agreements and co-operative instruments*
T.6.	Managing parking policy on and off roads	Transport	1	*Regulation*
T.7.	Developing plans for targeted sectors (taxis, goods)	Transport	1 4	*Regulation* *Voluntary agreements and co-operative instruments*
H.1.	Developing sustainable neighbourhoods: through renovation, new buildings and citizens' initiatives	Horizontal	4	*Voluntary agreements and co-operative instruments*

H.2.	Information and awareness-raising on environmental and energy issues	Horizontal	2	*Information and mandatory information measures*
P.1.	Defining strict REU (rational energy use) criteria for all investment in real estate by public or similar bodies receiving funds from the Region	Public	2.7 4.3	*Exemplary role of the public sector* *Energy efficient public procurement*
P.2.	Improving the EPB of public buildings • Passive standard for all new buildings • Low-energy standard for major renovations • Production of green energy equal to 30% of consumption • Mandatory display of energy certificate	Public	2.7 4.3	*Exemplary role of the public sector* *Energy efficient public procurement*
P.3.	Changing the logic of investment in public housing (SDRB, SLRB, Housing Fund, etc.) by integrating the occupancy cost logic and increasing the energy efficiency of social housing	Public	2.7 4.3	*Exemplary role of the public sector* *Energy efficient public procurement*
P.4.	Encouraging PLAGE projects in schools and public buildings	Public	1 2.7	*Regulation* *Exemplary role of the public sector*
P.5.	Improving travel plans in public enterprises	Public	2.7 4	*Exemplary role of the public sector* *Voluntary agreements and co-operative instruments*
P.6.	Improving the environmental performance of the vehicles of public authorities	Public	2 4	*Information and mandatory information measures* *Voluntary agreements and co-operative instruments*
P.7.	Enhancing sustainable public procurement	Public	4.3	*Energy efficient public procurement*
P.8.	Implementation of an overall lighting-efficiency improvement plan	Public	2.7	*Exemplary role of the public sector*

2.3.1. Calculation methodology

The overall gain in efficiency was calculated using two projection models of the IBGE-BIM: the first for fixed sources and the second for a projection relating to transport.

The IBGE-BIM developed its first projection model for energy demand and emissions from fixed sources. In this model, changes in consumption of energy carriers used in the Brussels-Capital Region and their associated emissions are determined on the basis of the evolution of the parameters defining consumption in each sector. For example, the residential sector is defined by the following parameters: population and average household size (which defines the net need for new housing), climate (in day degrees), demolition and the rate of renovation. The improvement of energy efficiency intended in the case of renovation depends on the typology of the housing

stock made up of various types of housing (apartment or house, four age groups for the building concerned, seven energy carriers used for heating, central or decentralised heating system, owner-occupation or rental). The model was calibrated for each sector with the annual regional energy balances from 2000 to 2008.

The second model enables projected annual fuel consumption by transport and air pollutant emissions to be calculated. The projections cover the period 2007 to 2030. This forecasting model is based on the European COPERT IV methodology for the calculation of emissions.

The Commission has asked that at least 20% of energy savings be calculated using the bottom-up methodology. To comply with this request, an additional bottom-up analysis has been carried out using the formulas proposed by the Commission on a limited number of measures. The results of the calculations carried out for three programmes: ("energy grants", "exemplary buildings" and the "local energy management improvement plan", included in the Annex to the BCR plan) meet this requirement.

2.3.1.1 "Energy grants" programme

Presentation of the "Energy grants" programme.

Cf. Measure B.4.

BU calculations on the basis of common methodology formulas

Formula 2: Reconditioning of insulation by components (walls, roofs, windows) in existing residential and tertiary-sector buildings

$$UFES = \frac{Uvalue_{init} - Uvalue_{new} * HDD * 24h * a * c}{1000 * b} - [kWh/m^2 \ of \ renovated \ facade * year]$$

	Sources	Values
Uvalue init roof	Energy balances and 3E study	2005 to 2007: 1.29 2008-2010: 1.23
Uvalue init wall		2005 to 2007: 1.57 2008-2010: 1.51
Uvalue init ground		2005 to 2007: 1.28 2008-2010: 1.23
Uvalue init window		2005 to 2007: 3.33 2008-2010: 3.24
Uvalue new roof	Grant terms	2007-2010: 0.26
Uvalue new wall		2007: 0.61 2008-2010: 0.38
Uvalue new ground		2007: 0.56 2008-2010: 0.36
Uvalue new window		2007 to 2008: 1.5 2009: 1.98 2010: 0.21
a		1
B		0.8
c		0.6
HDD		1946

Formula 4: Replacement of the heating system in residential and tertiary-sector buildings

$$UFES = \left(\frac{1}{\eta_{init}} - \frac{1}{\eta_{new}}\right) * SHD * \Lambda \ [kWh/unit * year]$$

	□ new = - Energy efficiency of new heating supply systems (in season)
Boiler HRTOP	0.86
Boiler HR+	0.86
Condenser boiler	0.94

In the Brussels Region, the grants for HRTOP and HR+ boilers were withdrawn from 2008 onwards. No data are thus available for this type of boiler from 2008.

Formula 5. Water heating in residential and tertiary sector buildings

$$UFES = \left(\frac{1}{\eta_{ini}} - \frac{1}{\eta_{new}}\right) * SWD \ [kWh/household * year]$$

	Values	**Sources**
□ ini = Energy efficiency of former water heating equipment	2005-2007 : 0.675 2008-2010 : 0.78	EAP of RW
SWD = Specific hot water demand (kWh/household*year]	1730.9	Calculations
Chot_water_daily = Average daily consumption of hot water per person	50	CONCERE decision - according to ADEME figures
npersons/hhds = Average number of people in household	2.33	CONCERE decision – national value
thot_water = Temperature of hot water (usually 600C)	45	CONCERE decision - according to ADEME figures
tcold_water = Temperature of cold water (usually 150C)	10	CONCERE decision - according to ADEME figures
Cwater = Specific heat of water = 1kcal/kg.°C	1	Physical constant
cf = Conversion factor 0.001163 kWh/kcal with 1 litre of water = 1kg	0.0012	Physical constant

Formula 7. Solar-powered water heaters in residential and tertiary-sector buildings

$$UFES = \frac{USAVE}{\eta_{stock\_average\_heating\_system}} \ [kWh/m^2 * year]$$

For these 4 formulas, the source of data are those of the “grant” programme. Since 2010 data were only available up to 25 October, a coefficient of 1.20 has been used to estimate the number of grants for November and December.

	Values	**Sources**

USAVE	390	CONCERE decision – harmonised value corresponding to energy balance
stock_average_heating_system	2005-2008 : 0.0675 2008-2010 : 0.78	Values taken from the basis for the EAP for Wallonia

2.3.1.2. BATEX

Presentation of the BATEX programme

Cf. Measure B.7. BCR.

BU calculation methodology

The dossiers submitted for this programme are very detailed; the precise surface areas of renovated or newly constructed buildings are thus known.

Only included here for the purposes of BU calculations are the surface areas of passive buildings completed in 2010 and surface areas renovated for individual homes (R = residential), collective homes (CH) and the tertiary sector (T).

The criteria and assumptions used are:

- The renovations are carried out in the year following acceptance of the dossier;
- Consumption per m^2 before and after renovations is equal to the average consumption in Brussels by sector and the average consumption required to qualify for the subsidy by sector respectively, as shown in the following table.

Average consumption before renovation of R and CH	150	kWh/m^2
Average consumption after renovation of R and CH	45	kWh/m^2
Average consumption before renovation of T	106	kWh/m^2
Average consumption after renovation of T	30	kWh/m^2
Average consumption after passive construction of R, CH and T	15	kWh/m^2

Table 3. Data for average consumption used in calculations – Source: IBGE-BIM

2.3.1.3 PLAGE

Presentation of the PLAGE programme

Cf. Measure P.4. BCR.

BU Calculation methodology

For the BU calculations of final energy savings achieved in 2010, differences in fuel consumption between the start of PLAGE and 2009, corrected for climate (1946 DJ15/15), were calculated on the basis of consumption records.

The available data are:

- PLAGE – Municipalities (2006-2009): 5 municipalities - 70 buildings
- PLAGE – Hospitals (2007-2009): 5 hospitals
- PLAGE – Municipalities (2007-2009): figures only available for 7 municipalities.

(GWh)	2005			2006			2007			2008			2009			2010		
	R	CH	T	R	CH	T	R	CH	T	R	CH	T	R	CH	T	R	CH	T
1. Renovation measures to improve energy efficiency in existing residential and tertiary-sector buildings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2. Reconditioning of insulation by components (walls, roofs, windows) efficiency in existing residential and tertiary-sector buildings	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	11.4	0.0	0.0	18.6	0.6	1.0	26.8	0.8	1.0
3. Introduction of additional energy-efficiency standards in construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4. Replacement of heating system in residential and tertiary-sector buildings	11.5	0.0	0.0	19.6	0.0	0.0	32.8	0.0	0.0	42.6	4.2	0.0	55.5	9.3	3.8	62.4	10.0	3.8
5. Water heating in residential and tertiary-sector buildings	1.1	0.0	0.0	1.9	0.0	0.0	3.2	0.0	0.0	3.7	0.0	0.0	4.4	0.0	0.0	4.7	0.0	0.0
6. Air conditioning systems (< 12kW) in residential and tertiary-sector buildings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7. Solar-powered water heater in residential and tertiary-sector buildings	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	1.1	0.0	0.0	1.9	0.0	0.0	2.0	0.0	0.0
8. Purchase of new or replacement of domestic appliances (refrigerators, washing machines, TV, dishwashers) in residential buildings	0.6	0.0	0.0	0.8	0.0	0.0	1.4	0.0	0.0	1.9	0.0	0.0	2.6	0.0	0.0	2.8	0.0	0.0
9. New lamp installations or replacement of lamps in residential buildings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10. Replacement, improvement or new system of lighting or components in tertiary-sector buildings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11. Replacement or purchase of new office equipment in existing and new tertiary-sector buildings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Batex										0.1	0.6	1.7	0.3	2.6	2.3	0.5	3.5	4.8
PLAGE																0.0	0.0	26.5
TOTALS	13.3	0.0	0.0	22.4	0.0	0.0	42.6	0.0	0.0	60.9	4.8	1.7	83.2	12.5	7.0	99.3	14.3	36.1
TARGET 1%/year															224.3	488.7		733.0
as %-age of target demonstrated using BU:															27.6%	21.0%		20.4%
TARGET:	**2199**	**GWh**	**en 2016**															

Table 4. Data for calculating energy savings (for 20%) evaluated according to the BU method

2.3.2. Individual measures

2.3.2.1 Measures in the buildings sector

Table 1. Overview of individual measures in the buildings sector

No	Title of the energy saving measure	End-use targeted	Duration	Achieved energy savings in 2010 (GWh)	Energy savings expected in 2016 (GWh)
B.1.	Structural action on demand through the gradual strengthening of EPB regulation requirements: • Inspection of technical installations	New buildings, existing buildings, heating and cooling of buildings	From 2008 2011	0	In final energy 1 061 in primary energy 1 254
	• Energy certificate • Passive standard for new buildings and low-energy standard for buildings subject to major renovations		2011 2015		
B.2.	Imposition of an energy consumption reduction plan on large consumers (PLAGE: Local Energy Management Action Programme)	Large property owners, large heating and cooling installations (tertiary sector)	From 2012	0	in final energy 306 in primary energy 434

B.3.	Making the performance of an energy audit mandatory for all non-residential buildings of more than 3 500 m2 when the environmental permit is renewed	Medium-sized to large buildings, medium-sized to large heating and cooling installations (tertiary sector)	From 2011	0	in final energy 286 in primary energy 425
B.4.	Energy grants for: • Insulation • Passive construction and low-energy renovation • Heating systems • High-performance household appliances • Means of renewable energy production • Cogeneration, etc.	New buildings, existing buildings, heating and cooling of buildings	From 2004		

B.5.	Developing financial support mechanisms for the sustainable renovation of buildings: – Social green loans – Third-party investor - residential – Third-party investor - tertiary sector – Use of the Global Energy Cost Reduction fund (FRCE)	New buildings, existing buildings, heating and cooling of buildings			
B.6.	Structural action on demand by making the sustainable building sector more dynamic: – Employment-Environment Alliance – 1st sustainable construction strand – Ecobuild Cluster – Specialised training on building design and execution – Expert advice (Sustainable Building Facilitator) for professionals	Professional buildings	Since 2000		

B.7.	Development of exemplary buildings – BATEX (with virtually zero consumption and high environmental quality)		From 2007, with several calls for projects	0	In final energy 210 in primary energy 309
B.8.	Introduction of labelling and certification for sustainable buildings		Date to be determined		
B.9.	Introduction of a minimum performance threshold for rented homes (by amending the Brussels Housing Code)	Tenants and landlords	From 2015		
B.10	Proactive back-up for households in the area of energy and eco-building to improve the quality and comfort in energy terms in their homes	General public		0	In final energy 123 In primary energy 140

Table B.1. Measure B.1. in the buildings sector

Title of the energy saving measure		***Structural action on demand through the gradual strengthening of EPB regulation requirements:*** • ***Inspection of technical installations*** • ***Energy certificate*** • ***Passive standard for new buildings and low-energy standard for buildings subject to major renovations***
Index of the measure		*B1*
Description	**Category**	*1. Regulation* *1.1. Building Codes and Enforcement*
	Timeframe	*Start* *The BCR Government Order of 7 June 2007 laying down energy performance and indoor-climate requirements for buildings regulates the implementation of EPB requirements (measure 7 of the 1st EEAP of the BCR). This Order has been followed by several implementing decrees, some of which are still being approved.* *For **boilers** (**technical installations**): mandatory regulation in the course of 2011. For **air conditioning installations**, new standards are being drafted* *The **certification of non-new buildings** has applied since 1 May 2011 for sale and since 1 November 2011 for rental.* *End: -* *Foreseen major changes, improvements:* *- Two initial increasing requirement thresholds must be met as of July 2008 and July 2011.* *- Two new requirement thresholds will be introduced from 2015.*
	Aim/brief description	***ENERGY PERFORMANCE REQUIREMENTS*** *These distinguish between three type of works:* – *new buildings: all newly built or rebuilt buildings;* – *For existing buildings: when a renovation requires an urban development permit and the works influence the building's energy performance, a distinction is made between different scales of the works:* o *major renovation:* ▪ *buildings more than 1 000 m^2 with an urban development permit and works covering more than 25% of the heat-losing surface area.* ▪ *buildings more than 1 000 m^2 with an urban development permit and involving technical installations with a power of more than 500kW after replacement or alteration.* o *minor renovation, in all other cases.* *This distinction between three types of works and the new requirement thresholds will evolve in parallel with each other.*

		The energy performance and indoor-climate requirements to be met by such works are based on the architectural and heritage-related characteristics of the building, its use and its occupants (income level, state of health). *For new buildings, the following table shows the levels currently required in terms of energy performance (E), overheating limitation (I overh) and the overall level of thermal insulation (K_{max})* *EPB unit* — E_{max} *Up to 30/6/11* — *From 1/7/11* — $I\ overh_{min}$ — K_{max} *Individual habitation* — *E90* — ***E70*** — *17500 Kh* — *K40* *Joint residential* — *K40* *Offices and services* — *E90* — ***E75*** — *K45* *Education* — *E90* — ***E75*** — *K45* *The new requirement thresholds (from 2015) will be:* – *The very low energy standard for major renovations.* – *The passive standard for new residential buildings, schools, and office and services buildings.* ***REQUIREMENTS FOR TECHNICAL INSTALLATIONS*** *Requirements for technical standards have also been strengthened.* *For boilers:* – *Since 1 January 2011, any owner of a boiler over 20 kW must meet the new requirements in this area (combustion efficiency, take-up, etc.) and have the boiler checked periodically (every year for oil-fired boilers and every three years for gas boilers).* – *During 2011, owners will also have to perform a thorough check on installations more than fifteen years old and to accept new or, in some cases, renovated installations* – *The checks are carried out by professionals accredited by the IBGE-BIM.* *For **air conditioning**, the new standards are being drafted. The recommendations made during inspections of air-conditioning installations should draw the attention of the person responsible for technical installations to the possibility of reduced demand for cooling of the building and to alternative cooling strategies.* ***ENERGY CERTIFICATION*** *From 1 May 2011, for every home put up for sale, and from 1 November 2011 for every home rented, the owner must present any prospective buyer or tenant with an EPB certificate. This certificate will indicate the energy classification of housing on a scale from A (very efficient) to G (high energy consumption), offering the prospective buyer or tenant the opportunity to compare the different properties they visit from an energy point of view. The document will also include recommendations on improving the home's energy performance level. Only an accredited certifier is permitted to supply a valid EPB certificate. The EPB certificate is valid for ten years if no changes are made to the energy-related characteristics of the property.*
	Target end-use **Target group**	*New buildings, existing buildings, heating and cooling of buildings.* *Individuals, businesses, socially less-favoured households*
	Region	*Regional measure (BCR)*

Information on implementation	**List of actions substantiating the measure**	*To ensure a successful implementation of the EPB Order, various back-up measures have been put into place for professionals accredited by the IBGE-IBM:* – *Telephone and e-mail helpdesk* – *Basic and continuing training* – *Seminars, etc.*
	Budget and financial source	
	Implementing body	*Accredited EPB consultants, accredited EPC certifiers, accredited heating technicians, accredited heating experts, PEB heating consultants.*
	Monitoring authority	*IBGE-IBM (with quality control).* *The municipalities of the Brussels Region.*
Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	in final energy: 1 061 in primary energy: 1 254
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	*Energy grants, tax deductions at Federal level, back-up measures.*

Table B.2. . Measure B.2. in the buildings sector

Title of the energy saving measure		***Imposition of an energy consumption reduction plan on large consumers (PLAGE: Local Energy Management Action Programme)***
Index of the measure		*B.2.*
Description	**Category**	*1. Regulation*
	Timeframe	*The first PLAGE programmes have existed on a voluntary basis and in the public sector (firstly in municipal authorities and hospitals, and then in schools) since 2006.* *This programme, which has proved its worth, will be made mandatory during 2012.*
	Aim/brief description	*A PLAGE programme initially enables the energy-saving potential and priorities for action in buildings of the same stock to be identified. It then offers the possibility of gradually implementing an action plan based on a series of coherent and coordinated technical and behavioural measures.* *The Region intends to require owners of and rightholders to more than 300 000 m^2 of buildings in Brussels to implement a PLAGE programme through:*

		• *establishment of a register of the energy performance of their building stock and setting-up of energy accounting;* • *development of the organisational means to implement energy management;* • *identification of significant potential energy improvements;* • *implementation of an action plan scheduled over time with a target to be achieved expressed in terms of figures.*
	Target end-use	*New buildings, existing buildings, heating and cooling of buildings*
	Target group	*Large property owners*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	***ALTER CLIM SOFTWARE*** *The IBGE-BIM has developed the Alter-Clim software, which evaluates environmental performance and comfort in tertiary-sector premises for different passive cooling systems.* ***ESTABLISHMENT OF AN AIR CONDITIONING ALTERNATIVE PLAN IN THE BUILDINGS SECTOR*** *Other air conditioning solutions exist to limit overheating in summer, e.g. reducing internal and solar gains. Cooling can then be achieved through a strategy of passive or hybrid air conditioning. The recommendations made during inspections of air-conditioning installations should draw the attention of the person responsible for technical installations to the possibility of reduced demand for cooling of the building and to alternative cooling strategies.* *The establishment of an air conditioning alternative plan in offices is thus an opportunity to improve indoor comfort and reduce the impact of offices on the environment. Participation by all stakeholders will be sought so as to implement the changes necessary from a technical and behavioural point of view.*
	Budget and financial source	
	Implementing body	*Large owners of building stock*
	Monitoring authority	*IBGE-BIM*
Energy savings	**Method for monitoring/measuring the resulting savings**	*TD-BU*
	Savings achieved in 2010	
	Expected energy savings in 2016	in final energy: 306 in primary energy: 434
	Expected impact on energy savings in 2020 (if available)	

	Assumptions	
	Overlaps, multiplication effect, synergy	

Table B.3. Measure B.3. in the buildings sector

Title of the energy saving measure		***Making the performance of an energy audit mandatory for all non-residential buildings of more than 3 500 m^2 when the environmental permit is renewed***
Index of the measure		*B.3.*
Description	**Category**	*1. Regulation*
	Timeframe	*The Decree requiring the performance of an energy audit in the context of the renewal of an environmental permit was approved at its first reading by the Government, and its final approval is expected during 2011.*
	Aim/brief description	*The tertiary sector in Brussels has experienced strong growth in its energy consumption (+18.6% between 1990 and 2008) and currently accounts for 32% of final energy consumption in the Region.* *The adoption of a Decree to make the performance of an energy audit mandatory for non-residential buildings over 3 500 m^2 when an environmental permit is renewed is planned for 2011.* *In order to reduce consumption in this sector, the Region will also require the implementation of solutions identified in this energy audit as being cost effective (with a payback period of less than 5 years).* *The audit will have to be performed by an accredited auditor, who will determine in collaboration with the operator of the building a list of measures to be included in an action plan together with a timetable for their implementation.* *The conclusions of this audit will be taken into account when the environmental permit is issued: the solutions identified in the audit as being cost-effective will have to be implemented within four years of the permit being issued, extended or renewed.* *This measure covers 23.4 million m^2 and should give rise (at constant energy prices) to an overall energy gain in the tertiary sector of between 6 and 19%.* *Given that not all small buildings are necessarily required to have a permit and that the environmental permit is valid for 15 years, the annual volume of permit applications covered by this measure will be around 150.*

	Target end-use	*Any building which has an environmental permit, tertiary sector*
	Target group	*All managers of buildings which have an environmental permit, tertiary sector*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	*Order on economic expansion* *Energy grant arrangements*
	Budget and financial source	
	Implementing body	*Owners of buildings subject to an environmental permit*
	Monitoring authority	*IBGE-BIM*
Energy savings	**Method for monitoring/measuring the resulting savings**	*Every three years, the IBGE-BIM draws up a summary report on the implementation of the Decree requiring an energy audit in connection with an environmental permit.*
	Savings achieved in 2010	*Not applicable*
	Expected energy savings in 2016	In final energy: 286 In Primary energy: 425
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table B.4. Measure B.4. in the buildings sector

Title of the energy saving measure		***Energy grants for:*** • ***Insulation*** • ***Passive construction and low-energy renovation*** • ***Heating systems*** • ***High-performance household appliances*** • ***Means of renewable energy production*** • ***Cogeneration, etc.***
Index of the measure		*B.4.*
Description	**Category**	*3. Financial instruments* *3.1. Subsidies*
	Timeframe	*Since 2004*
	Aim/brief description	*These grants are awarded in respect of energy-related investments.* *The policy of energy grants is continuously being expanded and improved. The grants focus on the most efficient energy savings in energy and social terms and are continually evolving to keep pace with market and technological changes. The amount of the grant is being*

		reviewed in order to ensure that the cumulation of various public measures is not excessive, while ensuring that they continue to offer an incentive. *Two systems are currently applied:* • *2011 energy grants for residential buildings (the amount of grants depends on income and where the investment is carried out);* • *2011 energy grants for tertiary sector and industrial buildings.* *The grants are grouped together under the following categories:* *A. Studies and audits* *B. Insulation and ventilation (including passive construction, very low-energy renovation, green roofs, and external solar protection, etc.)* *C. High-performance heating* *D. Renewable energy* *E. Investments which are high-performance in energy terms (heating networks, cogeneration, relighting, frequency variators, etc.)* *F. High-performance household appliances (for the residential sector)* *Evaluation of grants since 2004:* • *114 000 grants awarded for a total amount of € 68 million.*
	Target end-use	*Mainly existing buildings (insulation), new buildings*
	Target group	*Individuals, businesses, socially less-favoured households*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	• *Grants for renovation in the BCR* • *Tax reductions at Federal level* • *Information campaigns* • *Practical Guides* • *Facilitators*
	Budget and financial source	
	Implementing body	• *For amounts above € 30 000 and grant pledges: IBGE-BIM* • *In other cases:* o *Sibelga from 2004 to 2011* o *IBGE-BIM from 2012*
	Monitoring authority	*Brugel*
Energy savings	**Method for monitoring/measuring the resulting savings**	*Bottom-up*
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	

	Assumptions	
	Overlaps, multiplication effect, synergy	

Table B.5. Measure B.5. in the buildings sector

Title of the energy saving measure		***Developing financial support mechanisms for the sustainable renovation of buildings:*** • ***Social green loans*** • ***Third-party investor - residential*** • ***Third-party investor - tertiary sector*** • ***Use of the Global Energy Cost Reduction fund (FRCE)*** • ***Occupancy cost logic***
Index of the measure		*B.5.*
Description	**Category**	*3. Financial instruments* *3.3. Loans (soft and/or subsidised)*
	Timeframe	– *Since 2007 for social green loans* – *From 2012 for third-party investor -residential* – *Date to be determined for third-party - tertiary sector and FRCE*
	Aim/brief description	*Premiums and other subsidies are transfers of public money. The funds available are not sufficient to meet the goals set by the Brussels Region. Since these are meant to be "cost-effective" investments, it makes more sense for the authorities to lend money, but on less strict terms (interest rate and repayment period) that the private sector.* ***SOCIAL GREEN LOANS*** *The IBGE-BIM has entered into a partnership with the alternative credit union, CREDAL, to make an interest-free loan available to Brussels households. The BCR's involvement not only covers the interest that would be payable on an energy loan but also the costs associated with the personalized assistance given to applicants and the risks of non-recovery of the money lent.* *Two categories of works can be funded:* *A) insulation and ventilation;* *B) high-performance heating.* *Currently there are 190 outstanding loans with only one case of default.* ***THIRD-PARTY INVESTOR - RESIDENTIAL*** *With regard to housing, the challenge is to:* – *make the initial budget available to homeowners and landlords, including those without a guarantee/ ability to repay;* – *make the mechanism large enough to ensure the that the expenditure is painless for the owner, i.e. involving no initial cash outlay and monthly payments which are lower than the energy savings.* *A "Public-Households Partnership" (PPM), enabling home energy renovations to be prefunded (including in the case of rental), will be implemented. A Brussels public operator currently being created will be the sole contact point for households. It will fund a preliminary audit, which will be*

		compulsory and free-of-charge, in order to identify the priority investments needed to achieve ambitious energy performance levels for the existing housing stock. ***THIRD-PARTY INVESTOR - TERTIARY SECTOR*** *Public authorities have a role to play in encouraging energy service companies to submit interesting bids to building owners who wish to improve their building's energy performance. The role of public authorities is to bring interested companies together, to make homogeneous calls for expressions of interest, to assist in drafting specifications and to analyse bids, all in order improve price bids.* ***THE GLOBAL ENERGY COST REDUCTION FUND (FRCE)*** *The Global Energy Cost Reduction Fund (FRCE) was set up on 10 March 2006. The Fund is a public limited company and a subsidiary of the Federal Holding and Investment Company.* *The social aim of the FRCE, as described in its statutes, is "to study and implement projects through involvement in the funding of structural measures to promote a reduction in the overall cost of energy in private homes for the target group of the poorest and the grant of cheap loans for structural measures to promote a reduction in the overall cost of energy in the dwellings of private persons serving as their main residence."* *The Fund pursues this goal by granting cheap loans to private individuals for structural measures that save energy. This is done via local bodies designated by city and municipal authorities in consultation with the CPAS. The most vulnerable in social terms are the Fund's main target group.* *Studies to examine the possibility of using FRCE and BCR funding are in progress. In anticipation of the results of these studies, the Region intends to set up a guarantee fund because the designated local body or bodies must have a city or municipal guarantee.* *The Maison de l'Energie et de l'Eco-construction (House of Energy and Eco-building) will become the BCR's regional body for FRCE purposes.* ***OCCUPANCY COST LOGIC*** *A detailed study should be implemented by the Region to identify and evaluate solutions aimed at stimulating the energy-related renovation of the rented housing stock, both public and private and individual and collective.* *The aim is to reconcile the interests of landlords and tenants in a solution which benefits both parties. This study will cover technical aspects (what solutions and what energy gains), financial aspects (depreciation of investment, payback period, residual value residual, financial gains), legal aspects (leases, jurisprudence) and aspects specific to the distribution of powers at Federal and Regional levels.*
	Target end-use	*New building, existing buildings, heating and cooling of buildings*
	Target group	*Individuals, businesses, socially less-favoured households*

	Region	*Regional measure (BCR)*

Information on implementation	**List of actions substantiating the measure**	• *EPB* • *Energy grants* • *Grants for renovation in the BCR* • *Tax reductions at Federal level* • *Information campaigns* • *Practical Guides* • *Facilitators*
	Budget and financial source	
	Implementing body	• *Green social loans: Credal (agreement signed with IBGE-BIM)* • *Third-party investor – residential: to be established* • *Third-party investor – tertiary sector: to be established* • *Use of the Global Energy Cost Reduction Fund (FRCE): to be established.*
	Monitoring authority	• *Green social loans: IBGE-BIM* • *Third-party investor – residential: to be established* • *Third-party investor – tertiary sector: to be established* • *Use of the Global Energy Cost Reduction Fund (FRCE): to be established.*
Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table B.6. Measure B.6. in the buildings sector

Title of the energy saving measure	***Action on demand by making the sustainable building sector more dynamic:*** • ***Employment-Environment Alliance with the construction sector*** • ***Ecobuild Cluster*** • ***Specialised training on building design and execution*** • ***Expert advice (Sustainable Building Facilitator) for professionals***
Index of the measure	*B.6.*

Description	**Category**	*2. Information and mandatory information measures:* - *Focused information campaigns* - *Information centres* - *Training and education*
	Timeframe	***Employment-Environment Alliance – 1st sustainable construction strand:*** *1st development phase between April 2010 and February 2011* *2nd phase involving implementation and ongoing evaluation of actions to improve the quality of what businesses have to offer* ***Cluster****: since 2007* ***Training****:* *The IBGE-BIM has offered a variety of training courses in energy matters since 2000. A major turning point occurred in 2010 with the creation of a training unit, the objectives of which are to improve existing training and make it more systematic, and to widen the range and scale of training given.* *An eco-building strand for the construction sector has existed within the Brussels Professional Reference Centre since 2008.* ***Facilitator:*** *Since 2004, the Region has gradually made four energy facilitators and one eco-building facilitator available. In 2011, this service was merged into a single unit of experts, the "Sustainable Building Facilitator".*

	Aim/brief description	*Four strands of actions are implemented to avoid pitfalls that might complicate or discourage implementation of a series of cost-effective actions relating to energy efficiency, either because of the difficulty of finding a contractor willing and/or trained to carry them out, or because the proposed completion deadlines are too long or costs are too high:* – *The contractors called on to perform energy-related renovations (usually independent) are generally saturated with work. They therefore tend to focus on large projects (with a higher profit margin), compared to certain types of small energy-related renovations, which might be particularly cost-effective for the user (very quick payback).* – *The rapid development of building techniques in this area means that a major effort is required in terms of continuing training, and contractors sometimes propose solutions which are no longer optimal.* ***1st STRAND: ESTABLISHING A PARTICIPATORY PROCESS, THE EMPLOYMENT ENVIRONMENT ALLIANCE*** *The first focal point of the Employment-Environment Alliance relates to sustainable construction and involves creating a multi-sector pact between public authorities, operators, the two sides of industry and actors in the sector so as to enable Brussels businesses to reap the benefits of this growth and exploit the major potential for employment, including for less skilled jobs, which exists in this sector. The alliance should make it possible to ensure a harmonious and rapid transition from traditional to sustainable construction.* *The text of the agreement was drawn up following a large-scale consultation and is made up of 44 specific actions. The phase relating to the implementation of those actions has already begun.* ***2nd STRAND: CREATING A PLATFORM BETWEEN ACTORS IN THE AREA OF SUSTAINABLE BUILDING (ECOBUILD CLUSTER)*** *The Brussels Government has opted to support the eco-building sector by creating a platform to encourage synergies between various actors in the sector.* *If the aim is to encourage the building sector to become more involved in this sustainable project, the Ecobuild Cluster also sets out to support and give structure to economic development in this sector which offers high potential in terms of growth and jobs which are not at risk of relocation. The professionals involved thus have privileged access to a contact person and support for their development. They have access to greater visibility and to collective benefits resulting from the synergy with other businesses in the sector, cooperation with research centres and closer contact with public bodies.* ***3rd STRAND: CREATING SPECIALISED TRAINING ON BUILDING DESIGN ON EXECUTION*** *This strand is divided into three parts:* *a) Training for professionals in design and management;*

		b) Training on the execution of works; *c) Seminars and actions on specific subjects.* *a) To train professionals in design and management (architects, consultancy offices, building managers, etc.), the Region has already established several courses (energy consultant in the housing sector, energy officer in the tertiary sector).* *In 2011, following the setting up of the training unit within the IBGE-BIM, training will be structured around a common vision of sustainable building within a sustainable city. Special attention will be given to training on* ***passive design****.* *b) For the execution of works, the Region has also entrusted the Brussels Professional Reference Centre for the construction sector to launch eco-building training with the following objectives:* – *to improve the training on offer through the development of innovative and job-creating modules;* – *to provide an interface between partners in the areas of employment, training and education and the Brussels professional sector;* – *to encourage employment by ensuring that the training on offer is well matched with the needs of businesses;* – *to monitor technological developments so as to anticipate training needs.* *The following results are expected:* – *the development of the trades associated with eco-building and renewable energy;* – *an increase in the employability of unskilled workers who are furthest removed from the labour market.* *c) Seminars and actions on specific subjects ensure that professionals are kept informed and are able to network.* – ***Sustainable Building seminars*** *are targeted at decision-makers, those with technical responsibilities and professionals in the fields of energy and building.* ***4TH STRAND: GIVING EXPERT ADVICE (SUSTAINABLE BUILDING FACILITATOR TO PROFESSIONALS*** *The BCR offers a series of free consultancy services to professionals operating in the Brussels Region building sector (public sector, commercial and non-commercial organisations, building management, etc.) and wishing to reduce energy consumption and/or integrate all of the "sustainable" criteria into the management and realisation of buildings:* – *energy* – *materials* – *water* – *planning* – *health and comfort.* *These services and the opinions given are neutral and independent of any commercial activity.* *To foster the transversal links that exist between all of the issues relating to energy and eco-building, with regard to both renovation and new building, the services on offers*

		were reorganised in 2011. The single "Sustainable Building Facilitator" unit provides a help desk and general guidance on all issues relating to the management, renovation or construction of a building with a view to its sustainability. A front office of generalists will be backed by specialists to answer the most specific questions relating to the following: the tertiary sector, collective housing, eco-building, renewable energy, cogeneration, EPB and passive buildings.
	Target end-use	*New buildings, existing buildings, heating and cooling of buildings*
	Target group	*Construction professionals*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	***TECHNICAL QUALITY TOOLS*** *A very large number of tools intended for different audiences have been, and will be, developed by the IBGE-BIM to promote rational energy use and sustainable buildings.* *In particular, the **practical guide for the construction and renovation of homes** is an evolving technical reference guide on sustainable building. It is divided into five subjects (planning, energy, water, materials, health-comfort).* *For collective housing:* – *the collective housing energy register enables buildings to be classified according to their energy quality, priorities to be determined and improvements to be monitored.* *For building managers in the tertiary sector:* – *standard specifications and documents help specialists to implement criteria enabling energy or environmental performances to be achieved.* *All of these tools continue to be optimised or developed so as to make them easier to use and thus more effective.* ***TRAINING UNIT WITHIN THE IBGE-BIM*** *This unit has been set up (as of 2010) with the following objectives:* – *to bring professionals together so as to encourage interaction and overall reflection* – *to use existing tools as an educational basis for the development of transversal links between the various issues linked to the environment.* *In order to develop concepts linked to the passive standard, the Region supports the "Passive House" Platform, a non-profit-making association which seeks to encourage the construction of buildings with very low energy needs (website, newsletter, training, events, books, PHPP (Passive House Planning Package) programme). It certifies passive buildings (certification gives rise to tax reductions).*
	Budget and financial source	
	Implementing body	– *Implementation of the sustainable development strand of the Employment-Environment Alliance is piloted by a monitoring committee comprising representatives of the Government, employers and labour organisations of various professions and the building sector, and the Brussels-Capital Building*

		Federation. – *The Ecobuild Cluster, the platform for the support, networking and visibility of sustainable construction professionals , is organised jointly by the IBGE-BIM and the Brussels Business Agency (ABE), the latter also being responsible for the individual support of entrepreneurs.* – *Training on design and management (architects, consultancy offices, building managers, etc.) is organised by training operators selected by the IBGE-BIM on the basis of tendering procedures.* – *The Eco-Building Reference Centre is responsible for giving training on the execution of works (workers and job-seekers).* – *Seminars and other actions on specific subjects are organised by the IBGE-BIM.* – *The Sustainable Building Facilitator service is provided by the IBGE-BIM*
	Monitoring authority	– *For the Employment-Environment Alliance -1st strand (sustainable construction): Prime Minister, Minister of the Environment and Energy, Minister for Economic Affairs and Employment* – *For the Ecobuild Cluster: IBGE-BIM, Minister for Economic Affairs and Employment, Minister of the Environment and Energy* – *For training: IBGE-BIM* – *For the Sustainable Building Facilitator: IBGE-BIM.*
Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table B.7. Measure B.7. in the buildings sector

Title of the energy saving measure	***Development of exemplary buildings – BATEX (with virtually zero consumption and high environmental quality)***
Index of the measure	*B.7.*

Description	**Category**	*Information:* *2.6 Demonstration* *(3.1. Subsidies)*
	Timeframe	*Over three years (2007, 2008 and 2009), 117 projects have already been selected following three calls for projects.* *A further call for projects was launched in 2011. This action will be extended at least until 2014*
	Aim/brief description	*Since 2007, the Brussels-Capital Region has organised calls for "exemplary buildings" projects in order to promote exemplary construction and renovation projects in terms of energy and environmental performance. The aim is also to demonstrate in this way that such projects are technically and economically feasible in Brussels.* *The call for projects is open to all developers who build or renovate in Brussels: individuals, public authorities, parastatal institutions, private companies (real estate developers, contractors, non-profit-making associations, etc.). Given the diversity of possible uses, these might be small (approx. 120 m^2) or large (approx.. 10 000 m^2 of even more) building projects.* *Each applicant project undergoes serious technical analysis by external experts before being presented to a jury, which selects projects on the basis of criteria relating to energy performance, environmental quality (water management, ecological materials, etc.), technical reproducibility, viability or cost-effectiveness and the philosophy, visibility and architectural quality of the project.* *In order to stimulate the submission of projects, the BCR supports the construction/renovation of exemplary buildings by three means:* • *financial aid for the design and execution of the buildings;* • *technical assistance to help project authors to achieve the quality objectives;* • *public visibility for buildings and their designers.* *All of the projects must be completed within fixed deadlines, and are monitored at the building site and in terms of their real consumption (for five years) to check whether the performances indicated are being achieved.* *Selected projects vary in terms of types of building (individual housing, collective housing, schools, crèches, offices, commercial, etc.) and their owners (households, public sector, non-market sector and private sector) as regards both new buildings and renovations.* *Almost 81 000 m^2 in passive buildings (of which 46 000 m^2 made up of housing) will be completed by 2013. Other BATEX buildings achieve the low (Be < 60 kWh/m^2 year) or very low (Be < 30 kWh/m^2 year) energy standard.* *In view of the strict tightening of requirements imposed by the EPB regulations, energy criteria are generally giving way to other aspects of sustainable construction (ecological insulation, wooden frames, water management at plot level, biodiversity, e.t.c).* *These pilot projects are keeping pace with the new regulatory requirements which will eventually be imposed.*

	Target end-use	*Building owners and architects*
	Target group	*Individuals, businesses and architects*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	*Energy grants* *Renovation grants* *Technical support to building developers and designers.*
	Budget and financial source	
	Implementing body	*IBGE-BIM*
	Monitoring authority	*IBGE-BIM*
Energy savings	**Method for monitoring/measuring the resulting savings**	*TD-BU*
	Savings achieved in 2010	
	Expected energy savings in 2016	*in final energy* *in primary energy* *210* *309*
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table B.8. Measure B.8. in the buildings sector

Title of the energy saving measure		***Introduction of labelling and certification for sustainable buildings***
Index of the measure		*B.8.*
Description	**Category**	*2. Information* *2.2. Energy labelling centres*
	Timeframe	*This measure is the means of ensuring that the achievements of the "exemplary buildings" measure are lasting.* *The process of preparing the labelling system is already in progress.*
	Aim/brief description	*Various systems of recognition currently exist: Valideo, BATEX, BREEAM, BSBC, the sustainable housing reference (CSTC), etc. The initial experience with BATEX shows that a system of labelling should now be developed for the BCR and/or a Belgian label should be adopted which is compatible with an international system of recognition.* *The functioning of this label would enable us to push the entire building sector in Brussels into adopting exemplary*

		building and renovation standards with regard to sustainable construction. *In order to measure and compare the "sustainability" of buildings, this label will include the following components:* • *the building's energy performance, i.e. the extent to which it reduces primary energy requirements to a minimum;* • *consideration of the environmental, social and economic aspects of the building, in particular aspects relating to its surroundings and the health of its occupants;* • *the architectural quality of the project, i.e. the relevance, intelligence and creativity of the architectural solutions developed as compared to the programme.*
	Target end-use	*New buildings, existing buildings*
	Target group	*Individuals, businesses, architects*
	Region	*Regional measure. An approach has been made by the BCR with a view to cooperation with other regions.*
Information on implementation	**List and of actions substantiating the measure**	• *BATEX* • *Facilitators* • *Practical guide for the construction and renovation of homes* • *Training* • *Energy grants* • *Renovation grants* • *Technical support to building developers and designers*
	Budget and financial source	
	Implementing body	*IBGE-BIM*
	Monitoring authority	*IBGE-BIM*
Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table B.9. Measure B.9. in the buildings sector

Title of the energy saving measure	***Introduction of a minimum performance threshold for***

		rented homes (by amending the Brussels Housing Code)
Index of the measure		*B.9.*
Description	**Category**	*1. Regulation* *1.1. Building Codes and Enforcement*
	Timeframe	*A broad public consultation is planned in the first half of 2011.*
	Aim/brief description	*In the BCR, 55.5% of existing homes are rented.* *Studies demonstrate that the share of rent and the increase in charges linked to a dwelling might, by 2030, account for the entire income of the most vulnerable people.* *The Order of 17 July 2003 establishing the Brussels Housing Code defines the basic requirements for rented homes (i.e. 60% of the Brussels housing stock) in terms of the safety, fitness and equipment. This Code will be amended to introduce a threshold for energy unfitness: this would enable tenants in homes with excessive energy consumption to be protected.*
	Target end-use	*Buildings*
	Target group	*Tenants*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	
	Budget and financial source	
	Implementing body	*Housing policy stakeholders (SLRB, Housing Fund, municipal authorities, local authorities, etc.)*
	Monitoring authority	*Regional Housing Inspection Directorate [*Direction de l'Inspection du Logement*] (within the Regional Planning and Housing Administration – AATL).*
Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table B.10. Measure B.10. in the buildings sector

Title of the energy saving measure		***Proactive back-up for households in the area of energy and eco-building to improve the quality and comfort in energy terms in their homes***
Index of the measure		*B.10*
Description	**Category**	*2. Information and mandatory information measures* *2.3. Information centres*
	Timeframe	*The Brussels Energy Agency (ABEA) has been in operation since 1996. Its support activities will be taken over directly by the IBGE-BIM from 2012 (House of Energy and Eco-building)*
	Aim/brief description	***HOUSE OF ENERGY AND ECO-BUILDING*** *The Region currently funds an "Energy Desk" within the ABEA, whose tasks it defines. This Desk provides information on rational energy use. It helps households with energy self-assessment and performs residential energy audits free-of charge. It also explains existing aid at Federal and Regional level to members of the public.* *To improve and broaden the support given to households to help them take action on rational energy use and sustainable construction, the Energy Desk will be transformed into the House of Energy and Eco-building (within the IBGE-BIM).* *The aim is to provide an even more effective and proactive response to households' needs at any time of their lives in terms of housing (purchase, rental, occupation, construction, renovation).* *The objectives of supporting change are met through the dissemination of information, help with decision making and having works done, having minor jobs carried out by low skilled people and the long-term unemployed and assistance in seeking out funding.* *In a second phase, through partnerships with local actors, the possibility will be studied of decentralising this service in order to reach out to the entire population.* *The House of Energy and Eco-building will also serve as a front-line service for the private-public partnership envisaged to finance works. This service will thus be complementary to and not compete with existing structures, such as the habitat network (renovation in certain districts), the CPAS (social guidance on the matter of energy) the AIS (social real-estate agencies) and the SISP (public service real-estate companies). On the contrary, partnerships will be organised with a view to helping them integrate energy efficiency into their own process of providing a service to households.* ***Lending activities within the House of Energy and Eco-building*** *One of the House's key objectives is to propose appropriate funding solutions to households. Its lending activities will vary according to the type of audience involved. Low-income families will be able to receive an interest-free loan (which will still be called a social green loan) and full assistance before, during and after works are carried out.* *Other households will be able to receive low-interest loans and multi-faceted support (technical, financial and administrative), but more focused on putting a dossier*

		together and having works carried out. *In order to widen its lending activities and reduce costs, the House will play the role of a regional FRCE agency and will thus enhance the benefits granted by the FRCE, primarily by granting a credit line at an interest rate of 2% and a financial contribution to administrative fees.* *In addition to its lending activities, the House will be covered by a regional guarantee fund of € 10 000.00.*
	Target end-use	
	Target group	
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	*Several actions are already in progress and will gradually be assumed by the House of Energy and Eco-building, the main ones of which are the energy challenge and social guidance on energy.* ***ENERGY CHALLENGE*** *The "Energy Challenge" launched in 2005, aims to change daily behaviour regarding the way in which energy is consumed in a large number of households (renters and owner-occupiers).* *The objective is to reduce CO_2 emissions by a tonne per household simply by changing behaviour – i.e. without financial investment – both at home and in terms of mobility choices. To this end, each person identifies specific actions (using low-energy lighting, limiting the temperature of heating in daytime, etc.) which he undertakes to implement.* *The experiment has greatly evolved in how it is carried out by today working with energy animators (volunteers) who disseminate the "small gestures" message within their circle, neighbourhood, building, etc. The results are convincing: energy savings measure at constant climate are as high as 20% on average in terms of energy consumption. The same experiment is now being applied in schools.* ***SOCIAL GUIDANCE ON ENERGY*** *This action has been underway since 2004 and has gone hand in hand with the liberalisation of the electricity and gas markets.* *It is defined in very general terms as being support for less-favoured people who consume more than the average amount of energy to encourage them to reduce energy consumption in their homes whilst maintaining their level of comfort. Practice and experience have enabled this definition to be improved. The BCR has carried out a series of experiments aimed at putting together and examining tools and a methodology for action so that it can create technical and communication tools and provide an effective organisational support system to professionals who are in contact with the target audience, and also to obtain an understanding of the factors of success and failure of a large proportion of Belgian experiments.* *This action is currently managed by the Federation of Social Services Centres [Fédération des Centres de Service Sociaux (FCSS)]. Four social workers provide regular support to vulnerable Brussels households on energy and water management. This support focuses on various aspects:* – *management of consumption*

		– *management of the home* – *administrative support*
	Budget and financial source	
	Implementing body	*The ABEA is a service of the non-profit-making association Centre urbain asbl. Its aim is provide guidance to the people of Brussels on controlling their energy consumption and on the use of renewable energy in their homes. It provides information and advice to the public regarding all its technical problems and choices so that it can reduce energy consumption whilst maintaining a comfortable life* *The House of Energy and Eco-building will be an integral part of the IBGE-BIM.*
	Monitoring authority	*IBGE-BIM*
Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	*in final energy* *in primary energy* *123* *140*
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

2.3.2.2. Measures in industry and SMEs

Table 2. Overview of individual measures in industry and SMEs

No	Title of the energy saving measure	End-use targeted	Duration	Achieved energy savings in 2010 (GWh)	Energy savings expected in 2016 (GWh)
I.1.	Developing good practices (eco-dynamic business label)	All bodies (including the public and non-market sector), with restrictions for micro-businesses	Since 1999		
I.2.	Energy savers investment aid	Non-public businesses			
I.3.	Encourage the emergence of new business models: • Brussels Sustainable Economy (BSE)	Businesses undergoing transition, new businesses and products			

Table I.1. Measure I.1. in industry and SMEs

Title of the energy saving measure		***Developing good practices (eco-dynamic business label)***
Index of the measure		*I.1.*
Description	**Category**	*4. Voluntary agreements and co-operative instruments:* *4.1. Industrial companies* *4.2. Commercial or institution organisations*
	Timeframe	• *The BCR launched the "eco-dynamic business label" in 1999.* • *Since 2008, the energy aspect of the label has been enhanced.*
	Aim/brief description	*There were 80 866 businesses in the Brussels Capital Region in 2008, 84% of which were in the tertiary sector (business services, commerce, public services).*[7] *Economic activity in Brussels is essentially focused on the tertiary sector. Existing environmental management systems (ISO14001, EMAS) might thus be viewed as being too binding for businesses, at least when they are first set up. To simplify and enhance good environmental practices in the tertiary sector, the BCR has established a simpler and more accessible labelling system.* *This label officially recognises a business's or institution's good environmental management. It also helps environmental actions to be structured and planned and, subsequently, their results to be measured. Businesses are able to request personalised advice from outside specialists.* *During the three years in which the label is valid, businesses must implement the action plan they have defined in their environmental programme, evaluate their actions, update their analysis and draw up a new action plan relating to a range of aspects (waste management, energy consumption, mobility management or indeed the rational use of raw materials).* *The eco-dynamic business label gradually encourages and facilitates the implementation of an internationally recognised environmental management system, such as the one advocated by ISO standard 14001 or the European EMAS Regulation.* *The BCR had 165 labelled sites in April 2011.*
	Target end-use	*Companies, institutional organisations*
	Target group	*Since 2010, the eco-dynamic business label has been open to any type of body operating at a site in Brussels, be it a private company, public agency or a non-market-sector body.* *However, since the label is not suited to certain structures, only those sites with a floor area of 100 m^2 or above and employing a minimum of five full-time equivalents are eligible for it. These conditions do not apply if the applicant body holds an environmental permit for the activities pursued at the site which is subject to an application (excluding environmental permits issued solely for the functioning of the building).*
	Region	*Regional measure (BCR)*

[7] Source: Brussels Institute of Statistical Analysis (IBSA), September 2010

Information on implementation	**List of actions substantiating the measure**	• *Publications and guides* ***The business sustainability strategic guidance tool*** *[*Outil sur la guidance stratégique de durabilité des Entreprises*]: This provides businesses with explanations on what a sustainability model is, illustrated by means of specific examples (the selected model is "The Natural Step"). Thanks to this model, businesses are able to implement the initial steps of a sustainable strategy in practice, enabling them to consider the environment to be an economic opportunity and a source of profit rather than something that holds them back.* • *In the context of aid to investment in energy savings, the production of energy from renewable sources or rational energy production, intended primarily for industrial companies, additional aid is granted to business which are able to demonstrate recognition in terms of environmental management, e.g. on the basis of the eco-dynamic business label issued by the BCR, or EMAS and ISO 14000 certification. This additional aid amounts to 5% of the eligible investment amount.* • *Energy grants for tertiary-sector and industrial buildings (cf. energy grants measure in the buildings sector above).*
	Budget and financial source	
	Implementing body	*Businesses*
	Monitoring authority	*IBGE-BIM and ABE*
Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table I.2. Measure I.2. in industry and SMEs

Title of the energy saving measure		***Energy savers investment aid***
Index of the measure		*I.2.*
	Category	*3. Financial instruments*

Description	**Timeframe**	
	Aim/brief description	*Four types of aid are offered, with variable basic and additional rates, and according to the size of the business:* *1. aid for environmental protection;* *2. aid for urban integration;* *3. aid for the production of eco-products* *4. aid for energy savings and the production of energy from renewable sources.* *4.1. Building-related investments (only for certain sectors)* *The BCR offers aid for energy savings, the production of energy from renewable sources or rational energy production targeted primarily at industrial companies.* *Only investment or a programme of tangible or intangible investments linked to one of the following areas is eligible:* – *the building envelope: thermal insulation of buildings that have existed for more than 5 years, in order to achieve better energy efficiency;*

		– *Lighting: renewal of lighting installations giving rise to energy savings;* – *Renewable energy: production of energy from non-fossil renewable sources (such as wind solar, geothermal, hydroelectric energy, biomass, landfill gas and gas from waste water purification plants, biogas, heat pumps);* – *High-quality cogeneration and trigeneration: combined production of heat, power and, where appropriate, cooling which achieves energy savings as compared to separate production of the same quantities of heat, power and, where appropriate, cooling;* – *Boilers and burners: replacement of an existing boiler with a recognised condenser boiler or an existing burner with a two-speed or modulating burner;* – *Control, measurement: fitting or replacement or measuring, computerised management, control or regulation devices intended to improve energy efficiency of the installations in question;* – *Cooling system: passive system, without a cooling machine with a compressor, in particular free chilling or free cooling, solar protection, etc.* *4.2. Investments in heat recovery, reduction of consumption and less energy-consuming transport (excluding certain sectors)* *Aid is available for the following projects:* – *The recovery of recycling of heat produced by installations and production;* – *The installation of devices enabling losses from or energy consumption in installations and production to be reduced;* – *The purchase of bicycles or electric, hybrid or fuel-cell-powered vehicles, and the necessary adjustments.* *Aid is also granted with a view to supporting businesses in reducing costs and is also available for studies, training, recruitment and investments.*
	Target end-use	*Industrial and tertiary-sector applications*

	Target group	*Non-public-sector businesses.* *Some environmental aid is reserved for SMEs, while some is also available to large companies.* *Under the relevant decrees, the eligible recipients, sectors of activity, aid percentage and investments are specific.*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	*Businesses can obtain information via the Brussels Business Agency (ABE) and on the website http://www.ecosubsibru.be/.* *Federal aid – partial exemption.* *Actions implemented by professional federations may be subject to a 100% reimbursement of costs (2011 energy grants).*
	Budget and financial source	
	Implementing body	*Economic Affairs and Employment Division – Directorate of Economic Expansion*
	Monitoring authority	*The Economic Inspection Directorate monitors the use of the subsidies granted to Brussels businesses by the BCR Economic Affairs and Employment Administration.*
Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table I.3. Measure I.3. in industry and SMEs

Title of the energy saving measure		***Encourage the emergence of new business models:*** • ***Brussels Sustainable Economy (BSE)***
Index of the measure		*I.3.*
Description	**Category**	*Information and mandatory information measures* *4. Voluntary agreements and co-operative instruments*
	Timeframe	*Between 2008 and 2013 in the context of an ERDF project*
	Aim/brief description	*The **Brussels Sustainable Economy (BSE)** project is one of 37 projects selected by the Brussels Government in the context of the BCR's "Objective 2013: "Let's invest together*

		in urban development" operational development programme, which is supported by the European ERDF Fund for the period 2007-2013. The BSE project meets the priority of "support for the creation of an urban development centre associated with the environmental sectors of the economy". *The actions making up the BSE project will be implemented within a "Priority Intervention Zone".* *The objective of the BSE project is to define, draw up and implement a strategic economic-branch development plan relating to the environment within the Brussels Region.* *This plan will set out to create economic activity and jobs in the Brussels Region by boosting various environmental branches.* *There are currently six such branches: 1) eco-building, 2) renewable energy, 3) green chemistry and green and white biotechnology, 4) waste, 5) water and 6) eco-food.*
	Target end-use	*Industrial and tertiary-sector applications*
	Target group	*Businesses*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	***SOCIÉTÉ DE DÉVELOPPEMENT POUR LA RÉGION DE BRUXELLES CAPITALE (SDRB)*** *[*BCR DEVELOPMENT COMPANY*]* *This is a development company operational in the Brussels Region.* ***NETWORK OF BRUSSELS BUSINESS CENTRES*** *This network brings together specialists in providing back-up to business start-ups during the development phase. The eight centres making up this network make business management experts and reception facilities available to business start-ups and offer a wide range of services.* ***LOCAL ECONOMY HELPDESKS*** *A number of municipalities situated close to the canal have set up a local economy helpdesk which helps businesses launch projects and bring them to fruition. They cooperate with business centres which offer a package of services to businesses, including the provision of office space at moderate cost.*
	Budget and financial source	
	Implementing body	*The steering body is the IBGE-BIM, in cooperation with two other partners: the Brussels Business Agency (ABE) and Groupe One.*
	Monitoring authority	

Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

2.3.2.3. Measures in the energy sector

Table 3 Overview of individual measures in the energy sector

No	Title of the energy saving measure	End-use targeted	Duration	Achieved energy savings in 2010 (GWh)	Energy savings expected in 2016 (GWh)
E.1.	Organising the energy market and imposing public service obligations		Since 2007		
E.2.	Developing renewable energy sources and cogeneration on the basis of Green Certificates		Since 2005		
E.3.	Waste recovery		Several successive projects, from 2008		

Table E.1. Measure E.1. in the energy sector

Title of the energy saving measure		***Organising the energy market and imposing public service obligations***
Index of the measure		*E.1.*
Description	**Category**	– *Regulation* – *Public service obligation for energy companies on energy savings including "White certificates"*
	Timeframe	*The Brussels gas and electricity market has been fully liberalised since 1/1/2007.*
	Aim/brief description	*The BCR has set up an energy regulation commission in the Brussels Region by the name of Bruxelles Gaz Electricité (or BRUGEL for short) in order to be able to regulate the organisation and the functioning of the regional electricity and gas markets effectively and also to provide information to the consumer.* *Amongst other things, BRUGEL is responsible for:* – *ensuring that the green certificates scheme runs smoothly from a legal and technical point of view (including complaint resolution, transposition of the Directive on renewable energy) and checking its relevance to the funding of renewable energy and cogeneration;* – *ensuring that bills are easy to read;* – *revising the provisions of technical regulations and verifying whether public service obligations should also apply;* – *monitoring measures relating to the management of the electricity and gas markets: gas and electricity supply licence dossiers, supervision, eligibility of customers, certification of green installations);* – *setting up a complaints handling procedure;*

		– *developing an information system internal to the regulator;* – *analysing investment plans.* *With regard to public services obligations and missions, their content and procedures are described in Chapters IV and IVa of the Order of 19 July 2001 and Chapters V and Va of the Order of 1 April 2004 respectively concerning the organisation of the electricity and gas markets in the Brussels-Capital Region.* *Amongst these obligations, the distribution network operator and suppliers are required to promote rational energy use by means of information, demonstrations, the supply of equipment, services and financial aid to municipal authorities and other end customers.*
	Target end-use	*Energy market*
	Target group	*Households, businesses, institutions*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	*The IBGE-BIM is developing a series of actions to monitor policy on the electricity and gas markets.* • *Monitoring and coordination of legislation and policy definition relating the gas and electricity markets;* • *creating the conditions for the supply of electricity and gas to vulnerable households;* • *introducing procedures and back-up measures for managing energy debt and improving social energy tariffs (negotiation with the Federal authorities);* • *modifying "all-in" tariffs in favour of progressive charging (in conjunction with the Federal authorities);* • *cooperating with SIBELGA in drawing up a public-service mission programme;* • *creating additional information tools relating to awareness of energy consumption by different types of consumers in the BCR and invoices which show consumption.*
	Budget and financial source	
	Implementing body	• *The distribution network operator manages and maintains local electric cables and gas pipelines which bring energy to an inter-municipal distribution company designated by the Regional Government: Sibelga.* • *Suppliers*
	Monitoring authority	• *The energy regulation commission in the Brussels Region (Bruxelles Gaz Electricité, or BRUGEL for short)* • *The IBGE-BIM*

Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table E.2. Measure E.2. in the energy sector

Title of the energy saving measure		***Developing renewable energy sources and cogeneration on the basis of Green Certificates***
Index of the measure		*E.2.*
Description	**Category**	*3. Financial instruments*
	Timeframe	*A system of green certificates was established in 2005.* *In 2007, support for photovoltaic solar energy was stepped up by means of a specific multiplier coefficient: the region grants 7.27 green certificates per MWh of electricity produced by photovoltaic installations of less than 20 m^2 in the 10 years following their entry into service.* *As of 1 July 2011, gas-fired cogeneration installations installed in collective housing blocks benefit from a multiplier coefficient for the grant of green certificates of:* • *2 for installations of less than 50kW;* • *1.5 for installations larger than 50kWe.*
	Aim/brief description	*The Brussels mechanism for supporting the production of green electricity is based on the operation of a "green certificate market":* • *Producers of green electricity periodically receive green certificates according to the CO_2 savings they achieve when producing electricity;* • *Electricity suppliers are each required to present to the regulator a certain number of green certificates determined according to the quantity of electricity supplied, failing which they will receive a fine of € 100 for each certificate missing.* *Suppliers are therefore required to negotiate with green electricity producers on buying their certificates. The value of certificates exchanged depends on the amount of the fine, the number of certificates available on the market and the quota allocated to suppliers by the BCR*

		Government (this is a percentage of the annual volume of electricity supplied, expressed in MWh[8]). *Below is a table indicating the quota of green certificates in the coming years, as laid down by the BCR Government:* *2007 2.5%* *2008 2.5%* *2009 2.5%* *2010 2.75%* *2011 3%* *2012 3.25%* *To receive green certificates and origin guarantee labels, an installation must have undergone prior certification. Certification shows that the installation in question produces green electricity and that its design enables the quantities of energy consumed and produced to be metered in accordance with the provisions of the metering code.* *A green electricity production installation must achieve CO_2 savings of at least 5% as compared to the reference installations in order to receive green certificates. An installation will also only receive certificates for the first ten years following its entry into service. This period may be extended by 5 to 10 years if the installation undergoes significant alterations. The number of green certificates granted by MWh produced falls progressively in line with size of the installation.* *Green certificates are valid for five years and can be exchanged with Walloon certificates.* *The number of green certificates granted is directly proportional to the CO_2 saving achieved by the installation as compared to the reference installations. The reference installations are a gas turbine power station for electricity and a gas boiler for heat. One certificate is issued per 217 kg of CO_2 avoided.* *Biomethanisation also benefits from a specific multiplier coefficient.* *Green certificates are granted for cogeneration when it is "high-quality", i.e. when it gives rise to a sufficient CO_2 saving as compared to the separate production of heat and electricity.* *To support local production, electricity suppliers must first and foremost present green certificates issued by the Brussels Region.*
	Target end-use	*Production of renewable energy and high-quality cogeneration*
	Target group	*Households, businesses, institutions*
	Region	• *Regional measure (BCR)* • *The Brussels system also contributes to the smooth functioning of the mechanism put into place by the Region of Wallonia through the possibility of purchasing Walloon green certificates.*
Information on implementation	**List of actions substantiating the measure**	*The BCR also has a specific system of grants to support renewable energy and cogeneration.* *The "Renewable Energy Facilitator" and "Cogeneration Facilitator" provide advice for and support to actual projects.*

	Budget and financial source	
	Implementing body	*Brugel*
	Monitoring authority	*Brugel*
Energy savings	**Method for monitoring/measuring the resulting savings**	*The number of green certificates granted is linked to electricity production; it is therefore possible to determine exactly the production of heat and green electricity resulting from it for each production type.*
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table E.3. Measure E.3. in the energy sector

Title of the energy saving measure		***Waste recovery***[9]
Index of the measure		*E.3.*
Description	**Category**	*2.7. Exemplary role of the public sector*
	Timeframe	***Biomethanisation of green waste*** *In this area, the specifications for the first biomethanisation unit were published in 2010. This unit is scheduled to be built in 2013.* ***Urban heat network*** *A technical and a commercial study have been completed as regards the recovery of part of the heat produced by waste incineration via an urban heat network.* *The launch of the necessary works now depends on the finalisation of commercial agreements with industrial or institutional users.* ***Valorisation of biomass from purification plants*** *The North plant has been in operation since 2008.* *Study taking place at the South plant.*
	Aim/brief description	***Biomethanisation of green waste*** *The Region has decided to change its approach to the processing of green waste by giving priority in future to pre-processing on the basis of biomethanisation rather than processing on the basis of open-air composting.* • *The future operating company, s.a. Bruxelles-Biogaz, aims to process some 40 000 to*

		60 000 tonnes of organic waste from green waste (currently processed at a composting centre) and other selective organic waste collections (e.g. the morning market in Brussels, MABRU, and nearby canteens). • *The forecast production of biogas is 5.5 million Nm^3 of raw biogas, which initial estimates indicate could produce 6 800 MWh of electricity and 13 600 MWh of heat (20 400 MWh in total).* ***Urban heat network*** *The company scrl Bruxelles-Energie currently operates the BCR's incinerator. At present, all of the steam produced is used to produce electricity.* *Following urban development close to the energy-recovery-from-waste installation (shopping centre, etc.), this company intends to exploit some of the heat produced to supply an urban heating system.* ***Valorisation of biomass from purification plants*** *The Brussels North purification plant, which entered into service in 2008, has a capacity of 1 100 000 inhabitant equivalents. It purifies waste water from the North and Woluwe sub-basins. When in operation, the plant itself produces 15% of its electricity requirements. A hydraulic turbine recovers energy released by the water when it drops from the second level of the plant into the Senne river. Electricity is also produced by recovering biogas resulting from sludge digestion. This biogas is burned in a cogeneration installation which produces electricity and heat. The heat is recovered in the form of steam and is rechanneled into industrial processing. In 2008 the hydraulic pump turbine alone produced [text missing].* *The SBGE owns the Brussels South purification plant and is currently finalising a project to upgrade it. This includes a sludge biomethanisation unit coupled with a cogeneration installation. This cogeneration unit should on average supply approximately 10 MWh of electricity and 10 MWh of heat per day, against daily requirements estimated at 45 MWh.*
	Target end-use	*Supply of electricity and heat*
	Target group	*Large industrial customers*
	Region	*Regional measure*
Information on implementation	**List of actions substantiating the measure**	*Promotion of composting and selective sorting under the waste prevention and management plan of the BCR* *Green certificates mechanism*
	Budget and financial source	
	Implementing body	*Bruxelles-Compost for compost* *Bruxelles-Biogaz for biomethanisation* *Bruxelles-Energie SCRL for the incinerator*
	Monitoring authority	*IBGE-BIM*

Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

2.3.2.4. Measures in the transport and mobility sector

Table 4. Overview of individual measures in the transport and mobility sector

No	Title of the energy saving measure	End-use targeted	Duration	Achieved energy savings in 2010 (GWh)	Energy savings expected in 2016 (GWh)
T.1.	Strengthening planning tools on the basis of travel plans for: • Businesses • Activities • Schools		Since 2004 (businesses) The measure has been enhanced and widened since 2011		
T.2.	Internalisation of certain external transport costs and encouraging the purchase of less-polluting vehicles				
T.3.	Developing environmental management of roads and creating low-emission zones				
T.4.	Encouraging soft means of transport				
T.5.	Enhancing the supply and attractiveness of public transport				
T.6.	Managing parking policy on and off roads				
T.7.	Developing plans for targeted sectors (taxis, goods)				

Table T.1. Measure T.1. in the transport sector

Title of the energy saving measure		***Strengthening planning tools on the basis of travel plans for:*** • ***Businesses*** • ***Activities*** • ***Schools***
Index of the measure		*T.1.*
Description	**Category**	*Regulation* *Voluntary agreements and co-operative instruments*
	Timeframe	*The requirement to establish travel plans applicable to businesses employing more than 200 people on their site has been in force since 2004.* *A new legal framework, i.e. the Order of 14 May 2009, will enter into force in 2011.* *This Order will strengthen the requirement on businesses (targeting all businesses employing more than 100 people on a site and making some measures mandatory) and will widen the scope of the measure to schools and temporary or permanent cultural, commercial and sports events on the basis of two thresholds:* – *1 000 participant per day* – *3 000 participants per day.*
	Aim/brief description	*In order to encourage residents and visitors to use public transport, which is better for the city and the environment (with the ambitious aim of reducing car traffic), the Region is asking businesses, institutions, public administrations and schools to establish travel plans.* ***BUSINESS TRAVEL PLANS*** *These plans first examine the travel linked to the activity of the organisation(s) or business(es). This initial phase is followed by a second one in which specific and gradual measures designed to promote sustainable management are implemented and monitored.* *Since the environment and persons involved change, an annual update of the main points of the plan is required.* *The new "Travel Plans" Order adopted on 14 May 2009 will enable the measure to be improved through:* – *the introduction of mandatory measures;* – *the widening of the scope of the obligation to businesses employing 100 people at a site;* – *the introduction of a site audit by the IBGE-BIM enabling implementation by businesses to be checked and advice to be given on how to improve the plan's effectiveness.* ***ACTIVITY TRAVEL PLANS*** *The same Order also makes it mandatory for a travel plan to be developed for any one-off, occasional, periodic or permanent cultural, commercial or sports event, whether involving payment or not, and organised on a site intended for 1 000 or more participants. This applies to both the event organisers and the site managers.* ***SCHOOL TRAVEL PLANS*** *Travel between home and school account for 18% of journeys made during peak hours. Reducing the number of*

		journeys will help reduce emissions of pollutants. The Travel Plans Order makes the preparation of a "mobility pre-assessment" mandatory for infant, primary and secondary schools and lays down a framework to support schools wishing to develop a school travel plan. *Following registration with Bruxelles-Mobilité, the development of a travel plan comprises four stages:* • *Setting-up of a working group* • *Analysis of the school's situation* • *Development and implementation of action plans* • *Evaluation.*
	Target end-use	*Transport*
	Target group	*Workers, businesses, students, the public*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	*Bodies and businesses receive support in developing their plan from a monitoring unit made up of experts from the IBGE-BIM and Bruxelles-Mobilité, which issues a reasoned opinion on each phase of the plan.* *Several awareness-raising actions are organised throughout the year (car-free day for businesses, Friday Bikeday, etc.)*
	Budget and financial source	
	Implementing body	*Businesses, schools, activity organisers and site managers.*
	Monitoring authority	*IBGE-BIM*
Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table T.2. Measure T.2. in the transport sector

Title of the energy saving measure	***Internalisation of certain external transport costs and encouraging the purchase of less-polluting vehicles***
Index of the measure	*T.2.*

Description	**Category**	*Information and mandatory information measures* *Financial instruments*
	Timeframe	*Start: 2011*
	Aim/brief description	***REFORMING ROAD TAXES*** *The regional system of taxation on cars is currently based on a tax on the initial use of a vehicle and a road tax. These two taxes, paid when a car is bought and each year respectively, are currently calculated solely on the basis of the engine characteristics (fiscal horsepower or kilowatt). In cooperation with the other two regions, the BCR plans to tighten measures to reduce emissions linked to driving on the basis of a reform of these two taxes, rewarding vehicles with high environmental performance. The reform will be accompanied by appropriate social corrective measures.* ***INTRODUCTION OF INTELLIGENT CHARGING FOR LIGHT VEHICLES*** *Alongside the pilot project for lorries, the IRIS 2 plan envisages a study of the introduction of road charging according to vehicle use in terms of kilometres driven, the route taken, the period of use and the vehicle's environmental performances. It will be examined how best to integrate the criterion of family composition and the social corrective measures adopted. Account should also be taken of inter-regional competition: a system applied solely in Brussels would penalise the capital. This is why IRIS 2 considers that, in order for this measure to be effective, it should be applied to the entire area served by the rapid suburban rail network (RER), which would require joint action between the regions.* *However, the implementation of an intelligent charging mechanism at national level also gives rise to a number of technological, legal and political uncertainties. Other charging systems specific to the BCR (urban tolls or charging for specific infrastructures, for example) will therefore also be studied. The various options for implementing such a mechanism, the consequences for mobility, environmental impacts (greenhouse gasses, air quality, etc.), and socio-economic impacts (consequences for businesses, shops, neighbourhoods, etc.) [text missing] they could be implemented at the level of Brussels if it transpires that intelligent charging at national level cannot be applied within a satisfactory time period.* ***MILEAGE CHARGING FOR HEAVY GOODS VEHICLES*** *Lorry traffic is responsible for 10% and 15% of PM10 and NOX emissions respectively and for 4% of the kilometres driven in the BCR.* *Heavy goods vehicles are currently subject to payment of the Eurovignette. However, the implementation of mileage charging for lorries would better serve the main objective of internalising the external costs of goods transport and indeed a reduction in the number of kilometres driven. Such a system should, however, be introduced in conjunction with the other two regions.* *The charge made must take account of various factors so as to reduce the environmental impact of heavy goods vehicles. These factors are as follows: geographical area and type of road, the time of day (peak hours, night time) and specific events (pollution peaks, etc.) as well as the*

		vehicle's weight, fuel and emissions. *Consultations between the regions launched at the end of 2010 should enable charging to be implemented as quickly as possible.*
	Target end-use	*Car transport*
	Target group	*Public, businesses*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	***ENCOURAGING THE PURCHASE OF LESS POLLUTING VEHICLES*** *An improvement in the environmental performances of vehicles must be encouraged, and the emissions linked to car use must be reduced. The Brussels Region has developed an* ***eco-score*** *to that end. This indicates the overall ecological impact of a vehicle and has the advantage of enabling vehicles to be compared with vehicles using different fuels and technologies on one and the same basis.* *Impacts on the greenhouse effect and air quality (impacts on health and on eco-systems) and noise pollution are merged into a single indicator. The score thus has the advantage of enabling light vehicles involving different technologies and running on different fuels to be compared with each other on one and same basis.* *The website www.ecoscore.be, an educational tool aimed at the public, is regularly updated so that all vehicle models are listed.*
	Budget and financial source	
	Implementing body	
	Monitoring authority	
Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table T.3. Measure T.3. in the transport sector

Title of the energy saving measure	***Developing environmental management of roads and creating low-emission zones***

Index of the measure		*T.3.*
Description	**Category**	*Regulation* *Voluntary agreements and co-operative instruments*
	Timeframe	
	Aim/brief description	***DEVELOPING ENVIRONMENTAL MANAGEMENT FOR ROADS*** *A policy of managing road capacities and improving roads giving access to the BCR is being implemented and should be enhanced in order to encourage urban user friendliness, the protection of neighbourhoods (inhabitants, users), attractiveness and the return of households into the city, all with the aim of ensuring a positive impact on the regional economy and reducing car traffic created by commuters. On this matter, various measures are advocated in the coalition agreement for 2009-2014 to reduce the urban space dedicated to vehicles:* • *recalibrating main access routes so that they become more user-friendly urban roads: creation of side lanes, planted areas, creation of one-way streets with public transport and bicycles being permitted to travel in the "wrong" direction, widening of pavements;* • *dedicated lanes for public transport, pedestrians and bicycles.* *The Government, together with Beliris, intends to launch a large traffic redirecting, channelling and reduction programme so as to reduce the environmental impacts of road transport.* ***CREATION OF LOW EMISSION ZONES*** *These will be created in cooperation with municipal authorities. They will be areas in which car access will be limited according to criteria such as destination (access reserved for local inhabitants, etc.), time of day (access reserved to certain times), the vehicle's environmental performance, etc.* *The Region will play a role of encouraging, coordinating and supporting the municipal authorities in this respect, in particular with the aim of harmonising the arrangements applicable in such zones.*
	Target end-use	*Car transport*
	Target group	*Public*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	
	Budget and financial source	
	Implementing body	*Bruxelles Mobilité, municipal authorities*
	Monitoring authority	*Bruxelles Mobilité*

Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table T.4. Measure T.4. in the transport sector

Title of the energy saving measure		***Encouraging soft means of transport***
Index of the measure		*T.4.*
Description	**Category**	*Regulation* *Financial instruments* *Voluntary agreements and co-operative instruments*
	Timeframe	
	Aim/brief description	***REGIONAL BICYCLE ROUTES AND GREEN CONTINUITY FOR PEDESTRIANS AND CYCLISTS*** *To encourage non-polluting mobility, as represented by walking and cycling, the Region is taking measures to make the necessary improvements. Regional bicycle routes and green walks offer continuous non-motorised, secure and comfortable routes. They link up green spaces and make as much use as possible of existing planted areas in the city.* ***FACILITATING BICYCLE USE*** *The bicycle is a major player in creating sustainable mobility in the BCR. It therefore has to be afforded a prominent place.* • *The Region has undertaken to create cycle paths on all regional roads.* • *Investment in improving and renovating all regional bicycle routes will be finalised within 5 years.* • *Road improvement and renovation projects will systematically integrate bicycle access requirements.* • *The Region has created 5 bicycle points and is encouraging the creation of other points at which bicycles can be maintained and at which, after the local population has been consulted, secure shelters are built for them.* • *The Region has introduced "Villo!", an automated bicycle rental network for Brussels.*

		Villo! is operational in 11 municipalities in the Region and comprises 180 stations and 2 500 bicycles across the region. ***MAKING WALKING MORE ATTRACTIVE*** *The Region will make the pedestrian (resident or visitor) the main user of public highways. In the centre of Brussels, pedestrianized zones will be extended and traffic speed limits will be reduced in consultation with the competent municipal authority.* *A pedestrian plan is also being prepared.* ***SUPPORTING ALTERNATIVE MOBILITY: "BRUXELL'AIR" GRANT*** *The aim of this grant is to encourage motorists in Brussels to give up their cars in favour of means of transport with less impact on the environment: public transport, cycling, walking and car-sharing.* *The mobility grant package is offered subject to conditions to anybody resident in the BCR who cancels his car number plate and, where appropriate, has his vehicle destroyed.* *The package consists of a one-year subscription to the CAMBIO shared vehicle system plus either a one-year public transport season ticket or a bicycle grant enabling the recipient to invest in a bicycle and/or approved accessories. Moreover, if the owner decides to destroy his vehicle in an approved centre, the grant will be doubled (renewal of the subscription or season ticket (or both) or a doubling of the bicycle grant). Supported by the Region, the Cambio company places individual vehicles at the disposal of its subscribers from 25 road-side parking sites.*
	Target end-use	*Car transport*
	Target group	*Public*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	***AWARENESS-RAISING CONCERNING SOFT MEANS OF TRANSPORT*** *In the context of the European mobility week, which takes place each year at the end of September, the BCR and its 19 municipalities have for a number of years organised a car-free Sunday. This festive day has been enormously successful. The Region also implements recurring campaigns to raise the profile of cyclists and pedestrians:* • *Friday Bikeday, since 2007, and Bike to Work encourage people to travel to work by bicycle.* *A number of publications and other communication tools are made available to the relevant audience, including:* • *pamphlets and brochures: "Se déplacer autrement" (travel differently), "1.000 solutions et la vôtre" (1 000 solutions and yours) and "Mes déplacements et l'environnement" (my travel and the environment) give many tips on how to drive in a less polluting manner, the choice of clean vehicles, nature and the impact of pollutants, including on health;* • *the IBGE-BIM's website entitled "Eco-mobilité des ménages" (eco-mobility of households);* • *communication campaigns on making a modal shift for short journeys (TV and radio spots, etc.).*

		Some actions will be continued and stepped up, while others will be adjusted to foster a modal shift to soft means of transport.
	Budget and financial source	
	Implementing body	*Bruxelles Mobilité* *IBGE-BIM*
	Monitoring authority	
Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table T.5. Measure T.5. in the transport sector

Title of the energy saving measure		***Enhancing the supply and attractiveness of public transport***
Index of the measure		*T.5.*
Description	**Category**	*Regulation* *Voluntary agreements and co-operative instruments*
	Timeframe	*Ongoing*
	Aim/brief description	*In accordance with the coalition agreement, the development of public transport is a priority for the Brussels Government.* ***MAKING DEDICATED PUBLIC TRANSPORT LANES MORE WIDESPREAD*** *It is also vital to improve the frequency, regularity and average speed of STIB services. To this end, dedicated public transport lanes will become more widespread with the following aims:* • *for trams: increasing them from 40% (2008) to 90% (2020) of the network;* • *for buses: increasing them from 9% (2008) to 40% (2020) of the network.* ***INCREASING THE FREQUENCY OF PUBLIC TRANSPORT*** *In order to increase the attractiveness of public transport, the Government also intends to increase overall services by 35% in 2011 and 100% in 2020.* ***EXTENSION OF PUBLIC TRANSPORT ROUTES*** • *Metro: automation and extension of the North-South underground tram route (prémétro) to Schaerbeek* • *Measures to rationalise surface traffic will also be taken at the same time on the northern axis;* • *Tram: 5 extensions planned in the STIB management contract for 2007-2011 and evaluation of additional extensions.* ***CONTINUATION OF WORK ON THE RER (rapid suburban rail network)*** *The Region will request that Brussels be fully recognised in the investment plans of the SNCB (national train company) and will ensure that it does not have to shoulder the costs for which the Federal Authority and the companies coming under it are responsible. To this end, a regional railway interface will be created bringing together representatives of the STIB, Bruxelles-Mobilité, the AATL (Regional Planning and Housing Administration and Bruxelles-Environnement with the task of organising and coordinating the demands of Brussels vis-à-vis the SNCB.*
	Target end-use	*Car transport*
	Target group	*Public*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	*The integration of the various public transport systems will be improved.*
	Budget and financial source	

	Implementing body	*STIB* *Bruxelles-Mobilité*
	Monitoring authority	

Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table T.6. Measure T.6. in the transport sector

Title of the energy saving measure		***Managing parking policy on and off roads***
Index of the measure		*T.6.*
Description	**Category**	*Regulation*
	Timeframe	
	Aim/brief description	*Having a free parking space at one's destination is a preponderant factor when choosing how to travel and is a strong incentive to using a car. This is why the management of on and off-road parking is an effective means of discouraging car use, particularly with regard to travel to work.* ***ON-ROAD PARKING*** *The "Parking Order" of 22 January 2009 lays down the procedures for determining charges for on-road parking in parking zones.* *One of the objectives is to reduce the number of on-road parking places so as to improve quality of life, the fluidity of public transport and the creation of bicycle infrastructures.* *In conjunction with municipal authorities, a 16% reduction in on-road parking by 2018 will be studied and might be confirmed in the Regional Parking Plan, whereby off-road parking will contribute significantly to compensating for the removal of on-road parking spaces. The precise manner in which this reduction will be achieved will also be determined when drawing up the Regional Parking Plan.* *A reduction in on-road parking will focus on parking at destination. Special sites will also be set aside for long-term parking by coaches and heavy vehicles.* ***OFF-ROAD PARKING*** *Since 3 January 2007, the rules governing off-road parking have been laid down by the Regional Urban Planning Regulation (Title VIII).* *This Regulation defines the building standards for office and residential car parks on the basis of public-transport accessibility. However, these rules only apply to new buildings. They will therefore have only limited impact since they will only slow down slightly the increase in the number of off-road parking spaces in Brussels.* *In order to act also in relation to existing car parks, a maximum threshold of authorised packing spaces will be set by the Government for installations requiring an environmental permit and occupied as a workplace. References to the Regional Urban Planning Regulation will be included in extensions to or renewals of environmental permits.*
	Target end-use	*Car transport*
	Target group	*Public, businesses*
	Region	*Regional measure (BCR)*

Information on implementation	**List of actions substantiating the measure**	
	Budget and financial source	
	Implementing body	
	Monitoring authority	
Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table T.7. Measure T.7. in the transport sector

Title of the energy saving measure		***Developing plans for targeted sectors (taxis, goods)***
Index of the measure		*T.7.*
Description	**Category**	*Regulation* *Voluntary agreements and co-operative instruments*
	Timeframe	
	Aim/brief description	***DEVELOPING A GOODS PLAN*** *The process of developing a goods plan was launched at the end of 2010 with an initial phase (consultation with the transport sector) and should be completed in October 2011.* *The aim of this plan is to reduce the nuisance created by and improve the organisation of goods transport by increasing the use of transport by rail, canal or smaller vehicles.* ***IMPLEMENTATION OF A STRATEGIC PLAN FOR TAXIS*** *As a flexible car service, taxis have a role to play in improving mobility in the Region. As an ideal complement to walking, cycling or using public transport, taxis, shared taxis and indeed shared cars are an important component on the supply side of mobility.* *The Region has a strategic plan for the taxi sector entitled "A taxi for the future", the main objective of which is to improve the quality of services for taxi users. The plan includes measures on using vehicles with low environmental impact, the development of a collective taxi service (Collecto) and promoting taxi use.*

	Target end-use	*Transport of goods* *Car transport*
	Target group	*Businesses*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	
	Budget and financial source	
	Implementing body	*Bruxelles-Mobilité*
	Monitoring authority	
Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	

	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

2.3.2.5 Horizontal measures

Table 5. Overview of individual horizontal measures

No	Title of the energy-saving measure	End-use targeted	Duration	Achieved energy savings in 2010 (GWh)	Energy savings expected in 2016 (GWh)
H.1.	Developing sustainable neighbourhoods: through renovation, new buildings and citizens' initiatives				
H.2.	Information and awareness-raising on environmental and energy issues				

Table H.1. Horizontal measure H.1.

Title of the energy-saving measure		***Developing sustainable neighbourhoods: through renovation, new buildings and citizens' initiatives***
Index of the measure		*H.1.*
Description	**Category**	*4. Voluntary agreements and co-operative instruments:*
	Timeframe	*Neighbourhood contracts have existed since 1994.* *These contracts have become "sustainable" as of 2010 (Order of 28 January 2010 and Decree of 27 May 2010).* *A call for sustainable neighbourhood projects was launched in 2008. The first projects got underway in 2009.*
	Aim/brief description	***REVITALISING OLD AND VULNERABLE NEIGHBOURHOODS FROM A SUSTAINABLE POINT OF VIEW*** *Neighbourhood contracts are revitalisation programmes initiated by the BCR and implemented in various vulnerable neighbourhoods in partnership with the municipal authorities. These programmes consist of a number of operations within the same neighbourhood to be carried out over a period of four years (with an additional two years in order to complete the final works).* *These neighbourhood contracts have been adapted in order to speed up the energy shift of the building stock specifically in old and vulnerable neighbourhoods requiring revitalisation. Each year, a call for applications to the municipal authorities will be launched for new neighbourhood contracts, whereby priority will be given to projects offering a high ecological performance. A free eco-counsellor service will provide assistance with the energy management of small commercial businesses and with waste management.* *Four neighbourhoods are selected each year.* *The neighbourhood contracts launched in 2010 and 2011 are already covered by the new arrangements (8 neighbourhoods).* ***ENCOURAGE CITIZENS' INITIATIVES IN THE CONTEXT OF THE CALL FOR "SUSTAIINABLE NEIGHBOURHOOD" PROJECTS*** *The call for "sustainable neighbourhood" projects seeks to encourage citizens' initiatives within restricted geographical areas, i.e. individual neighbourhoods. The aim is to improve neighbourliness, solidarity and respect*

		for the environment on the basis of local solutions developed by local residents. *Five neighbourhoods are selected each year and receive personalised support and a subsidy for projects of collective interest.* *15 Brussels neighbourhoods already take part in this voluntary scheme.*
	Target end-use	*Neighbourhoods*
	Target group	*Public, socially less-favoured households*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	***Developing all new urbanisation projects with a special emphasis on sustainability*** *Throughout the region, all new greenfield urbanisation projects will have to place emphasis on the "sustainable neighbourhood" aspect and meet strict sustainability criteria: high energy and environmental (in terms of materials, water management and biodiversity) performance, good social and functional mix, soft mobility, etc. The new Regional Sustainable Development Plan will include this objective, and it will also feature in the Brussels Regional Planning Code. Works must also incorporate social-economy projects and encourage the development of new environmental trades. It should also be noted that, in future, the carbon footprint will systematically have to be established for all large works in the Brussels Region.* *A Sustainable Neighbourhoods Facilitator offers guidance to developers via a range of experts (planners, architects, eco-builders, sociologists, lawyers, engineers, etc.) for the development of sustainable neighbourhoods in Brussels.*
	Budget and financial source	
	Implementing body	*The Ministry of the Brussels-Capital Region* *Regional Planning and Housing Administration* *Urban Renovation Directorate* *The IBGE-BIM for the call for sustainable neighbourhood projects and for the Sustainable Neighbourhoods Facilitator.*
	Monitoring authority	*The Government of the Brussels-Capital Region – the Minister in charge of Urban Renovation*

Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table H.2. Horizontal measure H.2.

Title of the energy saving measure		***Information and awareness-raising on environmental and energy issues***
Index of the measure		*H.2.*
Description	**Category**	*2. Information*
	Timeframe	*Ongoing*
	Aim/brief description	***PUBLICATIONS*** *There is a large number of varied information and awareness-raising actions targeted at a range of audiences.* • *Amongst the many publications that exist, the free monthly publication entitled "Ma Ville Notre Planète" [My City Our Planet], available by post or e-mail, plays a particularly important role.* • *The magazine Brussels Environment News (BEN) offers news and advice to businesses relating to environmental legislation. This newsletter is sent out free-of-charge every three months.* • *E-News, a totally free electronic newsletter, allows environmental professionals to keep abreast of current developments in Brussels in the following areas: training, regulation, seminars, special actions, new tools, etc.* ***ENVIRONMENT DAY ("FÊTE DE L'ENVIRONNEMENT")*** *Each year, the IBGE-BIM organises a major celebration, the Environment Day. This day is an opportunity to have fun, meet various environmental stakeholders from various institutions or associations and load up on information.* ***ACTIONS IN SCHOOLS*** *The Region provides teachers with complete teaching materials to raise awareness among young people on the subject of energy.*
	Target end-use	
	Target group	*Public, businesses, professionals*
	Region	*Regional measure (BCR)*

Information on implementation	**List and description of energy saving actions substantiating the measure**	
	Budget and financial source	
	Implementing body	
	Monitoring authority	
Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

2.3.2.6. Measures in the public sector

Table 6. Overview of individual measures in the public sector

No	Title of the energy saving measure	End-use targeted	Duration	Achieved energy savings in 2010 (GWh)	Energy savings expected in 2016 (GWh)
P.1.	Defining strict REU (rational energy use) criteria for all investment in real estate by public or similar bodies receiving funds from the Region				

P.2.	Improving the EPB of public buildings • Passive standard for all new buildings • Low-energy standard for major renovations • Production of green energy equal to 30% of consumption • Mandatory display of energy certificate	From 2011			
P.3.	Changing the logic of investment in public housing (SDRB, SLRB, Housing Fund, etc.) by integrating the occupancy cost logic and increasing the energy efficiency of social housing				
P.4.	Encouraging PLAGE projects in schools and public buildings				
P.5.	Improving travel plans in public enterprises				
P.6.	Improving the environmental performance of the vehicles of public authorities				
P.7.	Enhancing sustainable public procurement				
P.8	Implementation of an overall lighting-efficiency improvement plan				

Table P.1. Measure P.1. in the public sector

Title of the energy saving measure		***Defining strict REU (rational energy use) criteria for all investment in real estate by public or similar bodies receiving funds from the Region***
Index of the measure		*P.1.*
Description	**Category**	*Energy efficient public procurement* *Exemplary role of the public sector*
	Timeframe	*A decree on subsidised works in the municipalities was adopted in May 2009 and now contains very strict conditions on energy efficiency.*
	Aim/brief description	*If the Region finance works, it is reasonable for it to be demanding as to the purpose to which its funds are put.* *The budgets allocated to subsidised works will have to be granted as a priority to projects with high energy performance and, following the logic of setting an example, the energy performance to be achieved will have to be greater than the requirements laid down by the decrees implementing the EPB Order.* *A range of stakeholders are involved: municipal authorities (through the general funds allocated to them, the tri-annual public-interest investment programme, other subsidised works and the neighbourhood contracts), the SDRB (Regional Development Company), the SLRB (Public Service Real Estate Company), the CMRS (Royal Monuments and Sites Commission), COCOM (Common Community Commission) and COCOF (French-speaking Community Commission) infrastructures, hospitals, rest homes, Beliris (cooperation agreement between the Federal State and the BCR to promote the image of Brussels as capital of Belgium and Europe), etc.*
	Target end-use	*New buildings, existing buildings*
	Target group	*Public sector*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	*A <u>regional energy economy plan</u> linked to the energy consumptions displayed in public buildings belonging to the Region will be incorporated into the PRDD (Regional Sustainable Development Plan). This planning of energy-saving works will be established in public buildings, and especially social housing. Priority will be given to insulation and boiler-improvement investments.* *In the context of energy grants, special attention is given to associated public authorities.* *Since 2010, these authorities have had access to general energy grants, whereas in previous years they had access to a specific budget.* *In addition to having access to general energy grants, the associated public authorities benefit from an ad hoc programme in 2011:* – *free audits* – *free studies for lighting and heating works* – *specific REU grants* – *and accounting service.* ***FUNDING MECHANISM***

		The Region will encourage the setting-up of an energy services company dedicated as a priority to municipal and regional public buildings. Funding for this company might be requested from Interfin (an inter-municipal company which provides funding to the municipalities) and SRIB (the Brussels Regional Investment Company).
	Budget and financial source	*The sources of funding are regional: the aim is to integrate the new requirements into recurrent budgets.*
	Implementing body	*Local authorities in the BCR.*
	Monitoring authority	*Government of the Brussels-Capital Region* *The Local Authorities Administration (APL) is the Region's representative in its relations with the various local authorities situated on the territory of the BCR.*
Energy savings	**Method for monitoring/measuring the resulting savings**	*An annual report concerning progress with this measure will be presented to the Government.*
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table P.2. Measure P.2. in the public sector

Title of the energy saving measure		***Improving the EPB of public buildings*** • ***Passive standard for all new buildings*** • ***Low-energy standard for major renovations*** • ***Production of green energy equal to 30% of consumption*** • ***Mandatory display of energy certificate***
Index of the measure		*P.2.*
Description	**Category**	*Energy efficient public procurement* *Exemplary role of the public sector*
	Timeframe	*From 2011 – A circular is being drafted.* *The display of the energy certificate will be implemented in 2011.*
	Aim/brief description	*The Region is required to set an example in terms of sustainable construction and renovation so as to encourage the real estate market to adopt the passive standard.* *In order to do so, all real estate investment (new buildings and renovations) by any body falling under Regional authority (administration, para-regional, SDRB, SLRB, etc.)*

		will have to set an example with regard to energy: all new buildings will have to at least meet the passive standard, and all major renovations will have to meet the very low energy standard (except where there is an exemption linked to specific functions or the because of the particular value of the building in heritage terms). *New public buildings and existing public buildings undergoing renovation will also gradually have to aim at achieving a proportion of green energy production corresponding to 30% of their consumption.* *The display of energy consumption information in all existing public buildings in the Region will be mandatory and gradually put into effect from 2011. This will have to be reviewed annually.*
	Target end-use	*New buildings, existing buildings*
	Target group	*Public sector*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	*Material aid in the form of training, expertise and methodology to support the implementation of this measure will be offered.* *A flagship action will be the construction of the new headquarters of the IBGE-BIM according to the passive standard (16 000 m^2).*
	Budget and financial source	
	Implementing body	*SDRB* *SLRB* *Housing Fund* *Sustainable neighbourhood contracts*
	Monitoring authority	*Government of the Brussels-Capital Region* *IBGE-BIM* *The Local Authorities Administration (APL) is the Region's representative in its relations with the various local authorities situated on the territory of the BCR.*
Energy savings	**Method for monitoring/measuring the resulting savings**	*An annual report concerning progress with this measure will be presented to the Government*
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table P.3. Measure P.3. in the public sector

Title of the energy saving measure		***Changing the logic of investment in public housing (SDRB, SLRB, Housing Fund, etc.) by integrating the occupancy cost logic*** ***Increasing the energy efficiency of social housing*** • ***New buildings: passive standard*** • ***Renovations: low energy standard***
Index of the measure		*P.3.*
Description	**Category**	*Energy efficient public procurement* *Exemplary role of the public sector*
	Timeframe	*2009, 2011*
	Aim/brief description	*Studies demonstrate that the share of rent and the increase in charges linked to a dwelling might, by 2030, account for the entire income of the most vulnerable people. It therefore seems increasingly important to view the item of housing in a household budget in its entirety (occupancy cost) and no longer in a fragmented manner (rent or loan plus overheads).* *This is why all building and renovation of housing carried out by public or equivalent bodies (SDRB, SLRB and SISP, Housing Fund, AIS, Régie Foncière, etc.) and subject to funding by the region will create homes of a size based on ensuring the lowest possible occupancy cost for the future occupant.* *With specific regard to social housing, energy efficiency will be increased by imposing the passive standard for new building and the low energy standard for renovations. A framework will be established to ensure that this improvement of the energy efficiency of social housing will not increase the total amount made up of agreed rent and additional charges payable by the tenant, and even leads as far as possible to a reduction in the overall cost.* *As regards the SDRB, from November 2009 it has made the passive standard mandatory for all new building products, with the low energy standard being mandatory for renovations.*
	Target end-use	*New buildings, existing buildings*
	Target group	*Public sector*
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	*The SDRB has already defined standard specifications to meet these requirements.* *The SLRB management contract has been adapted.*
	Budget and financial source	
	Implementing body	
	Monitoring authority	

Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table P.4. Measure P.4. in the public sector

Title of the energy saving measure		***Encouraging PLAGE projects in schools and public buildings***
Index of the measure		*P.4. (See also measure B.2. – PLAGE)*
Description	**Category**	*Regulation* *Exemplary role of the public sector*
	Timeframe	*The first PLAGE programmes have existed on a voluntary basis and in the public sector (firstly in municipal authorities and hospitals, and then in schools) since 2006.*
	Aim/brief description	*A PLAGE programme initially enables the energy-saving potential and priorities for action in buildings of the same stock to be identified. It then offers the possibility of gradually implementing an action plan based on a series of coherent and coordinated actions, including awareness-raising among occupants with regard to good behaviour.*
	Target end-use	
	Target group	
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	• *EPB* • *Environmental permit* • *Training* • *Grants* • *Funding mechanisms* • *Technical aids* • *Green Certificates*
	Budget and financial source	
	Implementing body	*Municipal buildings, hospitals, schools*
	Monitoring authority	*IBGE-BIM*
Energy savings	**Method for monitoring/measuring the resulting savings**	

	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table P.5. Measure P.5. in the public sector

Title of the energy saving measure		***Improving travel plans in public enterprises***
Index of the measure		*P.5. – see also measure T.1.*
Description	**Category**	*Voluntary agreements and co-operative instruments* *Exemplary role of the public sector*
	Timeframe	*Probably in 2011, following the entry into force of the "Travel Plans Order" of 14 May 2009*
	Aim/brief description	*In order to encourage residents and visitors to use public transport, which is better for the city and the environment (with the ambitious aim of reducing car traffic), the Region is asking businesses, institutions, public administrations and schools to establish travel plans.* *<u>Enhancing travel plans in public companies</u>* *Public authorities have an obligation to set an example to businesses and the general public in the area of mobility, in particular that of their staff. They therefore encourage local and regional officials to give priority to using public transport and all forms of soft mobility. The Brussels Parliament will also fulfil its exemplary role by establishing a business travel plan. Priority will be given to monitoring the travel plans of public authorities to ensure that an example is set*
	Target end-use	
	Target group	
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	
	Budget and financial source	
	Implementing body	
	Monitoring authority	

Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table P.6. Measure P.6. in the public sector

Title of the energy saving measure		***Improving the environmental performance of the vehicles of public authorities***
Index of the measure		*P.6. – see also measure T.2.*
Description	**Category**	*Voluntary agreements and co-operative instruments* *Information and mandatory information measures*
	Timeframe	*The "Clean Vehicles Decree", adopted on 28 May 2009, defines a minimum eco-score to be complied with by the vehicles of the authorities in question.*
	Aim/brief description	*The Region requires of all regional public authorities and bodies coming under their authority or control that every vehicle purchased or leased should comply with a minimum eco-score, which will be reduced every year from 2014. The Region will continue its efforts on this matter.* *Vehicles used in the exercise of public service missions (e.g. buses, ambulances) will also have to meet high environmental performance criteria; the management contract of the STIB (Brussels local transport company) will thus be amended to that end.* *Taxis and fleets of tourist buses will also be required to comply with a minimum eco-score applicable to new vehicles.* *The Region will also have to encourage the use of energy produced from renewable sources in the vehicles held, in whatever capacity, by the public authorities registered in the BCR.* *The Region will also set specific targets concerning the proportion of energy produced from renewable sources used by:* • *the public passenger transport vehicles used by the STIB (these targets are defined in the specifications of the relevant management contract);* • *the vehicles of the ABP (refuse collection service) and SIAMU (fire and ambulance service) specially designed for the purposes of their public service missions.* *The public authorities falling under the control of the Region submit an annual report to the Government on the proportion of energy produced from renewable sources in*

		their vehicle fleet.

	Target end-use	
	Target group	
	Region	*Regional measure (BCR)*
Information on implementation	**List of actions substantiating the measure**	*Environmental performance is assessed using the eco-score (see measure T.2.)*
	Budget and financial source	*From the recurrent budget.*
	Implementing body	*Each regional public authority*
	Monitoring authority	*IBGE-BIM*

Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table P.7. Measure P.7. in the public sector

Title of the energy saving measure		***Enhancing sustainable public procurement***
Index of the measure		*P.7.*
Description	**Category**	*Energy efficient public procurement*
	Timeframe	
	Aim/brief description	*Public procurement accounts for between 5 and 10% of GDP. It is therefore a very important lever in guiding production towards an economy based on sustainable development.* *The integration of environmental and sustainable-development criteria in the public procurement of goods and services is mandatory for all regional public administrations of the BCR (Circular of 5 February 2009) and voluntary for municipal administrations.* *In parallel, the Government will ensure that most public contracts financed and co-financed by the Region are geared towards sustainability.* *A purchasing unit will be set up with a purchasing policy focussed on sustainability through the incorporation of economic, social, and environmental criteria into its procurement activities. This unit will provide all Brussels institutions (regional and municipal) with energy supplies, materials for renovation works, motorised vehicles, bicycles, furniture and various consumables linked to their administrative activity. It will organise a network for exchanging and recovering goods between the various Brussels institutions. It will also seek to minimise impacts over the entire life cycle of different products, up to their end of their useful life, in accordance with the order of action laid down by the Waste Directive, i.e. prevention, preparation for re-use, recycling, treatment and disposal.*

	Target end-use	
	Target group	
	Region	*Regional measure (BCR)*

Information on implementation	**List of actions substantiating the measure**	*To support and facilitate the effective implementation of the Circular, the IBGE-BIM has set up a helpdesk for public administrations and is developing a range of online tool, including:* • *a method for evaluating the initial situation;* • *a green purchase monitoring tool;* • *environmental and sustainable criteria based as far as possible on existing labels and certificates: FSC, fair trade, organic label, green certificates, eco-score, etc.;* • *standard specifications incorporating all the economic, social and environmental criteria for different types of goods and services, such as office supplies (paper, furniture, etc.), cars (complying with a minimum eco-score), foodstuffs, sustainable construction and energy.* *In addition, the IBGE-BIM organises training to help procurement officers implement the Circular. 15 municipal administrations (out of the 19 making up the BCR) have already signed up on a voluntary basis to this policy of sustainable procurement by incorporating it into their local Agenda 21.*
	Budget and financial source	
	Implementing body	
	Monitoring authority	
Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

Table P.8. Measure P.8. in the public sector

Title of the energy saving measure		***Implementation of an overall lighting-efficiency improvement plan***
Index of the measure		*P.8.*
Description	**Category**	*2.1. Exemplary role of the public sector*
	Timeframe	*From 2010, with a test phase.*

	Aim/brief description	*The Region is under an obligation to reduce its energy consumption as much as possible both in terms of reducing it environmental impact and of fulfilling its exemplary role vis-à-vis the public.* *The low energy standard will be encouraged with regard to public lighting (while maintaining road safety) for all new buildings, public and private alike; energy performance contracts (including issues of maintenance) will systematically be concluded and energy clauses will be incorporated in the specifications for renovations and/or construction. The Government has entrusted Sibelga (as operator of public lighting on municipal streets) with implementing a global lighting efficiency improvement plan covering all lighting in Brussels.* *This plan will comprise the following measures:* • *preparation of an energy register for all lighting in 2011;* • *introduction of dimming (during the quietest hours) where technically possible and taking account of safety aspects (tests are already being carried out at three sites, and two other sites will be added shortly);* • *after testing a representative sample, an LED lighting plan will be applied, in particular in small installations (pedestrian passageways, etc.);* • *testing of self-powered lights (using renewable energy) is currently in progress.*
	Target end-use	*Public lighting*
	Target group	*Region, municipalities*
	Region	*Regional measure (BCR)*
Information on implementation	**List and description of energy saving actions substantiating the measure**	
	Budget and financial source	
	Implementing body	*Sibelga*
	Monitoring authority	*Brugel*

Energy savings	**Method for monitoring/measuring the resulting savings**	
	Savings achieved in 2010	
	Expected energy savings in 2016	
	Expected impact on energy savings in 2020 (if available)	
	Assumptions	
	Overlaps, multiplication effect, synergy	

2.3.3 Summary of overall final energy savings

Sector	Associated measure	Calculation methodology	Energy savings expected in 2016 (GWh)
Buildings	B1	IBGE-BIM projection model (fixed sources)	1 061 final energy 1 254 primary energy
Buildings	B2	IBGE-BIM projection model (fixed sources)	306 final energy 434 primary energy
Buildings	B3	IBGE-BIM projection model (fixed sources)	286 final energy 425 primary energy
Buildings	B7	IBGE-BIM projection model (fixed sources)	210 final energy 309 primary energy

Buildings	B10	IBGE-BIM projection model (fixed sources)	123 final energy 140 primary energy
Total transport	T1, T2, T3, T4, T5, T6, T7	IBGE-BIM projection model (transport)	325.78 final energy 325.78 primary energy
TOTAL			2 311.78 final energy 2 887.78 primary energy

2.4 PUBLIC SECTOR

In this plan, in the case of the Brussels-Capital, the public sector is considered in the case of the Brussels Capital Region to be the regional authorities or agencies coming under their authority and control (cf. Decree of the Government of the Brussels-Capital on the introduction of more environmentally friendly vehicles in the fleet of the regional authorities, 28/05/2009).

2.4.1 Exemplary role of the public sector

No	Title of the energy saving measure
P.1.	Defining strict criteria for rational energy use for all real-estate investments by public or similar bodies receiving funding from the Region
P.2	Improving the environmental performance of public buildings: • passive standard for all new construction • low energy standard for all major renovations • green energy production equal to 30% of their consumption • mandatory posting of the energy certificate
P.3	Changing the logic of investment in public housing (SDRB, SLRB, Housing Fund, etc.) by incorporating the logic of occupancy cost and increasing the energy efficiency of social housing
P.4	Encouraging PLAGE projects in schools and public buildings
P.5.	Strengthening the travel plans of public enterprises
P.6.	Improving the environmental performance of public vehicles
P.7.	Strengthening sustainable procurement
P.8	Implementing a comprehensive plan to improve the efficiency of lighting

Measures relating to the exemplary role of the public sector in the Brussels Capital Region

The BCR places special emphasis on the exemplary nature of public authorities with strong expectations in terms of buildings, energy and environmental performance and renewable energy production. At the level of transport, the notion of travel plans is being strengthened in public enterprises and the energy performance of public vehicles is

being improved. The emphasis placed on setting an example is also reflected in the implementation of a sustainable purchasing policy. The “eco-dynamic business” label allows the various regional authorities to implement environmental actions across their daily management activities.

As regards more specifically the rules relating to the energy performance of buildings (EPB, measure 2), the main aim of certification of public buildings is to encourage the public sector to set an example in terms of energy saving as a means of inspiring the public to act in the same way. Assessment is based on overall annual net energy consumption for all uses combined. The aim of setting an example, and the very nature of the EPB certificate, imply that this document will be updated every year.

The Government Decree on the EPB certificate for public buildings was adopted on 27 May 2010. It applies to all buildings located in the BCR of more than 1 000 m² occupied by public authorities (federal, regional, community, European, etc.) or by institutions providing public services (schools, hospitals, museums, etc.). These buildings are public buildings within the meaning of the Decree.

In addition, the Brussels-Capital launched a call for projects in 2007 on “Exemplary buildings in the areas of eco-construction and energy” (BATEX, measure B7). Of the 117 projects received in the first three years, thirty involve a public developer (municipality, municipal social-services centres, SDRB, etc.).

Since 2009, the Brussels Region has extended to all public authorities the obligation to adopt the passive standard for new construction and the "very low energy" standards for renovations. This was made possible thanks to those pioneers who took up this challenge, including as the SDRB.

The Brussels-Capital Region also supports the exemplary role of public authorities in terms of social housing by means of a call for projects for the development of new local action plans for energy management (PLAGE, P4) aimed at 33 social housing companies situated within the Region.

These local action plans for energy management (PLAGE, P4) are not just aimed at social housing but also at other stakeholders (hospitals, schools, etc.). The first results of previous calls for proposals show that the initial participants (15 municipalities, 7 hospitals, 2 public housing companies, schools, etc.) reduced their fuel consumption by nearly 15% in three years, without any major investment. This corresponds to total financial savings of almost € 2 million for municipalities and € 3.7 million for hospitals.

Projects are also implemented at the level of municipalities and social-services centres. The Iris 21[10] Agenda is an initiative of the Region to encourage and support municipalities and social-services centres who wish to move towards more sustainable development through, *inter alia*, the introduction of a new method of governance with greater public participation. The involvement of local actors is strongly encouraged.

As regards mobility, the Brussels Region imposes purchasing standards (based on the eco-score) for any vehicle purchased or leased ("Clean Vehicles" Decree of 28 May 2009). It has also included in the management contract of the STIB (the Brussels public transport authority) a number of mandatory actions relating to energy efficiency, such as training drivers to drive in a less polluting manner, offering travel plans to companies, etc.

The Brussels Capital Region regularly informs the public and businesses on its actions and its exemplary role using several means of communication

To encourage the public to follow the examples set by public authorities, various brochures on specific actions to reduce household energy consumption often contain references to action taken by the government.

In terms of communication, all existing public buildings in the region are gradually being required from 2011 to display information on their energy consumption. Moreover, the European Commission was the first to display the energy performance certificate of its building.

As evidence of the action taken in the public sector, a flagship action by the IBGE-BIM is the construction of its new headquarters (16,000 m²) on the basis of the passive standard. Once completed, this building will be one of the largest passive buildings in Europe.

Several regional bodies have been awarded the “eco-dynamic business” label and are taking advantage of being able to make it known that they have been accredited in that way or are publicising their specific initiatives. For example, the SLRB provides information on the specific nature of and initiatives being taken regarding social through, *inter alia*, seminars and publications, particularly concerning sustainable development, with the ultimate aim of creating new partnerships and giving rise to innovative ideas.

At the level of mobility, the STIB, the leading Belgian urban transport company, has seen its customer base almost double over the past 10 years. This is a dramatic increase, and is almost unique in Europe.

The **Ticket to Kyoto** project aims to reduce energy consumption by public transport companies and, in so doing, reduce their CO_2 emissions. Five partners are involved in the project: the STIB (Brussels), RET (Rotterdam), TfGM (Manchester), moBiel (Bielefeld) and RATP (Paris). In 2011, the project aims to create "**quick wins**", i.e. quickly producing measurable effects. At STIB, no fewer than 27 projects were selected following a call issued to all staff. Examples of these "quick wins" are the introduction of an indicator for bus drivers to instantly measure the benefits of **eco-driving**, reducing the temperature of heating in underground train depots, the installation of quick-closing doors at tram depots, reducing energy demand for **heating**, or increasing the pressure of the tyres of service vehicles, resulting in a reduction in fuel consumption. Ticket to Kyoto also involves two **awareness-raising campaigns** aimed at the general public. In June 2011, advertising on local television in Brussels, in the press and on the banners of websites will allow the public to become familiar with the T2K project. From June, a T2K tram will run on the streets of Brussels. STIB customers will see a series of information panels on the project.

The second wave of the public campaign will be launched in 2013. The aim will be to educate members of the public on their own **CO_2 emissions** and how best to reduce them.

To give visibility to regional measures, the IBGE-BIM has also nominated regional PLAGE and BATEX initiatives for the 2011 Belgian Energy and Environment Prize in the “Institution Sustainable Development Award” category”. These projects feature among the top three projects.

The public sector is aiming to take measures to improve energy efficiency in a cost-effective manner.

For example, during the implementation of a PLAGE initiative, the first stage involves conducting an energy assessment of the building stock in question so as to establish an action plan taking account of priority buildings. In the context of sustainable procurement policy, public authorities are also encouraged to consider the total cost of a product or service throughout its life cycle and not just the purchase price.

The Region publishes guidelines to serve as evaluation criteria for public procurement.

The IBGE-BIM has developed various tools, such as standard specifications for several product groups, technical guidelines for the integration of sustainability criteria in specifications, etc. All of these tools are included in the "toolbox" on the pages of the IBGE-BIM website dedicated to sustainable public procurement[13].

In 2009, the IBGE-BIM launched a help desk for all Brussels officials who have questions following the integration of environmental criteria in their specifications. An expert on green public procurement is happy to re-read the specifications free-of-charge in order to check the ecological criteria or environmental clauses. Other questions relating to ecological criteria can also be asked via the helpdesk[14].

The exchange of best practices among public sector bodies in the Brussels-Capital Region is made easier through information sessions and training.

Training is an opportunity for various public actors to meet each other. Information is also shared at seminars organized by specialists of the facilitator service (a fortnight of seminars over the year). These seminars are targeted at all professionals. Finally, a network of energy managers has been introduced on the basis of the PLAGE programme.

2.4.2 Public sector leading role in EPBD

Since 2010, any construction undertaken by public authorities is required to be passive and any major renovation to meet the low energy standard: all regional public investment in real estate for creating middle-income housing, the construction or renovation of social housing, the urban renewal and neighbourhood rehabilitation programmes (neighbourhood contract), etc., must in future comply with the passive standard in the case of new buildings and the low energy standard in the case of renovations. The symbol of this change is likely to be the new headquarters of the Brussels Environmental Administration (IBGE-BIM). At over 16 000 m^2, it will be the largest tertiary-sector passive and eco-built building developed in Europe in 2012-2013. It will be built by a private developer and will be leased for 20 years at the market price.

2.4.3 Specific measures for public procurement

The Brussels Region, in its commitment to set an example, meets most of the measures eligible for energy efficiency in public procurement. The actions listed below correspond to points a), b) and c) of the list in Annex VI of the ESD.

For the buildings component, the financial resources earmarked for public or similar bodies are subject to priority action on the energy efficiency of buildings, with stricter eligibility criteria than the minimum required by PEB legislation.

Building element	PEB value	Public authority value
Windows	UW max = 2.5 W /m²K	UW max = 2 W/m²
Glazing	Max Ug = 1.6 W/m²K	Max Ug = 1.1 W/m²K

Table 5 -Example of minimum values for heat loss from windows, showing that the value for public authorities is lower and therefore stricter[15]

Indeed, strict standards are already imposed (passive for new buildings and low-energy for major renovations) on all real estate investment by bodies coming under the authority of the Region.

For the mobility component, the Brussels Region imposes procurement standards (based on the eco-score) for any vehicle purchased or leased ("Clean Vehicles" Decree of 28 May 2009).

All public-interest organisations in Brussels are required by the Circular of 5 February 2009 to pursue a sustainable procurement policy for the procurement of supplies and services.

2.5 ENSURING AVAILABILITY OF ADVICE AND INFORMATION

The IBGE-BIM distributes range of information via different media:

- the monthly (10 issues per year) publication “Ma Ville Notre Planète” [My City Our Planet];
- the quarterly publication Brussels Environment News (BEN) aimed at professionals;
- the monthly E-newsletter for professionals;
- the monthly E-newsletter for the general public;
- on its website www.bruxellesenvironnement.be, which contains extensive documentation and will soon be enhanced by the trilingual portal site “Bruxelles Ville Durable” [Brussels Sustainable City][16].

Moreover, in 2011, a 42-page public brochure (available in French, Dutch and English) was produced entitled “Brussels, from eco-building to sustainable city”. An outdoor exhibition on energy/eco-building/the sustainable city project is also planned.

As far as the construction sector is concerned, the IBGE-BIM disseminates information on various measures through a variety of channels.

First of all, various pamphlets, brochures and manuals promoting actions are targeted at both citizens and professionals (such as the PLAGE Manual for decision makers and energy managers, PLAGE measure B2).

For professionals, the IBGE-BIM has stands at various major trade fairs dealing with topics such as EPB, energy saving or sustainable construction (the Passive and Energy Fairs held in the autumn at Tour et Taxis, etc.). Accompanying measures also exist for professionals accredited by the IBGE-BIM (telephone and e-mail helpdesk).

Free advice is also provided to individuals via the Centre Urbain [Urban Centre][17].

In addition, large media communication campaigns (daily and weekly press articles, radio spots, posters, etc.) are conducted throughout the year to attract the public's attention to actions such as:

- the 2011 energy grants (**Energy grants, measure B4**);
- EPB certification PEB (**EPB, measure B1**);
- calls for "Exemplary Buildings" projects (**Exemplary Buildings, measure B7**).

To **ensure that information is provided on the gradual strengthening of regulatory EPB requirements** (**measure B1**), basic/continuous training and seminars are provided. Similarly, specialised training on building design and implementation allow the **sustainable building sector to be boosted** (**measure B6**).

A regional Facilitators Service has also been developed. The Sustainable Building Facilitator (**sustainable buildings, measure B6**) provides a helpdesk and general guidance for all matters related to the management, renovation or construction of a building with a view to sustainability: energy, materials, water, land, planning, health and comfort.

A process has been underway for a number of years to give **pro-active support to households with regard to energy and eco-construction** (**measure B10**). The energy challenge, with a website, training and events, encourages the public to voluntarily reduce their energy consumption through "small steps", with practically no investment required. These same people then spread information by word-of-mouth within their community, their neighbourhood, building, etc. The Region currently funds an "Energy Infopoint", whose tasks it defines, within the Brussels Energy Agency [*Agence bruxelloise de l'Energie*] (ABEA). This provides information on rational energy use. It helps households to perform an energy self-diagnosis and carries out energy audits free-of-charge in homes. It also provides information on the aid available at federal and regional level. To improve and broaden the support services for households to take action on rational energy use and sustainable construction, the Infopoint will evolve into the "**House of Eco-Building and Energy**" [*Maison de l'Eco-construction et de l'Energie*] (within the IBGE-BIM).

At neighbourhood level, the development of sustainable neighbourhoods (measure H1) is supported by a sustainable neighbourhood facilitator service. Through stimulation of measures, the ongoing provision of information, assistance and guidance, the sustainable neighbourhoods facilitator seeks to introduce the principles of sustainable land management, eco-building and energy saving, eco-management, eco-citizenship and sustainable mobility into planning tools and real estate and renovation programmes, jointly and transversely at the level of neighbourhoods. This guidance service is targeted at all professional actors operating in a given neighbourhood for whom environmental support might be useful regardless of how far the project has progressed.

Since 2008, the Brussels Region has also called for projects involving the transformation of existing neighbourhoods into "sustainable neighbourhood." These projects are based on close and friendly relations and involve changing individual behaviour and creating actions and assets of collective interest.

The call for sustainable neighbourhood projects works as follows: the neighbourhoods selected after the call for projects has ended benefit over a period of a year from a number of activities intended to raise awareness among

the local population and establish an environmental momentum. These activities make up "the basket of sustainable neighbourhood services" and include training, guided walks, site visits, etc. Once they have finished, the IBGE-BIM funds projects of common interest, such as sustainable equipment or developments (shared garden, bicycle racks, etc.), or an initiative requiring active participation (workshops, exchange networks, reports, exhibitions, etc.).

To give voice to as many people as possible, a neighbourhood platform is established. The aim is to unite the group, encourage dialogue and provide follow-up to the project and its possible redeployment. Inter-district meetings are held to exchange experiences. A sustainable neighbourhoods log is also kept to indicate the progress of projects. This one-year programme is implemented with the help of a local animator provided by the IBGE-BIM.

As regards industry, important means of communication are the environmental permit, the "E-news" monthly magazine for professionals published by the IBGE-BIM and the site and articles published by the Brussels Business Agency [*Agence Bruxelloise pour l'entreprise*].

The granting or renewal of environmental permits is probably the best time to guide businesses in making their environmental choices.

Companies can enhance their environmental proactivity on the basis of the "eco-dynamic business" label (**measure I1**). Obtaining this label is free-of-charge, progressive (1, 2 or 3 stars) and is accompanied by back-up measures.

In addition to official recognition (a numbered label, valid for three years), all labelled companies are listed on the website of the IBGE-BIM. Each company can also complete a form highlighting specific achievements and published on the same website. Each year, the IBGE-BIM organises an award ceremony for the newly labelled businesses and renewals. The press and a large number of businesses in Brussels are invited. This event also allows managers of the various agencies to share their experiences. Information on the label and the achievements of participating businesses are regularly published in the "business" media of the IBGE-BIM (the BEN newsletter and E-news) as well as in the newsletter of the Brussels Business Agency).

As regards the energy sector, the distribution system manager and suppliers are required to promote rational energy use through information, demonstrations and the supply of equipment, services and financial assistance to municipal authorities and other end users (**Organising the energy market and imposing public service obligations, measure E1**).

Finally, in the transport sector, information and advice is provided as follows.

Since 2001, Brussels Mobility provides training to mobility advisers to support the development of travel plans (**measure T1**). It has also launched a platform enabling its mobility specialists to share their experiences and improve their knowledge.

The Region (via Brussels Mobility) funds 50% of the cost of multimodal accessibility forms.

The Region has implemented a number of promotion initiatives, including the "Bike to Work" initiative to encourage daily use of bicycles, the car-free day to encourage the use of alternatives to private cars, the "bike experience" to support newcomers to cycling on a daily basis.

A series of free training courses is also available to businesses; these include so-called thematic training (approximately once a year, with topics such as parking in businesses, multi-modality, etc.) and training relating to the requirement for any company with at least 100 employees to establish a business travel plan (published in the Belgian Official Gazette on 09.05.2011); four courses on this subject were held in May at the premises of the IBGE-BIM. Ultimately, some companies with a greater potential for improvement will be audited.

The school travel plans folder distributed to participating schools details the steps required to implement the plan. This document also includes a large number of actions that could be implemented.

A guide to major events is posted on the website of the IBGE-BIM: it informs site operators and event organisers of the tools available to reduce car traffic to events and to encourage alternative means of transport.

To encourage the purchase of cleaner vehicles (**measure T2**), the Brussels Region has participated in the development of the "eco-score" which indicates the overall ecological impact of a vehicle and has the advantage of enabling vehicles to be compared with vehicles using different fuels and technologies on one and the same basis. The website www.ecoscore.be, an educational tool aimed at the public, is regularly updated so that all vehicle models are listed. A brochure also exists. In presentations to companies on the subject of clean vehicles, the eco-score is always mentioned.

As regards the Bruxell'Air grant, there is a website with French and Dutch versions :

NL: http://www.brusselair-premie.be/homepage.php

FR: http://www.prime-bruxellair.be/homepage.php

Information is also available on the website of the STIB and IBGE-BIM.

To encourage soft means of transport (**measure T4**), numerous publications and other communication tools are made available to the public: pamphlets and brochures "Se déplacer autrement" (travel differently), "1.000 solutions et la vôtre" (1 000 solutions and yours) and "Mes déplacements et l'environnement" (my travel and the environment) give many tips on how to drive in a less polluting manner, the choice of clean vehicles, and the nature and impact of pollutants, including on health; the IBGE-BIM's website entitled "Eco-mobilité des ménages" (eco-mobility of households); communication campaigns on making a modal shift for short journeys (TV and radio spots, etc.); and a campaign to promote walking: 20 million km, bicycle route map (costing € 1, funded by the Region).

Improving the supply and the attractiveness of public transport (measure T5) is supported by media campaigns by STIB and other public transport operators in the region (posters, advertisements, E-News etc.). Brochures and advice on soft mobility are also available on the websites of Brussels Mobility and the IBGE-BIM.

2.6 OBLIGATIONS OF ENERGY COMPANIES TO PROMOTE ENERGY SAVINGS IN END-USE CONSUMPTION

Measure E.1 (Organising the energy market and imposing public service obligations) includes the public service obligations incumbent on suppliers and distribution system operators.

With regard to Article 6(1) of the Energy Services Directive (ESD), Government Decrees setting out the criteria and procedures for granting, renewing, transferring and withdrawing a license to supply electricity and gas require providers to report annually to the Brussels regulator (Brugel) on the number of sampling points and the quantities sampled, distinguishing between professional and non-professional customers. The manager of the regional electricity transmission system and the manager of the electricity and gas distribution system are also required to provide information to the Brussels regulator.

With regard to Article 6(2)(a) of the ESD, and specifically points (i) and (ii), most electricity suppliers in the BCR provide energy services (audits, personalised advice on energy saving, etc.) which they advertise on their websites, in information brochures sent to customers, etc. The manager of the electricity and gas distribution system is also required to promote rational energy use through information, demonstrations and the provision of equipment, services and financial assistance to municipal authorities and other end users. The manager of the distribution system is to this end establishing a programme for the rational use of electricity aimed at municipal authorities.

With regard to Article 6(2)(a) of the ESD, and specifically point (iii), the holding of a licence to supply electricity gives rise to a (monthly) charge payable by the person or entity holding the permit, part of which is allocated to the public service functions performed by the manager of the distribution system and part to the "Energy Policy Fund" [*Fonds relatif à la politique de l'énergie*] intended, *inter alia*, to finance actions relating to rational energy use to ensure the functioning of accreditation of protected customers (Article 11 of the ESD).

With regard to Article 9(2) of the Directive, the region makes available, via the website of the IBGE-BIM, a wide range of specific documents (model specifications, audit checklists, maintenance specifications, guides giving advice, maintenance toolbox for rational energy use, etc.).

With regard to Article 12(1) of the ESD, the Region promotes various forms of energy audits.

For individuals, the BCR has since 1 April 2008 offered a grant for those who voluntarily have an energy audit carried out by a PAE (Procédure d'avis énergétique – Energy Advice Procedure) auditor accredited by the Region. This energy audit involves making a detailed inventory of the energy performance of a single-family home using specific PAE software. It allows pinpointing of all the aspects that can be improved to reduce energy consumption and make the right decisions about possible renovation work[18].

Companies can also receive grants for energy audits, feasibility studies, energy design studies and the implementation of energy accounting.

Other specific financial support for businesses, which cannot be combined with the abovementioned grants and which are adjusted according to the size of the business, are described in the measure I.2 (Providing assistance with regard to energy-saving investments).

With regard to Article 12(2) of the ESD, the Region promotes actions which do not involve a direct cost.

Individuals can find self-energy-audit tools on the website of the IBGE-BIM:

- A simple self-audit simple taking only about ten minutes and requiring a few questions to be answered about the home and the individual's energy consumption. Thereafter, the user receives a large number of tips.

- A detailed self-audit, which allows the user to examine his energy use in detail and by topic. This audit takes longer, but the tips it gives will be better tailored to the user's specific situation.

Building professionals can also find several free tools adapted to various situations on the website of the IBGE-BIM:

- A vade mecum (targeted at the tertiary sector, the collective housing sector and hotel industry)
- Techno-economic analyses (for the tertiary sector and collective housing sector)
- An Energy+ CD ROM (a set of information and tools to help with understanding, sizing and evaluating the economic interest of specific technologies, such as cogeneration or large solar water-heating systems. The information is exhaustive and will satisfy the curiosity of managers and specialists alike). Version 6 is available only in French. Only version 1 is bilingual.

With regard to Article 13(1), the EPB regulations require energy metering for new or similar buildings and large-scale renovations. The underlying philosophy is to be able to monitor the production and consumption of an EPB unit (e.g. fuel meter) and to determine the performance of large facilities (e.g. fuel meter and energy meter for heated water).

2.7 MARKET FOR ENERGY SERVICES

The Brussels Region will encourage the development of an energy service company devoted primarily to municipal and regional public buildings.

Other more general measures also have the effect of stimulating the market for energy services. For the BCR, this is to be achieved through a number of mandatory measures, such as the professions accredited under EPB legislation (EPB advisor, EPB certifier, accredited heating specialist, EPB heating advisor), and mandatory audits, etc. To ensure the necessary quality of services, the accreditation systems of certain professions, such as energy auditors, have been put in place.

The market is also stimulated through incentives such as energy grants (which include an important element for studies and audits), the Employment-Environment Alliance and an extensive training programme for actors at all levels.

Ultimately, some professions also emerge, although more indirectly, as a result of legislation.

For example, the mobility officer in several companies came about as a result of the requirement to implement company travel plans, and energy offers can now be taken on following the obligation incumbent on some actors to implement an energy management action plan (PLAGE).

3 ESTABLISHMENT OF COMPETENT BODIES

The competent authority for the BCR is the IBGE-BIM (Brussels Environment), which was established by Royal Decree of 8March 1989 (MB 24/03/89).

The initial tasks of the IBGE-Bias specified in the Order, include:

- studying the application and implementation of EU rules in the area of the environment;
- Providing environmental assistance to local authorities (master plans, audits, opinions, etc.);
- Issuing an opinion on granting of operating permits;
- etc.

The tasks of the IBGE-BIM have greatly evolved and now include:

- the drawing-up of a biennial report on the state of the environment in the Brussels-Capital Region;
- mandatory participation in all consultative committees relating to planning procedures and environmental permits;
- issuing categories IA and IB environmental permits and also category II permits in the case of a public-sector applicant for an application involving public interest;
- the enforcement of environmental legislation (environmental police), including on environmental permits;
- management of an environmental information service;
- etc.

The powers of the IBGE-BIM with regard to energy include (Order of 20 January 2004 – Official Gazette of 21/04/94):

- The distribution and local transmission of electricity through networks with a nominal voltage of less than or equal to 70 000 volts;
- The public distribution of gas;
- The distance-heating distribution network;
- New energy sources (except those relating to nuclear);
- Energy recovery;
- Rational energy use;

The powers of the IBGE-BIM with regard to water were also widened in 2007 (Decree of 26 April 2007 - Official Gazette of 22/05/2007):

- The management of 1st and 2nd category non-navigable watercourses (clearing, maintenance, etc.);
- Groundwater management (issue collection permits, monitoring water quality, management of the piezometers network, reporting, flood prevention);
- The provision of some subsidies.