

B. ENERGY

Decision-Making : Strategies, policies, programmes and plans, legislation, policy instruments and the regulatory framework ; involmment of Major Groups

A. General Characteristics

1. Objectives of the Belgian Energy Policy

From the early 1970's, Belgium's overall policy objectives have concentrated on security of supply based on diversification of geographical sources and fuels, energy efficiency, transparent and competitive energy pricing and environmental protection.

The regional governments of Flanders, Wallonia and Brussel Capital are principally responsible for designing and implementing policies for energy efficiency, renewables, non-nuclear energy research and development (R&D) and market regulation for the distribution and supply of electricity and gas through distribution networks.

The federal governments is responsible for issues that need to be dealt with at the national level, including electricity and gas tariffs, market regulation for large infrastructures for storage, transport ad distribution of energy, the nuclear fuel cycle, and R&D in both nuclear fusion and fission.

Division of Responsibilities for Energy Policy between

A. Federal and Regional Governments

<i>Federal Government</i>	<i>Regional Governments</i>
Indicative programme for the electricity Sector ;	Distribution and transport of electricity through networks with a maximum voltage of 70 kV ;
Nuclear fuel cycle and related R&D programmes as well as research in the Field of nuclear fusion ;	Public distribution of gas ;
Large infrastructures for storage,	Use of methane and blast furnace gas ;
Transport and production of energy ;	District-heating equipment and networks ;
Setting tariffs.	Use of waste product recaimes from coal tips ;
	New and renewable sources of energy ;
	Recovery of waste energy from industry or other uses ;
	rational use of energy.

Since the last CSD-reporting, the main developments in Belgian energy policy have been major steps taken towards the establishment and implementation of the National Climate Plan (see chapter C), the advances in market liberalisation (see chapter D) and a progressive phasing-out of nuclear energy.

Nuclear Phase-out

The decision of the previous government to gradually phase out nuclear energy has been translated in the law of 31st January 2003. This law stipulates that the nuclear power plants producing electricity in a commercial way have to be deactivated 40 years after the start of their industrial operation. It also stipulates that no new nuclear power plant for the commercial electricity production can be built.

In order not to jeopardise the security of the electricity supply of the country, the following measures are foreseen :

normally, the Commission for Regulation of Electricity and Gas (CREG) has to establish every three years a rolling 10-year indicative programme of the electricity production means. From the year 2015 on (year of shutting down of first nuclear power plants), this programme has to be established every year;

the CREG has to evaluate the electricity supply security and has to formulate recommendations when there are threats which jeopardise it;

in case the electricity supply security is threatened, the King can take the necessary measures, after deliberation in the Council of Ministers on advice of the CREG, without prejudice to the phase-out, except in the case of superior power. The advice of the CREG must in particular be related to the influence of the evolution of the production prices on the supply security.

2. The Institutional Framework

The administrative structure of energy policies has been in transition since the Special Law of Institutional Reform of 8 August 1988. Under this law, Belgium became a federal state with significant delegation of responsibilities to the three regional governments of Flanders, Wallonia and Brussels-Capital. The fundamental objectives of its overall energy policy, however, have not changed significantly since the early 1970s. They focus on security of supply based on geographical and fuel diversification; energy efficiency; transparent, competitive energy prices; and environmental protection.

The municipalities have a legal monopoly for the distribution of gas and electricity; in fact, nearly all the municipalities have transferred the distribution of energy to intermunicipal companies set up by groups of municipalities (the “intercommunales”).

The Special Law of Institutional Reform of 1988 provides various mechanisms for association and co-operation, for instance through co-operation agreements (“Accords de Coopération”). The co-operation agreement dated 18 December 1991 established the Cellule CONCERE/ENOVER (see box). The Cellule, comprised of three or four permanent officials, is part of the Energy Administration (Administration de l’Energie) and thus has no independent budget or money to support actions itself.

All levels of government play a role in the Cellule CONCERE/ENOVER without getting involved in detailed management of the energy industries. The basic idea is to reach a consensus after continuing dialogue between the Federal Government, regional governments, energy industries, trade unions and consumer groups.

At the Federal Government level, in the framework of the Ministry of Economic Affairs, the Energy Administration deals with energy matters and the Ministry of Public Health and the Environment is in charge of environmental issues. At the regional level, various authorities have been designed by the regional governments to deal with decentralised energy policies.

Federal-Regional Co-operation

The Cellule *CONCERE/ENOVER* (Concertation Etat-Régions pour l'Energie/Energie-overleg) is a formal forum for discussion on all energy matters. It became operational in 1992. Its main tasks are to:

- Gather information and promote information exchange between the regions and the federal government and internationally.
- Support all policy measures, including those involving both federal and regional authorities, in a spirit of internal cohesion and respect of the participants' responsibilities.
- Select representatives in Belgian regional delegations for international meeting.

The Cellule respects the autonomy of all parties. It gives advice and makes recommendations, but these are not binding. Plenary sessions are held monthly. Several working groups on thematic subjects have been created. The Energy Administration provides secretarial assistance to the Cellule, which does not have an independent budget or permanent.

- ❑ the sensible increase in the demand of natural gas (+7,3%).
- ❑ the stability of the nuclear energy (+0,0%);
- ❑ the contribution of wind energy (+36,8% in net production, in comparison with 2002) and that of the fuels obtained from renewable energies and recycled materials in the primary consumption.

The consumption of coal went down because of a reduction in demand of the coking plants and the residential sector. The industrial sector and the steel industry in particular made a considerable progress in 2003.

Sales of natural gas especially developed in the industrial sector and in the sector of the production electricity. Sales to the residential sector and equivalents also progressed in 2003, especially taking into account the increase of the number of degree days.

With regard to the net production of electricity, an increasing appeal has been made to power plants working on gaseous, liquid and solid fuels.

In comparison with 2002, the appeal to nuclear energy practically remains unchanged and wind energy increases in 2003, displaying a growth of 36,8%.

On the other hand, import and export of electricity decreased heavily in 2003.

The average rate of use of the Belgian nuclear plants (90,1% in 1997, 87,8% in 1998, 93,3% in 1999, 90,7% in 2000, 88,1% in 2001 and 88,6% in 2002) amounted to 88,4 % in 2003 and due to this induced a relative stable level of the intake of nuclear energy into the primary balance, in comparison with 2002.

The number of degree days (15/15) characterising the climatic severity of the climate increases by 4,4% in 2003, in comparison with 2002. This increase of the number of degree days should in principle bring about an increase of the energy consumption in the residential sector.

According to the first tendencies, it appears that sales of natural gas to the residential sector rather firmly increase with 4,4% and that deliveries of domestic fuel oil also experience a considerably growth, by 10,8%, in 2003.

Expressed in terms of market shares on the primary balance, the share of natural gas rose from 22,6%, to 24,7% in 2003. The share of solid fuels decreases from 13,2% in 2002 to 10,7 % in 2003, whereas that of petroleum slightly increases to 41,4% in 2003, in comparison with 41,2% in 2002. The share of nuclear energy increases from 20,7% in 2002 to 21,2% in 2003.

B. Energy Supply and Demand

According to the latest estimates, the apparent gross consumption of the primary energy market, estimated starting from real availabilities, evolved as follows in 2003:

	2002 in 1000toe	2003 in 1000toe (2)	Differences In % 03/02
Solid Fuels	6 539	6 213	-5,0
Oil	22 338	24 153	+8,1
Natural Gas	13 414	14 397	+7,3
Nuclear Energy	12 340	12 345	+0,0
Others (primaire elektriciteit)	+688	+578	-
Renewable energy	517	603	+16,6
Totaal	55 836	58 289	+4,4

The market shares of the different energy sources are as follows :

In %	2002	2003
Solid Fuels	13,2	10,7
Oil	41,2	41,4
Natural Gas	22,6	24,7
Nuclear Energy	20,7	21,2
Others (primary electricity)	1,4	1,0
Renewable Energy	0,9	1,0

The consumption of primary energy registers a remarkable increase with 4,4% in 2003 and contrasts clearly with the downward tendency recorded in 2002. In spite of the heat wave of August 2003, the average climate was less mild than this of the exceptional year 2002. The climatic rigour observed in 2003 is similar to the one of the year 2001 and due to this induces a level of primary energy consumption that is very close to the one observed in 2001 (see the next table).

The evolution of the primary energy consumption in 2003 results from:

- the decrease in consumption of the solid fuels (-5,0 %);
- the fairly significant increase of the consumption of petroleum (+8,1%);

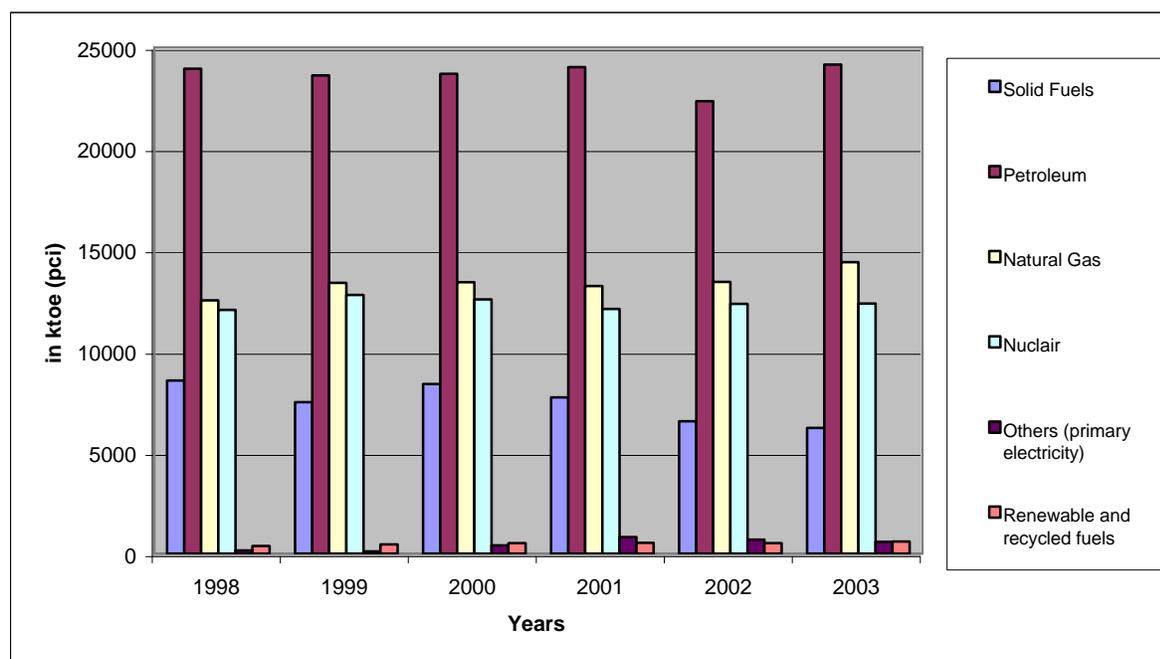
Over the period 1998-2003, the following table resumes the consumption of the country's primary energy by source of energy:

KTOE (NCV)	1998	1999	2000	2001	2002	2003 ⁽¹⁾	GJG in % ⁽²⁾
Solid fuels	8.552	7.479	8.382	7.718	6 539	6 213	-5,2
Petroleum	23.951	23.610	23.690	24.033	22 338	24 153	+0,1
Natural gas	12.508	13.371	13.405	13.216	13 414	14 397	+2,4
Nuclear energy	12.029	12.772	12.548	12.077	12 340	12 345	+0,4
Others (Primary electricity)	154	104	413	824	688	578	+24,7
Renewable and recycled fuels	374	453	516	535	517	603	+8,3
Total	57.568	57.789	58.954	58.403	55 836	58 289	+0,2

(1) provisional

(2) AAGR: the average annual growth rate expressed in %, calculated on the period 1998-2003

Graphic : consumption of primary energy per source of energy (1998-2003)



On examination of this table, one has to stress the decreasing tendency of the solid fuels over the considered period, the relative stability of petroleum and nuclear energy as well as the slight progress of the renewable and recyclable fuels.

At the economic level considered within the OECD, the yearly rhythm of growth of the GDP, should reach 2,0% in 2003, compared to 1,8% in 2002. For the European Union and the eurozone on the other hand, who are put at disadvantage by a weak dollar rate and a poor domestic demand this rate respectively should amount to 0,7% in 2003, against 1,1% in 2002 and to 0,5% in 2003, against 0,9% in 2002.

According to the economic prospects of the economic budget, the growth of the GDP for Belgium should reach 0,9% in 2003, against 0,7% in 2002.

Evolution in volume of the economic growth was as follows since 2000:

In %	2000	2001	2002	2003
OECD (1)	+3,7	+0,7	+1,8	+2,0
EU (2)	+3,5	+1,6	+1,1	+0,7
Euro zone(2)	+3,5	+1,5	+0,9	+0,5
Belgium (1)	+3,7	+0,8	+0,7	+0,9

(1) FPS Economy

(2) Eurostat

The price of the crude oil remained at a high level during the course of the entire year, even after the intervention in Iraq and showed an immediate increase with 15,8% for the brent (the barrel of brent on average went up from 24,95\$ in 2002 to 28,90\$ in 2003), against a mere increase of 2,1% in 2002.

This strong increase of international quotations of oil products is the consequence of the growth of the global demand for petroleum (+2,1%), encouraged by the economic development of China (+11%), which becomes the second petroleum consumer. Events in the Middle East, instability in Venezuela and Nigeria also played a non negligible role in this growth

Other raw materials, such as coal, also recorded important increases in 2003. Spot prices of coal reached 62\$/t CIF in December 2003, compared with less than 36\$/t CIF one year beforehand. This price-rise can be accounted for by the strong increase in the steel production in China (+21%).

Annual average	2000	2001	2002	2003
Dated brent (in \$/bl)	28,52	24,44	24,95	28,90
OPEC basket(in \$/bl)	27,60	23,12	24,36	28,10
US Dollars (in euro)	1,09	1,12	1,06	0,89

C. Energy and Sustainable Development

1. Energy and sustainable development – The institutional Context

In the context of the 'Law concerning the co-ordination of the federal policy on sustainable development' (May 5, 1997), a new version of the "Federal Plan for Sustainable Development" (2004-2008) has been elaborated. This Plan defines the measures that are to be taken at the federal level in order to achieve the objectives of SD.

The draft plan was prepared in the course of 2003, by the Interdepartmental Commission for Sustainable Development (which regroups representatives of each member of the federal government, a representative of the Federal Planning Bureau and a representative of each Region and each Community). Its content is based on the recommendations of working groups, involving representatives of the relevant administrations. Communities and regions also took part to this work. The draft was adapted in order to match priorities defined by the federal government, in place following the elections of May 18, 2003. In comparison with the first Plan, this version contains a limited number of actions and priorities, in line with international and European engagements of Belgium. The draft proposal was then submitted to public consultation (during spring 2004) for comments. Many suggestions resulting from this consultation were taken on board, leading to a revised version that should be approved by the federal Government by autumn 2004.

One of the six action themes of the "Federal Plan for Sustainable Development (2004-2008)" is "limitation of climate changes and more intensive use of clean energy". Under this theme, five specific actions are defined:

- ❑ strengthen the federal coordination: this action is aimed at the development of the federal contribution to the National Climate Plan; the implementation of a green tax system (for buildings, companies, the transport and electricity sectors...) should be a substantial part of it, as mentioned in the government agreement
- ❑ "fair prices" : elaborate a strategy aiming at fair prices, in line with the European legislation; this strategy may include the progressive limitation of existing advantages on certain products or activities, the promotion of other products or activities, a reform of the taxation system (shifting from the taxation of work towards taxation on resources consumption), etc.
- ❑ solidarity through the "flexible mechanisms" : proactive dialogue with partners in the developing countries, strengthening of the financial and technical assistance, capacity-building, etc. notably through the mechanisms of the Kyoto Protocol
- ❑ promote alternative energies : specific actions (e.g. fiscal, research) focused on synergies with measures taken at regional level in the field of renewable energies and rational use of energy; promotion of bio-fuels
- ❑ "clean buildings" : removing obstacles for investments in the field of energy efficiency of the buildings, notably through third party financing

Specific actions for the transport sector are also planned; they include the improvement of the offer of public transport, the development of clean car technologies, variabilisation of the costs (in order to take into account the environmental performance of the vehicles, and the number of driven kilometres)

In accordance with the law of May 5, 1997, members of ICDO/CIDD report annually on SD policy and on the implementation of the Federal Plan within the different federal ministries and public entities that they represent. Another important actor is the Federal Planning Bureau, which develops a Federal Report on SD every two years. It gives a state-of-the-art of the current Belgian situation and of the SD policy measures taken until then. It describes the expected development in case of BAU and in case of strengthened policy following relevant scenarios.

2. Trends in CO₂-emissions

Total CO₂ emissions in Belgium amounted to 126.6 Mt in 2002. Energy consumption by manufacturing industry and construction is the primary source of CO₂ in Belgium (26.8%), followed by space heating (residential, commercial, institutional and agriculture sector) (23.4%), energy industries (20.9%) and road transport (19.2%). These four sectors cover more than 90% of total CO₂ emissions. Among them, only the energy (transformation) sector displayed a drop of CO₂ emissions between 1990 and 2002 (-6%), as a result of improved energy efficiency and increased use of gas for the production of electricity, while emissions in industry, residential & tertiary, and road transport increased respectively by 2.4%, 8.8% and 26%. Overall, CO₂ emissions in 2002 were 7% above 1990 level.

It is worthwhile to mention that in the same time, CO₂ emissions from international bunkers (aviation and marine) have increased by 62%, reaching 26.6 Mt CO₂ in 2002.

3. Emission Trading Scheme

The European Directive 2003/87/EC of 13 October 2003 establishes a scheme for greenhouse gas emission allowance trading within the Community. In January 2005 this European Union Greenhouse Gas Emission Trading Scheme (EU ETS) will commence operation.

For this to be possible, firstly the member countries must allocate emission rights to the participants of the ETS. This is done in the Belgian National Allocation Plan (NAP), adopted by the EU Commission on 20 October 2004.

In Belgium, the 3 Regions account for the CO₂ emissions reduction on their territory. The Federal authority will also take measures to decrease emissions, besides the aforementioned acquisition of Joint Implementation and Clean Development Mechanism emission credits. A working group consisting of the federal and regional governments decided that the Belgian National Climate commission will assume the role of Focal Point and Designated National Authority, to assure the proper administrative handling of the JI and CDM projects.

The regional authorities are competent for the allocation to almost all installations under the ETS Directive. Only the backup installations of nuclear power plants fall under federal jurisdiction. These installations, however, will be subject to an opt-out, as well as the military

installations (except in the Brussels Capital Region), the compression installations on the natural-gas transport grid, and in Flanders also the building heating installations.

The allocation rules are different for the energy production sector, the industrial sector and the tertiary sector, and also differ between the regions. The total allocated amount to Belgian installations is 180960 kton CO₂ equivalent. The additional regional reserves for new entrants (appr. 7881 kton CO₂ equivalent) are not interchangeable between regions.

Industrial installations are allocated on the basis of benchmarking (in Flanders) or energy audit covenants (in Wallonia). Energy plants received emission rights on the basis of historical data and several growth and reduction scenarios.

Emission Registry

A second important step for the start-up of the ETS is the establishment of a national Registry for emission rights. This is the electronic backbone for the emissions trading. The Belgian federal government has taken up this task, choosing the system developed by the French CDC and starting tests with pilot companies in October 2004. Belgium will succeed in having an operational registry for the beginning of 2005.

3. Recent federal actions with respect to Sustainable Energy

The Council of Ministers of 19-20 March 2004 has approved a set of measures that constitutes the federal contribution to the National Climate Plan.

A synthesis of these measures focusing different sectors is listed below:

Federal administrations

- ❑ promotion of RUE through the obligatory introduction of environmental management systems and progressive integration with quality systems (start: 2005)
- ❑ progressive shift of the fleet of vehicles of the public services towards clean vehicles (start: 2004)

Transport of persons

- ❑ free train transportation for 70000 federal employees (start: 2004)
- ❑ acceleration of the development of the REN (regional express network) (start: 2004)
- ❑ extension of fiscal deductibility for home-work travels with clean transports (start: 2005)
- ❑ reduction of average emissions by new cars (140g CO₂ / km in 2008-2009, through voluntary agreement with car manufacturers)
- ❑ support of the EU Commission initiative, to lower average CO₂ emissions by cars up to 120 g CO₂/km by 2012
- ❑ promotion of clean driving behaviour (start: 2004)
- ❑ fiscal deductibility for the purchase of clean vehicles (up to 15% of the vehicle price) (start: 2005)

Biofuels

- ❑ introduction of biofuels in the fuel mix put on the market (2% in 2005, 5.75% in 2010)
- ❑ fiscal incentive to promote biofuels

Electric appliances

- ❑ extension of the labelling system (split of label A in 3 categories) (start: 2004)
- ❑ organisation of promotion campaign (2005)
- ❑ support the development of a EC directive « eco-design »

Buildings

- ❑ intensification of fiscal incentives for renovation investments aiming at energy efficiency (start: 2005)
- ❑ support of the renovation of public buildings (focused on energy efficiency) through third party financing (start: 2004)

Electricity Production

- ❑ development of off-shore wind farms, targeted at ~5.2 to 5.6 % of national electricity production by 2010
- ❑ phase out (or reconversion towards biomass) of ancient coal power plants (2009)

As a whole, this set of measures should guarantee a cut in the national greenhouse gas emissions by 4.8 Mton CO₂ equivalent / year, for the period 2008-2012. These measures will be assessed on an annual basis and adapted if necessary.

D. Market Liberalisation

1. Electricity Liberalisation

General features

In Belgium, under the special act of 8th August 1988, the **federal government** is responsible for “matters which, owing to their technical and economic indivisibility, require equal treatment at national level”. This includes a.o. the tariffs (e.g. for using the transmission and distribution networks), the production and the transmission of electricity at a voltage level above 70 kV.

The federal law of 29th April 1999 transposing the EU Directive 96/92 into Belgian law was published in the Official Gazette on 11th May 1999. This law defines the general framework for the opening of the Belgian electricity market, being put into effect in stages through different executive decrees. The text adopted includes all the directive's essential clauses and supplements them on numerous points.

The law establishes a.o. the access conditions for third parties to the transmission network as well as the regulatory aspects. Consequently, a Federal Regulatory Commission has been set up in 2000 in order to monitor the electricity and gas market. It is charged with advising the authorities on the organization and operation of the liberalised electricity and gas markets. Moreover, it supervises and monitors the application of relevant laws and regulations.

A General Council, consisting of representatives of the federal and regional governments, of associations of employees, employers and small businesses, and of generators, distributors and consumers, monitors its operation.

The **regional legislatures** (Flemish, Walloon and Brussels) have the power to regulate distribution and local transmission of electricity over networks with a voltage level less than or equal to 70 kV.

The three regions have also transposed the European Directive :

- Flanders : decree of 17th July 2000;
- Wallonia : decree of 12th April 2001;
- Brussels : decree of 19th July 2001.

Each of the three regions has also set up a regulatory commission, which are responsible for establishing the technical legislation regulating the distribution networks (up to 70 kV) and defining the eligibility conditions for customers connected to this grid (most SMEs and the households).

In Flanders, all electricity consumers are eligible since 1st July 2003; in Wallonia and Brussels, the industrial consumers are already eligible whereas the “smaller” professional and household customers will gradually become eligible.

Degree of liberalisation of the electricity market.

- ❑ Federal level : since July, 1, 2004 : all clients connected to the transmission grid are eligible ;
- ❑ Flemish Region : since July, 1, 2003 : all customers are eligible ;
- ❑ *Walloon Region : since July, 1, 2004 : all non-residential customers are eligible ; residential customers will be eligible on a date to be specified later by the government (at the latest on July, 1, 2007) ;*
- ❑ *Region of Brussels-Capital : Since 1 January 2003, all customers with a consumption of more than 10 GWh of electricity are free to choose their supplier.*

Since 1 July 2004, all professional customers - that is to say those consuming electricity or gas delivered to their supply point exclusively for professional purposes - have been liberalized. .

The Brussels market as a whole will be liberalized in 2007.

Regulatory situation.

In Belgium there are four regulation authorities :

- ❑ Federal level : Commission for the regulation of Electricity and Gas (CREG) ;
- ❑ Flemish Region : Vlaamse reguleringsinstantie voor de elektriciteits- en gasmarkt (VREG) ;
- ❑ Walloon Region : Commission Wallonne pour l'Energie (CWAPE) ;
- ❑ Region of Brussels-Capital : Service de l'Energie.

The federal and regional regulators (with the exception of the one of the Region of Brussels-Capital) are autonomous organisms with a legal personality. They are entrusted with a double mission :

- an advisory mission with the public authorities in the matter of the organisation and the functioning of the federal or regional electricity market ;
- a general mission of surveillance and control on the implementation of laws or decrees and on the regulations which relate to them.

The various competencies and assignments awarded to the regulators are described by the law, decree and ordinance which refer to them.

Price regulation

The law of April, 29, 1999, provides in a regulated access to the transmission and distribution electricity grids. This regulated access requires the approval by the CREG of the transmission and distribution tariffs. The fixing of the tariffs regarding the connection and use of the transmission and distribution grid, as well as the tariffs of the auxiliary services is based on the principle according to which a grid manager, whose costs are reasonable, particularly in comparison to a similar company, can recover by his tariffs, the entirety of his operating costs, as well as an equitable margin rewarding the capitals invested into the grid. The sensible character of these costs and the equitable profit margin are assessed by the CREG through a control prior to its decision to approve or to reject the transmission and distribution tariffs elaborated and proposed by the grid managers.

Relations with the civil authorities

Federal

In addition to its general mission of counselling to the federal government, the CREG carries out researches and studies concerning the electricity market, on the initiative or at the request of the minister for energy.

The CREG appoints an auditor, with the consent of the minister for energy. The auditor is put in charge of verifying the financial accounts, as well as the regularity of the operations performed, in comparison with the legal provisions. The financial accounts and the report of the auditor will yearly be communicated to the minister.

The project of budget of the CREG is submitted for approval to the council of ministers.

The CREG draws up an annual report on :

- a) the implementation of these assignments
- b) the state of its functioning costs,
- c) the evolution of electricity market.

This report is transmitted to the minister for energy, the federal legislative houses and the regional governments.

Regional

In addition to their general mission of counselling, the regional regulators carry out on the initiative or at the demand of the minister for energy, researches and studies with regard to the electricity market.

The regional regulators (VREG et CWAPE) are under the supervision of the concerned regional government. The 'Service de l'Energie' is part of the Administration of the Region of Brussels-Capital and therefore is submitted to the hierarchical power of the minister.

The supervision on the VREG is exerted by a government commissioner who is appointed and dismissed by the Flemish Government. The CWAPE is submitted to the control of the Walloon

government through two commissioners of the government appointed and dismissed by the aforesaid government . The commissioners can resort to all decisions of the regulator they consider as being contradictory to decrees, to implementing orders, or to public interest. The commissioners exert this recourse to the government, which can cancel the contested decision. Every year they draw up an evaluation, which they transmit, to the government.

The regional regulators yearly draw up a report on the execution of their mission and on the evolution of the regional electricity market. These reports are submitted to their respective governments and parliaments.

The regional regulators are submitted to the control of the Audit Office.

3. Gas Liberalisation

Belgium occupies a key position at the core of the European gas grids. Thus, Belgium is increasingly playing the role of transit country for natural gas from the Netherlands and Norway to France and Spain and from the UK to Germany through the Interconnector Gas Pipeline.

General features

The European Gas Directive 98/30/EC of 22 June 1998 was translated in the 29 April 1999 Law, amending the Gas Act of 12 April 1965 concerning the transportation of gas and other substances on the federal level and by the the decrees of 6 July 2001 (Flanders) and of 19 December 2002 (Wallonia) and by the ordonnance of 1 April 2004 (Brussels-Capital Region).

The federal law defines the basic elements for the transposition of the European directive at federal level. It touches upon those aspects of the European directive, which are of federal competence, being: transport of natural gas, gas pricing, long-term planning and competition issues.

At its meeting of July 20, 2000, the Federal government took stock of the orientation note on the liberalisation of the gas market. The 29 April 1999 Law was like that amended by the law of 16 July 2001.

The federal framework law and the executive decisions taken at federal level are completed with regional decrees and ordonnances, who deal with the distribution aspects of the directive 98/30/EC, which are of regional competence.

The Directive 2003/55/EC of 26 June 2003, which adapts the Directive 98/30/EC in the light of the completion of the liberalisation of the internal gas market, will be incorporated in internal legislation by a law, amending the Gas Act of 12 April 1965. The project of law is approved by the government on 20 July 2004 and will be shortly deposited in the legislative chambers. The largest modifications are the introduction system operators and long-range tariffs. Once again, the directive has to be transposed also on a regional level.

Regulatory authorities

An independent Commission for the Regulation of Electricity and Gas (CREG) advises on, supervises and monitors the liberalised segment of the gas market on a federal level.

At the end of 1999, the federal government appointed the Executive Committee of the CREG, the regulator for the liberalised segments of the electricity and gas markets. As regulator, the CREG monitors compliance with the gas law. The CREG also acts in an advisory capacity to the government on matters regarding the operation and organisation of the market. One of its tasks is to ensure that there is no cross subsidisation between the various categories of consumers. Another is the regulation of the prices in a liberalised market.

Each region has its own regulator (competence inside the distribution activities) :

- Flemish Region : Vlaamse Reguleringsinstantie voor de Elektriciteits- en de Gasmarkt.(VREG)
- Walloon Region : Commission Wallonne pour l'Energie (CWAPE)
- Brussels Capital Region : the Energy service of the Brussels Institute for Management of the Environment

The regional regulators have the same mission as the federal regulator but only regarding distribution matters inside their region.

E. Energy Efficiency

Energy Efficiency is essentially a responsibility of the three regions.

1. Institutions and Programmes

The federal Plan for Sustainable Development 2000-2004, approved in July 2003, mentions an objective of 7.5 % energy consumption reduction between 1990 and 2010, as well as the development of cleaner or renewable energy sources.

The National Climate Plan 2002-2012, which has been signed in 2002 by both the federal and regional governments responsible for environment, energy and transport, foresees a number of measures to be taken at either the federal or the regional levels.

2. Industry

For industry, the energy efficiency policy is focussed on voluntary agreements between industry and the regional governments. In Flanders, these agreements are “benchmark-agreements” with a commitment to bring the energy efficiency to the world top ten by 2012. They are signed by individual companies with an energy consumption larger than 0.5 PJ per year. Up to now, 179 companies have signed such an agreement. In Wallonia, the voluntary agreements are signed by sector associations, which commit themselves to a quantified energy efficiency improvement for the sector over the period 2000-2012. Two sectors (the paper and the chemical industries) have signed a voluntary agreement up to now.

3. Households and Services

All three regions currently enforce the “K55” thermal insulation standard for new dwellings. For the transposition of the European Directive 2002/91, the Flemish region has adopted a new law which will impose energy performance standards for all types of buildings, taking into account all energy efficiency aspects (building, shell, heating, ventilation...) for new and existing buildings and replace the existing K55-standard for new dwellings. In Wallonia and Brussels, similar measures have been taken.

All three regions award subsidies for a whole range of energy saving or renewable investments as well as for energy audits or energy accounting schemes.

At the federal level, the purchase of energy saving equipment is being encouraged by fiscal deductions for energy saving investments as well as by labelling of large domestic appliances.

4. Transport

A particular effort is being put on promoting the development of mobility planning tools such as company transport plans, urban mobility plans, school transport plans. Emphasis is also put on the promotion of public transport, bu

improving its availability, its quality and its price attractiveness. The federal government has decided to provide to all civil servant free access to railway transportation for their home-to-work trips.

5. Belesco

The Belgian government established the Belgian Energy Service Company (Belesco – Royal Decree of 27.12.2004) to promote energy efficiency mainly in public buildings. Belesco starts with 1.5 million euro of private funding. Belesco will invest in projects where energy reduction is profitable, but the investment cost for the owner or building administrator is too high. The savings on the energy bill first pay back the investment to Belesco and the benefit the client.

More information on the Energy-Efficiency Programmes of the respective regions can be found on the following websites :

Flemish Region : www.energiesparen.be

Walloon Region : www.energie.wallonie.be

Brussels Region: www.ibgebim.be

F. Renewable Energy

1. General Features

The share of renewable energy sources remains marginal in Belgium (1 % in 2003). The main sources are biomass (90 %) and hydro (8 %).

According to the division of responsibilities between the federal authorities and the regions, the regional authorities are in charge of new and renewable energy. The renewable electricity policies are therefore an exclusive competence of the Regions. However, the federal authorities being responsible for the operations in the North Sea, and for setting electricity tariffs, regulates the off shore –windparks in the North Sea and can set premium prices for renewable electricity.

Interest in the renewable energy sector has been revitalised within the last few years with the formation of the new political coalitions including the green parties in 1999. A more comprehensive approach has been taken through the adoption of several new regulatory measures in favour of the renewables in the electricity market, including priority on the grid for renewable energy, mandatory buy-back of renewable electricity, direct eligibility of renewable electricity customer or suppliers on the market, etc. Additionally, a system of tradable green certificates is also being put in place which would determine the quota of electricity from renewable energy sources delivered to the users connected to the transport net (from 2% in 2002 up to 6% in 2006), and the fine for not fulfilling the quota being €75 per certificate (corresponding to 1 MWh). It will also set the obligation to the transport grid manager for buying the green certificates at a minimum price (equivalent to €0.02/kWh for biomass, €0.05/kWh for wind energy and up to €0.15/kWh for solar energy).

2. Federal level

In the framework of the law of April, 29, 1999, the federal government has taken the following measures in view to foster the development of RES.

By virtue of a royal decree of December, 20, 2000, modified by a decree of May, 17, 2004, the Minister for Energy from now on can deliver domanial concessions for the construction and the exploitation of installations of electricity production, generated from water, currents or winds, in the territorial sea and the exclusive economic zone of Belgium. The decree in question determinates precisely the zone where the installations may be set up. It also specifies the criteria of granting and the procedure by which the concessions are being issued;

By royal decree of July, 16, 2002, has been instituted a mechanism of green certificates on behalf of the electricity that was produced out of the aforementioned installations. These certificates will be delivered by the Commission for Regulation of Electricity and Gas (CREG) to the producers that are entitled to a concession and dispose of a warranty of origin.

Moreover, with a view to ensure the selling on the market of a minimum volume of green electricity, a system of minimum repurchasing prices of the green certificates was established by the royal decree of July, 16, 2002. The grid manager is under an obligation to buy the green certificates from the producers of green electricity, obtained from installations situated in the marine spaces or on the Belgian soil, at a minimum fixed price, according to the production technology from :

- off shore eolean energy	:	90 €/MWh
- on shore eolean energy	:	50 €/MWh
- hydraulic energy	:	50 €/MWh
- solar energy	:	150 €/MWh
- other sources of renewable energies (of which biomass)	:	20 €/MWh

The grid manager is liable to commercialise these certificates in order to recuperate the costs involved. The net balance resulting from the difference between the purchasing price of the green certificate by the grid manager and the selling price of this certificate on the market, is financed by means of a surcharge on the tariffs of electricity transmission

Windenergy

In March 2003, the federal government endorsed the proposal for the construction of a big new wind farm off the Belgian coast with a total capacity of 3.6 %MW, situated on the Thorntonbank. The 60 windturbines should be able to produce green electricity for 400.000 households. The first 6 windmills should be operation by mid 2005, 18 in 2006, remaining 36 in 2007. The whole windfarm should be operation by 2007.

Support Schemes

- Green Certificates Scheme (see above)
- Fiscal deductions : The Federal law of 10/08/2001 on the reform of the households fiscal system foresees that the investments in order to improve rational use of energy may give right to tax reductions for the incomes of the year 2003. A budget of 37 M? has been assigned for these tax reductions. The deduction rate is 15% for the replacement of old boilers (more than 20 years) by new condensation boilers and for solar energy; the rate is 40% for the installation of double glazing, roof insulation, the installation of a central heating regulator, plus energy audits. The tax reduction may not exceed (year 1992 current value) 500 euro per habitation the first year but might be increased the following years. These deductions became effective by royal decree of 1 January 2003.

3. Regional level

Wallonia

A. Policies to promote renewables and their performance

The Walloon Region supports the RES that satisfy to the following criteria:
 technical feasibility in the short, medium and long term
 positive environmental impact including the energy and CO₂ balance
 economic viability needing a minimum of public support, depending on the CO₂ avoided.

The « Walloon plan for sustainable mastery of energy » aim to produce 8% electricity and 12% heat from RES.

The RES are integrated in the general policy at any stage. Many information is available on the energy website of the Walloon region: <http://energie.wallonie.be>

The Walloon legislation about thermal insulation and ventilation enforces either K standard based on U value for thermal insulation, or Be 450 standard which concerns the calculation of the net needs for energy for heating, which means taking into account the free inputs of solar heat. The “Build with Energy” programme also promote the recourse to RES.

The Walloon region subsidies:

APERE (“*Association pour la Promotion des Energies Renouvelables*”), a non-profit organisation grouping several organisations and research centres that are active in the field of energy efficiency and the development of RES.

EDORA, a federation of electricity producers from renewable

Several “Facilitateurs” have been appointed for their competences. Those “facilitateurs” are private operators subsidied by the Walloon region. The “facilitateurs” give information and advice potential investors. They are not project maker. They also inform the Walloon region on the obstacles to the development of their particular renewable field. To promote renewable, there are 5 “facilitateurs” for:

wind

hydro-electricity

biomethanisation

wood
 biofuels
 big installations of solar panels

Besides information and advice, about ten pilot plans have been subsidised through the Wood-Energy Plan.

The SOLTHERM programme aims to have 200.000 m² of solar panels installed for 2010, by means of information campaign and incentives. For households, the subsidy amount 1.500€ for 4 m² plus 100€ for any additional m².

The Energy Fund finances few investments for heat production from RES (wood heating, mass stove).

Investments in RES allow a tax abatement for households (of maximum 600€ per year) or companies (13,5% of the investment).

RES investments may benefit from subsidy through to the new decree adopted in April 2004. This decree gives a new legal ground for financial incentives (subsidies, reimbursement of loans guaranteed, tax exemption, accelerated write-off) for sustainable energy (investments in energy efficiency or production from renewable energy and CHP). This new legislation has been adopted following the Community guidelines on state aids for environmental protection. But the governmental regulation still need to be adopted.

Following the development of wind-turbines thanks to the green certificates system, a Wind Unit has been set up. The Wind Unit brings together people from different area: energy, regional planning, environment and agriculture. The Wind Unit has proposed a reference framework for the establishment of wind-turbines in the Walloon region. The Government has adopted this framework on July 2002. The Wind Unit also gives advice when a wind-turbines investment project is submitted to the administration's agreement.

Policy actions in the electricity market

The Walloon decree relating to the organization of the electricity market introduces the green certificates mechanism as well as the production aid for green electricity.

Green certificates is emitted for electricity produced from RES or high quality CHP if CO₂ emissions is avoided compared to traditional electricity production. The electricity suppliers have to buy green certificates to respect a certain quota, otherwise the supplier have to pay a fee. In 2004, the green certificates quota is 4%. It will be 5% in 2005, 6% in 2006 and 7% in 2007. In 2005, the Government will define quota for following years. The CWaPE supervices the green certificates market.

In 2003, The CWaPE has emitted 612.180 GC (53% hydro, 12% biomass, 23% CHP+biomass, 11% CHP and 3% wind). The middle price for a GC was 85,24€.

The CWaPE has evaluated that 1.100.000 GC would be emitted in 2005 (40% biomass, 24% hydro, 19% CHP+biomass, 12% wind, 5% CHP).

For installations that enter into function after July 1, 2003, the green producer may choose not to sell his green certificates to suppliers. He may choose to exchange it for production aid financed by the Energy fund. The production aid amount 65€ per green certificate.

Another mechanism based on eligibility is also specified in the decree to stimulate green electricity. A customer who is not eligible though is consumption volume become eligible if supplied by a green supplier. A green supplier buy half of the electricity supplied in the Walloon region from green producers.

Flanders

a) Policies to promote renewables and their performance

The Flemish policy objective is to achieve a share of 2% of green electricity in the generation of electricity by 2004, and a share of 6% by 2010, as well as the maximum level of the achievable potential of renewable heat.

The policy objective for 2004 was adapted from 3% to 2% in the decree of 20 December 2002 on the provisions for supervising the 2003 budget. On the other hand, the 2% objective now also applies for transmission deliveries. The policy objective for 2010 was raised in the same decree from 5 to 6% and now also applies for the share of green electricity in the transmission deliveries.

Green electricity certificates

Since 1 January 2002, a producer is awarded a certificate for every 1000 kWh which is generated from a renewable energy source. At the same time, the suppliers of electricity are obliged to present green electricity certificates for at least 2% of the electricity generated to the VREG by 2004. After 2004, the objective increases to 6% in 2010. The indicative objective for Belgium, in accordance with the European directive on the promotion of generating electricity from renewable energy sources of 27 September 2001 amounts to 6% of consumption.

If the supplier cannot present an adequate number of certificates, an administrative financial fine is imposed. The administrative financial fine amounts to 75 euro per every certificate missing in 2002, 100 euro in 2003 and 125 euro from 2004. Together with the ratio between supply and demand for green electricity certificates, the administrative financial fine determines the market value of the green electricity certificates. The fines are paid into the Fund for Renewable Energy Sources.

On 5 March 2004, the Government of Flanders definitively approved a new decision on promoting the generation of electricity from renewable energy sources. It is now possible to award certificates for the production of electricity generated from the organic-biological share of residual waste, on condition that the processing plant concerned achieves primary energy savings of 35% of the energy content on the waste materials processed in the plant by means of energy recuperation.

The green electricity certificate system has served as an important stimulus for investment in green electricity in Flanders in recent years (see b)), but on the other hand, a number of obstacles were encountered in the practical implementation.

Additional costs for the end users of electricity

In 2003, the production of green electricity corresponded to approximately 0.6% of the electricity supplied. The obligation to be met by 31 March 2004 was set at 1.2% of the electricity supplied by the distribution and transmission network in 2003. The feasibility of achieving the annual quota that was imposed is a matter of commitment and being prepared to invest in the environmentally-friendly generation of electricity. The sector had been aware of the modalities of the execution of the green electricity certificate system for a long time. It is clear that enough time was given to prepare for the implementation of the system. It must be concluded that some parties in the market did not adequately prepare for this.

The amounts of the fines that were imposed are charged on by the suppliers in the prices for end users. A component for the 'contribution to green electricity' is included in the prices of the end users of all suppliers, including those which complied with the first quota obligations. Because of the lack of competition in the Flemish electricity market, the contribution that is charged is almost equally high for all suppliers.

In drawing up the system it is assumed that the suppliers who made a committed effort to comply with the green electricity obligation would acquire a competitive advantage. The total costs of generating 1 MWh of green electricity are actually significantly lower than the fine for a number of technologies with a large market potential. It appears that this financial advantage is not passed on to the end users because of the lack of competition.

At the Enterprise Conference at the end of 2003, employers' organizations emphasized that the green electricity obligation has a very significant financial impact for large industrial users. The additional cost can particularly become a serious competitive disadvantage for companies which need significant quantities of electricity because of the nature of their production process and for which electricity bills therefore form a relatively large share of their costs. For that reason, large users in our neighbouring countries are sometimes partly exempted from contributing to the achievement of the green electricity target.

The decree of 7 May 2004 for the amendment of the Electricity Decree introduced a progressive exemption for large users with regard to the system of green electricity certificates in order to avoid putting pressure on their competitive position. For every point of delivery there will be a 25% exemption for levels of use between 20 and 100 GWh. The exception amounts to 50% for the level of use above 100 GWh.

Avoiding additional costs for local councils

Up to mid-2003, the network managers, as an integrated business of both the sale and the distribution of electricity, still supplied electricity to clients who were not eligible. After all, the liberalisation of the electricity market was not instantaneous, but gradual. The transition from an integrated business to exclusive network management has been achieved since 1 July 2003, not long after the complete liberalisation of the electricity market.

The Electricity Decree sums up the tasks of the network manager. From 1 July 2003 this no longer provides room for the production and sale of electricity. On the other hand, they still had to be presented with green electricity certificates for the first half of 2003. Therefore there was a sudden transition from obligation holder to non-obligation holder.

This transition also had important consequences for costs. Complying with an obligation with consequences for costs can be charged on by the network managers in the rates. However, the fines which are imposed due to the failure to comply with this obligation cannot legally be charged on.

Therefore the amendment decree of 7 May 2004 included a transitional regulation which meant that no green electricity certificate obligation could be imposed any longer on network managers for their deliveries in 2003.

Greater investment security is needed

The green electricity certificate system is a system which operates in accordance with the market. The value of the certificates depends on supply and demand.

This insecurity in the market also appears to be a disadvantage for potential investors. They find it difficult to attract foreign capital for the substantial investments involved in their projects because the support provided by certificates is considered to be too insecure by the external financiers.

Consequently the green electricity products required an amendment of the green electricity certificate system aimed at guaranteeing a minimum level of support with the green electricity certificates.

Therefore the amendment decree of 7 May 2004 provided that the distribution network managers must guarantee a minimum level of support for the production of green electricity as a public service obligation to promote renewable energy sources.

The distribution network managers can place these certificates back on the market at regular intervals with a view to recuperating the costs. Any balance remaining between the costs and the return from the sale of certificates is deducted in the rates of the distribution network.

After a comparison with the subsidy regulations which apply in a number of other EU countries, the following minimum subsidy is guaranteed for Flemish projects in so far as they are connected to the distribution network:

- hydro-electric power, wave and tidal energy, geothermal heat : 95 euros/MWh;
- wind on land, organic-biological materials: 80 euros/MWh;
- co-combustion of organic-biological materials, landfill gas, residual waste: 80 euros/MWh;
- solar energy: 450 euro/MWh (+150 euro/MWh via reverse rotation counter).

The minimum subsidy is guaranteed for new installations, viz, installations which enter into operation after the entry into effect of the decree of 7 May 2004. For solar energy installations the minimum subsidy is only introduced for installations which enter into operation from 1 January 2006, in order to provide a transition from the existing subsidy regulation (direct government subsidy of 50%) to the new subsidy mechanism (higher payment for return with more limited direct subsidy).

As the market price for the certificates valued by the suppliers on the basis of avoiding the fine of 125 euros/MWh is above the minimum value for most technologies, the system will in practice

most probably only have an impact for the certificates for solar panels. It is only for solar panels that the guaranteed purchase price will be above the maximum fine.

The sale of electricity from renewable energy sources

Article 5, paragraph 1 of the European Directive 2001/77/EC on promoting the generation of electricity from renewable energy sources states: "Member States shall, not later than 27 October 2003, ensure that the origin of electricity produced from renewable energy sources can be guaranteed as such within the meaning of this Directive according to objective, transparent and non-discriminatory criteria laid down by each member state. They shall ensure that a guarantee of origin is issued to this effect in response to a request."

Paragraph 3 of Article 5 states that these certificates originally "specify the energy source from which the electricity was produced, specifying the dates and places of production," and "serve to enable producers of electricity from renewable energy sources to demonstrate that the electricity they sell is produced from renewable energy sources within the meaning of this Directive."

Article 5 of that directive had already been partly converted into Flemish legislation. The Electricity Decree already provided for proof to be awarded to a producer of electricity from renewable energy sources guaranteeing that he has generated a certain amount of electricity from renewable energy sources, viz., the green electricity certificate. The green electricity certificate is actually originally a guarantee as indicated by the definition of the green electricity certificate in the Electricity Decree. In fact, Article 1, 17° of the Electricity Decree states: "17° green electricity certificate: a transferable, immaterial document which demonstrates that a producer has generated an indicated amount of green electricity expressed in kWh, in a particular year." The reason that this document was referred to as a "green electricity certificate" in the Electricity Decree is that the directive 2001/77/EC, and consequently the term "guarantee of origin", did not yet exist at that time.

However, the green electricity certificate was only used as a document for the supplier to prove that he had complied with his certificate obligation. The amendment of the decree of 7 May 2004 provided that the green electricity certificate can also be used for a different function, viz., as proof that a sold quantity of electricity was generated from renewable energy sources. With this addition, this obligation of Article 5 of the directive is also converted into Flemish legislation.

Logically a green electricity certificate can only be submitted once in the context of the sale of electricity from renewable energy sources, as referred to in Article 23bis.

The submission of green electricity certificates in the context of the sale of electricity from renewable energy sources does not have the result that the certificates are also deemed to have been submitted in the context of the obligation with regard to the quota. These two procedures for submitting the certificates are completely separate.

Submitting a green electricity certificate in the context of the sale of electricity from renewable energy sources does not exclude the possibility of subsequently presenting the certificate in the context of the obligation with regard to the green electricity certificate.

Taskforce and Green Energy Action Plan

On 20 June 2003, the Government of Flanders approved the contracts for the employment of 7 FTEs to intensify the actions for the promotion of green electricity and green heat. The suppliers were not able to observe the green electricity obligation in 2002 and 2003.

The Green Energy Taskforce will use the fines which were paid into the Fund for Renewable Energy Sources, and any fines in subsequent years, to extend the social basis for renewable energy, to take measures to supervise the sector, to start demonstration and market introduction projects and to promote the production of green heat. The Green Energy Taskforce must create the conditions for the suppliers to make up for where they have failed to achieve their target.

b) Past trends and future projection of renewables and non-conventional fuels supply

In 2003, 291,568 green electricity certificates were issued. Of these, 58,946 certificates were related to wind energy (20%) and 230,677 certificates were related to biomass (79%).

Up to now, certificates have been issued to the following individual biomass electricity producers:

Sewage purification silt gas (1,833 MWh in 2003);

Landfill gas (62,191 MWh in 2003);

GFT gas (9,028 MWh in 2003);

Biomass / Other biogas (157,625 MWh in 2003)

The green electricity production in 2003 corresponded to approximately 0.6% of the electricity supplied. The obligation which had to be met on 31 March 2004 was set at 1.2% of the electricity which was supplied via the distribution and transmission network in 2003.

Prognosis to 2010

It is assumed that by 2010 the Flemish green energy electricity certificate target will correspond to approximately 2,900 GWh of green electricity, based on a growth of 1.3% in electricity by 2010. On the basis of the projects already planned, approximately half can be achieved by wind energy, and the remainder by biomass.

Wind energy

There are plans to install a capacity of approximately 750 MW, of which 2/3 are on land, and 1/3 are at sea. This corresponds to approximately 300 wind turbines, of which 3/4 are on land and 1/4 are at sea, together producing approximately 1600 GWh.

On the basis of the projects which are already planned, and for which there is a reasonable chance of being achieved, it is assumed that approximately 60% of the objective for wind energy can be achieved on land by placing wind turbines in port areas and on large-scale industrial sites.

Approximately 30% of the objective for wind energy on land can be achieved by placing wind turbines on locations which are selected for wind turbines in Regional Execution Plans for Town and Country Planning. A number of projects are already possible in definitively approved Regional Execution Plans for Town and Country Planning (GRUPs). The feasibility of additional GRUPs is still being examined.

Biomass

The remaining electricity generated from renewable energy sources (1600 GWh) is expected to come from the energetic valorisation of biomass.

The energy from timber waste and other waste which will have to represent half of the total planned production from biomass in 2010 is crucial.

In absolute figures the strongest growth is expected in the timber sector. With an active policy, the production of green electricity from timber waste should be tripled.

The production from anaerobic water purification, fermentation and the energetic valorisation of fats and oils will together represent an important share in 2010. Significant growth is also expected in that sector.

Other

Electricity from hydroelectric power and solar energy will only be able to make a marginal contribution in 2010 (40 GWh). A more substantial contribution from solar energy is only expected in 2020. The application possibilities of hydroelectric power will remain limited in Flanders.

Brussels-Capital

Electricity market:

The ordinance for the liberalisation of the electricity market includes some measures relating to the access to the market for the clients using green electricity. In particular, the autoproducers using renewable sources become eligible, whatever their size, from 1st January 2003 on. Moreover, the Brussels' Government has organized a green certificate mechanism by which a predetermined fraction (2% for 2004, 2,25% for 2005 and 2,5% for 2006) of the electricity that is sold by the suppliers must be covered by green certificates.

Promotion of RES and information: given the limited available funds, the Region of Brussels-Capital has chosen not to go on with research in the field of renewable energy sources, and, instead, to promote their market penetration. In the same way as in the other Regions, the measures are twofold: fiscal measures (taken at the Federal level) and financial ones. The financial measures are defined by the Royal Decree of 10 February 1983 (see above) but also by the Regional Decree of 3 June 1999. The latter modifies the previous e.g. to stimulate the use of the solar boilers for sanitary warm water generation. A subsidy of maximum 991 EUR and corresponding to a maximum of 35% of the investment is given. Some information campaigns were also launched (through the diffusion of documents designed for the public and the organisation of both overall and more technical workshops). In addition, solar projects which have a demonstrative character are supported by the Region : up to 50% of their cost can be

financed. In 2003, five such projects have been supported : 2 swimming pools and 3 collective dwellings.

Capacity Building, Information and Research and Technologies

1. General Features

The competence areas related to science, technology and innovation (STI) in Belgium are distributed across all federated and the federal entities of Belgium. The main responsibility for STI policy is conferred on the Regions and the Communities within their own areas of competences. As an exception to this rule a number of competencies involving scientific research are entrusted to the Federal government.

Communities have the main responsibility for fundamental research in universities and applied research in higher education establishments. Regions have the main responsibility for economically oriented research, technological development and innovation promotion. The Federal State is responsible for scientific activities linked to its own competencies, and develops STI activities of national and international interest, in agreement with Communities and Regions. Co-operation and consultation between the federated entities is organised through the *Inter-Ministerial Conference on Science Policy* (CIMPS-IMCWB), embracing representatives of the Federal State, the Communities and the Regions.

2. Major Research Programmes and Priorities

Federal Level

Implementation of actions falling under the federal science policy is mainly a responsibility of *PPS Science Policy*.

Energy Research in the *PPS Science Policy* is mostly integrated into a *Scientific Support Plan for a Sustainable Development* (SPSD). The second Scientific Support Plan for a Sustainable Development Policy (SPSD II) was approved by the Council of Ministers on the twelfth of May 2000 with a total budget of 58 MEUR and will end in December 2005.

This federal initiative benefit from the collaboration of the regional and local authority governments, which have a certain number of competences required for the envisioned scientific research's outcomes to give rise to tangible innovations in the area of sustainable development. To this end, the federal government, Regions and Communities signed a co-operation agreement to implement and follow up this Plan

Energy Topics within SPDD II

The budget for the Energy research projects within SPDD II is 5 MEUR. The priority research topics are:

The issue of climate change

The studies focus both on the instruments and greenhouse gas emission reduction measures to be taken at the national level, and on the evaluation of the possibilities for Belgium offered by the flexibility mechanisms (Kyoto mechanisms). Besides environmental efficiency and the cost of emission-reducing measures, an assessment of their economic and social impact is essential.

Several models are developed in order to assess the measures and the instruments aimed at reducing greenhouse gas emissions:

a dynamic regional multi-sectoral general equilibrium model of the Belgian economy. The model will take into consideration all the interactions between the three Belgian regions (Brussels, Flanders and Wallonia) and the other regions of the world, in order to assess the impacts of the economic measures related to energy and the environment.

a technico-economic model, which assembles in a simple but economic consistent way technological information (conversion-efficiency, investment- and variable costs, emissions, etc.) for the entire energy system in Belgium (MARKAL/TIMES)

a multi-pollutant model used to evaluate the impacts of a single measure on different pollutants ; a coupling of a long-term economic model (with a simplified but reliable representation of the climate system)

development of legal, institutional, technological and economic tools which enable Belgium to use the Clean Development Mechanism.

The consumption of households and rational use of energy (RUE)

Two research projects try to analyse the factors influencing households energy consumption (technical, individual behaviour, cultural, socio-economic, demographic factors) in order to make recommendations in terms of policy instruments, information campaigns, awareness campaigns... bearing in mind the social differences among households.

The development of alternative and/or renewable energy sources

The research projects should in as concrete terms as possible look into the growth potential of new energies, the various barriers to the small- or large scale introduction of renewable energy sources in Belgium, in addition to all the consequences of their development.

On the one hand, integrated studies are carried out aimed at understanding what the consequences of the introduction of alternative or renewable forms of energy are, particularly on the environment, on technology (production, distribution and consumption), on costs and production thresholds, on consumer preferences, on national and regional development, on employment, on the interests of the various actors, on all sorts of constraints, etc.

On the other hand, the different barriers and the specific strategies in order to counter these obstacles and to encourage the penetration of these sources of energy on the Belgian market will be examined.

Five projects are currently financed:

"Solar roadmap": The work proposed consists of an analysis from a 'macro-perspective' of the past 25 years of renewable energies in Belgium and an outlook towards the next 25 years ahead. It aims at an in-depth analysis of policy, technology and market performances in Belgium and internationally, allowing a benchmarking of Belgian policy. The envisaged technologies are based on solar-derived resources: wind energy (on-shore and off-shore), solar thermal and photovoltaics and biomass.

"Optimal offshore wind development in Belgium" : will determine the physical, technical and economical potential for offshore wind application in the Belgian territorial sea based on the specific resources (geological and geotechnical, wind, grid-connection) and expected technological evolutions.

"Liquid Biofuels in Belgium in a global bio-energy context " : will analyze the ecological, micro-economic and socio-economic sustainability of the most promising large scale biomass routes in Belgium. The project will include a full assessment on short and medium term possibilities on bio-fuels for the transport sector; a comparison of the potential and sustainability of the chains in Belgium versus imported biomass, liquid bio-fuels or intermediate products and a comparison of liquid bio-fuel chains with bio-CHP and bio-electricity chains.

"Development of tools to evaluate the potential of sustainable hydrogen in Belgium" will include databases, technology assessment, evaluation of the legislation, and an hydrogen-module within the MARKAL-TIMES model focussed on the specific Belgian situation (e.g. energy demand, existing hydrogen infrastructure,...).

" Improved predictions of wind energy in Belgium" will develop a consistent methodology for long term and short term predictions for onshore and offshore sites in Belgium, consisting of reference long term wind data, roughness maps, and requirements for wind field models; and will formulate recommendations on the optimisation of measuring stations for wind power applications

The Regional level

Wallonia

Overall objectives and priorities

In the Walloon Region, the Minister for Scientific Research and New Technologies is in charge of RTD in general, meanwhile since 1999, the Minister for Energy is responsible for the stimulation and promotion of NNE RTD. The D.G.T.R.E. (Direction Générale des Technologies, de la Recherche et de l'Énergie) is the Administration in charge of applying the ministries' policy.

The overall policy objectives of NNE RTD is in line with those of the RTD in general.

The strategy aims at the following objectives :

encourage partnerships and technological synergies, also beyond the borders of the Walloon Region ;

reinforce the innovation potential of the Walloon Region ;

organise a net of supply of competencies adapted to the needs of the enterprises.

Universities, high schools and research centres

The Walloon Region has research teams internationally well known in its universities and high schools. Through the research programmes, two objectives are aimed : reinforce the scientific potential of these units and valorise it in the Walloon industry through financing research projects which could emerge to an utilisation of the results in existing or to be created enterprises.

The DGTRE identifies priority areas for research, allocates research funding from governmental budgets, sets up and takes operational responsibility for RTD programmes, conducts evaluations of submitted proposals and follow-up of selected projects. It also has a role in disseminating scientific content to the public.

The DGTRE is the legal regional authority for co-operation with and promotion towards the international research environment and particularly with the European union (Eureka, COST, Framework programme, Structural funds, Interreg, ERA-Net, European research area...).

The Region is fully involved in the European Research Area. It participates in the ERA-NET HY-CO (Hydrogen Co-ordination). It attaches importance to co-ordinating the implementation of regional and European research programmes, by encouraging researchers to work abroad and making the Walloon Region as attractive as possible to foreign researchers, particularly by promoting spin-offs and easy access to venture capital.

Participation in European programmes is fostered by means of the "[Horizon Europe](#)" grant, which covers part of the cost of developing and mounting an RTD project to the European Commission or with a view to obtaining the EUREKA label.

As a result, the D.G.T.R.E. regularly launches calls of proposals on specific thematic priorities of research, named "programmes mobilisateurs", the results of which are likely to be of interest to existing companies or might lead to the creation of new undertakings.

The projects proposed in the calls are analysed and evaluated by foreign experts (peer review) and by D.G.T.R.E. engineers. A selection committee composed by representatives of the Scientific Policy Council, industrial and economics stakeholders, D.G.T.R.E. and the concerned Minister proposes a ranking of the projects to the Minister.

The anticipated results should provide the potential user with complete and reliable data as reference material for applied research and technological developments. In the medium term, Walloon companies will be provided with leading-edge scientific information and know-how enabling them to devise new technological products, services and innovative processes.

Moreover, the Region has always attached great importance to the protection of results. Specific research units will in future be granted financial support for this purpose.

The Walloon Region is aware of the importance of R&D personnel. It has therefore implemented special programmes aimed at training researchers.

The Walloon Region has many research centres with different statutes, activities and financing sources. With the grant of the European structural funds (FEDER and FSE), the Walloon Region has developed 12 "pôles d'excellence" An agreement based on technological quality is to be followed in order to be eligible to the Walloon Region sustain to research, among others the "programmes mobilisateurs". Some research centres or "pôles d'excellence" are co-

ordinators or partners of several research projects in the FP6, or EUREKA. But it does not exist a specific NNE RTD centre.

Companies

For the companies, the approach is bottom-up, the project initiative is left to the companies.

The Walloon Region stimulates technological innovation by encouraging the development of new products, processes and services.

The Region provides :

grants and refundable loans for companies. The Region encourages co-operation with universities ;

follow-up of the EUREKA tool in business ;

management of resources provided to companies under structural funds and international programmes such as EUCLIDE.

The Region is eager to develop innovation in SME's. It has therefore drawn up several policy schemes grants such as:

RIT (Responsable à l'Innovation Technologique) grants for subsidising the salaries of persons at SME's investigating the prospects of and areas related to innovation. It includes

a technical support (ST) scheme which pays for a feasibility study ;

technical and economic assistance (ETE) tackles strategic marketing ;

sectoral studies (ES) are used to analyse a specific sector with a view to targeting technological clusters that could be exploited by SME's ;

feasibility studies of innovative software (LI) are provided for software companies;

RIT Europe examines the possibility of developing technological co-operation with one or several SME's located in one or more EC member states, other than Belgium.

A new decree of the Walloon government concerning a different approach to NTICs will enable the promotion of e-commerce business and an "RIT NTIC" to be set up.

Moreover, the Walloon Region supports "inventors" by enabling them to develop and finalise new products on their own without requiring any corporate assistance. This grant covers the costs of protecting industrial property rights, of producing a prototype and carrying out tests by a certified body.

The Walloon Region indirectly supports SME's by funding thirty research centres, which perform research programmes in important areas for innovation. The Walloon Region also financially supports the activities of 50 "guides", i.e. scientific experts attached to these centres supporting and advising businesses, especially SME's, in matters relating to innovation.

Setting of priorities in energy RTD

Since 1990, Walloon research teams participate in the IEA implementing agreements in the combustion and building fields. Outside of these, there were no priorities for NNE RTD until 1999. The choice of energy topics was bottom-up and the selection of projects was based on quality. This allowed the emergence of fields of excellence in energy research.

In line with the "Action Plan for Preparing Wallonia for the Future" and the studies made about the research and innovation policy, these topics are now encouraged through the calls for proposals or "programmes mobilisateurs".

The results of the projects are evaluated meanwhile the questionnaire ERGO (European Research Gateway On-Line).

Priorities

The budget of D.G.T.R.E. is € 234,2 millions in 2003. Besides the funding of RTD, this also includes dissemination of science and technology, energy efficiency subsidies, promotion of energy efficiency, data collecting, studies, etc. Based on the IEA-classification, the RTD budget of DGTRE for NNE is almost € 10 million a year. It encompasses grants for research projects, but not the general sustain to research centres or universities.

These budgets are commitment budgets and are not year to year payments.

The budget is split in the following mode :

*Programmes mobilisateurs or calls for proposals, around €3 million a year ;
International Energy Agency: implementing agreements, around € 1.4 million a year ;
R&D enterprises, around €5 million a year ;
other research and studies of specific interest.*

The ISSEP (Institut Scientifique de Service Public), former INIEX (Institut National des Industries Extractives) receives an annual sustain of € 8,5 million, outside of the budgets here above mentioned. Previously implied in research programme of valorisation of coal products, coal gasification and conversion of coal products, it orientates its activities towards environmental research.

Following the IEA classification, the major research areas are oriented to renewable energy (45%) and energy conservation (35%), followed by power and storage technologies (15%).

The research priorities are :

Combustion of fossil fuels through the IEA implementing agreement "Combustion".

Building, climate-sensitive architecture and passive solar energy technology in buildings, mainly through the IEA implementing agreements SHAC (Solar Heating and Cooling) and ECBCS (Energy Conservation in Buildings and Community Systems).

Production of energy from Biomass and waste, mainly Gasification of Biomass, combined heat and power.

The *Action Plan for Preparing Wallonia for the Future (Plan d'Action pour préparer la Wallonie au Futur)* was presented in 1996. The plan reflects the new RD&D policy that the Walloon Government intends to promote in the future. Efforts by the regional government will be orientated towards clearly identified technological niches to be identified through consultation with all stakeholders. The support provided by the region will be restructured and RD&D regional policy will be more integrated into European research and development programmes.

Catalysts, for several uses : catalytic combustion of Biomass, catalytic purification of combustion gases, hydrogen production from natural gas and alcohol, low temperature combustion of natural gas.

Hydrogen and fuel cells, let us mention the participation in the EU ERA-NET Hydrogen Coordination.

recently, Solar thermal and photovoltaics.

Major research programmes and activities

(i) Energy efficiency and fuel use

- Supported RD&D activities : participation at the implementing agreements "Energy Conservation and Emissions Reduction in Combustion", " Energy Conservation in Buildings and Community Systems", "Solar Heating and Cooling" and "Energy Efficiency in Separation Technologies", for roughly €1.4 million a year. These researches are completed by the participation of the research units at the "*programmes mobilisateurs*" and by *other research and studies*.

- Technology demonstration and dissemination activities :

CD-ROM Énergie + : The knowledge and experiences in energy efficiency in buildings have been gathered in a CD-ROM. It constitutes an indispensable tool for training and information of building energy managers and professionals.

CD-ROM COGENERATION : the objective of it is to provide an easy and simply tool for technical managers interested in little and medium size combined heat and power plants.

Set-up of **training programmes** for professional schools in buildings.

Practical guides for architects : 9 practical guides have been published for architects ' training. They support the legislation about insulation and ventilation, and describe best practise in energy efficiency in buildings.

Natural lighting : The BBRI (Belgian Building Research Institute) has built a laboratory for the use of an artificial sky and sun allowing to analyse the impact of natural lighting on building projects. The Walloon Region grants complementary research on it. Student training are also organised. A "Buildings' Natural Lighting guide" has been set up.

Artificial lighting : A Building's artificial lighting guide" has been set up. It is complementary to the "Buildings' Natural Lighting guide" and gathers the lasted available data's and concepts developed in this field.

(iv) Renewable energy

- The RD&D activities for the **gasification of Biomass** are being supported since 1995, and since 2000 in the frame of the "programmes mobilisateurs". This long term research in a university research unit has led to the creation of a spin-off which builds and commercialises gas producers for combined heat and power. The spin-off continues to be granted for prototyping and technology demonstration activities.

- The RD&D activities in **catalysts** are a typical example of valorisation of scientific potential which could emerge to an utilisation of the results in existing or to be created enterprises. For example, the knowledge in catalytic partial oxidation and catalytic reforming is used for the production of Hydrogen.

- **Solar thermal and photovoltaics** benefit from government incentives for RD&D activities in research units and enterprises. The SOLTHERM plan aims at disseminating thermal solar plants in buildings for water heating. Up to now, there is no plan for dissemination of

photovoltaics as we think that the price of photovoltaic plants is yet prohibitive and we don't have yet a company able to produce these. But things are going to change soon.

- **Hydrogen and fuel cell** This *long term research* benefits since 5 years of an annual sustain of around € 1 million a year. The research is made in university research units, sometimes with the participation of a private company. As *international collaboration*, the Walloon Region participates in the European Union ERA-NET Hydrogen Co-ordination and has launched in 2004 a specific "programme mobilisateur" on this subject.

Flanders

The conditions with regard to technological environmental and particularly, technological energy research are laid down in the IWT measurement 'Sustainable Technological Development (DTO), which generally determines the modalities for all the IWT programmes, for subsidies for research and development projects related to energy savings and renewable energy sources. In the IWT programmes extra subsidies are provided if the conditions of the 'Sustainable and Technological Development' measure are observed.

The VITO is active in three important research fields at the level of innovation, in material technology, environmental and process technology, and finally, energy technology respectively. These three research fields are also reflected in the organisation of the VITO and therefore in the use of its funds. In the research field of energy technology, the VITO supports energy suppliers, developers of equipment, end users and the government with regard to their aim for rational energy use, the best possible use of available or renewable energy sources and the related reduction of CO2 emissions.

With regard to energy technology, the research activities of IMEC concentrate on the research and development of photovoltaic solar cells for the production of electricity from sunlight. The research focuses both on solar cells based on silicon, and on organic solar cells.

The Environment Innovation Platform (MIP) was established in the context of the Flemish Climate Policy Plan (approved by the Government of Flanders on 7 May 2004). The MIP will bring together all the players active in Flanders with regard to the development of environmental and energy technology. By bringing together and coordinating their competences and government instruments, the Government of Flanders hopes to give Flemish environmental and energy technology more chances of effective market penetration and innovation. In the first instance, the aim is to achieve the coordination of the Flemish innovation policy, the environmental policy and the energy policy. The platform also introduces a number of effect and performance indicators and effect and performance measurements.

Brussels-Capital

In recent years, budgets formerly spent on energy RD&D projects have shifted towards studies in support of energy policy.

3. INTERNATIONAL COLLABORATION

Belgian research centres, universities and companies are active in the EU energy and research programmes such as the 6th Framework Programme on R&D and the non technological programme "Intelligent Energy for Europe", but also Eureka, COST, Structural funds, Interreg, ERA-Net, European research area...).

Belgium participates in the following IEA Implementing Agreements: Alternative Motor Fuels, Bio-energy, Demand-Side Management, Energy and Environmental Technologies Information Centres (EETIC; CADDET Renewable Energy and CADDET Energy Efficiency), Energy Conservation in Buildings and Community Systems, Energy Conservation and Emissions Reduction in Combustion, Energy Storage, Energy Technology Data Exchange (ETDE), Energy Technology Systems Analysis Project (ETSAP), Greenhouse Gases, High Temperature Materials for Automotive Engines, Hybrid and Electric Vehicles, Solar Heating and Cooling and recently Energy Efficiency in Separation Technologies.

Since 2001, teams from non-Belgian universities or public research institutions, are able to join Belgian teams applying for funding within the second Scientific Support Plan for a Sustainable Development Policy (SPSD II), thus facilitating the creation of a European Research Area as advocated by the European Commission. In principle, the potential association is based on the principle of co-financing (50 %). The SPP Science Policy funding of foreign partners is limited to a maximum of 10% (in some programmes 20%) of the total overall budget of the submitted proposal.

Financing

1. Energy Taxation

From 1 August 1993, a special tax on domestic energy products, an “energy levy”(Cotisation sur l'énergie), is being levied on gasoline, light heating oil, natural gas, I.PG and electricity. Coal, social tariffs for electricity and gas and diesel fuel were exempted. The aim is to support employment. This tax is calculated on the energy component, not the CO₂ of energy products. In practice, the households are the main contributors to the energy levy. Industrial energy consumption is exempt, with exception of light heating oil.

On 1 January 1996, additional excise taxes were placed on motor fuels. Gasoline is also subject to the general VAT of 21 % which adds to its total cost.

In 1993, heavy fuel oil for industry and electricity generation was subject to an excise tax of BF 750/tonne for heavy fuels containing 3 % sulphur to BF 250/tonne for 1 % sulphur content. Electricity and natural gas for households are subject to VAT at 21 % as from 1 January 1996. There are no taxes on coking coal or steam coal for industry and electricity generation. A reduced VAT rate of 12 % is placed on steam coal for households.

In 2003, two federal levies were brought in, one on electricity and another on gas. These federal levies are aiming at financing certain obligations of public utility (demantling of nuclear sites, measures of social guidance, federal policy of reduction of greenhouse gases) and the costs that are linked to the regulation and the control of the markets of electricity and gas (CREG).

2. Energy Prices

The consumption prices of the principal energy product rose as follows in 2003:

Energy products	2000	2001	2002	2003	Var % 03/02
Road diesel (Euro/L)	0,8106	0,7811	0,7654	0,8025	+4,8
Road diesel (Euro/L) 50 S			0,7534	0,7659	+1,7
Gas oil of heating (Euro/L)	0,3669	0,3329	0,3057	0,3163	+3,5
Unleaded Super fuel 95 (Euro/L)	1,0682	1,0322	1,0090	1,0260	+1,7
Unleaded Super fuel 98 (Euro/L)	1,1088	1,0806	1,0682	1,0689	+0,1
Unleaded Super 98 fuel (Euro/L) 50 S			1,0610	1,0644	+0,3
Natural gas (tariff B)(Euro /kWh) ⁽¹⁾	0,032567 4	0,036066 5	0,032656 9	0,032333 6	-1,0
Electr. normal tariff (Euro/kWh) ⁽²⁾	0,1525	0,1574	0,1553	0,1607	+3,5
Electr. excl. night tariff (Euro/kWh)	0,0578	0,0593	0,0598	0,0610	+2,0

(1) Only the proportional term (VAT incl.)

(2) Only the proportional term (normal tariff >2500kWh/year and >6kva, VAT incl.).

In general the year 2003 has been characterised by a generalised rise of the petroleum prices under influence of a strong increase of the crude oil on the international markets (+15,8% rise of the average rate of Brent oil in 2003), although compensated by the weakness of the dollar (on average -16,6% between 2002 and 2003 in proportion to the euro).

In that way, prices of engine fuels increased to a rather sensible extent for diesel fuels and to a lesser degree also for the combustion motor fuels in 2003.

Regarding road diesel engines, the average price of "normal" road diesel, increases with 4,8 % and with 1,7% for the road diesel engines « 50S », with a low sulphur content.

The price of super fuel 95 RON (unleaded) increases only by 1,7%, super fuel 98 RON (unleaded) by 0,1% and unleaded fuel 98 « 50S » by 0,3%.

The average price of domestic fuel marks a more distinct increase of 3,5% in 2003.

Natural gas used on behalf of domestic heating (tariff B generalised heating) undergoes a slight decrease of 1,0% in 2003, because of the decrease of the frontier price of natural gas (parameter « G »).

However, this decrease in price of natural gas should be of short duration, bearing in mind the rise of the quotations of the petroleum prices in 2003 and the indexation mechanisms of the purchasing contracts of natural gas in the long term, which with a certain delay are brought in line with the prices of the petroleum products (6 months).

As to electricity, the normal tariff experienced an average increase with 3,5% in 2003 (since it increased from 1553 euro/kWh in 2002 to 0,1607 euro/kWh in 2003), while the exclusive night tariff rose from 0,0598 euro/kWh to 0,0610 euro/kWh, an average increase of 2,0%.

3. Subsidies

The energy laws of 1999 not only prohibit cross-subsidisation but also require increased productivity and lower tariffs. Tariffs are not aligned with those in other EU-memberstates.

Two types of cross-subsidy however remain : "social" electricity and gas tariffs and "energy grants" for low-income households. The effective income transfer from the lower electricity and gas tariffs to low-income households is about 100 euro for each of some 190.000 low income households annually. In addition, low-income consumers pay no fixed charges and receive 500 kWh of electricity and 2.000 % MJ of natural gas free per year. Some 500 to 1.000 litres of free heating oil per year are granted to poor households, about 20-40 % of their average annual consumption.

A grant of a fixed amount of 'free energy' to all residential consumers, not just the poorest of them has been introduced in Flanders where all low-voltage consumers receive 100 kWh of free electricity per year.

Fiscal Deductibility

The federal government has implemented fiscal deductibility for the purchase of clean vehicles :

- up to 15 % of the vehicle price (max. 4000 EUR) for cars with CO₂-emissions lower than 105 g/km

- up to 3 % of the vehicle price (max. 750 EUR) for cars with CO₂-emissions between 105 and 115g/km

The federal law of 10/08/2001 on the reform of the households fiscal system foresees that the investments in order to improve rational use of energy may give right to tax reductions for the incomes of the year 2003. A budget of 34 M euro has been assigned for these tax reductions.

The deduction rate is 15 % for the replacement of old boilers (more than 20 years) by new condensation boilers and for solar energy ; the rate is 40 % for the installation of double glazing, roof insulation, the installation of a central heating regulator, plus energy audits. These fiscal deductions could initially not exceed 500 euro per habitation. This amount was raised in 2004 up to 600 euro. The target of the measure has also been extended :

- 1/ more renovation works are considered
- 2/ tenants can also apply for the fiscal deduction

International Cooperation

Belgium engages in international energy cooperation through its membership of :

- the European union
- the International Energy Agency
- the International Atomic Agency
- the Energy Charter
- the International Energy Forum
- the United Nations
- the Johannesburg Renewable Energy Coalition