PLAN AGAINST PM10 EXCEEDANCES UNDER THE AIR QUALITY FRAMEWORK DIRECTIVE 96/62/EC

ANSWER TO THE COMMISSION DEMAND D(2007)17144 (OCT 2007)

THE BRUSSELS-CAPITAL REGION (ZONE BEB10A)

YEARS 2005-2006

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Institut bruxellois pour la Gestion de l'Environnement
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Chapter 1: General Information

A. Responsible authority

The Brussels Institute for the Management of the Environment, or IBGE-BIM, is the environmental and energy administration of the Brussels Capital Region. Since 1989, the Belgian regions have authority over important matters such as the economy, employment, infrastructure, transport, urban planning and the environment.
IBGE-BIM was created in 1989 by the Royal Decree of 8 March 1989 to be the spokesman of the Brussels inhabitants for all the matters relating to their living environment.
IBGE-BIM acts, from the regulatory standpoint, as a research, planning, advisory and information body, as well as an issuer of permits, and a surveillance and control agency. From the sectoral standpoint, it has authority in the areas of waste, air quality, noise, parks and forests, water, soil and energy.

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B. Description of the Region

The Brussels Capital Region (BEB10a) is the zone, which IBGE-BIM is in charge of. It covers 161,4km2.
In 2006, the population was 1.018.804 inhabitants (INS : http://statbel.fgov.be). The population density was therefore 62.4 inhabitants/ha.
During the day, the population varies in the Brussels Capital Region due to the large number of commuters. In 2004, 344.451 workers were coming from Flemish and Walloon regions and 48.125 workers were going out Brussels. Nearly 300.000 additional people came therefore in the Brussels Capital Region during the working day.
The residential sector (mainly houses and buildings with apartments) represents 34% of the territory. Brussels is also a green city: vegetation cover represents 33% of the territory.
Brussels is highly urbanized but there is still a lot of improvement to do in the residential sector as : 64% of the building are equipped with double glace window, 63% have an isolated roof, 34% have isolated external wall and 56% have their isolated heating pipes

C. Climatic data for 2005 and 2006

Table 1 summarizes the main meteorological parameters for 2005 and 2006 in the Brussels Capital Region. The meteorological conditions for the two years were quite the same. The maximum/minimum mean temperature was the average of the daily maximum/minimum (from 8:00 am to 8:00 am) of each day during the year.

	2005	2006
Mean Temperature	11.0°C	11.4 °C
Maximum mean temperature	14.8°C	15.3°C
Minimum mean temperature	7.5°C	7.7 °C
Precipitations	751 mm, 200 days	835 mm, 180 days

Table 1 : Mean temperature, maximum and minimum mean temperature and precipitations in Brussels for 2005 and 2006.

D. The economic activities

The Brussels Capital Region is the most important source of employment in Belgium with 654.000 employment, which 47% are occupied by the Brussels inhabitants.
From 1999 to 2002, the number of salary employment increased in the public administration (+11%), in the financial activities (+14%) and in the common services (+15%). In parallel, a decrease in the labor workers (-19% from 1990 to 2002) was observed.
In 2002, the primary, secondary and tertiary sectors represented 0.1%, 10.6% and 89.4% of the salary employment, respectively. The public administration, the real estate/rent/services to the companies, business/restoration and the financial activities represented 54% of the number of salary employment.
This region wants also to maintain its international character with high host capacity for international institutions, several congress hall, hotel infrastructures… In 2001, 3.796 international institutions and sectors influenced by the EU is settled in Brussels with totally 55.000 workers. In 2003, 89% of the added value produced in Brussels came from the tertiary sector. The tertiary sector was then the most important sector in Brussels.
44.6% of the total population are considered as workers in Brussels. Since last years, the number of free employment and unemployed is drastically increasing (+29%). At the end of 2004, the unemployment rate reach 21% compared to 8.6% and 18.4% in Flemish and Walloon regions, respectively.
In 2002, Brussels has 31.128 and 2.221 companies from public and private sector, respectively.
Most of the activities are done by small and extra small size business: in 2002, 21.686 companies employed less than 5 workers and 180 companies employed more than 500 workers.
The Brussels inhabitants spent more than the Belgium average inhabitant for rent (128%), for water consumption (+158%) and for public transport (+193%). Nevertheless, they spent less for private transport (82%), for heating and lighting (88%).

E. Transport

The transport in Brussels is changing and is characterized by :

- Increasing of the travelling distance
- Increasing of the number of daily travelling
- Increasing of the motorized travelling
- Large increasing of the travelling for hobbies and purchase
- Spreading of the rush hours (now it is from 6:00 am to 10:00 am)

For a standard day, 76% of the Brussels inhabitants older than 6 years are moving (INS). 13% are walking, 17% use public transport, 60% use private transport and 9% combine public and private transport.
25% and 62% of this travel are shorter than 1km and 5km, respectively. The Brussels inhabitants travel in average three times per working day, for which 2.2 are not done by walk.
In Belgium, the number of diesel car, is increasing: from 12% in 1983 to 47% in 2004. In Brussels, 43% of the cars are diesel : the combustion of the diesel is one of the source of PM10 emission in Brussels.

F. Public transport

Public transport (train, tramway, bus) are used more and more: from 1996 to 2005, the number of travel by tram and metro (STIB-MIVB[1], Société des Transports Intercommunaux de Bruxelles) was increasing of 57%. The number of train travellers was also increasing by about 7% from 1990 to 2004.

[1] http://www.stib.be/index.htm?l=fr

Chapter 2: Coordination of environmental policies in Brussels Capital Region

In environmental topic, nearly 80% of the Belgium legislation comes from international convention and European legislation[2].
Belgium has complex institutional mechanisms. The Federal State and the regions are, sharing environmental competences.
The Federal State is involved in coherent coordination and solidarity ; the Regions manage competences related to territory.
The Federal State is in charge of the international policy of environment. There is a double need:

- Juridical need: the public international legislation recognizes only the juridical personality of the State.
- Political need: Belgium has to speak with one voice to the international instances even if the topics are under the regional competences. It requires coordination and collaboration.

A. Sharing the competences between different power levels

Since 1970, Belgium knew 5 constitutional revisions, ending in the transformation of Belgium into a federal state composed with three communities and three regions.

Environmental competence of each region

Within the institutional reform, most of the competences of the environmental policy were transferred to the regions: Brussels Capital, Walloon and Flemish regions. The competence of Brussels Capital in this domain concern:

- Granting environment permits and several categories of permits and certificates;
- Enforcing and monitoring compliance with environmental legislation;
- Verifying production of wastewater for the implementation of a tax;
- Observing the state of the environment;
- Measuring air quality and ambient noise levels;
- Drafting sectorial plans (for waste treatment, noise, etc) and coordinating their implementation;
- Landscaping and managing regional green areas, including park management;
- Improving awareness on the part of citizens and businesses as concerns the environment.

Environmental competence of the Federal State

Nevertheless, the Federal State keeps some environmental competence on environment and possibility to make concrete actions within other policy like the energy, mobility or financial policies.
These competences on environmental policy are:

- Elaboration of products norm and promotion of sustainable production and consumption
- Protection against the ionized and not ionized radiation
- Management of nuclear waste
- The transboundary transport of the waste
- Protection of the marine environment

[2] https://portal.health.fgov.be/portal/page?_pageid=56589294&_dad=portal&_shema=PORTAL

- Importation/exportation and transport through Belgium of vegetal/animal species.

The Federal State is also in charge of the coordination of international environmental policies.
This responsibility covers two aspects of coordination:

- Preparation of common international positions in collaboration with the three regions.
- Supervision of the correct implementation of international and EU norms.

International coordination

Three cooperation agreements approved by the federal and regional partners, describe the modality of international coordination in Belgium.
The first agreement has been signed on 8th March 1994 between the Federal State, the communities and the regions. It defines how Belgium is represented within the Minister Council of the European Union, which has together with the European Parliament, the environmental legislative power at European level.
It determines two essential principles:

- The coordination to determine common Belgium positions at the European level has to be done within the "Direction Générale des Affaires Européennes" of the SPF Foreign Affairs.
- The system under which the Belgium Minister at the Minister Council of the European Union is nominated.
  Within this cooperation agreement, this minister (who is the only one which can vote) must come with a minister assessor belonging to another power level. Since July 2003, for the environmental questions, a regional minister represents Belgium at the Minister Council of the environment. Each region is in charge of this function for six months. The federal minister plays the role of the permanent assessor minister.

The second agreement of cooperation, approved on 30th June 1994, concerns the representation of Belgium in the international organizations in charge of activities in relation with "mixed" competences.
The third agreement of cooperation, which describes specifically how the international policy of the Environment can be applied, was signed on 5th April 1995. A "Comité de Coordination de la Politique Internationale de l'Environnement" (CCPIE-CCIM) was then created.
IRCEL-CELINE was created in 1994 and is in charge of the interregional collaboration on air quality matter between the three regions in Belgium[3].

a) The CCPIE-CCIM

The CCPIE-CCIM (Comité de Coordination de la Politique Internationale de l'Environnement) was created in 1995 and was supervised at federal level by the DG Environment of the SPF Public Health, Security of the Food Chain, Environment. It represents Belgium within an international context and eases the transposition and the implementation of the international norms in the Belgium legislation.
It is in charge of 5 main tasks:

[3] *8 mai 1994 – accord de coopération entre les Régions bruxelloise, flamande et wallonne en matière de surveillance des émissions atmosphériques et de structuration des données. (MONITEUR BELGE DU 24.06.1994 , p. 17211)*

- Prepare common positions, which have to be adopted by the Belgium delegations at the international organizations
- Organize the collaboration (between federal and regional levels) to have a coordinated execution of the advices and decisions taken by international organizations
- Supervise the centralisation of the needed data for answering to the requests of international organizations
- Refer to delegations, which represent Belgium in the international instances
- Propose the topics of the international policy of Environment within the Interministerial conference where decisions are ultimately taken (Conférence Interministérielle de l'Environnement, CIE).

The CCPIE-CCIM is composed by members, nominated by the different administrations and by Ministers and/or State secretaries in charge of Environmental policy joined by foreign policy and cooperation of development policy. Sometimes, they are joined by scientist experts from academic institutes.
Each month, the CCPIE-CCIM has a meeting. The decisions must be taken by consensus. In case of disagreement, this point is treated within "interministerial-cabinet": in this interministerial -cabinet meeting or within the CIE, the federal and regional ministerial cabinet can discuss and find agreement.
To prepare and follow further all the topics, the CCPIE-CCIM collaborates with thematic working groups (see Figure 1).

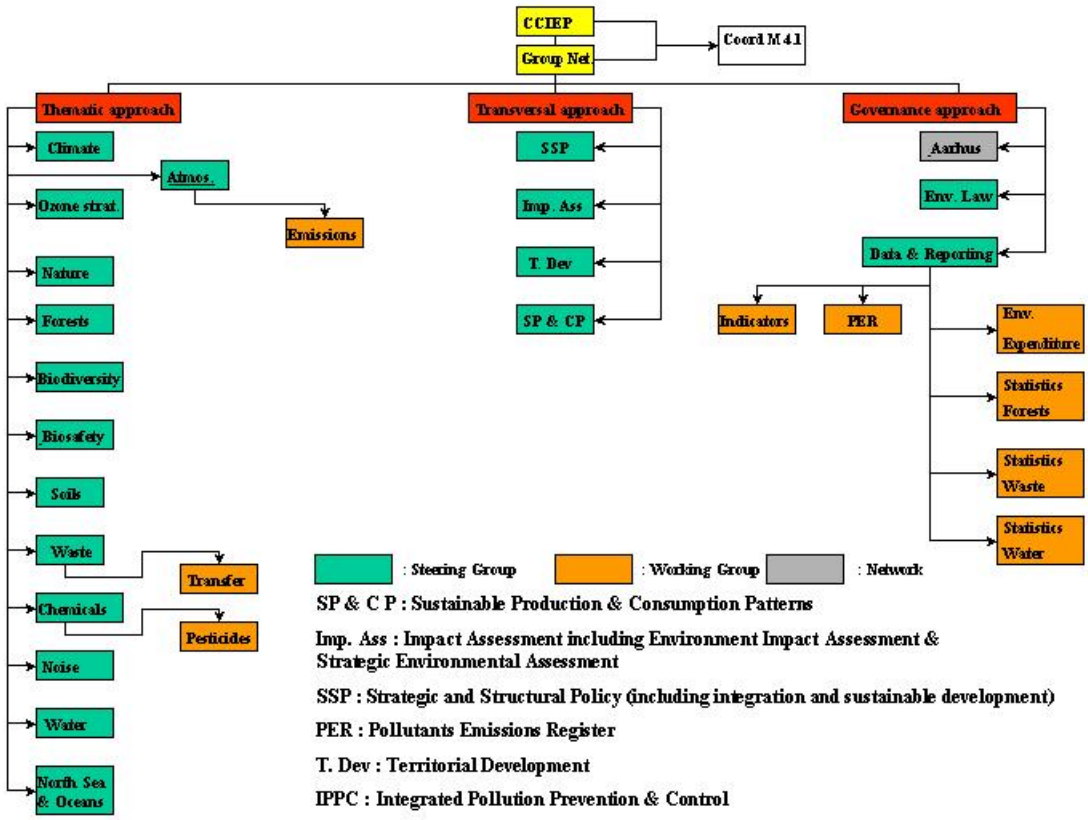

Figure 1: Schematic view of the responsibilities of the CCPIE-CCIM.

They are mainly working on technical aspects of the policies to prepare a common Belgium position for a specific topic or to make the implementation of the European legislation easier.

As the CCPIE-CCIM address international topics within a common perspective, the links between the Federal State and the regions are strengthened. This dynamic also influences national policy. Within this context, the Federal State develops then many projects within an efficient way of working. It takes into account also, the interests of all the different groups concerned by the projects.

b) Coordination with EU

The CCPIE treats the technical aspects of the European requests within its meeting. The CCPIE-CCIM prepares the Belgium position, which are supported by the Minister representing Belgium within the Environment Councils. These texts are finalised and adopted by the federal and regional cabinet within meeting organized by SPF Foreign Affairs.
The CCPIE-CCIM is in charge, also, of the correct implementation of the norms of the European legislation over Belgium. Two kinds of norms have to be distinguished: the European rules, which have to be applied directly, and the European directives, which have to be transposed within the Belgium legislation at the appropriate level.
In function of the level of this implementation, the legislative act will be different: legislation for the Federal State, decree or ordinance for the regions.

B. Regional coordination

The regions are in charge of the legislative competence for the environmental policy and the conservation of nature. They are in charge of the implementation of this policy with the support of the municipalities. The competences "Environment and Energy" are gathered in one administration, l'IBGE-BIM. The "Administration des Pouvoirs Locaux" (APL-BPB) is the link between the government of the Brussels Capital Region and its 19 local authorities

Advisory organs

Several advisory organs have been created in the Brussels Capital Region to represent the civil society: among those, the Environment council, the superior council of Brussels for the conservation of nature, the economic and social council, the regional commission of the development, the regional comity of Brussels for the socio-professional insertion, the regional inter-ministerial delegation for the urban solidarity, the royal commission of the monuments and sites,…

Coordination via the hierarchy of the plans

The adoption of the organic ordinance concerns the town planning ; it combines regional policy on various aspects such as economy, energy, housing, transport and environment. The system of different integrated and hierarchical plans includes:

- *The Regional Plan of the development (PRD-GewOP)* describes the objectives for the economic, social, cultural, mobility development and environment needs. It determines also the priority for action for each zone and the tools needed to do it.
- *The PRAS-GBP (Plan Régional d'Afffectation du Sol)* complement the PRD concerning the urban planning and translation into maps land-use.
- *The PCD-GOP (Plans Communaux de Développement)* determines at the municipality scale, the objectives for local development.
- Finally, *the PPAS-BBP (Plans Particuliers d'Affectation du Sol)* is the translation at local level of the PRAS-GBP. .

Every public or private project, which can have an important impact on the environment, on the economy or on society, have to be evaluated first.
Furthermore, thematic plans are created concerning several domains: waste, nature, mobility and transport, noise, air and climate. Their aims integrate the global strategic objectives and implement thematic prescription. These plans are based on scientific and technical observations. They are evaluated and adapted in function of the urban components evolution.

Chapter 3: Implementation of the community legislation

A. Vehicles

The Federal State is in charge of the implementation of the following directives concerning the norms on the products :

- **Directive 70/220/CEE** du Conseil du 20 mars 1970 concernant le rapprochement des législations des Etats membres relatives aux mesures à prendre contre la pollution de l'air par les gaz provenant des moteurs à allumage commandé équipant les véhicules à moteur.
- **Directive 97/68/CE** du Parlement européen et du Conseil du 16 décembre 1997 sur le rapprochement des législations des Etats membres relatives aux mesures contre les émissions de gaz et de particules polluants provenant des moteurs à combustion interne destinés aux engins mobiles non routiers.
- **Directive 98/70/CE** du Parlement européen et du Conseil du 13 octobre 1998 concernant la qualité de l'essence et des carburants diesel.
- **Directive 1999/32/CE** du Conseil du 26 avril 1999 concernant une réduction de la teneur en soufre de certains combustibles liquides.
- **Directive 2005/33/CE** du Parlement européen et du Conseil du 6 juillet 2005 modifiant la directive 1999/32/CE en ce qui concerne la teneur en soufre des combustibles marins.
- **Directive 2005/55/CE** du Parlement européen et du Conseil du 28 septembre 2005 concernant le rapprochement des législations des Etats membres relatives aux mesures a prendre contre les émissions de gaz polluants et de particules polluantes provenant des moteurs à allumage par compression destinés à la propulsion des véhicules et les émissions de gaz polluants provenant des moteurs à allumage commandé fonctionnant au gaz naturel ou au gaz de pétrole liquéfié et destinés à la propulsion des véhicules.

B. Gas station

Directive 94/63/CE du Parlement Européen et du Conseil du 20 décembre 1994 relative à la lutte contre les émissions de Composés Organiques Volatils (COV) résultant du stockage de l'essence et de sa distribution des terminaux aux stations-service

- *Application* : Arrêté du Gouvernement de la Région de Bruxelles-Capitale du 10 octobre 1996 fixant des conditions d'exploiter au stockage d'essence et à sa distribution (*M.B.*, 24/12/1996)

C. Paint and solvents

Directive 1999/13/CE du Conseil du 11 mars 1999 relative à la réduction des émissions de composés organiques volatils dues à l'utilisation de solvants organiques dans certaines activités et installations

- *Application* : Arrêté du Gouvernement de la Région de Bruxelles-Capitale du 3 juillet 2003 relatif à la réduction des émissions de composés organiques volatils dans les installations de production de vernis, laques, peintures, encres ou pigments utilisant des solvants (*M.B.*, 18/03/2003)

Directive 2004/42/CE du Parlement européen et du Conseil du 21 avril 2004 relative à la réduction des émissions de composés organiques volatils dues à l'utilisation de

solvants organiques dans certains vernis et peintures et dans les produits de retouche de véhicules

- *Application* : Arrêté du Gouvernement de la Région de Bruxelles-Capitale du 21 novembre 2006 modifiant l'arrêté du 15 mai 2003 fixant des conditions d'exploiter à certaines installations de mise en peinture ou retouche de véhicules ou parties de véhicules utilisant des solvants (*M.B.*, 23/11/2006).

D. Incineration of the waste and large installations

Directive 2000/76/CE du Parlement européen et du Conseil du 4 décembre 2000 sur l'incinération des déchets

- *Application* : Arrêté du Gouvernement de la Région de Bruxelles-Capitale du 21 novembre 2002 relatif à l'incinération des déchets (*M.B.*, 20/02/2003).

Directive 2001/80/CE du Parlement européen et du Conseil du 23 octobre 2001 relative à la limitation des émissions de certains polluants dans l'atmosphère en provenance des grandes installations de combustion

- *Application* : Arrêté du Gouvernement de la Région de Bruxelles-Capitale du 21 novembre 2002 relatif à la limitation des émissions de certains polluants dans l'atmosphère en provenance des grandes installations de combustion (*M.B.*, 21/12/2002).

E. Air

Directive 1996/62/CE du parlement européen et du Conseil du 27 septembre 1996 relative à l'évaluation et à la gestion de la qualité de l'air ambiant.

a) **Directive fille 1999/30/CE** du Parlement Européen et du Conseil du 22 avril 1999 relative à la fixation des valeurs limite pour l'anhydride sulfureux (SO2), le dioxyde d'azote (NO2), et les oxydes d'azote (NO), les particules (PM10) et le plomb (Pb) dans l'air ambiant.
   - *Application* : Arrêté du Gouvernement de la Région de Bruxelles Capitale relatif à la fixation des valeurs limite pour l'anhydride sulfureux (SO2), le dioxyde d'azote (NO2), et les oxydes d'azote (NO), les particules (PM10) et le plomb (Pb) dans l'air ambiant du 28 juin 2001[4]

c) **Directive fille 2002/3/CE** du Parlement européen et du Conseil du 12 février 2002 relative à l'ozone dans l'air ambiant
   - *Application* : arrêté de la Région de Bruxelles Capitale relatif à la fixation d'objectifs à long terme, de valeurs cibles, de seuil d'alerte et de seuil d'information pour les concentrations d'ozone dans l'air ambiant[5]

d) **Directive fille 2004/107/CE** du Parlement européen et du Conseil du 15 décembre 2004 concernant l'arsenic (As), le cadmium (Cd), le mercure (Hg), le nickel (ni) et les hydrocarbures aromatiques polycycliques (HAP) dans l'air ambiant.
   - *Application* : arrêté de la région de Bruxelles Capitale du 25 octobre 2007[6]

[4] http://www.ibgebim.be/Templates/download/20010628_agb_ValLimSN.pdf?langtype=2060
[5] http://www.ibgebim.be/Templates/download/20020418_agb_ozoneAirAmb.pdf?langtype=2060
[6] http://www.ibgebim.be/Templates/download/20071025_AGB_air%20ambiant.pdf?langtype=2060

Directive 2001/81/CE du Parlement européen et du Conseil du 23 octobre 2001 fixant des plafonds d'émission nationaux pour certains polluants atmosphériques

- *Application* : Arrêté du Gouvernement de la Région de Bruxelles-Capitale du 3 juin 2003 fixant des plafonds d'émission pour certains polluants atmosphériques (*M.B.*, 19/06/2003).

F. In general

Directive 96/61/CE du Conseil du 24 septembre 1996 relative à la prévention et à la réduction intégrées de la pollution

- *Application* : Arrêté du Gouvernement de la Région de Bruxelles-Capitale du 18 avril 2002 imposant une obligation de notification aux exploitants de certaines installations classées (*M.B.*, 31/05/2002).

Directive 2006/32/CE du Parlement européen et du Conseil du 5 avril 2006 relative à l'efficacité énergétique dans les utilisations finales et aux services énergétiques

- *Application* : En préparation (Arrêté du Gouvernement de la Région de Bruxelles-Capitale relatif au planning énergétique pour les établissements gros consommateurs d'énergie classés).

Echéance de transposition : 17/05/2008 (17/05/2006 pour l'art. 14, §§ 1, 2 et 4).

Chapter 4: National , regional and local measures

Belgium is divided into three Regions (Brussels Capital, Flemish and Walloon regions), which have to draw their own air quality plan. The answer of the EC information request D(2007)17144 (Points 2 and 3 of the annex II) are gathered in this current section. The different scales (regional and local) are equivalent for Brussels.
In the Brussels Capital Region, several action plans have been adopted in order to improve the urban air quality. The Brussels Capital Region has drawn up a structural improvement plan called Plan Air-Climat 2002-2010, a regional mobility plan (Plan IRIS), and a regional development plan. All three strive to limit road traffic as it is responsible particularly of most of the regional PM10 (65%, direct emission and resuspension) and NOx emissions.
To limit the emission of PM10 from combustion for the heating of buildings, the "Plan d'Action en matière d'efficacité énergétique" (under directive 2006/32/CE) complements the other three plans.

A. The Plan Air-Climat 2002-2010

This plan[7] was approved on 13 November 2002, by the government of the Brussels Capital Region. It is the outcome of a collaboration between administrations responsible for environment (IBGE-BIM), transport (AED-BUV), land-use planning (AATL-BROH) and public transport (STIB-MIVB).
The plan is the direct implementation of the Air Ordinance[8] of March 1999, on the evaluation and improvement of ambient air quality, which in turn is a transposition of EU Directive on the evaluation and management of ambient air quality (1996/62/EC). The aim of the "Air" part of the plan is to fulfill all related European and international obligations concerning air quality and air pollution emissions as PM10.
Since 2002, within this plan, 81 actions were applied in Brussels to decrease among others the PM10 emissions. These actions are distributed over the following 5 areas:

- The reduction of emission from transport, a major source of urban pollution, by improving the technology of vehicles, including parking regulations, company mobility plans, improvements in public transport, information about and support for clean vehicles (STIB-MIVB is currently modifying its bus fleet to reach a quota of nearly 80% of clean vehicles by 2007), decrease road traffic emissions in managing traffic and promote environmental-friendly driving.
- The reduction of emissions related to the energy consumption of buildings, which are major sources of greenhouse gases, via an environmental policy towards the promotion of the rational use of energy (RUE).
- The promotion of renewable energy.
- The reduction of emissions from industrial activities via a policy for technological progress and the use of products generating less pollution, including regulations on the use of solvents-based products for companies emitting Volatile Organic Compounds (VOC).
- The reduction of emissions from individual incineration and household consumption of solvents (uncontrolled emissions).

[7] http://www.ibgebim.be/uploadedFiles/Contenu_du_site/Particuliers/02_Thèmes/01_Air_et_Climat/Quelle_est_l'action_de_la_Région/PLANAC_complet.pdf?langtype=2060
[8] http://www.ibgebim.be/Templates/download/19990325_O_QualAir.pdf?langtype=2060f

The Air Ordinance was also followed by a "clean vehicle decree"[9] of July 2003, which sets up a 20% quota of clean vehicles for the fleets of Brussels administrations. This target must be met not later than October 2008.
The "transport" aspects of the Air-Climate Plan have been strengthened in 2006, by the action plan "Bruxell'Air"[10]. It is the result of the close cooperation between the Environment and Energy Minister and the Mobility Minister. Furthermore, it introduces financial tools related to the withdrawal and destruction of vehicles prior to EURO II (regional act of 7 September 2006) and emergency plans in the event of pollution peaks.

B. The emergency plan against PM10

As required by the air framework directive 96/62/EC, a short-term action plan will soon come into force (to be adopted). This plan contains the measures to be taken when there is a risk of the limit values for PM10 being exceeded, in order to reduce that risk and limit the duration of such an event.
This action plan will be applied when PM10 concentrations during at least two consecutive days are forecasted by IRCEL-CELINE to exceed the threshold limit values.
In most of cases, the increase of PM10 concentrations is explained by unfavorable meteorological conditions to the dispersion of pollutants (weak wind, thermal inversion). Their prediction is difficult and depends on the meteorological forecast.
Three levels of restrictions on traffic are defined in function of forecast PM10 concentrations. The measures corresponding to these levels are summarized in the following Table 2.
In practice, the action starts 24 hours before the beginning of the pollution event: an information bulletin is sent to the medias and the authorities in order to largely inform the public. If the measurements done during the first day of the pollution event confirm the forecasted levels of PM10, the restricting measures on traffic are become active from the second day of the event on.

[9] http://www.ibgebim.be/uploadedFiles/Contenu_du_site/Particuliers/01_Gestes/05_Mes_déplacements/03_Acheter_un_véhicule_plus_propre/ArreteVehiculespropres_3juill03.pdf?langtype=2060
[10] http://evelyne.huytebroeck.be/IMG/doc/20060512_dossier_presse_final_plan_Air.doc

	Daily mean PM10 (µg/m3)	Measures
Intervention threshold 1	71-100	▪ Information for the most sensitive people (hospital, doctor,…) ▪ Speed limit in the city = 50km/h (in the city) and 90km/h in the ring ▪ Increasing of the speed control
Intervention threshold 2	101-200	▪ Limitation of the traffic ▪ Limitation of the truck in Brussels ▪ Reinforcement of the public transport with free access ▪ Limitation of the heating in the public building (21°C)
Intervention threshold 3	>200	▪ Car-free day ▪ Strengthening of the public transport with free access ▪ Limitation of the heating in the public building

Table 2: Measures applied in Brussels in function of the PM10 concentration predicted.

Note that this short-term action plan can also be activated if exceedances of the limit value (200 µg/m^3) or alert threshold (400 µg/m^3) for NO2 are forecasted.

C. The regional development plan

This plan[11], approved on 12 September 2002, commits the Region to implement a sustainable development policy. One of its targets is to reduce by 2010 road traffic by 20% in relation to 1999 levels. In order to reach this target, the plan must be backed up by a new mobility Plan, called IRIS II, which is now under preparation.

D. The regional mobility plan

This plan called IRIS I Plan[12] was approved on 1st October 1998 and is currently being revised. Its leading objective is to slow the increase of traffic. More specifically, this target was to maintain in 2005 rush hour traffic at 1991 levels.
These goals were based on the following strategies:

- Land-use planning
- Actions on car traffic: road specialization
- Actions on parking
- Actions relating to two-wheeled vehicles; bike paths
- Action for pedestrians
- Fitting-out of public areas
- Actions on public transport: the regional public transport company of buses, trams and metro (STIB-MIVB) stepped up its service.

The region wants to go further in decreasing the traffic pressure and to that end, a new mobility plan called IRIS II in under study. The aim is to reduce traffic levels by 20% in 2010 compared to 1999 levels.

[11] www.prd.irisnet.be/Fr/arrete_complet1.pdf
[12] http://www.mobil2015.irisnet.be/Public/Page.php?ID=368&menuID=105&language=fre

E. The "Plan d'action Efficacité Energétique" (under directive 2006/32/CE)

The aim of this plan is to decrease 9% of the primary energy consumption for 2016. The Brussels Capital Region has determined measures in different sectors to reach this target: 49 measures have been taken in the general building sector, the residential sector, the services industry, public sector and transport sector.

F. The Environmental Permits and Inspection

Under the Royal Decree of 8 March 1989, the IBGE-BIM is competent for granting environment permits, enforcing and monitoring compliance with environmental legislation.

In the Brussels Capital Region, many minor sources of pollution influence the global air quality. They are spread in the city and some of them are in residential areas.

Since 1993, IBGE-BIM is in charge of the environmental permit delivery for class 1 establishments. Permits for class 2 establishments are managed by the municipalities. The "Inspection" service was also created at the same time.

As these regulations affect the business work, a dialogue is established between the administrations and the business world: meetings are regularly organised in collaboration with the Brussels Business Union and the Business and Industry Chamber. The objective is to inform companies about the most recent developments in environmental policy and regulations. As a result, some professional federations develops more friendly-environmental approaches in their business.

More recently, the "eco-dynamic label" is created by IBGE-BIM to support more global voluntary approaches of the companies.

Permits and authorisations

Every year, within the 800 applications for environment permits processes, 40 to 50 are related to environmental impact. The Legislation of 5th June 1997 reduced the duration of the environmental permit process to 160 days: 95% of cases reach this target. For more details on these permits, see Annex Point A.

Inspection

1,400 inspection visits are made. On average, in 45% of cases, no violations are observed. In the remaining 55%, some intervention is required. Due to the approach based on dialogue with the company (and successive inspections), the problem can be solve before filling an infringement report for 95% of the cases.

The "Eco-dynamic business" label

The "Eco-dynamic business" label is an initiative of the IBGE-BIM along with other administrations and professional associations. It involves an environmental quality certificate reflecting a commitment to comply with 27 eco-management principles.

Within three months, the applicant company must fill a "perspective report with the Institute giving a brief description of the premises and describing the environmental objectives pursued by the company and the resources that it plans to devote to them.
Within two years of signature at the latest, a full "application" must be filed, including an environmental impact analysis, an environmental programme and a statement of initial achievements submitted for assessment. A board grants the label based on three types of requirements.

Chapter 5: Evaluation of the actions

In the Brussels Capital Region, different actions have been implemented in the main sectors responsible of the PM10 emissions : transport, residential sector, tertiary sector and industries (see also the list of the actions made in section 3).

The results of the IRIS Plan are important: the STIB-MIVB customers increased by 50% between 1999 and 2005. Moreover, the improvements of the services in train public transport (SNCB-NMBS) increased of 8% the number of people using the train.

To reinforce the measures on traffic, an "ecoscore" methodology [13] has been adopted in order to characterize the global impact of a vehicle on the environment.

"Bruxell-Air" was adopted in May 2006 to further reduce the emission of PM10 from the traffic.

Nevertheless, the projections (see section 6) show that the Brussels Capital Region cannot reach the target for PM10 adopted of the Air Ordinance not even in 2015. The actions are therefore not sufficient ; new ones are in preparation :

- the IRIS II plan will be adopted to strengthen the measure on the traffic : the volume of the traffic should decrease of about 20% in 2015 compared to 1999 level.
- The vehicle taxation will in the future be based on the ecoscore in order to encourage people to buy low emission vehicles.
- A new climate plan (post Kyoto period) is in preparation

[13] http://www.ecoscore.be/ecoscore/EcoScoreFAQ.asp?Language=FR&vcat=M1&ExtendedSearch=Y

Chapter 6: Projections

A. Observations

The regulating legislation on the PM10 concentration in the ambient air is described in the Air Ordinance, approved on 25 March 1999, which is the transposition of the EC directive 1999/30/EC. The limit values for PM10 mass concentration have to respect the two following conditions since the 1st January of 2005:

- the daily mean PM10 mass concentration of 50µg/m3 must not be exceeded more than 35 days per year
- the annual mean PM10 concentration must not exceed the limit value of 40µg/m3.

Table 3 shows, for the Brussels monitoring sites, the number of exceeding days, the annual mean concentration of PM10 (in µg/m3 and between parenthesis) and the percentage of the valid daily PM10 concentrations number (in boldface) measured (i.e. 98% means that during the whole year, the instruments measures 98% of the total number of the PM10 concentration over one year) in 5 Brussels PM10 stations for years 2005 and 2006. The daily mean value of the PM10 concentration is based, at least, on 75% availability of semi-hourly valid PM10 concentrations.

PM10	Berchem Ste Agathe 41B011	Haren, Port de BXL 41N043	Molenbeek St Jean 41R001	Wolluwe St Lambert 41WOL1	Uccle 41R012
2005	17 (26)	66 (36)	42 (31)	24 (28)	23 (27)
	98%	**98%**	**99%**	**92%**	**95%**
2006	17 (23)	56 (34)	40 (31)	29 (27)	25 (29)
	99%	**98%**	**99%**	**94%**	**99%**

Table 3 : Number of exceeding days of PM10 for the five PM10 stations in Brussels for which the PM10 concentration is above the limit value of 50ug/m3, the mean annual value of the PM10 concentration in ug/m3 (within parenthesis) and in boldface the percentage of the valid daily PM10 concentrations measured for years 2005 and 2006.

In 2005 and 2006, the annual mean PM10 mass concentrations in the 6 measurement stations were below the annual mean limit value and they are quite stable from 2000 to 2006 (see Figure 2) except in Haren, where a decrease is observed from 2003 to 2006 due to the local measure (see section 7C).
Nevertheless, the number of exceeding days at two stations (Haren 41N043 and Molenbeek Saint-Jean 41R001) in Brussels is still higher than the limit value of 35 days as defined within the transposition of the EC directive 1999/30/EC.

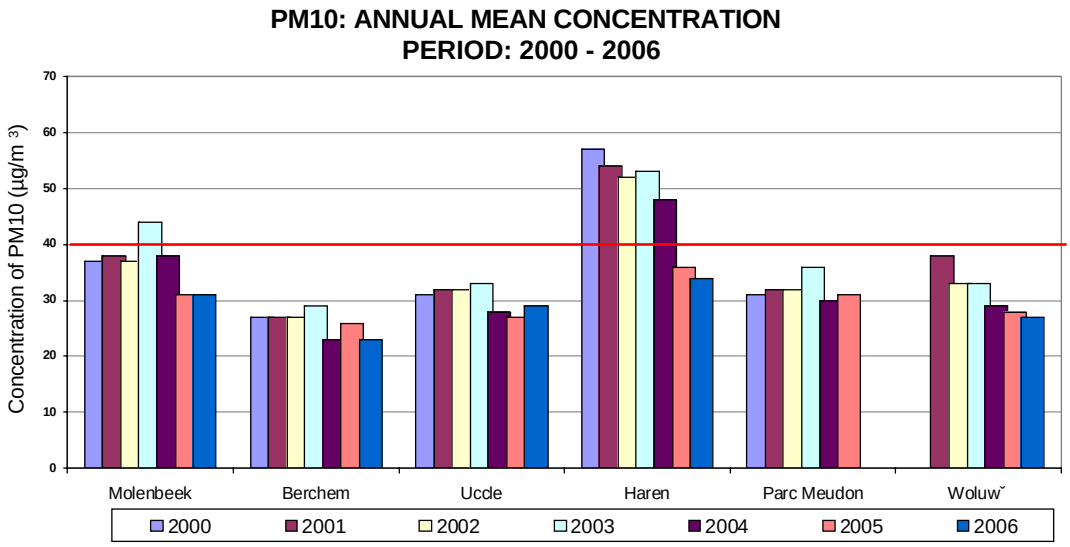

Figure 2 : Mean annual PM10 concentration observed for the 6 stations in Brussels from 2000 to 2006. the red line represent the limit value of the PM10 concentration of 40 µg/m3.

By 2010, compliance with phase II of the current norm, a maximum of 7 exceeding days and an annual average concentration of 20 µg/m3, is out of reach even if strenghter measures are applied.

B. Current modelling

IRCEL-CELINE is in charge of the PM10 modelling for the three regions in Belgium Brussels, Flemish and Walloon Regions[14].
The BelEuros model provided air quality modelling in using the scenario emission IIASA CLE as presented in IIASA report nr. 6 (see IIASA 2005a) to estimate if Belgium can reach the PM10 target with this emission scenario in 2005, 2010 and 2015.
In complement to the IIASA CLA emission scenario, the model uses the meteorological data from ECMWF model for pollution transfer, chemical transformation and dispersion over model area for year 2002, which can be classified as an "normal" meteorological year.
The Table 4 shows the mean annual PM10 concentration and the number of exceedance days, for which the PM10 concentration is above 50µg/m3, for these dates for two kind of environment in Belgium: for urban background conditions (in boldface). The mean street increments of the annual value was estimated of about 5 µg/m3 in 2030 according to the CLE scenario (EEA, 2006). Street increments in narrow streets with heavy traffic density (more than 20 000 vehicles/day) may add up to 13 µg/m3 above the background annual mean in 2000 and will probably moderate under CLE scenario to 5 µg/m3 in 2015. The street increment is added to the background annual mean concentrations (values within parenthesis): +10 µg/m3 for 2005 and 2010 and +5 µg/m3 for 2015. The error on the PM10 evaluation is estimated to be not more than 50% (Deutsch et al., 2006), which is within the EU acceptable error limit.

[14] www.irceline.be/~celinair/documents/pub/attain/estimation_PM_Belgium.pdf

Years	**Background annual mean PM10 (ug/m3) in urban zone (in boldface)** and in narrow street with high traffic density (red)	**Number of exceedance days (day) in background urban zone (in boldface)**and in narrow street with high traffic density (red)
2005	**32.5-35** (42.5-45)	**41-52** (83-94)
2010	**30-32.5** (40-42.5)	**31-41** (73-83)
2015	**27.5-30** (32.5-35)	**20-31** (41-52)

Table 4: Mean annual PM10 concentration and number of exceedance days for urban background (in boldface) and narrow street with high traffic density stations for years 2005, 2010 and 2015 in Belgium. This estimation is done with the BelEuros model.

This estimate shows that in busy streets in Belgian cities, the EU daily limit value for PM10 (35 exceedances days) will not be attained under CLE measures not even in 2015. For the background stations, the target will not be attained either for all the stations. Nevertheless, some urban background station in some cities may attain the target from 2010.
To go further this Belgium study, an air quality modelling are planning in the Brussels Capital Region in the future.

Chapter 7: Discussion on possible reasons of the exceedances

A. Introduction

Most of the PM10 are transported by the wind from surrounding countries close to Belgium. Therefore, local actions cannot have any influence on this part of the measured PM10 except if all the surrounding countries decrease their PM10 concentration. In that case, the PM10, which would arrive in Belgium would then decrease and Belgium will help the surrounding countries to decrease their PM10. The PM10 problematic is global.

In Brussels, several studies have shown that only between 20 and 40% of the PM10 come directly from the regional activity. The regional emissions inventory shows that more than 60% of the Brussels emissions (within this 20-40% of the PM10 mass concentration) are coming from the traffic.

The scientific community bring out that the PM can have a negative impact on the Human health as these airborne particles can go deeply in our body and cause some respiratory problem. The evaluation of their impact appears to be one of the most important challenge. It appears fundamental to limit the PM10 negative impact on health in applying measures in Brussels to decrease the quantity of PM10. In the Brussels Capital zone (BEB10a), the exceedance of the PM10 limit is due to two stations in Brussels in 2005 and 2006 (Haren 41N043 and Molenbeek Saint-Jean 41R001). The Brussels Capital Region investigates the health exposure relationship within the APHEIS project[15,16].

Fine particles emitted by the traffic are among the most harmful particles for health but they represent only a small part of the total PM10 mass concentration in the ambient air. For that reason, it is fundamental to reduce the PM10 coming from the traffic to protect the people health.

Figure 3 shows the weekly profile of the daily mean PM10 concentration normalized at one over 4 winter times. In average the PM10 concentration decrease of about 20% during the weekend compared to working days.

[15] www.apheis.net
[16] http://documentation.bruxellesenvironnement.be/exl-php/util/documents/accede_document.php

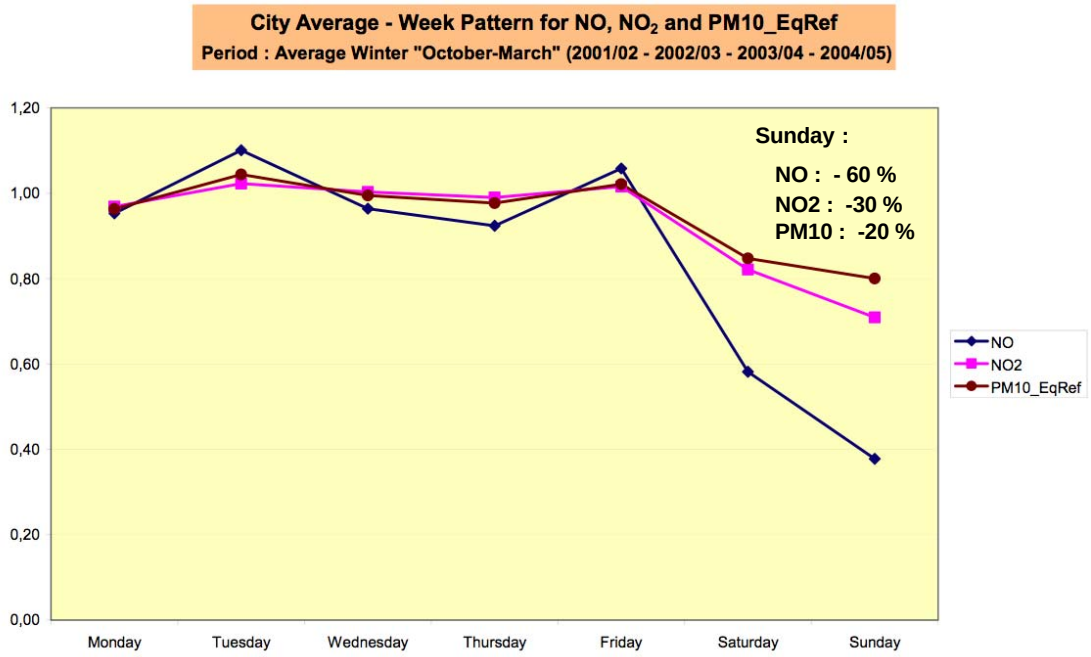

Figure 3: Weekly profiles of the daily mean of NO, NO2 et PM10 on three stations (Molenbeek, Parc Meudon and Wolluwé-Saint-Lambert) normalized at one over 4 winter times (2001/2002, 2002/2003, 2003/2004 and 2004/2005).

It means that the decrease of the regional activity during the weekend influences for about 20% the PM10 mass concentration in Brussels. Furthermore, the decrease in PM10 mass concentration is not proportional to the level of the effort in action. The decrease on NO mass concentration, which is a typical traffic tracer, is larger (-60%) than the PM10 mass concentration decrease (-20%). This could be explained by the high PM10 background concentration (imported PM10)

A study was made during a car-free day in Brussels on 17 September 2006 from 7:00 am to 19:00 pm (Vanderstraeten et al., 2007). The concentrations of PM10 and PM2.5 on that day were three times higher than the PM10 and PM2.5 concentrations on an average Sunday or an average working day.

Considering the period from 2000 to 2006, Figure 4 shows the number of days exceeding the daily limit value (50 µg/m^3) in all PM10 measurement stations in the Brussels Capital Region. It appears namely that the stations of Molenbeek-St-Jean and Haren are systematically in exceedance. Figure 5 represents an estimate of the number of exceedance days if the traffic in Brussels would be reduced to weekend regime. This estimate has been obtained by extrapolating the measurements done during weekend to all working days. Although such an extrapolation is conceptually limitative when applied to only one year, it gives a qualitative appreciation of the traffic impact on PM10 measured concentrations over 7 years. More specifically, the comparison between Figures 4 and 5 proves that traffic significantly contributes to measured PM10 in all stations, and in particular in Molenbeek-St-Jean and Haren. However, this comparison also shows that only traffic reduction to weekend regime would probably not be sufficient to reduce the number of days exceeding the daily limit value to less than 35. To reach this goal, additional measures to reduce PM10 emissions are required.

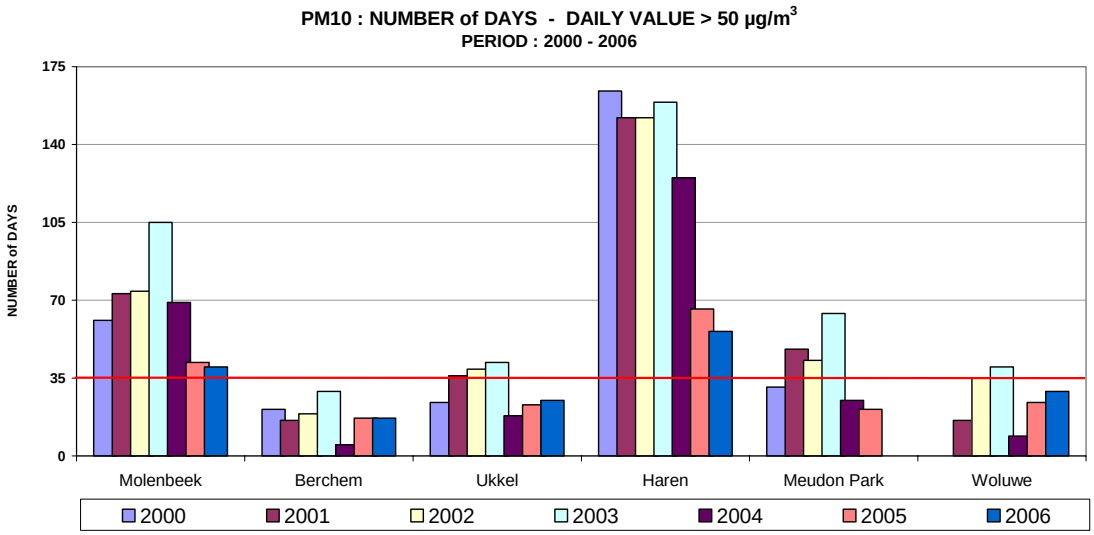

Figure 4: Number of days exceeding the daily limit value (50 µg/m3) for PM10. The results are presented for 6 measurement stations in the Brussels Capital Region from 2000 to 2006.

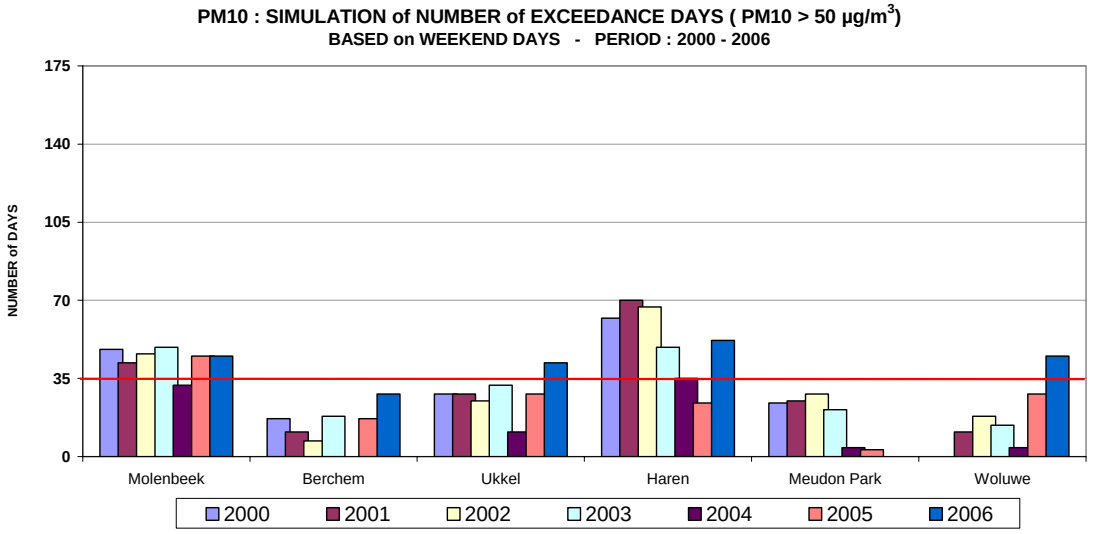

Figure 5: Estimated number of days exceeding the daily limit value (50 µg/m3) for PM10 assuming a weekend traffic regime for all the days. The results are presented for 6 measurement stations in the Brussels Capital Region from 2000 to 2006.

B. Discussions

Table 3 shows that the mean annual PM10 in all the stations does not exceed the limit value (40 µg/m^3). Nevertheless, at two stations in Brussels, Haren (41N043) and Molenbeek Saint-Jean (R001), the number of exceedance day is above the 35 days per year meaning that the target is not reached.

An analysis has been conducted to assess the factors explaining the exceedances observed in 2005 and 2006 in Brussels. The most significant factors are the following:

Regional dispersion of pollutants

The regional dispersion of pollutants is mainly influenced by meteorological factors such as wind velocity and thermal stability. However treating separately wind and stability is somewhat limitative, because of the interactions between these two processes. For this reason, the present analysis has rather selected the vertically integrated turbulent kinetic energy (noted *viTKE*) as indicator of dispersion. Indeed *viTKE* can adequately characterize the intensity of turbulence in the boundary layer, since it takes into account shear, buoyancy and boundary layer depth. These three parameters give information on the dispersion of the pollutants in the atmosphere layer close to the ground.

More specifically, the following criteria on *viTKE* has been chosen to estimate the role of dispersion on PM10:

- *probable impact* (symbol '*' in the Tables7 and 8 in Annex point B): $30 \leq viTKE < 50$ m^3/s^2 ;
- *significant impact* (symbol '**' in the Tables7 and 8 in Annex point B): $10 \leq viTKE < 30$ m^3/s^2 ;
- *very significant impact* (symbol '***' in the Tables7 and 8 in Annex point B): $viTKE < 10$ m^3/s^2.

Medium- and long-range transport of particulate matter

Depending on the situations, the transport can significantly contribute to measured concentrations of PM10, especially considering fine and ultra-fine particles. In urban areas, its contribution is about 50% of PM10 (Lenschow et al., 2001), while the remaining 50% is explained by urban emissions. The assessment of particle transport is based on the analysis of measured PM10 in background stations. The unique background station in Belgium is located at Vielsalm (43N085). It is assumed that the transport of particles has an influence on the PM10 concentrations in the following cases:

- probable impact (symbol '*' in the Tables7 and 8 in Annex point B): 6-hourly PM10 concentrations are between threshold_1 and threshold_2 ;
- significant impact (symbol '**' in the Tables7 and 8 in Annex point B): 6-hourly PM10 concentrations are between threshold_2 and threshold_3 ;
- very significant impact (symbol '***' in the Tables7 and 8 in Annex point B): 6-hourly PM10 concentrations are above threshold_3 ;

where *threshold_1* = temporal average of PM10 concentrations in Vielsalm + standard deviation (30.3 µg/m^3) ;

threshold_2 = temporal average of PM10 concentrations in Vielsalm + 2 standard deviations (43.4 µg/m^3) ;

threshold_3 = temporal average of PM10 concentrations in Vielsalm + 3 standard deviations (56.5 µg/m^3) ;

The statistics on time series at Vielsalm have been computed considering the period from 1st May 2005 to 31th October 2007.

In addition to this qualitative estimate of transported PM10, a distinction on the spatial scales transport is proposed: in particular, it is suggested to distinguish the relative importance of transported particles that have been initially emitted in Belgium (national emissions) or in foreign countries (transboundary transport). Using a

trajectory model, it is assumed that transported particles originate from foreign countries ("transboundary" column in Tables 7 and 8 in the Annex, section 9B) if the distance covered by the air masses during the last 24 hours is greater than 200 km; otherwise, they are rather attributed to Belgian emissions outside the Brussels Capital Region ("national" column in Tables 7 and 8 in the Annex, section 9B).

Other physical or chemical processes

Some very high PM10 concentrations, well above the limit value, have been obtained on all monitoring sites, under conditions with a relative high humidity range (80% or higher) and at moderate temperature (10 to 20 °C). In these cases, practically 80 to 90% of the PM10 mass concentration consists in PM2,5. Subsequent identifications of such events are not always obvious, because they generally require a composition analysis of PM10. However, the TEOM-FDMS mass detection systems reveals the presence of volatile mass, mainly within the PM2,5 fraction. For about 50% of the exceeding days the contribution of volatile mass is substantial and ranges generally between 7 and 26% (measurement since May 2006 only). In many of these cases, the presence of ammonium salts has been confirmed.

Days with dry weather conditions and prevailing winds coming from the continent (large sector East) are well represented amongst the days with PM10 levels exceeding the limit value of 50 µg/m3. Over the past years (2002-2006) the large sector East (North East to South East) represents about 28 to 30% of the time, but it accounts for 45 to 50% of the exceeding periods. Under these conditions the higher concentrations are mainly observed in two measuring sites (Molenbeek Saint-Jean and Haren), with increased differences between the PM10 and PM2,5 concentration levels. The local activities seems to be responsible for the (re)suspension of the coarser fraction (particles from 2,5 to 10 µm). On an average, periods with a relative humidity beneath 60% show a PM10 concentration that is 20 $\mu g/m^3$ higher than for periods with a humidity above 80%.

Some period of the year are also characterized by PM10 emissions from agricultural activities (harvest, ploughing …). Although their impact on health is probably less critical than other particles such as heavy metals and HAP, Particulate Matter originating from agriculture in the province of Brabant can be transported and significantly contribute to PM10 concentrations measured in Brussels.

The above-mentioned analysis has been applied to the years 2005 and 2006 in Brussels. The results are presented in the Tables 7 and 8 in the Annex, section 9B.

Conclusions

Table 5 summarizes the results obtained in the Tables 7 and 8 in the annex (section 9B) for 2005 and 2006. It shows the relative importance of dispersion and transport of particles in situations where the threshold of 50 $\mu g/m^3$ (daily average) has been exceeded.

Year	Dispersion	Medium and long-range Transport of PM		Other (not identified)
		National	Transboundary	
2005	62%	7%	17%	15%
2006	48%	12%	38%	19%

Table 5: Possible reasons of the exceedance day in %.

It can be concluded that:

- The unfavorable meteorological conditions to the dispersion of pollutants are a very important factor in explaining the evolution of PM10 concentrations. In 2005 and 2006, the role of meteorological conditions were found significant in 50 to 60% of exceedance situations. This result underlines the fact that the number of exceedances is highly related with the occurrence of weak dispersion conditions.
- The importance of particles transport varies from year to year and is also related to meteorological conditions. In 2005, (medium- and long-range) transport plays a significant role in about 24% of exceedance situations. In 2006, this proportion raises to 50%. The difference between 2005 and 2006 could be explained by more occurrences of meteorological situations influenced by continental air masses (easterly or north-easterly wind). Table 6 shows for each station the percentage of the exceeding days during weekend in 2005 and 2006. The increase of this percentage in 2006 compared to 2005 is probably due to the medium and long-range transport.
- For a few situations, enhanced formation of secondary aerosols has been identified as the most important factor explaining measured exceedances, especially when the surface boundary layer is moist (close to saturation).

PM10	Berchem Ste Agathe 41B011	Haren, Port de BXL 41N043	Molenbeek St jean 41R001	Wolluwe St Lambert 41WOL1	Uccle 41R012
2005	29.4%	10.6%	30.9%	33.3%	34.8%
2006	47.1%	26.8%	32.5%	44.8%	48%

Table 6: Percentage of the number of days exceeding the daily limit value for PM10, during the weekend for each station for years 2005 and 2006.

C. Station of Haren 41N043, Port of Brussels

Type of station

It is a mid-industrial station where the construction industries stock outdoor materials, which can be easily transported by wind. The station is located along the Brussels canal "Canal de Willebroek", parallel to the Senne Valley (North-South axis), see Figure 6. It is highly influenced by the industrial activities.

***Figure 6* : Industrial activities in the Port of Brussels (*www.portdebruxelles.be*)**

Origin of the pollution

For this station, the main factor of exceedance is the manipulation of granular materials by the construction industries close to the station and by the transport of this dust by the wind. These particles can be resuspended in the air due to the truck traffic near the station.

Measure applied to decrease the emission of PM10

Figure 7 shows the temporal evolution of the number of exceedance days at the station Haren from 1997 up to 2006. A decrease of this number is observed especially from 2003 to 2006: from 100 days in 2003 to 56 days in 2006.
The Plan Air-Climat was indeed adopted in November 2002. Within this plan some measure was applied at this station: during dry period, the construction industries have to humidify or cover their fine particles piles. The Permit Inspection (for more details, see section4F) increases also the control of the legislation. These local measures could explain this improvement of the air quality at this station.

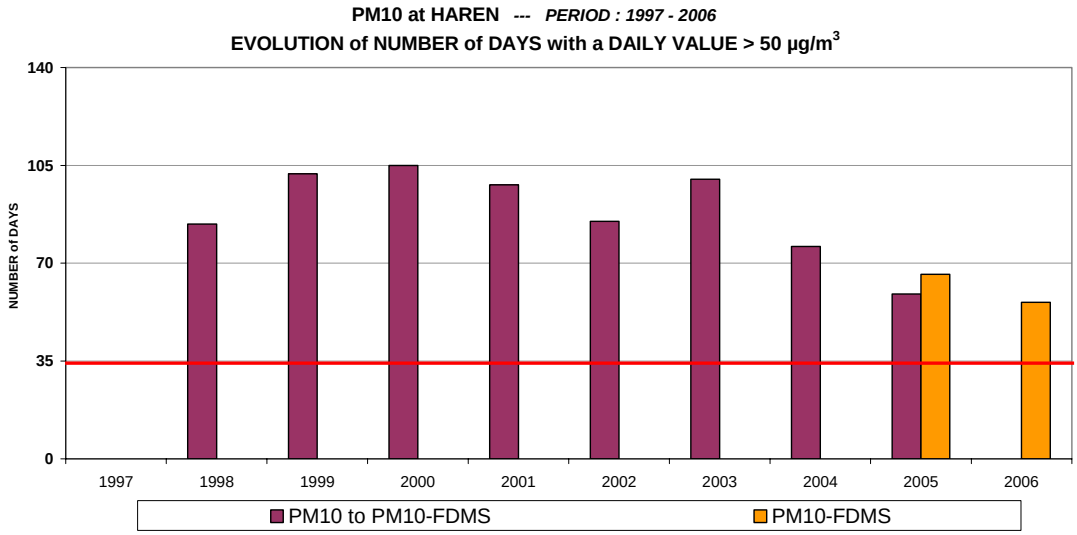

Figure 7: Number of days with a daily mean value above 50µg/m3 in Haren from 1997.

D. Station of Molenbeek Saint-Jean 41R001

Type of station

This station is influenced by traffic: it is a typical urban station.

Origin of the pollution

As for the previous station, there is still too many exceedance days in the station 41R001, Molenbeek Saint-Jean (see Figure 8). A decrease of this number is observed since 1997 but it is necessary to estimate over larger time series if this decrease is significant or not.

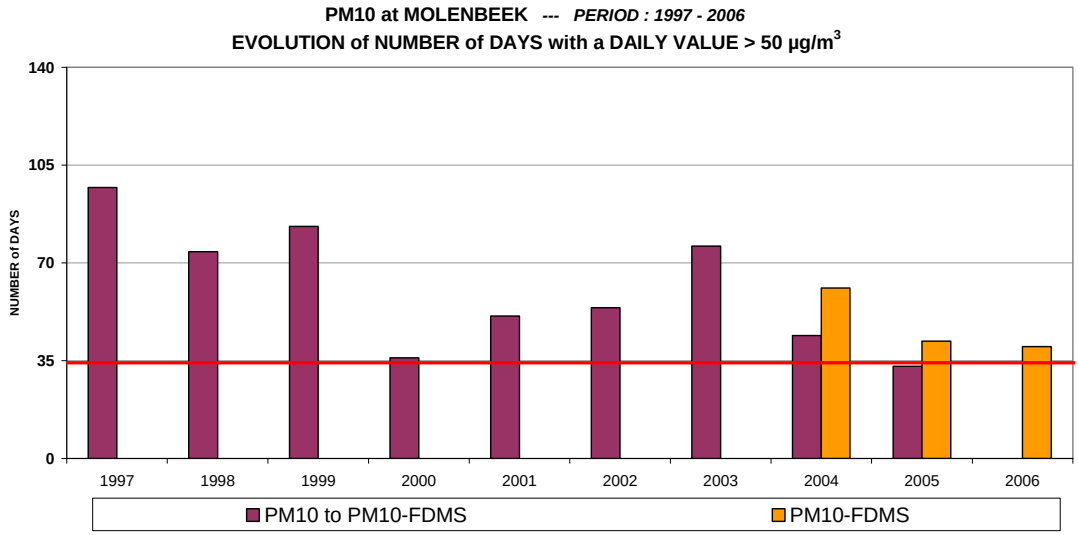

Figure 8: Number of days with a daily mean value above 50µg/m3 in Molenbeek Saint-Jean from 1997.

Measure applied to decrease the emission of PM10.

No specific measure is applied for this station but all the plan described in the previous sections could decrease the volume of the traffic and then improve the air quality at this station.

Chapter 8: References

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[17] http://www.irceline.be/~celinair/french/homefr_nojava.html

Chapter 9: Annex

A. Environmental permit

Préalablement à l'exercice de leurs activités et durant celui-ci, les entreprises sont soumises à plusieurs autorisations et déclarations administratives: déclaration de TVA, registre ONSS, conditions RGPT (sécurité des travailleurs, incendies, usage de certains appareils, etc.), attestation RGIE (installations électriques), réglementations fédérales sur les produits (détention et utilisation), réglementations du Ministère des Affaires Economiques sur les explosifs, accès à la profession, déclaration HACCP (hygiène, inspection vétérinaire, inspection des denrées alimentaires), permis ONDRAF relatif aux radiations ionisantes, permis d'environnement, permis d'urbanisme, … Dans la Belgique fédérale, les deux derniers permis sont gérés au niveau des régions. Le texte réglementaire le plus récent en matière des permis d'environnement en vigueur est l'ordonnance du 6 déc. 2001 (M.B. 02/02/2002).

Pris au sens strict, le permis d'environnement (PE) est une autorisation administrative qui contient les dispositions techniques que l'exploitant doit respecter.

Ces dispositions techniques fixées par l'administration ont pour objectifs :

- d'assurer la protection contre les dangers, nuisances ou inconvénients qu'une installation ou une activité est susceptible de causer, directement ou indirectement à l'environnement, à la santé ou à la sécurité de la population, en ce compris de toute personne se trouvant à l'intérieur de l'enceinte d'une installation sans pouvoir y être protégée en qualité de travailleur.
- de protéger l'entreprise contre des décisions arbitraires en la matière.

Dans les faits, l'emploi du PE s'inscrit dans une politique globale visant à prévenir les nuisances et améliorer les performances environnementales des entreprises implantées en milieu urbain de manière à intégrer et à développer plus harmonieusement les activités économiques au sein de la Région de Bruxelles-Capitale. Son rôle ultime d'instrument de gestion étant de donner les lignes directrices d'une gestion de l'entreprise qui respecte l'environnement et la qualité de vie du citoyen.

Un permis d'environnement est nécessaire pour l'exploitation par une personne physique ou morale, publique et privée, de toute installation reprise dans la liste des "installations classées". Cette liste reprend 194 types d'installations classées dont les plus fréquentes à Bruxelles sont: les parkings, les dépôts de liquides inflammables (citernes à mazout ou à essence), les installations HVAC (chauffage, conditionnements d'air et groupes de ventilation), les cabines de peinture, les ateliers pour le travail du bois, la découpe de la viande, l'entretien de voitures, les travaux d'impression, le traitement des métaux, les car-wash, et les cabines à haute tension.

En fonction de la nature et de l'importance des dangers et nuisances que peut causer une installation classée, elle entrera dans une classe de permis IA, IB, II ou III, par ordre décroissant d'impact potentiel sur l'environnement. La délivrance des permis IA, IB et II implique une consultation des riverains sous forme d'enquête publique (voir plus loin la Commission de Concertation). Pour les installations de classe III, par contre, il suffit de les déclarer, la délivrance de la déclaration environnementale consistant en une autorisation immédiate sans enquête publique.

La base législative (textes en vigueur) qui définit les installations classées est constituée de:

- l'Ordonnance du 22 avril 1999 fixant la liste des installations de classe IA (MB du 05/08/99).
- l'Arrêté du Gouvernement de la Région de Bruxelles-Capitale du 4 mars 1999 fixant la liste des installations de classe IB, II et III (MB du 07/08/99).
- l'Ordonnance du 6 déc. 2001 portant diverses modifications intéressant les permis d'environnement (M.B. 02/02/2002).

Lorsque plusieurs installations sont rassemblées au sein d'une unité géographique et technique, elles doivent faire l'objet d'une demande de permis d'environnement unique. Si ces installations relèvent de classes différentes, la demande est introduite et instruite selon les règles applicables à l'installation de la classe la plus stricte.

Les installations exploitées pendant une durée limitée (par exemple pour un chantier) nécessitent un permis d'environnement temporaire.

Lors de la rédaction des permis, l'administration prodigue des conseils aux exploitants et assure une lecture concrète de l'ensemble de la législation environnementale concernant l'air, l'eau, les déchets, le bruit, la protection de la nature, les "secteurs" industriels spécifiques… Elle fait un tri des règles en vigueur pour ne reprendre dans le permis que celles applicables à l'exploitation. En outre, elle précise éventuellement quelles sont les "Meilleures Technologiques disponibles" (en anglais BAT – Best Available Technologies") et les bonnes pratiques environnementales à utiliser. Ainsi, chaque permis sera le résultat d'une « digestion juridique et technologique sur mesure de l'entreprise », protégeant ainsi l'exploitant, à condition bien sûr qu'il respecte son permis.

Vu le tissu économique de la Région principalement composé de PME et particulièrement de très petites entreprises (moins de 5 personnes), cette lecture de la législation au cas par cas est nécessaire. Elle permet d'une part à l'exploitant de connaître ses obligations et d'autre part à l'autorité d'assurer une meilleure intégration et un développement plus harmonieux des activités économiques au sein du milieu urbain de la Région de Bruxelles-Capitale.

Dans cette même optique d'amélioration de la lisibilité des permis, un permis-type utilisable dans les cas d'installations non industrielles (immeubles tertiaires et de logement) a été élaboré en 2003. Le permis-type offre aux gestionnaires de permis une trame adaptée à des situations standard et doit permettre une gestion plus uniforme de ce type de dossier. Pour l'exploitant, un permis-type adapté à l'activité est généralement plus facilement compréhensible. Si cette initiative s'avère positive, elle sera poursuivie pour d'autres secteurs.

Parmi les installations de classe IA et IB, les établissements IPPC et SEVESO présentent des risques majeurs. Pour elles, l'obligation de détenir un permis découle d'une obligation européenne et le suivi de ces entreprises dépend en général de règles fixées au niveau européen.

Inspection

La division Inspection de l'IBGE distingue trois types de contrôles : le contrôle intégré, le contrôle spécifique et le contrôle sectoriel.

- Un contrôle intégré porte sur l'ensemble de la législation environnementale en vigueur en Région de Bruxelles-Capitale. Tous les risques de pollution ou d' accidents sont analysés lors de la visite des installations ou du traitement d'un dossier: validité des permis, rejets dans l'air et dans l'eau etc. C'est dans ce domaine que s'exerce pleinement la politique de l'IBGE, qui privilégie la

prévention et le dialogue. Cette approche s'applique au contrôle des établissements à risque majeur (Seveso, IPPC, zone du canal), lors des inspections sectorielles et pour les contrôles géographiques

- Une inspection spécifique ou thématique porte sur un aspect particulier du risque environnemental, il peut s'agir de la pollution du sol, ou de la gestion des déchets, ou encore des conditions d'agrément des entreprises.
- Un contrôle sectoriel : chaque année, quelques secteurs « prioritaires » font l'objet d'un contrôle intégré ou spécifique. Ces actions sectorielles permettent de valider et optimiser les conditions d'exploitation propres au secteur et de professionnaliser les inspections.

Le système d'inspection environnementale est réglé en Région de Bruxelles Capitale par l'Ordonnance du 25 mars 1999 relative à la recherche, la constatation et la répression des infractions en matière de l'environnement, publiée au Moniteur Belge le 24 juin 1999 et modifiée par l'Ordonnance du 28 juin 2001 publiée au Moniteur Belge du 13 novembre 2001. Cette ordonnance uniformise les mesures de contraintes et accroît les moyens d'investigation des administrations compétentes.

L'introduction de l'amende administrative pour certaines infractions en matière d'environnement est incontestablement l'une des principales nouveautés de l'ordonnance.

Les contrôles visent à la fois à prévenir les dommages et à réprimer les infractions à la législation environnementale. Une partie de travail consiste donc également à informer et sensibiliser les exploitants, par secteur économique ou par grand type de pollution.

Les contrôles peuvent être motivés par différents objectifs :

- Contrôles effectués lorsqu'une infraction environnementale est soupçonnée (exploitation sans permis ou non-respect du permis) ou contrôles effectués avant ou peu après la délivrance d'un nouveau permis d'environnement;
- Contrôles planifiés par secteurs d'activité, le choix des secteurs étant dicté par l'actualité ou par des modifications légales récentes qui requièrent un suivi sur le terrain (en 2003 : ateliers de découpe de la viande et boucheries, action « grande surface », biosécurité, piscines, zones du canal, action garage « rue Heyvaert », chantiers d'enlèvement d'amiante) ;
- Contrôles effectués dans le cadre de l'exécution des directives IPPC et SEVESO II qui imposent l'inspection régulière des entreprises concernées ;
- Contrôles planifiés par type de problème (nuisances sonores engendrées par le trafic aérien, déchets, qualité de l'eau, sols et eaux souterraines pollués et potentiellement pollués) ;
- Contrôles effectués sur base de plaintes ;
- Contrôles effectués dans le cadre de l'exécution d'obligations régionales qui précisent des délais de mise en conformité (stations-service, élimination et décontamination des appareils contenant des PCB – PCT, …) imposant des vérifications de terrain ;
- Contrôles administratifs (agréments…)
- Contrôles effectués dans une zone géographique (Zone du Canal)

B. Possible reasons of the exceedance days for years 2005 and 2006

Table 7: Analysis of possible reasons explaining exceedances measured in 2005 in Brussels. N.A. means that the information is "Not Available (N.A.)".

Date	Daily mean concentrations of PM10 when the threshold of 50 µg/m3 is exceeded						Possible reasons for exceedances			
							Dispersion (related to meteo. conditions)	Transport of PM		Other
	41B011	41MEU1	41N043	41R001	41R012	41WOL1		National	Trans-boundary	
14/01/2005		55	67	57			*	N.A.	N.A.	
27/01/2005			51				**	N.A.	N.A.	
28/01/2005			54	52			**	N.A.	N.A.	
29/01/2005				54			*	N.A.	N.A.	
04/02/2005			84				**	N.A.	N.A.	
07/02/2005	58	76	104	97	66	68	**	N.A.	N.A.	
08/02/2005	63	83	143	101	80	62	*	N.A.	N.A.	
09/02/2005			71	63	54			N.A.	N.A.	
18/02/2005			62					N.A.	N.A.	
24/02/2005			61	51	54		*	N.A.	N.A.	
25/02/2005	56	63	80	82	67	70	**	N.A.	N.A.	
26/02/2005			52	54	57			N.A.	N.A.	
04/03/2005			64	51				N.A.	N.A.	
10/03/2005			58				**	N.A.	N.A.	
14/03/2005			60				*	N.A.	N.A.	
15/03/2005			62					N.A.	N.A.	
16/03/2005		52	70	54		52		N.A.	N.A.	
19/03/2005		51	62	68	67	67	**	N.A.	N.A.	
22/03/2005		54	65					N.A.	N.A.	
23/03/2005			52					N.A.	N.A.	
24/03/2005		52	63					N.A.	N.A.	
26/03/2005				57			**	N.A.	N.A.	
28/03/2005	77	75	82	87	84	82	**	N.A.	N.A.	
29/03/2005	53	51	68	73	61	70	*	N.A.	N.A.	
31/03/2005			64	69		59	***	N.A.	N.A.	
01/04/2005	51	55	86	72	54	61	*	N.A.	N.A.	
04/04/2005			55					N.A.	N.A.	
12/04/2005		57	58				**	N.A.	N.A.	
17/04/2005				52		51		N.A.	N.A.	
19/04/2005			57				***	N.A.	N.A.	
20/04/2005			54	58			*	N.A.	N.A.	
22/04/2005			63				**	N.A.	N.A.	
02/05/2005		54	70	65			**			
03/05/2005			51				*			
12/05/2005			53							Not identified
19/05/2005		53								Not identified
27/05/2005		63	59							Not identified
03/06/2005		58								Not identified
20/06/2005		54	60				*			

21/06/2005		56	53	55	58		*		*	
23/06/2005		71	59	51			**			
24/06/2005		58	57				**			
25/06/2005			56	59	61	59			*	
13/07/2005		51	56	54	51	52	*			
14/07/2005			62	56		56	**			
16/07/2005			52	51			**			
17/08/2005			52							Not identified
18/08/2005			52				**			
19/08/2005			60				**			
29/08/2005			60				**			
30/08/2005	55		78			52				
31/08/2005			71							Not identified
03/09/2005	59			62	54	52		*		
06/09/2005			63				**			
08/09/2005			61				*			
11/09/2005			57	54	52	54	**			
20/09/2005			61	56			***			
21/09/2005	59		104	74	59	64	**			
22/09/2005			81	54			**			
23/09/2005			69				*			
05/10/2005	55		66	66	58	60			**	
06/10/2005	52		59	67	52	58	**		*	
07/10/2005	61		66	74	71	63	***	**		
08/10/2005	56		67	63	58	54			**	
10/10/2005			66							Not identified
11/10/2005			55						*	Not identified
13/10/2005			58						*	Not identified
14/10/2005	77		87	90	80	83	**	*		
15/10/2005	58			64	53	59				
23/11/2005			67	58			*			
24/11/2005			54	51						Not identified
10/12/2005	52			65			***			
11/12/2005	60		79	72	56	61	***			
12/12/2005			53	54						Not identified

Table 8: Analysis of possible reasons explaining exceedances measured in 2006 in Brussels. N.A. means that the information is "Not Available (N.A.)".

Date	Daily mean concentrations of PM10 when the threshold of 50 µg/m3 is exceeded					Possible reasons for exceedances			
						Dispersion (related to meteo. conditions)	Transport of PM		Other
	41B011	41N043	41R001	41R012	41WOL1		National	Trans-boundary	
03/01/2006		60	54			**			
09/01/2006	53	95	78		59	*			
10/01/2006		61	52					*	
13/01/2006		56						*	
15/01/2006	51	59	56	58	51			**	
16/01/2006		57						***	
24/01/2006		80	67			*			
25/01/2006		59	58	56	51			*	
27/01/2006	67	83	83	80	79			***	
28/01/2006	79	85	93	89	88			***	
29/01/2006	55	62	68	69	66				End of episode
31/01/2006		59	58	62	55			*	
01/02/2006	91	104	108	93	101	***			
02/02/2006	62	75	73	72	73	***	***		
03/02/2006	64	69	70	67	67	**	***		
06/02/2006		55		52					Hygroscopic particles
04/03/2006		51				*			
07/03/2006		51							Not identified
14/03/2006		59				*		*	
15/03/2006		67	58						Not identified
16/03/2006		60	55					*	
17/03/2006		65	59		54			**	
19/03/2006	62	66	70	69	65			*	
20/03/2006		51						**	
23/03/2006		57							Not identified
21/04/2006		107	65		51	*			
24/04/2006	51	69	61	55	59		*		Secondary aerosols
25/04/2006		69	59		51	*			
03/05/2006		59							Not identified
04/05/2006		69	52						Not identified
05/05/2006		67	60	57	52	*		*	
06/05/2006		56	58	55	54				Not identified
07/05/2006	55	54	58	61	52				Not identified
09/05/2006		65	59	57	59	*		*	
10/05/2006	62	82	75	71	73	**			High influence of secondary aerosols
11/05/2006	59	73	65	58	53	***	*		
12/05/2006	59	70	69	68	65	**			High influence of secondary aerosols
14/05/2006		53	51		51	**		*	
08/06/2006		71	60			**			
09/06/2006		62	53			*			
13/06/2006		56				**			
25/06/2006		52	56	58	51		*		
30/06/2006		65	62			*			

01/07/2006		51				*			
04/07/2006		66				**			
13/07/2006		57						*	
11/09/2006		61				***	*		
12/09/2006		61				*			
15/09/2006			53					*	
16/09/2006	68	79	82	76	68	**		**	High influence of secondary aerosols
17/09/2006	83	82	85	92	75	*	***		High influence of secondary aerosols
18/09/2006		52						***	
14/10/2006		55	57	55	52				Hygroscopic particles
15/10/2006	53	56	59	60	53			**	
16/10/2006		60						*	
08/11/2006		52							Not identified
21/12/2006			53			**			
24/12/2006		51	56	54	51	*			