Health Environment
2nd National Action Plan 2009-2013

Concrete measures to prevent environment-related health risks

The full report on the plan is accessible via the Internet sites of the Ministries of Sustainable Development, Health, Research and Labour:
www.developpement-durable.gouv.fr
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Ministry of Ecology, Energy, Sustainable Development and the Sea
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“Protect health, improve environment quality, keep the public informed”
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D / THE GOVERNANCE OF THE NEHAP AND THE DEVELOPMENT OF REGIONAL ENVIRONMENT AND HEALTH PLANS
Environmental health was one of the main focuses of the Grenelle Environment round table talks and is a major public health issue. It encompasses all aspects of human health that are impacted by the environment and, in particular, by environmental pollution.

By their very nature, environmental health issues concern the whole population and involve a broad spectrum of players: environment protection groups, associations of sick and injured persons, trade unions, employers’ organizations and numerous government ministries (ecology, health, labour, agriculture, economy) and research organisations and teams. The second national environment and health action plan (NEHAP) was drawn up jointly by all these stakeholders, and it addresses the commitments made at the Grenelle Environment round table in terms of environmental health. Its purpose is to provide an overview of the main challenges, and to describe and prioritise measures for 2008-2013 on the basis of a common understanding. It defines a series of joint, concerted actions to be implemented on the national and local levels.

It builds on the measures begun under the first NEHAP, in accordance with the public health law of August 9, 2004 and with the decisions of the Grenelle Environment round table.
The challenges arising from environmental and health issues

THE HEALTH IMPACT OF ENVIRONMENTAL DETERIORATION

Some diseases can unquestionably be linked to poor environment quality. For example lead poisoning, which is caused by the ingestion of high levels of lead, legionnaires’ disease which is caused by exposure to Legionella in domestic hot water systems or in cooling towers, and some forms of cancer due to asbestos exposure.

In addition, according to the WHO, air pollution is responsible for over 30,000 premature deaths in France and 300,000 in Europe (long-term exposure to airborne particles from all emission sources). The national programme on the health effects of air pollution (PSAS 9), rolled out in nine French cities by the Institute for Public Health Surveillance (INVS), estimates that the number of deaths caused by particle matter measuring less than 10 μm ranges from 2 to 31 per 100,000 inhabitants.

As far as other pathologies are concerned, there is no scientific consensus as to whether they are genetic or environment-related. Cancer is one of the most widely-studied diseases in this respect. According to a study published by the INVS in 2003, 5 to 10% of cancers are related to environmental factors. The WHO estimates that 19% of cancers are environment-related, but this includes passive smoking. The INVS estimates that occupational cancer accounts for 4 to 8.5% of all cancer cases, while the IARC puts the figures at 4% in men and 0.5% in women. On the other hand, according to an American study conducted on almost 45,000 twins, only one in four cases of cancer are caused by genetic factors. Thus, three cases of cancer out of four are due to our environment and our lifestyle. However, as specified in “Cancer et environnement”, a survey report published by the Inserm and commissioned by the Afssset, “considering genetic and environmental mechanisms separately is too simplistic an approach nowadays”. We must take steps to reduce the health effects of environmental deterioration, even though it is difficult to quantify the impact of our actions.

THE COST FOR THE TAXPAYER OF ENVIRONMENT-RELATED DISEASES

As part of a project commissioned by the Ministry of Health, a study group coordinated by the Afssset has tried to assess the cost, in health insurance payouts, of two pollution-related diseases (asthma and cancer):

- After extrapolating estimated 1999 costs to 2006, and assuming that 10 to 35% of asthma cases are environment-related, the cost of treating asthma caused by non-biological outdoor pollution was estimated at €0.2 to 0.8 billion for 2006;

- Assuming that 1 to 5% of cancer cases can be attributed to the environment, the estimated cost of treating cancer caused by environmental factors is €0.1 to 0.5 billion per year, and the estimated cost of production loss is €0.005 to 1.2 billion. These estimates should be viewed with caution, as they are based on approximate figures. Nevertheless, they do give an idea of the costs involved. The impact assessments performed when drawing up the Reach regulation predicted a possible 10% reduction in the number of diseases caused by chemical substances (4,500 cancer deaths a year), i.e. 0.1% of all illnesses. Hence the estimated cost saving achieved by this regulation is €50 billion in the European Union over 30 years.

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2 World cancer disease, IARC, 2007 report.
3 Letter from the INVS, INVS, November 2003.
4 Lichtenstein et col.
6 Study of the cost impact of pollution-related diseases such as asthma and cancer, in terms of health insurance payouts. Report issued by the Afssset study group, September 2007.
The national context

Environmental health is:
- one of the five major public health issues recognized by the law (along with cancer, violence, dangerous and addictive behaviour, quality of life for people with chronic diseases, and rare diseases). Therefore, the public health law of August 9, 2004 requires the realisation of a plan of action in each of these areas and, in particular, for a five-yearly national environment and health action plan;
- a key ecological issue - discussed during the Grenelle Environment round table on the same grounds as climate change or the protection of biodiversity - and an important aspect of the June 2003 sustainable development strategy.

Moreover, NEHAP 2 builds on the measures taken under the first national environment and health action plan (NEHAP 1), and hence benefits from its existing knowledge and momentum. It was developed in the aftermath of the Grenelle Environment round table talks, and addresses the environmental health commitments made there.

The international context

At the third ministerial conference of countries in the WHO European Region in London in 1999, France and 52 other countries agreed to draw up a national environment and health action plan. In Budapest in 2004, these same countries undertook to draw up Childrens’ Environment and Health Action Plan for Europe (CEHAPE). In France, the result of these commitments was the first NEHAP, adopted by the government on June 21, 2004.

By drawing up a second environment and health action plan, France has underlined the importance that the French government attaches to this issue and has become an international leader in the field.

The scope of the French national environment and health action plans (NEHAPs)

At the WHO conference in Frankfurt in 1989, environmental health was defined as follows: “Environmental health addresses all the physical, chemical, and biological factors external to a person, and all the related factors impacting behaviours. It encompasses the assessment and control of those environmental factors that can potentially affect health. It is targeted towards preventing disease and creating health-supportive environments.” (WHO, 1990). The WHO’s definition of environmental health encompasses all health problems that are not of genetic origin and that do not result from a personal choice (to smoke, for example). Hence it covers domestic accidents, obesity, sports injuries and occupational diseases.

In France, these areas are all covered by specific public health plans. Therefore NEHAP 1 and NEHAP 2 were drawn up on the basis of a much more restricted definition of environmental health, which excludes risks arising essentially from individual behaviour.

The actions outlined in the French plans are based on the assumption that environmental health covers the interactions between man and his environment, the health effects of lifestyle factors [exposure at home and/or in the workplace] and the contamination of different environments (water, air, soil, etc.).

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7 The purpose of the REACH regulation is to evaluate, over a period of 11 years, 30,000 chemical substances produced in or imported by the European Union and placed on the market before 1981. At the same time, the 1,500 most dangerous substances will be evaluated with a view to replacing them.
8 First European conference on the environment and health, Frankfurt-on-Main (Federal Republic of Germany), December 7-8, 1989.
Midway evaluation of the first NEHAP

A joint review committee was set up to evaluate the implementation and impact of the NEHAP, so that any necessary adjustments could be made before it reached its term and was renewed. This committee submitted its report to the government in July 2007, midway through the plan. It emphasised the undeniable ripple effect of the first NEHAP, which spread not only through central government departments but also through local government via the first regional environment and health plans (PRSEs).

However, it also underlined the inadequate cooperation between the different stakeholders during the drafting and implementation of the plan, and the difficulty in accurately evaluating the implementation of actions due to the lack of precise indicators.

Results of the first NEHAP

Concrete achievements were made between 2004-2008, the main ones being:

- industrial atmospheric emissions of cadmium, lead, benzene, dioxin and vinyl chloride monomer were cut by 50 to 85%;
- stronger measures were taken against legionnaires’ disease. As a result, the number of cases reported between 2005 and 2008 fell by around 20%, despite more diagnoses and the introduction of a surveillance system that inevitably led to a rise in the number of known cases;
- the introduction of protective procedures was either begun or completed at almost 75% of drinking water harnessing points;
- the Observatory for Indoor Air Quality conducted large-scale surveys on air quality in housing and schools, and the Afsset defined the first emission guide values for some pollutants in indoor air (formaldehyde, carbon monoxide and benzene);
- other government plans, such as the occupational health plan of April 13, 2004 and the radon risk management plan of March 2006, were given fresh impetus;
- the Observatory for Pesticide Residues was created on June 28, 2006 and, in September 2008, the Ministry of Agriculture and Fisheries published the interministerial plan for the reduction of pesticide-related risks and the ecophyto 2018 plan;
- the environment and health action plan put environmental health on the political and social agenda. The environmental health survey conducted by the INPES in 2007 revealed that over one third (36%) of the population had already heard of the NEHAP.

The plan has also been implemented locally. Each region therefore has a regional environment and health plan, which defines action strategies according to local needs.
Full support was given to the REACH regulation, adopted by the European parliament on December 13, 2009; the capacity to assess the health risks relating to hazardous chemical substances was reinforced by extending the scope of the Afssé (Agency for Environmental Health Safety) to include occupational health (thereby creating the Afssét); in December 2005, parliament passed an agricultural orientation law that extended the Afssa’s remit to include the assessment of the risks and benefits of phytopharmaceutical products, adjuvants, fertilizers and crop enhancers; a national work programme was drawn up, which defined a list of 20 priority CMR substances and initiated amendments to workplace regulations (in 2008, the Afssét delivered its conclusions on 4 substances and it is expected to report on 13 other substances by the end of 2009).

Between 2005 and 2007, the National Research Agency (ANR) funded 114 environmental health research projects, for a total cost of around €25.4 million; the Afssét developed a portal site on environmental and occupational health.

Following on from NEHAP 1, each region drew up a regional environment and health action plan to implement the main objectives of the National Action Plan according to its own specific needs. Thanks to these 24 PRSEs, local government services have become highly involved in environmental health issues and have been able to better coordinate their actions.
THE SECOND NEHAP:
a jointly defined action plan

The second NEHAP results from a huge concerted effort: it is based on a report submitted to the government on 14 April, 2009, by a task force charged with drafting proposals for a second NEHAP.

This task force, which was set up after the Grenelle Environment round table, was chaired by Professor Gentilini, Honorary Chairman of the Academy of Medicine. It began its work in January 2008, and comprised representatives of various associations, politicians, labour and management, employers and government.

The task force’s first interim report was discussed widely, on both the national and local levels, between October 2008 and February 2009. It invited Regional Prefects and Regional Council Chairpersons to work together on setting up environmental health task forces to drive local discussions of the NEHAP 2 project. Regional authorities were also asked to review their first regional environment and health action plans, and to define areas of improvement for the second NEHAP.

Links with other plans

The national environment and health action plan does not aspire to provide an exhaustive set of environmental health measures, or to replace existing plans. It aims to establish environmental health priorities, by providing a cohesive, overall view of the situation at present. Therefore, where specific plans have already been drawn up to deal with subjects mentioned in NEHAP 2 (chlordecone, PCB, radon, pesticides [eco-phyto 2018], slumlords, social cohesion, social inclusion, substandard housing, etc.), NEHAP 2 refers to them but does not describe in detail the specific actions outlined in them.

Finally, a number of other plans are worthy of mention because some of the measures they propose may be connected directly to the NEHAP:

- the cancer plan defines specific measures to fight cancer and, in particular, to reduce smoking and alcohol consumption, bring down the incidence of occupational and environmental cancer, encourage the prevention of other risks, promote healthy behaviour - such as the development of healthy eating habits in line with the national nutrition and health programme (PNNS) - and prevent skin cancer. It organises cancer surveillance and research. The NEHAP complements this plan by proposing measures to reduce or even eradicate carcinogenic substances, where these substances pollute the environment (water, air, etc.);
- the 2005-2009 occupational health plan defines environmental health measures specific to the workplace. NEHAP 2 only discusses occupational health measures that have a connection with the other environmental health measures proposed.
Further occupational health measures will be put forward in the second occupational health plan:

- the road safety plan;
- the home and leisure accidents plan, presented on June 24, 2004;
- the heatwave and cold weather plans (in force since June 1, 2006).

The main objectives of the second NEHAP

By their very nature, environmental health issues are difficult to deal with and to prioritise. The environmental health theme may be approached in a number of different ways:

- from an environmental standpoint, with the focus on different environments - air, water, soil, indoor environment [indoor air quality, radon, etc.] – or on different pollutants – particles, pesticides, chemical substances, noise, etc.;
- from a medical standpoint, with the focus on the different diseases that may be caused by environmental factors – cancer, cardiovascular disease, neurological disorders, respiratory diseases [such as asthma], fertility problems, etc.;
- from a populational standpoint, with the focus on improving prevention in the most vulnerable populations [pregnant women, children, people suffering from chronic diseases like asthma, etc.].

In NEHAP 2, a specific approach is chosen and actions are proposed according to two objectives, which are not mutually exclusive:

- reduce exposure leading to high-impact diseases;
- reduce environmental inequality.

REDUCE EXPOSURE LEADING TO HIGH-IMPACT DISEASES

In continuation of NEHAP 1, NEHAP 2 proposes measures to reduce exposure leading to high-impact medical conditions (cancer, cardiovascular disease, respiratory and neurological disorders, etc.).

It focuses on chemical, biological and physical agents in the environment, to which the population is exposed via the air, water, food and soil.

These substances or agents do not all have the same effect on the health: this depends on the toxicity of the substance, the concentration to which the population is exposed and the earliness of exposure. Therefore, it is vital to determine which environmental pollutants are the most hazardous for the health, identify the main sources of exposure and define concrete measures to reduce the levels of these pollutants.

We do not have equal knowledge of all environment-related health risks. Some risks are well known, such as lead poisoning in children linked to poor housing conditions, and cancer linked to asbestos exposure. Others, such as the impact of new chemical substances, still require considerable expert analysis. So various types of measures are proposed, from regulations to restrict, reduce and control emissions, to research to better define the risk.

It is also important to have the appropriate tools for assessing and managing risks that have not yet been really clearly defined. NEHAP 2 takes a cautious approach, in line with article 5 of the Environment Charter, which stipulates that “where damage could, though uncertain in the light of current scientific knowledge, seriously and irreversibly affect the environment, the public authorities will monitor, in application of the precautionary principle and in their respective areas of responsibility, the implementation of risk assessment procedures and the adoption of provisional and suitable measures to prepare for such damage”. To meet this stipulation, considerable effort in terms of collecting data, carrying out research and conducting expert analyses is required. New forms of governance must also be developed in order to better understand the complexities of managing risks in a context of uncertainty.

The main measures defined in NEHAP 2 to meet this objective are:

- reduce air particulate matter;
- reduce emissions into the air and water of six substances deemed particularly important in view of their toxicity and the level of exposure in the population;
- improve indoor air quality;
reduce exposure to chemicals classified as carcinogenic, mutagenic or toxic to reproduction (CMRs) in the workplace;
- develop health-friendly means of transportation.

**REDUCE ENVIRONMENTAL INEQUALITY**

NEHAP 2 has a second key objective: to identify and manage environmental inequality, i.e. to reduce environmental nuisances likely to cause or deepen health inequality. In fact, reducing health inequality is one of the priorities of the public health policy, and reducing environmental inequality will be a serious step towards reaching this goal. Furthermore, the environment charter published in March 2005 gives precedence to environmental equality, as article 1 states that "each and every person has the right to live in a balanced, healthy environment". NEHAP 2 addresses this question from several angles.

**Unequal sensitivity to pathogens depending on age.**

Children are particularly sensitive to environmental factors like chemicals, as their bodies are still developing. Early exposure to these factors can lead to serious illness or disturbed functions later on. NEHAP 2 contains measures to:
- reduce the exposure of children and pregnant women to carcinogenic, neurotoxic and reprotoxic substances, and better manage the risks associated with reprotoxic substances and endocrine disrupters;
- reduce exposure levels in buildings used by children;
- step up efforts to prevent hearing disorders and acoustic trauma caused by listening to very loud music.

**Unequal sensitivity to pathogens depending on state of health** (allergies, asthma, people who have had cancer in the past, etc.). Hence NEHAP 2 contains measures to protect the most vulnerable populations:
- allergy prevention;
- better treatment of illnesses that are potentially environment-related. The measures initially proposed to better protect people with cancer or who have a high risk of cancer will be included in the second cancer plan.

**Inequality due to socio-economic background.**

Under NEHAP 2, the programme to combat substandard housing will be stepped up.

**Geographic inequality due to varying degrees of environmental deterioration across the country.**

Indeed, water and soil quality differs according to the region, and the differences can be caused by present or past human activity or by natural phenomena. NEHAP 2 contains measures to reduce these variations and, in particular, to:
- guarantee long-term access to drinking water;
- identify and clean up regions with a high industrial density, and manage the effects of previous pollution events, as an area’s industrial past or its proximity to infrastructures may result in environmental black spots;
- reduce noise pollution;
- reduce exposure to natural substances or agents such as natural asbestos or radon.
THE 12 FLAGSHIP MEASURES OF NEHAP 2

1. REDUCE BY 30%
   - concentrations of fine particulate matter (PM 2.5) in the ambient air, by 2015: this measure is part of a national action plan – the particulate matter plan – which will be implemented locally via regional climate, air and energy programmes, developed under the frame of the bill entitled “national engagement for the environment”;
   - emissions into the air and water of 6 toxic substances by 2013: mercury, arsenic, polycyclic aromatic hydrocarbons (PAHs), benzene, perchloroethylene and PCB/dioxins.

2. INTRODUCE A HEALTH WARNING LABEL
   on building and decorating materials and on products that release high levels of substances into the air inside buildings; make it compulsory to use the lowest-emitting products and materials in schools and day-care centres.

3. PROMOTE NON-MOTORIZED MEANS OF TRANSPORTATION
   both to reduce the environmental impact of transport and encourage physical exercise, which is essential to good health.

4. SET UP A SYSTEM TO PROTECT
   the catchment areas of the 500 water harnessing points most at risk.

5. IMPROVE KNOWLEDGE AND REDUCE THE RISKS RELATING TO THE RELEASE OF PHARMACEUTICAL RESIDUES INTO THE ENVIRONMENT
   - by beginning work on a national action plan as of July 2009,
   - and setting up a monitoring and steering committee for this plan.
6. **SET UP A PROGRAMME TO BIOMONITOR THE HEALTH STATUS** of the population as of 2010.

7. **TEST A SYSTEM FOR TRACKING** occupational exposure in four regions.

8. **IMPROVE PROCEDURES FOR TESTING SUBSTANCES**, products and items marketed in France, especially those aimed at children.

9. **REDUCE EXPOSURE TO SUSPECT SUBSTANCES IN THE HOME AND IN BUILDINGS USED BY CHILDREN**: the air quality in 300 day-care centres and schools will be monitored as of September 2009, and a programme to identify and deal with day-care centres and schools built on polluted ground will also be set up, in collaboration with the local authorities concerned.

10. **DEVELOP A NETWORK OF INDOOR ENVIRONMENT COUNSELORS**, who will visit people with certain medical conditions in their homes, and suggest targeted measures to improve their living environment.

11. **PURSUE THE PROGRAMME TO COMBAT SUBSTANDARD HOUSING**, with the aim of cleaning up 20,000 homes a year.

12. **IDENTIFY AND DEAL WITH ENVIRONMENTAL BLACKSPOTS**, that are likely to cause over-exposure to toxic substances, notably by introducing black spot identification procedures.

9 Particles measuring less than 2.5 µm
The review committee set up to evaluate the first NEHAP pointed out the relative weakness of the plan’s governance structure. Therefore, a national steering committee called the GSE (environmental health group) will be set up to monitor and guide the implementation of NEHAP 2. It will comprise representatives of the five colleges involved in the Grenelle round table [central government, local authorities, associations [including those approved under the health and environment codes], trade unions and employer representatives], suitably qualified personalities, health professionals and health insurance employees. The range of associations represented will be extended to include consumer, patient and injured persons associations.

This committee will be able to adjust measures as needed, and according to new knowledge.

Besides monitoring NEHAP 2, the GSE will act as a permanent think tank on environmental health issues and will:

- discuss emerging risks (nanotechnologies, electromagnetic waves, endocrine disrupters, etc.);
- jointly define and put forward a new list of substances, the emissions of which must be reduced as a priority;
- monitor the implementation of the human biomonitoring programme.
THE DEVELOPMENT OF REGIONAL ENVIRONMENT AND HEALTH PLANS

In 2009, the regional task forces set up as part of the consultation process will be asked to develop new regional environment and health plans (PRSE 2). Each PRSE 2 will be developed jointly by representatives of the five colleges involved in the Grenelle round table.

Regional and national cohesion will be ensured by a group of regional PRSE correspondents, who will meet regularly on a national level.
Annexes

“Concrete measures for a healthy environment”
Annex 1
THE COMMITMENTS OF THE GRENELLE ENVIRONMENT ROUND TABLE, AS ADDRESSED IN THE SECOND NATIONAL ENVIRONMENT AND HEALTH ACTION PLAN

Annex 2
THE ACTION SHEETS IN NEHAP 2

Annex 3
FUNDS ALLOCATED FOR THE IMPLEMENTATION OF NEHAP 2

Annex 4
GLOSSARY
Because it covers a very broad spectrum of topics, the second NEHAP interacts closely with the different commitments of the Grenelle Environment round table, and provides a framework for the health measures defined there. The NEHAP addresses the following 21 commitments, made at the Grenelle Environment round table talks on 24, 25 and 26 October 2007:

101: Protect the 500 water catchment areas most at risk. This point is addressed by action 28.

103: Manage the risks relating to medication residues. This point is addressed by action 47.

105: Ban the use of phosphates in all detergent products by 2010. This point is addressed by action 29.

137: Develop a bold policy to replace new chemical substances of high concern, as part of the objective of restricting or tightly controlling the use of such substances, in accordance with the Reach regulation. This point is addressed by action 11.

138a: Reduce emissions of and exposure to substances of high concern - for example benzene, mercury, trichloethylene and some chrome compounds - from all sources and in all environments. This point is addressed by action 5.

138b: Draw up a clean transport plan covering all types of vehicle, including the early renewal of vehicle fleets. This point is addressed by actions 3, 13, 14 and 15.

138c: Anticipate and prevent risks arising from products, methods and changes to the environment. This point is referred to throughout the plan.

138d: Occupational health. This point is referred to throughout the plan.

139: Human biomonitoring programme. This point is addressed by action 43.

140: Develop environmental health equality by tackling black spots and focusing primarily on children and on the most vulnerable or most exposed populations. This point is referred to throughout the plan.

142: Set up inter-regional, multi-discipline environmental health centres, a toxicology and ecotoxicology skills centre and inter-university hospital treatment, prevention and clinical research centres. This point is addressed by action 24.

143: Phyto-sanitary products containing substances of extremely high concern (CMR1, CMR2 and bioaccumulative substances) will be banned from sale as of 2008, for domestic use or for use in public places. Substances of high concern (including CMR3 substances) will be addressed in the second national environment and health action plan. This point is addressed by action 6.

146: Increase resources for the government inspection of sites and the testing of toxic content in domestic and imported products. This point is addressed by action 17.

149: Immediately implement legislation on NOx and ozone. This point is addressed by actions 1 to 3.

150: Particulate matter plan. The cardiovascular and respiratory effects of fine particles are now known: the target value for 2010 is 15µg/m³ [PM 2.5], which will become compulsory in 2015. This represents a 30% decrease compared with the current value. This point is addressed by actions 1 to 4.
151: Improve indoor air quality: compulsory labelling of building and decorating materials, indicating their volatile pollutant content. Banning of CMR 1 and CMR 2 substances in these products as of 2008, CMR 3 substances being addressed in NEHAP 2. This point is addressed by actions 7 and 8.

152: Set up indoor air quality monitoring and information systems for buildings frequented by large numbers of people or by vulnerable people such as children and the elderly, and for public buildings. This point is addressed by actions 9 and 19.

153: Update the list of noise black spots for the end of 2007 and get rid of the most unhealthy of them within the next 5 to 7 years. Increase the resources allocated to reducing noise from roads, motorways and railway lines, from 150 to 450 million euro. Funding to be negotiated between central government, local authorities, the French rail network (RFF) and motorway companies. This point is addressed by actions 15 and 37 to 39.

157: Set up a building acceptance process compliant with legislation on aeration, ventilation and noise. This point is addressed by action 8.

158: Set up noise observatories in the major cities. This point is addressed by action 39.

159: Anticipate risks connected with the use of nanomaterials. This point is addressed by action 46.

179: Set up a chlordecone task force in the West Indies. This point is addressed by action 35.

194: Set up an independent high authority to mediate in conflicts regarding expert environmental assessments and warnings. This point is addressed by action 53.

195: Set up a high-level council to guarantee the transparency, methodology and deontology of expert assessments. This point is addressed by action 53.

241: Finish the inventory of sites which, historically, are potentially polluted. Cross this inventory with those of water catchment areas and buildings housing vulnerable populations in order to prioritise actions for 2010. This point is addressed by actions 19 and 28.

242: Action plan on the rehabilitation of out-of-use service stations and of orphan polluted sites. This point is addressed by action 34.
THE ACTION SHEETS IN THE NEHAP

SHEET 1 p. 25  Particulate matter plan
SHEET 2 p. 28  Reduction of toxic substances in the air and in water
SHEET 3 p. 31  Indoor air quality
SHEET 4 p. 35  Reduction of occupational exposure to chemicals classified as carcinogenic, mutagenic or toxic to reproduction (CMRs)
SHEET 5 p. 37  Health and transport
SHEET 6 p. 40  Protection of the health and environment of children
SHEET 7 p. 43  Protection of the health and environment of people who are vulnerable due to their state of health
SHEET 8 p. 45  The fight against substandard housing
SHEET 9 p. 47  Protection of the population against waterborne pollution
SHEET 10 p. 50  The fight against environmental black spots
SHEET 11 p. 52  Reduction of noise pollution
SHEET 12 p. 54  Reduction of exposure to natural radon and asbestos
SHEET 13 p. 56  Emerging risks
SHEET 14 p. 59  Research
SHEET 15 p. 63  Expert assessments
SHEET 16 p. 65  Training and information
According to a study conducted by the WHO, 30,000 premature deaths in France in 1996 were caused by long-term exposure to airborne particle pollution (from all emission sources). The national air and health surveillance programme (PSAS 9) implemented by the Institute for Public Health Surveillance in nine French cities, estimates that the number of avoidable deaths caused by fine particles measuring less than 10 µm ranges from 2 to 31 per 100,000 inhabitants. In Europe, studies conducted within the CAFE (Clean air for Europe) programme, show that background air pollution (as measured by the particles indicator) reduces life expectancy by one year on average.

Human activity, for example combustion, generates particles of different sizes and composition, which are proven to produce pathogenic effects such as cardiovascular and respiratory diseases. Over the last ten years, PM 2.5 emissions have dropped by almost 30% and PM 10 emissions by almost 25%, thanks to various air pollution reduction programmes and to action 4 of NEHAP 1, which aimed to cut emissions of diesel particles from mobile sources.

During the Grenelle Environment round table of 24, 25 and 26 October 2007, a more ambitious target was set, which extended the scope of action to include all emission sources and all fine particles. Hence, by 2010, air concentrations of 2.5 µm particles (PM 2.5) should be approaching 15 µg/m³ (target value), and this target will become compulsory in 2015. This will represent a 30% reduction compared with present values. To meet this objective, an action plan aiming to reduce particle emissions from transport, industry and the tertiary and residential sectors has been defined: the particulate matter plan.

**ACTION 1**

Reduce particle emissions in the domestic sector

**Leader:** DGEC

- In 2010, redirect government aid and communication campaigns towards wood-fired heating, in order to develop the use of cleaner heating systems; review the current tax credit system to stimulate the marketing of more efficient heating equipment, by offering a preferential rate for the replacement of old equipment and allocating aid to the most efficient equipment (in terms of particle emissions); foster innovation in the development of wood-fired heating systems by prolonging the Ademe’s calls for research proposals and updating the criteria for awarding the “Flamme Verte” [Green Flame] label to include the reduction of dust emissions.
- **Study the feasibility of introducing a specific incentive scheme for second homes and supplementary heating**, via regional action plans.
- **In 2010, define limit values for NOx and particle emissions from boilers with an output of less than 2 MWh.** Introduce regular testing of particle emissions from large, unclassified boilers, encourage the energy and environmental labelling of boilers, and raise awareness among domestic and professional users of emissions from open fireplaces and garden fires.

**Leader:** DGEC

**Partners:** Ademe, Ineris, DGALN

**Tools:**
- point 1: actions by the Ademe
- point 2: decree
- point 3: circular

**Schedule:** 2010

**Means indicator:** enforcement of legislation on the scheduled date (2010)
ACTION 2
Reduce particle emissions in the industrial and agricultural sectors

→ Leader: DGEC

- In 2010, reinforce the regulations on combustion installations classified under the environment code (installations subject to authorisation or declaration); tighten specifications relating to NOx and particle emissions in calls for proposals for biomass projects, basing the project selection criteria on the best available techniques for limiting particle emissions.

Leader: DGEC (sub-leader: DGPAT for point 3)
Partners: Ineris, Ademe, DGPR
Tools: study and circular
Schedule: 2010
Means indicator: enforcement of legislation on the scheduled date and development of the study (2010)

- In 2010, study the impact of modulating the air pollution component of the General Tax on Polluting Activities (TGAP), with respect to nitrogen oxides and total airborne dust content.

Leader: DGPR
Partner: Ineris
Tool: review of the ministerial order on installations classified on environmental grounds (ICPEs)

- Reduce ammonia emissions in the agricultural sector by clarifying knowledge on the farming practices that emit the most particles and particle precursors, circulating the best farming practices recommended by the CORPEN, adapting animal feed to the animal’s needs, encouraging the covering of pits and the use of spreading materials that are less likely to fly into the air, and reducing emissions from tractors.

Leader: DGEC (sub-leader: DGPAT for point 3)
Partners: Ineris, Ademe, DGPR
Tools: study and circular
Schedule: 2010
Means indicator: enforcement of legislation on the scheduled date and development of the study (2010)

ACTION 3
Better organise transport and reduce unitary emissions from each means of transport

→ Leader: DGITM

- Better organise urban transport by developing policies to reduce habitual car use: the creation of eco-neighbourhoods (tie the development of residential or business areas to the availability of adequate public transport and of access routes for non-motorized transport) and the development of car-sharing and car pools.

Leader: DGITM
Partners: Certu, Predit, Ademe, DGEC for the eco-neighbourhoods - DGCCRF, Ademe, DSCR, DGCL, Certu, DGEC for car-sharing and car pools
Tools: implementation of the sustainable city plan, review of car-sharing feedback
Schedule: the length of the plan
Means indicator: availability of studies and development of national campaigns; launch 5 low-emission area studies

- Reduce road vehicle emissions at the source: develop research in order to reduce the unitary emissions of vehicles and limit air and noise pollution from mopeds (introduction of an obligatory roadworthiness test).

Leader: DGITM
Partners: Certu, Predit, Ademe, DGEC for the eco-neighbourhoods - DGCCRF, Ademe, DSCR, DGCL, Certu, DGEC for car-sharing and car pools
Tools: training, information, aid for innovation and the development of clean vehicles
Schedule: the length of the plan
Means indicator: funds allocated to research in order to cut the unitary emissions of vehicles between 2009 and 2013; enforcement of the legislation on roadworthiness tests for mopeds

- Improve the environmental performance of captive vehicle areas in certain cities where air quality limit values are exceeded or are expected to be exceeded in the future; assess the impact of providing free public transport in cities and business areas when air quality limit values are exceeded; reduce speed limits in some urban areas (creation of pedestrian-priority zones, etc.); build car parks on the outskirts of cities; study the impact on air quality of optimising the delivery of goods to city-centre shops; set up national campaigns to encourage healthy and environment-friendly behaviour.

Leader: DGEC
Partners: DGITM, DGPR, Certu, ADEME, DSCR, representatives of local authorities and of AOTs (transit authorities), Ministry of the Interior
Tools: study and assessment of the experiments performed; call for proposals in 2010, organised by the Ministry of Sustainable Development
Schedule: the length of the plan
Means indicator: availability of studies and development of national campaigns; launch 5 low-emission area studies

- Launch opportunity studies for the creation of low-emission areas in certain cities where air quality limit values are exceeded or are expected to be exceeded in the future; assess the impact of providing free public transport in cities and business areas when air quality limit values are exceeded; reduce speed limits in some urban areas (creation of pedestrian-priority zones, etc.); build car parks on the outskirts of cities; study the impact on air quality of optimising the delivery of goods to city-centre shops; set up national campaigns to encourage healthy and environment-friendly behaviour.

Leader: DGEC
Partners: DGITM, DGPR, Certu, ADEME, DSCR, representatives of local authorities and of AOTs (transit authorities), Ministry of the Interior
Tools: study and assessment of the experiments performed; call for proposals in 2010, organised by the Ministry of Sustainable Development
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Leader: DGEC
Partners: DGITM, DGPR, Certu, ADEME, DSCR, representatives of local authorities and of AOTs (transit authorities), Ministry of the Interior
Tools: study and assessment of the experiments performed; call for proposals in 2010, organised by the Ministry of Sustainable Development
Schedule: the length of the plan
Means indicator: availability of studies and development of national campaigns; launch 5 low-emission area studies

- Launch opportunity studies for the creation of low-emission areas in certain cities where air quality limit values are exceeded or are expected to be exceeded in the future; assess the impact of providing free public transport in cities and business areas when air quality limit values are exceeded; reduce speed limits in some urban areas (creation of pedestrian-priority zones, etc.); build car parks on the outskirts of cities; study the impact on air quality of optimising the delivery of goods to city-centre shops; set up national campaigns to encourage healthy and environment-friendly behaviour.

Leader: DGEC
Partners: DGITM, DGPR, Certu, ADEME, DSCR, representatives of local authorities and of AOTs (transit authorities), Ministry of the Interior
Tools: study and assessment of the experiments performed; call for proposals in 2010, organised by the Ministry of Sustainable Development
Schedule: the length of the plan
Means indicator: availability of studies and development of national campaigns; launch 5 low-emission area studies
fleets and of delivery vehicles in urban areas, notably by fitting them with particle filters as part of the “exemplary state” policy, while taking care not to generate additional NOx.

Leader: DGEC
Partners: Ineris, Ademe, DGPR
Tools: revival plan, voluntary commitments, exemplary state circular.
Schedule: 2010

• Introduction of a green tax for heavy goods vehicles, with adjustment of the taxable amount according to the vehicle’s EURO emission rating, in accordance with art. 153 of the initial finance law (LFI 2009) of December 27, 2008, published on December 28, 2009.

Leader: DGITM
Partners: DGE, CGDDI, DGPN, DGGN, Ineris, Ademe
Tools: support for the implementation of article 153 of the LFI
Schedule: 2011
Means indicator: publication of legislation in 2010

• Improve the environmental performance of road freight by promoting the development of CO2 emissions charters, whereby carriers make a commitment to sustainable development.

Leader: DGITM
Partners: Ministry of Finance, road haulage federations, DGE, Ademe
Tools: promote the development of CO2 emissions charters, whereby carriers make a commitment to sustainable development.
Schedule: 2011
Means indicator: over 50% of carriers committed to a CO2 emissions charter by 2013

• Reduce emissions from ships and boats by connecting docked river and sea vessels to the power grid, limiting emissions of SOx (sulphur oxides), NOx (nitrogen oxides) and particles from sea-going vessels, limiting emissions of SOx, CO (carbon monoxide), NOx, hydrocarbons and particles from river vessels, and backing IMO (International Maritime Organisation) agreements on emissions standards and the development of control zones.

Leader: DGITM
Partners: Ministry of Finance, DGE, Ademe
Tools: feasibility study and feedback; IMO agreement.
Schedule: study in late 2009 on connecting docked vessels

• Improve knowledge of the physico-chemical properties, granulometric composition and health effects of particles, and in particular the long-term health impact of chronic exposure to airborne particles. Investigate how they travel across borders, and regularly calculate the respective role of each contributor in particle-related health effects.

Leader: Afsset
Partners: Ineris, InVS, Ademe, DGE, DGPR and DGS
Tools: calls for research proposals
Schedule: the length of the plan
Means indicator: number of research proposals selected

Action 14 (promote active and soft transport solutions) will also help to fulfill some of the objectives in the particulate matter plan. Like the particulate matter plan, action 14 will be implemented locally, via the regional climate, air and energy programmes.
Reducing the occurrence of high-impact diseases entails improving environmental quality (air, water, soil, etc.), and therefore reducing emissions of toxic substances into the environment. A considerable amount of work has already been done, which must be continued. NEHAP 2 is an original plan in that it puts forward concrete measures for all areas of the environment, in order to identify synergies between the measures taken under different regulations and to optimise the effectiveness of these measures.

**IT IS EXTREMELY IMPORTANT TO REDUCE EMISSIONS OF THESE SIX TOXIC SUBSTANCES INTO THE AIR AND WATER**, due to the specific toxicity of each of the substances and to the considerable level of human exposure to them. They were selected by comparing several lists of substances, on the basis of their toxicity (classified carcinogenic by the IARC and the European Union), the quantities used, or the fact that they had already been identified by other authorities as requiring priority action (American Clean Air Act, OSPAR convention 10, etc.). This measure builds on action 6 of NEHAP 1, which provided for a reduction in atmospheric emissions of industrial toxic substances (dioxin, cadmium, lead, vinyl chloride and benzene).

On the basis of knowledge acquired during NEHAP 1, NEHAP 2 extends the action to include all emitters (industry, transport, the residential and tertiary sectors, etc.) and both air and water emissions.

**THE REDUCTION OF HUMAN EXPOSURE TO PESTICIDES** (in continuation of action 11 of NEHAP 1) is also a key area of progress. The main actions relating to pesticides are laid down in the *ecophyto 2018 plan*; this plan essentially targets a reduction in the use of phytosanitary products, especially those of the highest concern. Other measures are also being implemented by the Observatory for Pesticide Residues (ORP), whose action plan for 2009-2011 is currently undergoing approval. In addition, NEHAP 2 proposes a measure to increase knowledge of the pesticide contamination of soils and air (action 6).

**THE ECOPHYTO 2018 PLAN**

The *ecophyto 2018 plan* was developed in the aftermath of the Grenelle Environment round table; it targets a 50% reduction in the use of pesticides, if possible within 10 years. It also provides for the market withdrawal of all products containing any of 53 active substances of the highest concern (with 30 products being withdrawn before the end of 2008). It also targets the immediate and widespread implementation of a set of best farming practices that do not rely heavily on phytosanitary products, and the development, through research, of new and viable production systems that can be implemented widely and will further reduce pesticide use. To ensure that the plan is successful and receives as much support as possible, training programmes must be developed and implemented and the use of phytosanitary products must be made safer. The plan aims to reinforce bioaggressor surveillance networks so that pesticide use can be adjusted to needs, and to enhance knowledge of the adverse effects of phytosanitary products on crops and the environment. Finally, a specific objective has been defined relating to the safer and less-extensive use of pesticides in non-agricultural areas.

A specific section of the plan is devoted to French overseas regions, given their unique circumstances in terms of phytosanitary-related risks. The plan contains a system for quantitatively monitoring progress towards reducing pesticide use. This system is based on an indicator (NODU), which is proportional to the number of doses of active phytosanitary substances sold.
**ACTION 5**

**Reduce emissions of six toxic substances into the air and water**
(as per commitment 138A of the Grenelle Environment round table)

- **Leader:** DGPR
- **Global performance indicator for action 5:** from 2007-2013: 30% reduction in air and water emissions of benzene (and the associated volatile organic compounds), PAHs (Polycyclic Aromatic Hydrocarbons), PCBs (polychlorinated biphenyls), dioxins, arsenic, mercury and chlorinated solvents.

- **Reduce by 30% the air and water emissions of six priority substances between 2007 and 2013:** benzene (and the associated volatile organic compounds), PAHs, PCBs, dioxins, arsenic, mercury and chlorinated solvents. Pay particular attention to situations where people are in close proximity to the substances. In some cases, the focus will also be on reducing natural exposure (to arsenic for example).

- **Control close pollution sources,** notably by reinforcing the implementation of benzene and PAH management procedures in service stations in built-up areas as of 2010, and by encouraging the replacement of existing dry-cleaning facilities with equipment that emits less tetrachloroethylene.

  - **Leader:** DGPR
  - **Partners:** DREAL, Ineris, Afsset, Onema, Ademe, DGS, DDASS, ARS
  - **Tool:** the Ministry of Sustainable Development is including this measure in the national annual programme for the inspection of industrial installations (circular).

- **By the end of 2010, define a method for identifying and prioritising toxic substances of the highest concern,** in order to generate synergies between different initiatives (framework directive on water, Reach, air quality objectives, priority substances for the WHO, etc.).

  - **Leader:** DGPR
  - **Partners:** DREAL, Ineris, Afsset, Onema, Ademe
  - **Tool:** the Ministry of Sustainable Development is including this measure in the national annual programme for the inspection of industrial installations (circular).

- **Reduce emissions of six toxic substances into the air and water** (as per commitment 138A of the Grenelle Environment round table)

  - _reduction, if necessary, of the emission values specified in the ministerial orders governing these activities (according to the outcome of sector studies conducted by the Ineris)_
  - _modification of the draft regulations on crematoriums (DGS)_
  - _revision of current regulations on batteries and accumulators_

  - **Schedule:** 2010 – 2013 national audit programme

- **By the end of 2009,** of the ministerial order on dry cleaning of May 2, 2002; continuation of the incentive programme for the renewal of dry-cleaning procedures by the water boards; implementation of a study to identify regulatory or tax measures that would further reduce emissions of chlorinated solvents.

  - _the action plan relating to service stations is already underway (order of 19/12/2008); audits will be conducted to ensure that the provisions in this order are being enforced effectively (more efficient recovery of service station fumes, stricter regulations for service stations in built-up areas, lowering of the threshold value above which petrol fume recovery is compulsory)._**

  - **Schedule:** 2009-2013

- **The long-term goal is to develop global approaches to evaluating routes of human contamination by those priority substances (air, water, food, etc.).**
Leaders: DGPR, DGS
Partners: NEHAP 2 monitoring group, consisting mainly of the Ineris and of health safety agencies.
Tools: drafting of a new list by 2010; definition of technical prioritisation tools by 2010; health risk assessment; biomonitoring.
Schedule: End of 2010

ACTION 6
Improve knowledge of pesticide exposure (phytosanitary and biocidal products)
→ Leader: ORP steering committee
• Increase knowledge of overall human contamination by pesticides, essentially by:
  - drawing up an exposure report;
  - improving knowledge of soil and air contamination by pesticides (emission of pesticides into the air), by adopting and implementing the ORP’s 2009-2011 action plan.
• Assess the respective roles of the different pesticide exposure routes (air, drinking water, food): measure outlined in the ORP’s 2009-2011 action plan (currently undergoing approval).
• Monitor air and soil contamination in time and space (in addition to existing food monitoring processes): measure outlined in the ORP’s 2009-2011 action plan (currently undergoing approval).

Administrative leader: ORP steering committee
Technical leader: ORP (Afsset)
Partners: Afssa, Ineris, MSA, INVS, local offices of the MAP (Ministry of Agriculture, Fisheries and Food) in charge of the ecophyto 2018 plan, AASQA (air contamination), DGECC
Tools: analysis of data on air pesticide concentrations; organisation of a system for monitoring pesticides in the air; the ORP’s 2009-2011 action plan
Schedule: 2009-2011
Means indicator: results of the ORP’s 2009-2011 action plan, availability of air monitoring data.

NOTES from page 28
10 The OSPAR convention for the protection of the marine environment of the north-east Atlantic was signed on September 22, 1992 in Paris. It was ratified by all the countries bordering the north-east Atlantic, and aims to pool the means of knowledge and action of the contracting parties in order to optimise the conservation of this marine area within a perspective of sustainable development.
11 The term pesticide refers to all phytosanitary and biocidal products. Phytosanitary products are used in agriculture (weed control). Biocidal products are used in public and private places for disinfecting and for protecting materials from insects and mould. They are also used in anti-mosquito programmes.
IMPROVING INDOOR AIR QUALITY IS A KEY FACTOR IN ENVIRONMENTAL HEALTH PROGRESS. It is a legitimate public health issue, given the many chemical, biological, physical, (geno)toxic, infecting and allergising substances and agents with pathogenic effects in indoor air, and given the amount of time we spend in enclosed places (70 to 90% on average). The first official data on the quality of air in French homes were provided by the Observatory for Indoor Air Quality, and showed that asthma and rhinitis are directly linked to indoor concentrations of certain volatile organic compounds (VOCs). The latter are irritants, and can act as co-factors to increase sensitivity and lower the allergic threshold. According to an Insee survey of 45,000 homes in 2001-2002, 40% of homes have at least one quality problem, the most frequent being a high level of dampness.

The Grenelle environment round table set new and ambitious objectives for reducing energy consumption in buildings. These objectives apply to both new and old buildings. Therefore, profound changes will be made in building design and construction in the coming years. These changes will affect architectural design, wall and roof insulation, and heating, ventilation and air conditioning systems (with a strong incentive to use biomass as a fuel). The task ahead is huge; nonetheless, we cannot afford to ignore the need for better air quality in energy-efficient buildings if we are to meet both health and ecological objectives.

ACTION 7
Improve knowledge of and limit indoor pollution sources
Leader: DGPR

• Ban the use of chemicals classified as carcinogenic, mutagenic or toxic to reproduction by the European Union (CMR 1 and 2 substances) in building and decorating materials and products.

It is vital to tackle the energy efficiency, noise insulation and health safety of buildings at the same time. Therefore, NEHAP 2 sets forth measures to better identify and limit pollution sources inside buildings (action 7), promote clean building by limiting indoor pollution sources and controlling the installation of aeration, ventilation and air conditioning systems (action 8), better manage indoor air quality in public places (action 9), and reduce asbestos exposure (action 10).

Leader: DGPR for actions 7 and 9, DGALN for action 8 and DGS for action 10

Global performance indicators for sheet 3 (actions 7 to 10):
• increase in the sales volumes of low-emitting products.
• improvement in the indoor air quality in French homes, on the basis of OQAI campaigns.
• use of monitoring data on air quality in schools to measure the progress made by 2013.

• Restrict the use of formaldehyde in some areas (as per commitment 143 of the Grenelle Environment round table):
  • Ban wood panels that emit high levels of formaldehyde (panels in the E2 emission class);

Leaders: DGALN and DGPR

Tool: restriction procedure to be put forward by France, in accordance with the Reach regulation (DGPR); if necessary, a ministerial order (DGS,
DGT, DGPR, DGALN); at the same time, France will instigate the creation of new classes within the E1 class, applicable across the European Union (DGALN, 2012); renew the request for formaldehyde to be classified as a CMR 1A or 1B substance across Europe (leader: DGPR, technical leader: Afsset), if the classification is confirmed by the IARC.

Investigate the possibility of tightening regulations on the use of urea formaldehyde foam (for example, by issuing a government order to lower the current authorised formaldehyde content of 0.2 ppm, i.e. 250 micrograms per cubic metre).

Leader: DGPR
Partner: DGALN
Tools: amendment of the order of May 6, 1988 relative to formaldehyde exposure deriving from the injection of urea formaldehyde foam insulation into residential buildings or into permanently or semi-permanently occupied buildings; amendment of decree no. 88-683 of May 6, 1988 relative to the use of urea formaldehyde foam insulation in residential buildings or in permanently or semi-permanently occupied buildings; restriction procedure in accordance with the Reach regulation.

Means indicators: CSTB study, followed by enforcement of legislation if appropriate

• Introduce a compulsory emissions labelling system in 2012, relating in particular to VOC and formaldehyde emissions from the most significant indoor sources, excluding building and decorating materials (see action 8) (as per commitment 151 of the Grenelle Environment round table).

Leader: DGPR
Partners: Ineris, CSTB, Afsset
Schedule: from 2012
Tools: studies, decree further to prior notification of the European Commission

Means indicator: enforcement of legislation

**ACTION 8**

Limit indoor pollution sources in buildings and control of the installation of aeration, ventilation and air conditioning systems

⇒ Leader: DGALN

• Investigate the possibility of developing tools for diagnosing contamination sources and monitoring the correct operation of aeration systems (OQAI studies underway to identify the determinants); define the skills needed to perform these diagnoses.
• Produce technical and practical guidelines on aeration systems, to help professionals and private individuals when carrying out renovation work.
• Develop tools to help contract managers perform building acceptance tests and ensure that these buildings comply with aeration, ventilation and noise regulations, in accordance with commitment 157 of the Grenelle Environment round table.
• Provide training on indoor air quality for the construction industry:
  _ review the current training offer and then set up a specific training plan. Include modules on indoor air quality and noise in the energy performance (FEEBAT) training courses currently being developed for the construction industry;
  _ conduct regional information campaigns on indoor air and noise, targeting the construction industry (via the DREAL and the DDT);
  _ study ways of improving basic and continuing training on indoor air quality and noise in state schools [ENTPE [national school of public works], etc.].

There are many sources of pollution in buildings: glue-laminated softwood panels, foam, household cleaning products, etc.
These ecohouses, on display in Landrethun-le-Nord (62), are built with new, healthy and natural materials from the local area.

**ACTION 9**

**Better manage indoor air quality in public places**

**Leader:** DGPR

- Define indoor air quality management values by mid-2010 (decree in application of article L2 21-1 of the environment code), on the basis of the work done by the AFSSET and the HCSP.

**Leader:** DGPR
**Partners:** DGS, DGALN, Afsset, HCSP
**Tools:** regulations
**Means indicator:** enforcement of the management values decree

• Develop indoor quality monitoring in enclosed places open to the public, starting with schools and day-care centres (as per commitment 152 of the Grenelle Environment round table):

**Leader:** DGALN
**Partners:** INERIS, CSTB, Afsset
**Tools:** studies, OQAI actions
**Means indicator:** OQAI report

**Leader:** DGALN
**Partners:** DGS, INERES, Afsset, HCSP
**Tools:** studies, CRI actions
**Means indicator:** CRI report

**Leaders:** DGS, INPES
**Tools:** communication campaigns
**Impact indicator:** campaign evaluation results

• From 2011 onwards, gradually introduce a compulsory emissions labelling system, relating in particular to VOC and formaldehyde from building and decoration materials. This action builds upon and reinforces action 15 in the first NEHAP, which aimed to ensure that 50% of building products and materials were sold with a health and environmental label. Under the terms of both NEHAP 1 and NEHAP 2, this 50% objective must be reached by January 1, 2012 at the latest (as per commitment 151 of the Grenelle Environment round table).

**Leader:** DGALN
**Partners:** INERIS, CSTB, Afsset, HCSP
**Tools:** studies, OQAI actions
**Means indicator:** OQAI report

• the identification of indoor air quality determinants (substances to be considered and the contribution of different sources) and continue to improve knowledge of the level of indoor pollution. This last sub-action follows on from action 14 in NEHAP 1 (improve knowledge of indoor air quality determinants and tighten regulations).

**Leader:** DGALN
**Partners:** INERIS, CSTB, Afsset, DGPR
**Tools:** studies, OQAI actions
**Means indicator:** OQAI report

• Check the performance of new technological solutions in terms of indoor air quality.

**Leader:** DGALN
**Partner:** CSTB
**Schedule:** 2012

**Means indicator:** availability of the different guidelines and technical handbooks.

**Leader:** DGALN
**Partners:** DGPR, DGS, Ademe, CSTB, Ministry of Education, Ministry of Employment, Regional Councils
**Tools:** guidelines to help contract managers perform building acceptance tests, the first professional training modules, standards.
**Schedule:** 2012

**ACTION 9**

**Better manage indoor air quality in public places**

**Leader:** DGPR

- Define indoor air quality management values by mid-2010 (decree in application of article L2 21-1 of the environment code), on the basis of the work done by the AFSSET and the HCSP.

**Leader:** DGPR
**Partners:** DGS, DGALN, Afsset, HCSP
**Tools:** regulations
**Means indicator:** enforcement of the management values decree

• Develop indoor air quality monitoring in enclosed places open to the public, starting with schools and day-care centres (as per commitment 152 of the Grenelle Environment round table):

**Leader:** DGALN
**Partners:** INERIS, CSTB, Afsset
**Tools:** studies, CRI actions
**Means indicator:** CRI report

• the identification of indoor air quality determinants (substances to be considered and the contribution of different sources) and continue to improve knowledge of the level of indoor pollution. This last sub-action follows on from action 14 in NEHAP 1 (improve knowledge of indoor air quality determinants and tighten regulations).

**Leader:** DGALN
**Partners:** INERIS, CSTB, Afsset, HCSP
**Tools:** studies, OQAI actions
**Means indicator:** OQAI report

• Check the performance of new technological solutions in terms of indoor air quality.

**Leader:** DGALN
**Partner:** CSTB
**Schedule:** 2012

**Means indicator:** availability of the different guidelines and technical handbooks.

**Leader:** DGALN
**Partners:** DGPR, DGS, Ademe, CSTB, Ministry of Education, Ministry of Employment, Regional Councils
**Tools:** guidelines to help contract managers perform building acceptance tests, the first professional training modules, standards.
**Schedule:** 2012

**ACTION 9**

**Better manage indoor air quality in public places**

**Leader:** DGPR

- Define indoor air quality management values by mid-2010 (decree in application of article L2 21-1 of the environment code), on the basis of the work done by the AFSSET and the HCSP.

**Leader:** DGPR
**Partners:** DGS, DGALN, Afsset, HCSP
**Tools:** regulations
**Means indicator:** enforcement of the management values decree

• Develop indoor air quality monitoring in enclosed places open to the public, starting with schools and day-care centres (as per commitment 152 of the Grenelle Environment round table):

**Leader:** DGALN
**Partners:** INERIS, CSTB, Afsset
**Tools:** studies, CRI actions
**Means indicator:** CRI report

• the identification of indoor air quality determinants (substances to be considered and the contribution of different sources) and continue to improve knowledge of the level of indoor pollution. This last sub-action follows on from action 14 in NEHAP 1 (improve knowledge of indoor air quality determinants and tighten regulations).

**Leader:** DGALN
**Partners:** INERIS, CSTB, Afsset, HCSP
**Tools:** studies, OQAI actions
**Means indicator:** OQAI report
monitor air quality in 300 schools and day-care centres by 2012;
make this monitoring compulsory as of 2012 (in application of the Grenelle 2 bill).

Leader: DGPR
Partners: Aasqa, Ineris, Ademe, OQAI, DGS, local authorities, national education system, DGALN
Tools:
- call for proposals from the AASQAs for the first year of the pilot phase
- introduction of a technical management support system
- implementing decree for the Grenelle 2 bill: start of compulsory monitoring in 2012
- introduction of a certification system for monitoring organisations
Schedule: first campaign covering 150 schools and day-care centres in 2009-2010, second campaign in 2010-2011, compulsory monitoring as of 2012-2013.
Means indicator: monitoring of 300 schools by 2012

- Develop management support
  - produce guidelines for managing environmental and health signals in collective buildings (Ministry of Health and Sport, Institute for Public Health Surveillance);
  - set up national and local technical support structures to respond to “indoor air” crises (organise existing skills into a network, encourage the creation of audit teams specialising in the environmental health of buildings);
  - define indoor air quality indexes using tools tested during the schools and day-care centres campaign (OQAI studies);
  - develop tools to characterise indoor air quality, for the use of private individuals and housing stock managers (social housing, offices, syndicates of co-owners, etc.).

ACTION 10
Reduce asbestos exposure

Leader: DGS
Partners: DGALN, OQAI, LCSQA, Ineris
Tools:
- amendment of the public health code and of the construction code if necessary, Afsset survey in 2009
- put forward draft regulations in 2010
- inform managers
Schedule: 2011
Means indicator: modification of the regulations

• Change the trigger value for asbestos removal based on the Afsset report of February 9, 2009, taking into account the re-evaluation of background noise. Consult all the stakeholders – such as the national asbestos working group - before changing the legislation as necessary.

Leader: DGS
Partners: DGALN, cooperation between the national asbestos working group, Ineris, CSTB, Lepi
Tools: regulatory amendments (state council decree and implementing provisions)
Schedule: start updating legislation in 2009
Means indicator: enforcement of legislation

• Study the deterioration of materials emitting short asbestos fibres, in places such as public buildings where they are most subject to wear and tear. Use the results of this study to define appropriate management measures.

Leaders: DGALN, DGS
Partners: DGT, cooperation between the national asbestos working group, Ineris, CSTB, Lepi
Tools: regulatory studies and amendments (experimental studies)
Means indicator: publication of the study

• By 2011, tighten regulations on covered public swimming pools, especially in regard to ventilation. Launch a study and circulate an information leaflet on air quality and ventilation in swimming pools.

Leader: DGS
Partners: DGALN, OQAI, LCSQA, Ineris
Tools:
- amendment of the public health code and of the construction code if necessary, Afsset survey in 2009
- put forward draft regulations in 2010
- inform managers
Schedule: 2011
Means indicator: modification of the regulations

Leader: DGT
Partners: DGS, cooperation between the national asbestos working group, Ineris, CSTB, Lepi
Tools: regulatory amendments
Schedule: start updating legislation in 2009
Means indicator: enforcement of legislation

• Study the deterioration of materials emitting short asbestos fibres, in places such as public buildings where they are most subject to wear and tear. Use the results of this study to define appropriate management measures.

Leaders: DGALN, DGS
Partners: DGT, cooperation between the national asbestos working group, Ineris, CSTB, Lepi
Tools: regulatory studies and amendments (experimental studies)
Means indicator: publication of the study

• Change the occupational exposure limit value [OLEP] to include fine asbestos fibres.

Leader: DGS
Partners: DGALN, cooperation between the national asbestos working group, Ineris, CSTB, Lepi
Tools: regulatory amendments
Schedule: start updating legislation in 2009
Means indicator: enforcement of legislation

• Study the deterioration of materials emitting short asbestos fibres, in places such as public buildings where they are most subject to wear and tear. Use the results of this study to define appropriate management measures.

Leaders: DGALN, DGS
Partners: DGT, cooperation between the national asbestos working group, Ineris, CSTB, Lepi
Tools: regulatory studies and amendments (experimental studies)
Means indicator: publication of the study

• Study the deterioration of materials emitting short asbestos fibres, in places such as public buildings where they are most subject to wear and tear. Use the results of this study to define appropriate management measures.

Leaders: DGALN, DGS
Partners: DGT, cooperation between the national asbestos working group, Ineris, CSTB, Lepi
Tools: regulatory studies and amendments (experimental studies)
Means indicator: publication of the study

• Study the deterioration of materials emitting short asbestos fibres, in places such as public buildings where they are most subject to wear and tear. Use the results of this study to define appropriate management measures.

Leaders: DGALN, DGS
Partners: DGT, cooperation between the national asbestos working group, Ineris, CSTB, Lepi
Tools: regulatory studies and amendments (experimental studies)
Means indicator: publication of the study

• Study the deterioration of materials emitting short asbestos fibres, in places such as public buildings where they are most subject to wear and tear. Use the results of this study to define appropriate management measures.

Leaders: DGALN, DGS
Partners: DGT, cooperation between the national asbestos working group, Ineris, CSTB, Lepi
Tools: regulatory studies and amendments (experimental studies)
Means indicator: publication of the study

• Change the occupational exposure limit value [OLEP] to include fine asbestos fibres.

Leader: DGS
Partners: DGALN, cooperation between the national asbestos working group, Ineris, CSTB, Lepi
Tools: regulatory amendments
Schedule: start updating legislation in 2009
Means indicator: enforcement of legislation

• Study the deterioration of materials emitting short asbestos fibres, in places such as public buildings where they are most subject to wear and tear. Use the results of this study to define appropriate management measures.

Leaders: DGALN, DGS
Partners: DGT, cooperation between the national asbestos working group, Ineris, CSTB, Lepi
Tools: regulatory studies and amendments (experimental studies)
Means indicator: publication of the study

• Study the deterioration of materials emitting short asbestos fibres, in places such as public buildings where they are most subject to wear and tear. Use the results of this study to define appropriate management measures.

Leaders: DGALN, DGS
Partners: DGT, cooperation between the national asbestos working group, Ineris, CSTB, Lepi
Tools: regulatory studies and amendments (experimental studies)
Means indicator: publication of the study
According to an INRS survey, 4.8 million tons of CMR substances were consumed in France in 2005. Occupational health issues are addressed in a specific plan – the 2005-2009 occupational health plan – which was developed under the frame of NEHAP 1.

NEHAP 2 focuses on reducing occupational exposure to carcinogenic, mutagenic and reprotoxic substances, by defining measures to encourage and facilitate the substitution of toxic substances, and by promoting the development of alternatives to substances and agents that are notoriously difficult to replace (action 11).

This action builds on action 23 in NEHAP 1, which aimed to reduce occupational exposure to carcinogenic, mutagenic and reprotoxic (CMR) substances – such as wood dust, benzene and refractory ceramic fibres – by strengthening and modernising monitoring facilities and health and safety services in the workplace.

NEHAP 2 also underlines the need to step up occupational exposure monitoring (action 12) and, in particular, improve the prevention of risks deriving from CMR substances in waste.

ACTION 11
Develop measures to encourage and facilitate the substitution of toxic substances in the workplace, and promote the development of alternative processes
(as per commitment 137 of the Grenelle Environment round table)

Leaders: Afsset, DGT
Partners: INRS, CNAMTS, CRAM, professional federations and unions, industrial and technical centres, Ineris, Ademe
Tools: experience sharing via the Afsset website, implementation of agreements with professionals, European action plan to pool resources
Schedule: as of 2010
Means indicator: availability of the tools proposed

• Propose new measures to promote alternative processes, focusing in particular on substances and agents that are notoriously difficult to replace. Ensure the participation of research and technology transfer organisations (such as Oseos and industrial and technical centres), and concentrate primarily on substances and agents produced and used by small companies and on substances and agents produced in small quantities, which are not covered by the Reach regulation.

Leaders: depending on the project: Oseos, CTIs and competitiveness clusters to provide support for technological innovation projects, under the coordination of the Afsset (calls for research projects, calls for targeted research projects)
Partners: industrial research teams, Ineris, Ademe, DGIS
Tools: research programmes (ANR, calls for research projects or targeted research projects via the Afsset, support for competitiveness clusters)
Schedule: as of 2010
Means indicator: number of research projects effectively financed and the level of funds allocated to these projects.
• Analyse the socio-economic obstacles to effective substitutions (understand the mechanisms and stakes involved) and develop socio-economic analysis tools or indicators that will help to establish priorities.

**Leader:** DGT  
**Partner:** Afsset  
**Tools:** studies  
**Schedule:** 2010  
**Means indicator:** availability of studies

**ACTION 12**  
Reinforce occupational exposure monitoring  
→ **Leader:** DGT

• Test an occupational exposure monitoring system in 4 regions, based on the method specified in the Lejeune report. This experiment must comply with the objectives and management agreement drawn up by the occupational accidents and diseases branch of the health insurance fund for 2009-2012.

**Leader:** DGT  
**Partners:** Afsset, INVS, INRS, CNAMTS, MAP-SAFSL and CCMSA  
**Tools:** experiment  
**Schedule:** start in 2010  
**Means indicator:** monitoring systems established in 4 regions

• Improve the prevention of risks related to CMR 1 and 2 substances in the waste collection sector.

**Leader:** DGPR  
**Tools:** development and sharing of a general knowledge database, enabling the identification of the main CMR substances in waste through the use of hazardous waste production and disposal records; updating of the hazardous waste monitoring record.  
**Partners:** Afsset, Ineris, Ademe DREAL  
**Means indicator:** availability of the database

• Improve the prevention of risks relating to the occupational exposure of crop harvesters to phytosanitary products and wood dust.

**Leaders:** MAP-SAFSL and Afsset  
**Partners:** CCMSA, DGT  
**Tools:** inventory and improvement of protection levels for these workers.  
**Means indicator:** availability of studies

Some printers are taking steps to provide secure storage for hazardous liquids and to use more environment-friendly products.
IMPROVING HEALTH BY PROMOTING CLEANER MEANS OF TRANSPORT is a major environmental health objective. NEHAP 2 focuses on the following points:

• Take into account the health impact of different means of transport.

• Promote alternative non-motorized transport. The health benefits of regular physical exercise have been proven, especially in terms of life expectancy and mobility in the elderly. Therefore, alternative and soft modes of transport (walking, cycling, skating) should be encouraged. It is essential to promote and raise awareness of alternative means of transport, notably for the journey to and from school. The goal is to encourage physical exercise and to get the message across to sedentary populations. In this respect, NEHAP 2 is largely based on the national action plan for prevention through physical exercise and sport (PNAPS)12. The development of alternative and soft means of transport must go hand in hand with the improvement of road safety. A road safety plan has just been drawn up, which aims to decrease the number of people killed in road accidents to less than 3,000 a year by 2012. This plan contains measures to enhance the safety of infrastructures, pedestrians and cyclists.

• Reduce unitary emissions from each means of transport. Atmospheric pollution can cause respiratory tract illness (bronchiolitis, rhinopharyngitis), asthma attacks and eye, nose and throat irritation, but it can also lead to an increase in cardiovascular morbidity and mortality. According to a Citepa study (conducted in February 2008), the transport sector accounts for 59% of NOx emissions, 20% of PAH emissions, 13% of PM10 emissions and 19% of PM 1 emissions13.

• Reduce the noise pollution generated by transport. Various studies have shown that noise in general may have a very negative impact on the health, especially through poor quality of sleep and increased stress. In France today, 100,000 dwellings around 10 major airports are exposed to high levels of noise, along with about 200,000 close to roads and 60,000 to 70,000 along the national rail network (estimate currently being verified as part of the census of transport noise black spots). In accordance with the recommendations issued by operating committee 18 of the Grenelle Environment round table, nuisances must be better managed at source through modernisation and noise prevention measures. 8,000 homes are sound-proofed every year, and this figure must be increased. The overall objective is to remove the most health-hazardous noise black spots within 5 to 7 years.

• Improve the health and comfort of transport users and workers. The health impact of road accidents is not covered by this plan, as a specific plan already exists on the subject. These measures comply with health and transport objectives and, in particular, with the statement issued by EU member state ministers and representatives and the WHO at a meeting in Amsterdam on January 22 and 23, 2009. The commission for the environment and sustainable development participated in drafting these measures on transport, and issued a report on the health and transport plan on February 12, 2009.

Global leader: DGITM
Global indicators:
 IMPLEMENT action plans to develop non-motorized transport and better organise transport in urban areas.
 _reduce the contribution of transport to overall atmospheric emissions.
 _remove noise black spots due to transport.
ACTION 13
Take into account the health impact of different means of transport
→ Leader: DGITM

• Implement the commitments made at the Grenelle environment round table on this subject, and evaluate the implementation process on the basis of quantitative objectives.
• Assess the health impact of transport infrastructures and systems.
• Take into account the health impact of transport infrastructures and systems in assessment and decision-making processes.
• Ensure cohesion between different local plans and create eco-comparators.

Leader: DGITM
Partners: DGALN, Ademe, DGS, CGDD, DGPR
Tools: allocate funds for research and studies, develop methods to evaluate the health impact of different transport modes, ensure that the energy, environment and transport observatory takes health problems into consideration, ensure that health impacts are taken into account in the national transport system (SNIT).
Schedule: proposal currently being drafted under Predit 4, regarding point 2
Means indicator: research and study funds effectively allocated

ACTION 14
Promote alternative and soft forms of transport
→ Leader: DGS

• Encourage alternative means of transport by developing safe pedestrian and cyclist areas, introducing a “Street Code” and creating mixed pedestrian/low-speed vehicle areas (pedestrian priority zones); make urban cycling routes safer, and assess article L 228-2 of the environment code (compulsory creation of cycling routes).

Leader: DGITM, DGS
Partners: Ministry of the Interior, Certu, CBDD, Ademe, DGPR, DGALN
Tools: application of the Grenelle 2 bill, support and awareness programme, amendment of legislation [art. 28 of the framework law on inland transport (LOTI)], soft transport section in public contract specifications
Schedule: length of the plan
Means indicator: reduction in the number of fatal cycling accidents

ACTION 15
Reduce the noise pollution generated by transport
→ Leader: DGPR

• Encourage alternative means of transport by developing safe pedestrian and cyclist areas, introducing a “Street Code” and creating mixed pedestrian/low-speed vehicle areas (pedestrian priority zones); make urban cycling routes safer, and assess article L 228-2 of the environment code (compulsory creation of cycling routes).

Leader: DSCR, DGS
Partners: Certu, Dicom, DGITM, DGALN, SG DRI, cycling associations
Performance indicator: reduction in the number of fatal cycling accidents

• Remove noise black spots
within 5 years by implementing the noise reduction plan financed by the Ademe, the DREALs and the DDEs, and by progressively applying the polluter pays principle; study the possibility of including locally-managed road networks in the sound-proofing assistance scheme for dwellings
that are highly exposed to traffic noise (as per commitment 153 of the Grenelle Environment round talks).
• Limit the noise made by road and rail traffic and infrastructures, by reducing noise at the source and by more effectively addressing the issue of noise in infrastructure impact studies.
• Finance pending applications for home soundproofing and facilitate the application process; improve information on the soundproofing scheme.

Leaders: DGPR, Ademe
Partners: DGITM, DGAC, DSCR, DGS, Setra, Certu, Ademe, Ministry of the Interior, infrastructure operators and managers, Predit, DREAL, DDEA
Tool: implement the noise reduction plan through fund assistance from the Ademe and the Ministry of Sustainable development; in the medium-term, conduct a feasibility study for an economic tool that better reflects the polluter pays principle; update infrastructure impact study methods, so that noise pollution is addressed more effectively.
Schedule: first funds for the noise reduction plan in 2009
Performance indicator: number of dwellings soundproofed and amount of funds allocated.

ACTION 16
Improve the health and comfort of transport users and workers
Leader: DGPR

• Limit airport noise by reducing the noise generated by aircraft, stepping up the fight against nocturnal airport noise in urban areas, developing networks to monitor noise from civil airports not covered by the ACNUSA in order to improve knowledge of noise exposure, studying (on a case by case basis) the possibility of introducing operating restrictions on light aircraft aerodromes and heliports, and encouraging the development of noise reduction charters (as per commitments 154 and 156 of the Grenelle Environment round table).

Leader: DGAC
Partners: managers and manufacturers
Tool: a decree will soon be adopted to increase the rate of aid for properties adjacent to airports to 95%, under the frame of collective operations. Discussions are ongoing with a view to improving the scheme (by paying the service providers so that property owners do not have to advance the funds).

Schedule: 2009
Means indicator: publication of studies
Performance indicator: positive improvement in air quality in underground public transport systems

• Improve the health and comfort of transport sector workers by improving knowledge of risk exposure on infrastructure construction and maintenance sites, and by reducing exposure to noise and vibrations.

Leaders: Setra, DGITM
Partners: DGS, DGTR, DGPR, DRAM, CSN, IMP, SSGM
Tools: studies, research
Schedule: 2009
Means indicator: availability of studies, amount of research on noise and vibrations.
AS CHILDREN’S BODIES ARE STILL DEVELOPING, THEY ARE PARTICULARLY VULNERABLE TO AGGRESSIVE EXTERNAL FACTORS. In fact, their vulnerability to toxic substances is very high at some stages of development (the time of exposure determines the toxic effect). Early exposure can have a lifelong impact in the form of disturbed functions, chronic diseases and more long-term conditions such as cancer. Therefore children, pregnant women and women of child-bearing age must be protected from early exposure to chemical substances. This protection must begin as soon as a child is conceived, as foetal exposure via the mother may be extremely high in relation to the weight of the foetus.

NEHAP 1 proposed stronger measures to protect pregnant women and preserve male fertility, especially in the workplace (action 24).

NEHAP 2 goes further, in that it targets the whole population and aims to reduce the exposure of children, pregnant women and women of child-bearing age to the most hazardous substances (action 17). In particular, it aims to improve the management of risks associated with endocrine disrupters (action 18).

Action 19 aims to reduce exposure levels in buildings housing children by identifying – by 2013 – vulnerable establishments built on potentially polluted sites, and assessing the risk in order to define and implement management plans if necessary.

Finally, NEHAP 2 proposes measures to improve knowledge on the exposure of vulnerable people and on the health impact of this exposure (action 20), and to ensure that the particular vulnerability of children, pregnant women and women of child-bearing age is more effectively taken into account in risk assessment procedures (action 21).

Global leader: DGS
Global indicators:
- tighter control of substances, mixtures and items marketed in France, especially those designed for the use of children
- implementation of a joint Inserm study on reprotoxic substances and endocrine disrupters, and of an information campaign
- identification and management of day-care centres and schools built on polluted sites, and monitoring of air quality in 300 day-care centres and schools
- implementation of campaigns on the risks of listening to loud music

ACTION 17
Reduce the exposure of children, pregnant women and women of child-bearing age to the most hazardous substances

• Step up the fight against lead exposure by guaranteeing the quality of prevention measures, eliminating sources of damp (particularly in the home), providing non-specific accommodation for families while work is being carried out, improving knowledge of exposure sources other than paint, and implementing the Inserm’s screening recommendations.

• Conduct a survey to verify the quality of lead exposure risk assessments (CREPs).

Leader: DGS
Partners: DGALN, DGT, Ministry of Justice
Tools: assessment of the quality of CREPs, site inspection campaign, updating of technical guides.
Schedule: 2010-2012
Performance indicator: reduction in the incidence of lead poisoning (public health law indicator)

- Reduce the exposure of children and pregnant women to substances of concern.
- Reinforce the testing and traceability of substances, mixtures and items marketed in France (as per commitment 146 of the Grenelle environment round table):
  _by developing targeted test campaigns, focusing especially on children’s products (toys, woven fabrics and bonded fibre fabrics) and cosmetics. These campaigns should be coordinated by the different testing bodies;
  _by adopting an ambitious policy to increase French submissions to the Reach authorities, with a view to reducing the use of the most toxic substances;
  _by assessing the risk to vulnerable populations of CMR substance or impurity residues at concentrations below the classification threshold (0.1% for carcinogenic and mutagenic substances and 0.5% for reprotoxic substances);
- depending on the results of these assessments, suggest lowering the classification threshold for reprotoxic substances on a case-by-case basis (the current threshold is 0.5%, and the future globally harmonised system (GHS) should change it to 0.3%).

Leader: DGPR
Partners: DGS, Afsset, DGCCRF/Customs, DGT, Afsaps
Schedule: continuous action throughout the plan
Means indicator: number of campaigns conducted, number of substances submitted by France to the Reach authorities, number of substances regulated under Reach

- Evaluate substances that have already been classified as carcinogenic, mutagenic or toxic to reproduction by the International Agency for Research on Cancer (IARC), but which the European Union has classified as only liable to be carcinogenic, mutagenic or toxic to reproduction (CMR 3 substances). The goal of this evaluation is to suggest moving certain substances, such as formaldehyde, into the CMR 1 or 2 category. Changing the classification of a substance is an effective means of subjecting it to strict European regulations and making sure that it is restricted under the Reach regulation (as per commitment 143 of the Grenelle environment round table).

Leader: DGPR
Partners: DGT, DGS
Tools: study and CLP classification
Means indicator: studies conducted on at least 2 substances

ACTION 18
Better manage the risks associated with reprotoxic substances and endocrine disrupters
→Leader: DGS

- Conduct a joint Inserm study on the mutagenesis and reprotoxicity of CMR 3 substances, whose effects on humans and animals have not been proven, but which are suspected of having a CMR effect (as per commitment 143 of the Grenelle environment round table).
- Re-assess the risks presented by cosmetics during pregnancy and early childhood, in cooperation with the AFSAPS (French health products safety agency);
- Insert information in the “carnet de maternité” (maternity record book) on the potential risk of using these products during pregnancy.
- Participate in the development and implementation, in Europe,
of tests to define the endocrine-disrupting effect of a substance.

• Have the INPES (National Institute for Prevention and Health Education) conduct an information campaign targeting the general public, women who are pregnant or liable to be pregnant, and health professionals such as paediatricians, gynaecologists, obstetricians and midwives. This campaign should emphasise the potential dangers of using certain chemical substances during pregnancy, especially those identified by the joint Inserm study.

**Leader:** DGS  
**Partners:** Inserm, health safety agencies, DGPR, Inpes, DGAL  
**Tools:** joint study and information campaign  
**Schedule:** 2010  
**Means indicator:** implementation of an information campaign and of the different studies proposed, adoption of endocrine disrupter tests.

**ACTION 19**  
Reduce exposure levels in buildings used by children  
→**Leader:** DGPR

• Improve the quality of buildings and structures used by children over long periods of time; make it compulsory to use low-emitting products in these buildings and places, and train construction workers to this effect.

**Leader:** DGALN  
**Partners:** National education system (schools), Ministry of Family Affairs (day-care centres), local authorities, DGS, DGPR, CSTB, Afsset  
**Tools:** development of Afsset/CSTB specifications to advise contract managers on building new schools and day-care centres; production of technical guides; amendment of legislation (updating of the government procurement code)  
**Schedule:** 2013  
**Performance indicator:** see the overall performance indicator for sheet 3

• By 2013, identify vulnerable establishments that are built on potentially polluted sites, assess the risk and define and implement management plans if necessary.

**Leader:** DGPR  
**Partners:** National education system, BRGM, DGS, INVS, MAP (agricultural training)  
**Tools:** crossing of Basias databases and census of schools, coupled with on-site analyses.  
**Schedule:** end of 2011  
**Means indicators:** number of establishments identified, number of management plans defined by 2013.

• In conjunction with action 9, monitor the air quality in 300 schools by 2012, and then perform periodic monitoring of these establishments.

• Improve the indoor acoustics [sound absorption] of the most vulnerable places used by children [rest rooms in day-care centres and nursery schools, canteens] and, wherever possible, bring the noise level down to 35 dB(A) by agreeing to pay 50% of the tax-exclusive cost of the work and of the acceptance tests.

**Leader:** DGPR, national education system  
**Partners:** local players, DGS, DDASS, ARS, DGALN  
**Means indicator:** number of establishments benefiting from financial aid to carry out work.

**ACTION 20**  
Ensure that the greater vulnerability of children, pregnant women and women of child-bearing age is better taken into account when assessing risks  
→**Leader:** DGS

• Define methods for specifically taking into account the dangers of chemical exposure for children, pregnant women and women of child-bearing age, in chemical risk assessment procedures. These methods should be defined jointly by health safety agencies, and submitted to the European authorities.

**Leaders:** Afsset, Afssa  
**Partners:** DGS, DGPR, Afssaps, DGAL  
**Tool:** expert assessment  
**Schedule:** 2011  
**Means indicators:** availability of the expert assessment, memorandum on the methods for specifically taking into account the dangers of chemical exposure for children, pregnant women and women of child-bearing age in risk assessment procedures.

**ACTION 21**  
Step up efforts to prevent hearing disorders and acoustic trauma caused by listening to very loud music

**Leader:** DGS  
**Partners:** Inpes, National education system  
**Schedule:** 2011–2013  
**Tools:** national and local communication campaigns, strengthening of legislation enforcement checks  
**Means indicator:** number of campaigns performed.
Some people are particularly vulnerable to environmental imbalances because of their state of health, especially those with cancer or at risk of cancer, and those with allergies and potentially environment-related diseases. NEHAP 2 does not propose any specific measures for people with cancer or with a high risk of cancer, as these are covered by the second cancer plan.

Furthermore, it has been observed that food allergies increase simultaneously with inhaled pollen allergies and that they are no doubt connected. In fact, more and more cross-reactivity phenomena are being encountered between allergens from different sources. In some cases, these sources are even quite divergent, for example birch trees and fruit (apples, hazelnuts, etc.). It is therefore important to manage pollen allergies more effectively (action 22). This action builds on action 27 in NEHAP 1 (information campaign and continuation of the national aerobiological surveillance network).

Finally, in order to reduce these health inequalities between different population groups, specific strategies should be developed for people with potentially environment-related diseases. They need to be informed of the steps that they can take to stop their health getting worse, and further clinical research must be performed into the determinants of their state of health (actions 23 and 24).

Global leader: DGS
Global indicators:
- limitation and reduction of the ragweed growth area
- recruitment of healthy housing advisors
- creation of experimental care units, and of clinical research and environmental health education programmes.

Action 22
Prevent allergies

Leader: DGS

• Reduce the risks associated with pollen exposure, by monitoring the pollen index, informing allergic people of exposure risks at an early stage and informing the public and the local authorities of the allergenic potential of certain species.
• Control the spread of ragweed by ensuring that politicians, transport infrastructure managers and private individuals are aware of efforts to do so and that they are familiar with the most effective control measures, and by regulating certain control measures and encouraging European coordination to optimise efficiency.
• Step up research into the relationship between pollen allergies and food allergies, and support research and innovation leading to the development of preventive treatments for pollen allergies.

Leader: DGS
Partners: RNSA, local players, DGPR, DGITM, Setra, DGAL, National Botanical Conservatory
Tools: information campaigns, development of a ragweed map
Schedule: from 2010
Means indicator: number of information campaigns, availability of the ragweed map

15 to 20% of the French population are allergic to pollen. While the first symptom of pollinosis is rhino-conjunctivitis, it very quickly leads to tiredness, loss of concentration, absence from school or work and, in some cases, asthma.
ACTION 23
Recruit healthy housing and indoor environment counselors
→ Leader: DGPR

• Issue a call for projects to create government-subsidised jobs for counselors able to pay home visits to asthma or allergy sufferers for example, and suggest targeted measures to improve their environment.

Leaders: DGS, DGPR
Partners: local authorities, healthcare facilities, associations
Schedule: 2010
Means indicator: 10 indoor environment counselors recruited between 2010 and 2013, co-funded by the Ministry of Sustainable Development; evaluation of the action (review of the costs/benefits of these counselors)

ACTION 24
Improve the care of patients with potentially environment-related diseases
→ Leader: DGS

• Test inter-hospital healthcare, clinical research and environmental health education centres, along the same lines as the occupational disease consultation centres. Start by issuing a call for projects, and then assess the added value of these structures (as per commitment 142 of the Grenelle environment round table)

Leader: DGS
Partners: healthcare facilities, university hospitals, universities, DGPR, DGT
Tools: tests in 2010, definition of specifications for 2011, call for projects
Schedule: 2011
Means indicator: specifications

• Improve the care of people who are hypersensitive to environmental factors and to electromagnetic waves in particular, by developing appropriate treatment protocols, informing health professionals and developing research.

Leader: DGS
Partners: AP HP, Ineris, learned societies
Means indicator: availability of treatment protocols
HEALTHY HOUSING IS A UNIVERSAL RIGHT. Yet it is estimated that around 400 to 600,000 privately-owned, permanent dwellings in this country are substandard. 50% of these dwellings are owner-occupied, and 50% are rented out.

Substandard housing is defined as any premises or dwelling that is unfit for purpose, or any residential unit (or building containing such units) which clearly infringes the physical safety or health of the occupants. Substandard housing still exists in France, although a number of financial initiatives, law enforcement measures and criminal penalties have been introduced to encourage or oblige property owners to comply with health and safety standards. Therefore the Prime Minister, in a circular issued on February 22, 2008, announced his decision to step up the fight against substandard housing and to make it a clear government priority.

Urgent steps must be taken to reinforce and develop the national programme to combat substandard housing (action 25), to prevent the emergence of new health hazards such as overcrowding (action 26) and to develop targeted social support measures (action 27). These actions reinforce action 19 in NEHAP 1 (which tasked the public authorities to clean up 20,000 substandard housing units a year), by extending it to include “unfit” housing and by defining social support measures. They go hand in hand with the unfit housing eradication plan (Council of Ministers of October 17, 2001), the action plan against slumlords (circular of November 14, 2007) and the social cohesion plan (Council of Ministers of June 30, 2004).

Global leader: PNLHI (national programme to combat substandard housing)
Global indicator: number of unfit dwellings dealt with

**ACTION 25**
Reinforce and develop the national programme to combat substandard housing
-> Leader: PNLHI

- **Set up district-level organisations to combat substandard housing across France**, and create a dedicated task force. Encourage public establishments for inter-municipal cooperation (EPCIs) and municipalities that are legally bound to develop a local housing programme (PLH) to sign a protocol against substandard housing. Promote the development of a municipal hygiene and health service (SCHS) in all municipalities with more than 20,000 inhabitants. These district-level organisations will have an ambitious goal, i.e. to meet the national objective of cleaning up 20,000 substandard housing units a year.
- **Set up a substandard housing observatory in each district** under the frame of the district-level housing programme for disadvantaged people. This will identify the exact number of dwellings to be dealt with, and the number of dwellings cleaned up every year; the resulting data will be consolidated nationally as per article 95 of the law of March 25, 2009.
- **Certify organisations to conduct substandard housing surveys**, in order to increase the number of prefectoral orders or injunctions issued and the number of reports submitted to the public prosecutor, and hence reinforce law enforcement by central and local government.
- **Quantify the number of dwellings that pose a health risk, and identify and describe their occupants** by consulting the general population census (RGP), the national housing survey, the INPES health survey and the land and property classification system.
**ACTION 26**
Prevent health hazards due to overcrowding

> **Leader:** Ministry of Sustainable Development

- Based on an analysis of local demand [estimated according to the number of DALO appeals, the number of cases reported by child benefit funds and the number of police interventions], the PDALPD will define quantified, regional objectives for the building of large social housing developments, to be funded by subsidized loans (PLAIs). Reports to the public prosecutor of the excessive sub-division of large dwellings may also be used.

**ACTION 27**
Develop targeted social support measures

> **Leader:** DGAS

- Provide assistance for families and improve parents’ ability to cope with the health effects of substandard housing and overcrowding by facilitating family holidays, increasing accommodation capacity for children, providing support for parenthood and setting up community health development processes (urban health workshop, educational success, etc.).

**NOTES from page 45**

14 CThis definition comes from article 85 of the law of March 25, 2009, which introduced it into the so-called Besson law of May 31, 1990.

15 Application of article 60 of the National Commitment to Housing Act of July 13, 2006.
THE OBJECTIVE OF GUARANTYING MULTIPLE ACCESS TO DRINKING WATER MUST BE RE-EMPHASISED and must take into account the diversity in local situations. In fact, the production and distribution of drinking water (18.5 million cubic meters of water a day from almost 30,000 abstraction points) is highly uneven: almost 5% of water harnessing points are superficial, yet they account for one third of the drinking water supply, mainly for urban areas. The first NEHAP (2004-2008) set a target of protecting 80% of harnessing points by 2008 and 100% by 2010.

THE FIRST LINE OF ACTION is to effectively protect the resource (action 28), primarily by defining protected area boundaries and implementing shared action through the creation of local, jointly-managed protection areas.

THE SECOND LINE OF ACTION is to implement measures to reduce the levels of hazardous substances in water (action 29) and, more generally speaking, the release of substances that could, potentially, end up in the water, for example PAHs, nitrates, pesticides and some of the most toxic chemical substances. A plan for controlling levels of medication and health product residues in the water will be drawn up. This plan may subsequently be extended to include cosmetics. The development of technologies not supported by the market will be encouraged. With regard to the disposal of wastewater from French cities, an action plan was launched on September 14, 2007, to ensure that 98% of French agglomerations comply with the urban wastewater directive by the end of 2010.

THE THIRD LINE OF ACTION is to control the quality of distributed water (action 30). This is a very important action, as water can be contaminated with chemical and microbiological pollutants. The aim is to eliminate hazards due to Legionella, disinfection by-products, microbiological contamination and new uses of water.

THE FINAL LINE OF ACTION is to sustainably manage water availability (action 31). The harmonisation of the clean-up policies required under the water framework directive, and that of policies relating directly to drinking water, should result in interoperable monitoring data and the creation of a water clean-up and quality observatory, which will also monitor the reduction in access inequality.

Global leader: DGS
Global indicators:
- Protect the catchment areas of the 500 most threatened water harnessing points
- Implementation of the plan for controlling the risk from medication and health product residues
- Creation of the water clean-up and quality observatory
**ACTION 28**
Effectively protect water within protected area boundaries and within the catchment areas of abstraction points (as per commitment 101 of the Grenelle environment round table)

→ Leader: DGS

- Effectively protect water harnessing points by optimising protection tools (protected area boundaries), protecting the catchment areas of the 500 most threatened harnessing points by 2012 (as defined at the Grenelle environment round table), improving governance systems by setting up appropriate local structures, and cleaning up out-of-use abstraction points.
- Cross the list of sites which, historically, are potentially polluted, with the list of water abstraction points, in order to prioritise actions for 2010.

Leaders: DGS (point 1) and DGPR (point 2)

Partners: DEB, DGPAAT, DGS, DGPR, local leaders (to be established), water boards, local authorities, association of French mayors, agricultural and industrial trade associations, water sector professionals.

Schedule: 2010-2013

Means indicators:
- number of protected catchment areas,
- number of appropriate local structures created,
- availability of the list of harnessing points located on potentially-polluted sites,
- development (by the BRGM) of a tool for crossing the lists of harnessing points and potentially polluted sites,
- availability of the DDASS (district health and social services offices).

**ACTION 29**
Reduce the levels of certain substances in the aquatic environment

→ Leader: DEB

- Reduce input from urban sewage systems by ensuring that they comply with standards, in accordance with the ministerial commitment of September 14, 2007. Reduce input from non-collective wastewater treatment and from surface run-off.
- Reduce input from industrial and agricultural facilities, in conjunction with action 5.

Leaders: DEB et DGS

Partners: Afset, Afssa, Onema, local authorities, water companies

Schedule: sewage treatment plants must be brought up to standard before the end of 2012, which is an extremely ambitious objective to meet in such a short period of time (five years in all).

- Reduce input from private individuals and communities by limiting pesticide emissions and banning the use of phosphates in all detergent products (as per commitment 105 of the Grenelle environment round table).
- Identify and reduce human and animal medication residues, followed by cosmetics residues (see action 47).
• Identify and reduce the input of substances from surface run-off (PAHs in particular).
• Set up a task force to identify pollutants that are critical from the health and environmental points of view, by developing synergies with other environmental policies and promoting the development of technologies not supported by the market.

Leaders: DG5, DEB
Partners: Onema, Afsset, Ineris, Afssa, DGPR, Ministry of Agriculture
Means indicator: enforcement of laws, availability of the surface run-off study

ACTION 30
Control the health quality of distributed water
→ Leader: DG5

• Better investigate clusters of legionnaires’ cases, prevent the occurrence of legionnaires’ disease due to domestic hot water networks, and continue with research.
• Make sure that water supplies across France meet microbiological criteria, while limiting human exposure to chlorination by-products.
• Make sure that the public drinking water network is not contaminated by monitoring emerging substances, testing samples from private water distribution systems (based on wells, boreholes and rainwater), and improving the assessment of health risks due to the re-use of household wastewater and rainwater.

Leader: DG5
Partners: DEB, Afssa, INVS, Afsset, water and sewage companies, INSERM, EHESP, Pasteur Institute, National Alliance for Life and Health Sciences
Performance indicator: see global indicator above. Decrease the number of cases of legionnaires’ disease, while continuing to reinforce the monitoring system.

ACTION 31
Sustainably manage water availability
→ Leader: DEB

• Improve the quantitative management of water resources, by developing a water saving culture, reducing leaks from drinking water supply networks and using alternative resources (such as rainwater and treated wastewater) in areas where there is an established shortage of drinking water, while protecting the health and safety of users and of the surrounding population.
• Improve the replenishment of underground water supplies, by facilitating the infiltration of rainwater into the ground, using unconventional water resources, taking account of water renewal capacities and water flow sustainability and building inter-seasonal storage facilities for replenishment purposes.

Leaders: DEB, water boards
Partners: distributors, district authorities, industries, Afsset, Afssa, INVS, BRGM, Ineris, Onema, DG5, DGPAT
Means indicator: establishment of the observatory

NOTE from page 48
The use of phosphates has been banned in fabric detergents for domestic use since July 1, 2007. The Grenelle 1 bill amends article R 211.64, to extend this ban to all detergents (including industrial detergents) from 2012.
THE DEGREE OF ENVIRONMENTAL DEGRADATION DIFFERS FROM REGION TO REGION IN FRANCE.
In some geographic areas, the environment has been strongly impacted by present and past human activity. These areas, where exposure to environmental factors is very high, are sometimes known as environmental black spots and require priority attention.

These areas must be taken into consideration when defining government measures, so that they are better targeted and more effective. Steps must also be taken to identify and deal with areas that are likely to generate overexposure to toxic substances or pollutants (action 32), perform health and environmental monitoring after accidents (action 33), reinforce the management of polluted sites and soils (action 34) and rehabilitate or manage contaminated areas, especially overseas (action 35). Action 35 prolongs action 12 in NEHAP 1 (prevent and reduce specific risks arising from mercury exposure in Guyana and pesticide exposure in Guadeloupe and Martinique).

Global leader: DGPR
Global indicator: number of area studies implemented

ACTION 32
Identify and deal with areas that are over-exposed to toxic substances
Leader: DGPR
- By 2013, identify the main areas in which over-exposure is likely and reduce the levels of contamination there. Monitor the environment in these areas, develop geographic information systems and ensure that environmental and health databases are interoperable and accessible to the public.
- Develop tools for measuring the number of people affected by non-compliant air quality.

Leaders: DGPR, DGS
Partners: DRIRE, DDASS, DGECE, Onema, Ademe, Ineris, DGRI, DGECE, INVS
Schedule: 2013
Means indicators: number of areas identified as black spots, number of area studies conducted, availability of tools; for point 3, amount of research funds allocated.

ACTION 33
Improve prevention measures and control the health and environmental impact of accidents
Leader: DGPR
- Develop tools for monitoring the health and environmental impact of industrial or natural disasters.

ACTION 34
Reinforce the management of polluted sites and soils
(as per commitments 241 and 242 of the Grenelle environment round table)
Leader: DGPR
- Increase by one quarter the funds allocated to rehabilitating polluted sites under neglectful management.
- Finalise the list of potentially
polluted sites, by comparing existing soil quality databases.

• Rehabilitate out-of-use service stations, which are sources of pollution (250 a year until 2013), in concert with local authorities and trade associations.
  
  Leader: DGPR
  Partners: Ademe and Andra
  Schedule: continuous action
  Means indicator: budget effectively allocated to the management of polluted sites and soil.

• In conjunction with action 19, identify sensitive establishments built on potentially polluted sites, and assess the risk. If necessary, define and implement management plans and cross the list of sites which, historically, are potentially polluted, with that of water catchment areas in order to prioritise actions for 2010.

ACTION 35
Rehabilitate or manage contaminated areas, especially overseas
  
  Leader: DGS

• Develop a strategy for managing the rehabilitation of waterways and coastal areas containing contaminated sediments, notably through the implementation of the PCB plan.

ACTION 36
Assess the health impact of the different waste management methods
  
  Leader: DGPR

• On this point, NEHAP 2 refers to the recommendations of operational committee 22 of the Grenelle environment round table, i.e.: collect data on recycling waste, uncontained and deferred emissions from storage and composting facilities and long-term transfers; increase knowledge of the characteristics of waste and by-products, and of their development; carry out environmental health monitoring and metrology actions accordingly (long-term environment observatories, etc.); develop toxicological and eco-toxicological knowledge; conduct regular epidemiological reference studies and absorption studies.
  
  Leader: DGS
  Partners: prefecture, Ministry of Overseas Territories and Local Authorities
  Means indicator: mercury plan in Guyana

• Prepare a strategy for managing the rehabilitation of waterways and coastal areas containing contaminated sediments, notably through the implementation of the PCB plan.

ACTION 37
Assess the health impact of the different waste management methods
  
  Leader: DEB
  Partners: DGS, BRGM, Onema, Ademe
  Means indicator: availability of surveys on sludge and sediments

• Ensure the implementation of the chlordecone plan in the West Indies, to manage soil and plant contamination (as per commitment 179 of the Grenelle environment round table).

  Leader: DGPR

• Reinforce the mercury pollution prevention plan in Guyana, through the expert participation of health safety agencies.

  Leader: DGS
  Partner: copil chlordécone
  Means indicator: results of the chlordecone plan in 2010

• Improve knowledge of flows and practices and define ad hoc disposal and recycling procedures for sewage sludge, clearing sludge, process sludge and dredging sediments.

• Lay the groundwork for an initiative to analyse the health and environmental impact of marine, river and limnic sludge and sediments, by drawing up a list of the main substances targeted by the initiative, developing and testing the necessary protocols and improving the management of sediments on the ground.

  Leader: DEB
  Partners: DGS, BRGM, Onema, Ademe
  Means indicator: availability of surveys on sludge and sediments

• Ensure the implementation of the chlordecone plan in the West Indies, to manage soil and plant contamination (as per commitment 179 of the Grenelle environment round table).

  Leader: DGPR

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  Leader: DGPR
  Partners: DGS, BRGM, Onema, Ademe
  Means indicator: availability of surveys on sludge and sediments
As indicated in the report published by operational committee 18 of the Grenelle environment round table, FRENCH PEOPLE RATE NOISE AS THE BIGGEST SOURCE OF NUISANCE IN THEIR HOMES, WITH 80% OF THEM PUTTING TRAFFIC NOISE FIRST.

In addition to the discomfort caused, the stress generated by noise affects attitudes, social behaviour and intellectual performance. Noise exposure is difficult to evaluate, as it has several sources (work, leisure, transport, home). However, we do know that it causes measurable physiological disorders.

While the impact of high noise levels (above 85 dBA) on the hearing no longer has to be proved, it also appears that exposure to lower levels, particularly at night, affects the quality of sleep. Not only do these disturbances lead to tiredness, drowsiness and a drop in concentration, but they also increase the risk of cardiovascular disease and may affect the immune system.

Given the health effects of noise exposure, it should be considered as a health determinant rather than just a factor in quality of life.

NEHAP 2 addresses the main issues identified in this report, to ensure that the measures taken are commensurate with the stakes involved.

ACTION 37
Incorporate the fight against noise pollution into a global strategy

Leader: DGPR

- Make sure that new buildings are adequately sound-proofed, and increase the responsibility of construction financing agencies for the acoustic performance of buildings.
- Take acoustic performance into account when carrying out work to improve energy efficiency. Make sure that such work is compatible with soundproofing requirements.

Leader: DGALN

- Focus resources and action on homogenous areas affected by noise, along the same lines as housing improvement programmes (OPAH). Study the possibility of 100% financing for work needed to prevent air traffic noise. Study the possibility of combining noise subsidies with other financial aid for adjacent owners (ANAH grants, tax credits, etc.).

Leader: DGPR

Partners: Ademe, DGITM, DGALN

- In conjunction with action 15, continue research to assess the accumulated impact of road, rail and air traffic noise.

Leader: DGPR

Partners: DGALN Ademe DGITM
ACTION 38
Reinforce the noise police

Leader: DGS

• Reinforce the noise police by evaluating the application of the circular of May 23, 2005 relative to the implementation of the national action plan against noise. If necessary, reinforce the application of this circular. Train local authority employees in how to reduce neighbourhood noise.

Leader: DGS
Means indicator: number of people trained

ACTION 39
Develop tools for assessing the health impact of noise

Leader: DGPR

• Conduct a review of noise exposure in France and assess the health and economic impact of noise (sleep disorders, loss of concentration, loss of hearing, etc.).
• By 2012, develop noise observatories in major cities, in accordance with the policies adopted by the local authorities (in a dedicated building, attached to another building, etc.). The Ademe should issue a call for projects in 2009, in view of building these observatories with the financial assistance of the Ministry of Sustainable Development (as per commitment 158 of the Grenelle environment round table).

Leaders: DGS (point 1), DGPR (points 2 and 3)
Partner: Ademe
Means indicators: availability of studies, creation of at least 24 noise observatories.

• Draw up specifications for the observatories (data distribution, joint action, etc.). Make sure that they operate as a network, to capitalise on methodological advances and make the most of the data collected. Ensure that they cooperate effectively with district-level committees for monitoring noise maps and noise prevention plans.
A number of highly dangerous substances are naturally present in the environment, such as radon and asbestos.

**RADON IS A NATURAL RADIOACTIVE GAS**, which, along with medical interventions, is the leading source of exposure to ionising radiation in France. It is the second biggest risk factor for lung cancer after smoking (5 to 12% of the 25,000 deaths by lung cancer in France). In accordance with action 17 of NEHAP 1 (Reduction of radon exposure in residential buildings), an action plan was set up to define appropriate ways of reducing risks in the home. The NEHAP 2 builds on the work already accomplished, and proposes further measures to **reduce radon exposure** (action 40).

While measures to prevent the risks associated with asbestos in buildings and places of work have been in force since the early 1990s, **ENVIRONMENTAL EXPOSURE TO ASBESTOS**, (via asbestos-bearing rocks or sites contaminated by industrial activity) must be tackled more effectively, and those exposed must be informed in accordance with the recommendations of the National Health Authority. The process of identifying the natural and industrial sites concerned must be completed, and a set of risk criteria established (action 41). Once the list of sites has been drawn up, a set of priorities and targeted actions must be introduced, depending on the level of risk identified.

**ACTION 40**

Reduce exposure to radon in buildings

Develop a new radon action plan for 2009-2013, to follow on from the first action plan (which covered the period from 2005-2008). Continue to develop a policy for managing the risks associated with radon exposure in existing and new buildings in high-risk areas. This new plan must be based on international guidelines, and on the recommendations issued by the National Health Authority further to the evaluation of the public health law.

**Leaders:** DGALN, DGS, ASN  
**Partners:** IRSN, DGPR  
**Schedule:** 2009  
**Tools:** metrological study for fast diagnosis, and information leaflet  
**Indicator:** availability of the fast diagnosis method

**ACTION 41**

Control exposure to natural asbestos

**Leader:** DGPR

- Reduce exposure to natural asbestos outcrops by drawing up an exhaustive list of asbestos-bearing regions in France, reviewing the different studies conducted (on management measures in particular) and studying the possibility of controlling the delivery of building permits in high-risk areas.

**Leader:** DGPR  
**Partners:** DGPR, AfSset, BRGM, Ineris, DGS  
**Means indicators:** existence of studies
• Finish drawing up the list of industrial sites likely to be polluting the local environment with asbestos, define risk criteria and inform the public if the exposure risk is high (in accordance with the recommendations of the National Health Authority).

  Leader: DGS  
  Partners: Afsset, BRGM, Ineris, INVS, national asbestos association  
  Means indicator: availability of the list.

• In Upper Corsica: pursue and reinforce the measures taken by the steering committee chaired by the prefect of Upper Corsica, concerning the specific management of natural asbestos outcrops: step up the campaign to measure asbestos fibre content both inside and outside the home, and in areas where the outcrops are close to human dwellings; define rules for managing this risk, both in the home and in the workplace; finalise the risk map and conduct more in-depth, one-off studies in towns such as Murato.

  Leader: Upper Corsica prefecture  
  Partners: DGS, DDASS, DGPR, DRIRE, DDEA, DRT, DDT, BRGM  
  Means indicator: implementation of the different measures in the action plan.

• With regard to New Caledonia: organise a conference to collect feedback on natural asbestos management practices, as per the recommendations in the Afsset report.

  Leader: Afsset  
  Partners: DGS, DGPR, government of New Caledonia  
  Means indicator: organisation of the conference
Further to the Grenelle environment round table, the Ministry of Sustainable Development asked Pr. Girard to lead a task force on health monitoring and emerging risks. In his September 2008 report, he states that “the procedures currently in force in France and other equivalent countries focus primarily on the structured feedback of information for health monitoring and warning purposes. In environmental health, monitoring procedures aimed at identifying hazards at a very early stage are not yet sufficiently organised. Therefore it is now essential to improve the warning system, by reinforcing environmental monitoring procedures, reinforcing and pooling the monitoring activities of different agencies, establishing links between health and environmental watch and surveillance systems and implementing modern data processing techniques”.

NEHAP 2 contains actions that are designed to improve the warning system (action 42). They build on the measures identified by operational committee 19 on health surveillance and emerging risks, including the implementation of a pluri-annual biomonitoring programme (action 43) and the development of a system to better organise and manage emerging risks and diseases (action 44). Measures are also proposed to better prevent effects due to electromagnetic waves (action 45) and nanotechnologies (action 46), and to enhance knowledge of and reduce the risks associated with releasing residues of pharmaceuticals into the environment (action 47).

Global leader: Ministry of Health
Global indicators:
• Creation of a health biomonitoring programme in 2010
• Creation of an environmental health group

ACTION 42
Improve the surveillance and alert mechanism
→ Leader: DGS

- Reinforce the toxicant monitoring scheme by incorporating it into the law; obliged health professionals and those responsible for marketing substances and mixtures to notify poison control and toxicant monitoring centres (CAPTVs) of cases of human intoxication by these products, and of their composition.
- Reinforce the network of poison control and toxicant monitoring centres, and the national network for monitoring and preventing occupational diseases (RNV3P), by setting up a certification system for these centres, extending the toxicant monitoring network to other partners, extending the scope of the network to include chronic intoxications, guaranteeing the quality of indicators, developing signal analysis methods and improving the information systems in these centres.

Leader: DGS and INVS
Partners: DHOS, other health agencies, CAPTV
Tools: public health law (HPST), network leadership
Means indicators: number of certified poison control centres, number of partners in the toxicant monitoring network

ACTION 43
Launch a pluri-annual programme for biomonitoring the French population, coupled with a broader health survey including the assay of emerging pollutants

(as per commitment 139 of the Grenelle environment round table)
→ Leader: DGS

- Development of a national biomonitoring programme, in accordance with commitment 139 of the Grenelle environment round table;

Administrative leader: DGS, DGPR
Technical leader: INVS
Partners: DGT, AFSSA, AFSET
Provisional schedule:
- Preparatory studies: 2009-2010
- Pilot or targeted study: 2010-2011
Start of the cross-sectional study: 2012
Indicator: Implementation of the cross-sectional study

- Develop environment surveillance indicators, in view of integrating surveillance activities: continue the inventory of existing indicators, evaluate their reliability and define environmental bio-indicators evaluate.
### ACTION 44
Increase concerted action on the risks associated with new technology

**Leader:** DGs  
**Partners:** AFSSSET, AFSSA, InVS, DGAL  
**Means indicator:** implementation of the recommendations issued by the round table

**Summary:** Develop concerted action on identifying and dealing with emerging risks, within the NEHAP 2 implementation monitoring group and in collaboration with the prevention and precaution committee (CPP) and the health safety agencies.

- **Encourage public debate,** organise debates on emerging risks with the National Public Debate Committee (with a special focus on nanomaterials in 2009). Extend the scope of competence of the National Public Debate Committee.
- **Define** standards for organising public debates, based on existing initiatives and institutions (the EU’s CIPAST project, etc.). Make sure that they are used by the different players, and that experiments conducted in this area are evaluated.

**Leader:** DGPR, DGs, CGDD  
**Partners:** AFSSSET, AFSSA, InVS, DGAL  
**Means indicators:** existence of the NEHAP monitoring group, holding of a public debate on nanomaterials.

### ACTION 45
Organise information and concerted action on electromagnetic waves

**Leader:** DGs  
**Partners:** AFSSSET, Ineris, INRS, INPES, government information service  
**Means indicator:** implementation of the recommendations issued by the round table

**Summary:** Implement the round table’s commitments on radiofrequency electromagnetic waves.

- **Develop information and improve concerted action** on extremely low-frequency and radiofrequency electric and magnetic fields.

### ACTION 46
Reinforce the regulations, monitoring activities, expert assessment and prevention measures relating to nanomaterials (as per commitment 159 of the Grenelle environment round table)

**Leader:** DGPR  
**Partners:** AFSSSET, AFSSA, InVS, DGAL  
**Means indicator:** launch of the Elfe study
ACTION 47
Improve knowledge and reduce the risks relating to the release of residues of pharmaceuticals into the environment
(as per commitment 103 of the Grenelle environment round table)
 Leader: DEB, DGS

On this point, which is connected to actions 19 and 30 of the current interministerial action plan, NEHAP 2 refers to the recommendations of group 3 of the Grenelle environment round table.

• Summarise available knowledge and, based on this summary and on the risk assessments performed for each substance, establish a list of substances to be monitored as a priority, and for which preventive measures are necessary.
• Build new knowledge in the different environments, using sentinel species and biomarkers where possible, especially for priority substances.

Continue to include environmental impact information in national applications for marketing authorisation for human medicinal products. This has been done since 2001, and is also already done on the European level.
• Set up an efficient waste recovery system for the sector (industrialists, dispensing pharmacies and wholesalers), financed by an eco-contribution (via the excess for example). Include the stakeholders in the scheme.

• Analyse the feasibility of measures to reduce medicinal and medical waste at the source, in order to limit their release into the environment. Implement these measures in the healthcare establishments most directly concerned. Make sure that production facilities do not have a dangerous impact.
• Step up surveillance in risk areas (for example, estuaries and affluents used for fishing and shellfish farming).
• Help develop applied research into water treatment and purification.

Leader: DGs, DEB,
Partners: DGPR, DHOS, LEEM,
Ineris, Onema, Afssa, Afssaps,
DGRi, DGAL
Schedule: 2012
Means indicators: development of the plan relating to medication residues in water, availability of studies, introduction of the waste recovery scheme, effective reinforcement of surveillance in risk areas, release of funds for research.

Iron oxide nanoparticles are already used as contrast agents in magnetic resonance imaging.
THE IMPLEMENTATION OF NEHAP 1 FACILITATED THE TASK OF DEFINING THE SCOPE OF RESEARCH into environmental and occupational health, an area which covers a huge range of topics and requires input from a very wide variety of disciplines: physics, chemistry, biology, medicine, mathematics, human and social sciences and engineering. The scope of research must be adaptable to scientific developments and new situations; it must take account of new subjects and emerging themes, and of new approaches and methods that are likely to enhance current knowledge.

**Funding for research projects** has come from various programmes launched over the last ten years or so:

- the health and environment programme - coordinated by the Ministry of the Environment from 1996 to 2001 and then by the Afsset as of 2002 - funded research into public policy for 10 years. Since 2006, the Afsset has been running a pluri-annual programme on environmental and occupational health;
- in 2005, the national research agency [ANR] set up a fundamental research programme focusing on environmental and occupational health (SEST, 2005-2007). In 2008, this programme was replaced by a programme on contaminants, eco-systems and health (CES, 2008-2010).

NEHAP 2 should not only build on the achievements of NEHAP 1 in this area, but it should also provide fresh impetus, foster new proposals and give environmental health the place it deserves in the new national research set-up. To maintain this momentum, environmental and occupational health must be clearly included in the scientific policies of research bodies, and human and financial resources must be reinforced (action 48). In addition, research into environmental and occupational health must be structured and coordinated, and the necessary tools must be strengthened (action 49). Key research disciplines must be reinforced in order to forecast and assess environmental risks and hazards, with a special focus on fast-growing or (re)emerging diseases and emerging risks (action 50). Research into contaminants in the food chain must also be stepped up (action 51), and research and innovation must be promoted in order to assist companies in establishing healthier and more environment-friendly practices (action 52).

**Global leader:** Ministry of Research  
**Performance indicators:** number of people working in occupational health, amount and distribution of funds allocated to environmental and occupational health.

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**ACTION 48**

Make sure that environmental and occupational health is clearly included in the scientific policies of research bodies, and reinforce human and financial resources  
→ **Leader:** Ministry of Research

- **Draw up a map of research teams** working on environmental health.  
- **Recruit research and academic staff** for interdisciplinary projects on environmental and occupational health; make sure that the topic is better represented on the recruitment boards of public organisations.  
- **Increase funding for research programmes** on environmental and occupational health, by issuing calls for multi-disciplinary research projects with long-term backing from private investors, and by securing more support from local authorities.
**ACTION 49**
Structure and coordinate research into environmental and occupational health, and reinforce the necessary tools

- Within the multi-organism, thematic institute of public health, **define and coordinate a research strategy for national institutes of research into public health** and, in particular, for environmental and occupational health. In addition, an annual call for research projects focusing entirely on environmental and occupational health is issued by the Afsset (on behalf of the Ministries of Sustainable Development and Employment). Project-based research must be based on the strategy defined by the thematic institute, regardless of whether it is initiated by the National Research Agency, public research organisations acting as funding agencies, or specialist agencies such as the Afsset.
- **Create or reinforce inter-regional research networks and centres**, focusing on environmental and occupational health. Develop one or more centres for targeted research on toxicology/ecotoxicology (commitment 142 of the Grenelle environment round table). To do this, take into account the conclusions of the restricted task force.
- **Define a national strategy for organising training and research** on toxicology and ecotoxicology, coordinated by the bio-resources, ecology and agronomy branch of the DGRI.
- **Develop and provide long-term support for very large equipment and very large infrastructures** (TGE/TGIs) that can be used in the field of environmental and occupational health: information systems (databases, interoperability), cohorts, and cross-sectional health surveys involving biological sampling. Share equipment and promote networking with other partners, and include environmental and occupational health in the development strategy for these future TGE/TGIs.

**Leader:** Ministry of Research

**Partners:** Research bodies, universities, programming agencies (ANR, Afsset)

**Means indicators:** existence of a map of research teams

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**ACTION 50**
Reinforce key research disciplines and priority research topics, in order to forecast and assess environmental risks and hazards, with a special focus on fast-growing or (re)emerging diseases and emerging risks

- **Reinforce key research disciplines:**
  - epidemiology in environmental and occupational health;
  - toxicology/ecotoxicology and expology (metrology and analysis tools);
  - socio-economic approaches.
- **Support research into fast-growing and re-emerging diseases** and emerging risks. Publicise the results, for example through conferences:
  - reinforce research on chemicals that are proven or suspected to be carcinogenic, mutagenic or toxic to reproduction (CMRs), and foster innovation with a view to finding alternatives;
  - reinforce research on the interactions between the quality of different environments (air, soil, water, buildings) and human
health, taking into account specific vulnerabilities due to age [children, pregnant women or women of child-bearing age, etc.] or disease;

• develop research on diseases that are growing fast due to exposure to environmental pollutants: allergies and auto-immune disorders, respiratory diseases, some forms of cancer and neurological disorders (neurodegenerative diseases, neurological development disorders, etc.);
• reinforce research on the potential links between pesticide exposure, cancer and neurodegenerative diseases. The goal is to implement prevention measures, update the tables of occupational diseases, and improve the efficiency of collective and individual protective equipment against pesticides. In addition, reinforce research into the least contaminating work processes;
• improve knowledge of emerging or re-emerging diseases (such as hypersensitivity to electromagnetic fields).

• Support research into emerging risks:
• reinforce research into the risks associated with nanomaterials or with products deriving from nanotechnologies, and support the development of the necessary metrology and analysis tools;
• improve knowledge of the health effects of electromagnetic fields (radiofrequency and extremely low frequency);
• reinforce research into the risks associated with climate change. Focus in particular on the impact of climate change on atmospheric pollution and water, the risks arising from the re-emergence of infectious and parasitic diseases (due to changes in animal habitats and in vectors), and the risks related to the health quality of food.

Epidemiological surveillance and health monitoring activities must also be stepped up in this area;
• Prolong and develop the national research programme on endocrine disrupters [PNRPE, Ministry of Sustainable Development] and publish the first results.

Leader: Ministry of Research Partners: Research bodies, ANR, ITMO Santé Publique, health safety agencies, Ministries of Health, Sustainable Development, Labour and Agriculture, SAFSL, Cemagref and CCMSA

Means indicators: number of publications in the field, number of projects financed by the ANR in the field, number of conferences on environmental and occupational health
ACTION 51
Step up research into contaminants in the food chain
→ Leader: Ministry of Research

- Enhance operational knowledge, in order to define measures for managing food that is contaminated or likely to be contaminated due to the state of the environment. Improve risk assessment procedures, and develop research into the transfer of contaminants in animal and plant production. Such research can be conducted by public organisations with an experimental vocation (for example, INRA).
- Support research and, in particular, improve toxicological knowledge on the cumulative effects of several contaminants, and the effects of long-term exposure to low-dose contaminants and of inadequately studied emerging pollutants (nanosubstances, etc.).

ACTION 52
Promote technological research and innovation to assist companies in establishing healthier and more environment-friendly practices
→ Leader: Ministry of Research

- Reinforce technological research and innovation in the field of environmental and occupational health [metrology, instrumentation, prevention, substitution, improvement of materials, products and processes, remediation, etc.], and promote technology transfers. To achieve this, support and strengthen the programmes implemented by the ANR and Ademe. Encourage industrialists to develop Cifre conventions (for training through research).
- Make use of the different technological transfer tools, and promote interaction between academic research, the industrial sector and local authorities: competitiveness clusters, Carnot institutes, CRITT, RDT, local authorities, Oséo, research organisations, Predit

Means indicators: number of publications in the field, number of projects financed by the ANR, number of Cifre conventions developed.

Leader: Ministry of Research, DGCI
Partners: DRRt, DREAL, ANRT, ANR, Ademe, competitiveness clusters, Carnot institutes, CRITT, RDT, local authorities, Oséo, research organisations, Predit

NOTE from page 61
17 Research bodies: CNRS, INSERM, CEA, IRSN, INERIS, CEMAGREF, INRA, IFREMER, universities, engineering schools, etc.
In the current context, where the health impact of the environment has become an important research and social issue, **there is a growing demand for expert assessments to support public health decisions relating to the environment.**

The carrying out of expert assessments is intrinsically linked with the acquisition of knowledge through research. The level of scientific and technical expertise must be as high as possible, in order to provide the decision-maker with the best possible expert advice. Moreover, the expert assessment may bring to light new needs in terms of fundamental and applied research. The public authorities need highly-qualified professionals, who are able to deliver advice based on the latest scientific and technical information.

It is important to encourage the professionalisation of expert assessment practices in the environmental and occupational health field, on both the national and international levels. The report published by research operational committee 30 of the Grenelle environment round table, and the DGS report on the “objectivity and promotion of expert assessments to support public health decisions” outlined several proposals, some of which will be implemented under NEHAP 2.

It is therefore necessary to **increase the efficiency of the expert scientific assessment practices** developed by public-sector assessment organisations (action 53), and to **strengthen the capacity for expert scientific assessments on environmental and occupational health** (action 54).

**Global leader:** Ministry of Health

**Global indicator:** the level of confidence in public expert assessments on various environmental topics (according to the Inpes survey).

### ACTION 53
Better organise the expert scientific assessments carried out to facilitate public policy decisions

> **Leader:** Ministry of Health

- **Wherever possible, recommend the use of the most widely-recognized standard on expert scientific assessments of environmental and occupational health** (standard NFX 50–110: Quality in expert assessment activities; general requirements of competence for an expert assessment). Apply it to the different types of expert assessment; invite the High Council for Research and Technology (CSRT) to conduct an ethics watch (on an experimental basis), as per commitment 195 of the Grenelle environment round table; bring any disputes regarding expert assessments before the Prevention and Precaution Committee (CPP) or the CRST (as per commitments 194 and 195 of the Grenelle environment round table).
- **Draw up an expert assessment ethics charter** Encourage organisations to adopt operational ethics charters (or rules of procedure) for nominating experts, further to an analysis of the competencies required and the interests involved. Promote the development of joint expert assessments, by providing training on the management of conflicts of interest and the responsibility of experts and expert assessment organisations. The Ministry of Higher Education and Research is going to draw up a national scientific assessment charter – as recommended by the research operational committee of the Grenelle environment round table – in order to
generalise and harmonise practices in this area.

- Encourage and promote careers in expert assessment.
  Note that expert assessment activities are now taken into account in the individual work records of researchers, research professors and other research staff during the assessment of research units by the National Agency for the Evaluation of Higher Education and Research (AERES).

- Work with experts on the definition of methods for characterising the uncertainties associated with the different aspects of an expert assessment, and the knowledge level. Make sure that experts are familiar with these methods. The opinions delivered by experts must mention the standard of proof.

ACTION 54
Strengthen the capacity for expert scientific assessments on environmental and occupational health

Leader: Afsset

- Collect, map and update information on public and private expert assessment organisations per area of competence, the goal being to pool them together and increase French participation in the expert assessment of environmental and occupational health on the European and international levels.

- Develop a process of expert socio-economic assessment, to be implemented prior to public decision making. Use this process wherever necessary, in addition to the expert scientific assessment providing a standard of proof.

- Include all stakeholders in expert assessment procedures (NGOs, industrial representatives, etc.).

- Encourage the participation of the research sector in expert assessments, by training students and researchers in the methodological, legal and ethical aspects of expert assessment, focusing more on the knowledge gaps observed during expert assessments or the drafting of calls for projects, developing expert assessment procedures in research organisations (especially joint, multi-disciplinary procedures) and strengthening the participation of research organisations in the production and diffusion of knowledge for expert assessment purposes.

Leader: Afsset, CAS

Partners: Ministries of Health, Sustainable Development, Labour and Research

Means indicator: Existence of the map of experts
While advanced education in environmental health is obviously important in professional circles such as healthcare management, healthcare, higher education and scientific research (action 55), other sectors need to show more interest and adopt the same cross-discipline approach. This means making environmental health training more widely available in higher education and technical training establishments (action 56) and providing better training for young people on environmental and occupational health (action 57).

Many experts and institutions agree that basic and continuing training programmes for health professionals do not adequately address the subject of environmental and occupational health. Despite the efforts made under NEHAP 1, environmental health is still not systematically included in the training of doctors, pharmacists, dentists, midwives and other paramedical staff. Basic environmental health training programmes should be set up to train specialists in environmental and occupational health, and environmental health should be included in continuing training to raise the standard of doctors and other health professionals (nurses and other healthcare staff, pharmacists, etc.). It is also essential to develop training in environmental and occupational health for those working in the housing and living environment sector.

**Global leader:** Ministry of Research  
**Global indicators:** number of environmental health topics in professional training courses, number of people who feel that they are well informed on environmental health (according to the Inpes survey).

### ACTION 55
Develop training programmes on environmental and occupational health for health professionals  
**Leader:** Ministry of Research

- Further to action 42 of NEHAP 1 (incorporate environmental health into continuing training programmes for health professionals), and in accordance with commitment 209 of the Grenelle environment round table, NEHAP 2 proposes to:  
  - develop basic training modules on environmental and occupational health for health professionals, and include them in training programmes;  
  - promote continuing training in environmental and occupational health for health professionals, school doctors and works doctors.

#### Leader: Ministry of Research

**Partners:** Deans of medical schools, Ministries of Health, Sustainable Development and Labour, URML, medical and pharmaceutical association

**Means indicator:** inclusion of a module on environmental and occupational health in the basic training of health professionals and in continuing training programmes.

### ACTION 56
Develop training programmes on environmental and occupational health in higher education and technical training establishments  
**Leader:** Ministry of Research

- Further to actions 41 and 43 (incorporate environmental health into basic training programmes) and 43 (inform and train those involved in corporate prevention programmes) of NEHAP 1, NEHAP 2 proposes to:
  - identify training programmes on
environmental and occupational health and reinforce them and/or develop new ones according to needs;

incorporate an additional training module on environmental and occupational health into basic and continuing training programmes;

• make companies aware of their responsibilities by setting up a system of certification for their own internal training courses, in order to better address environmental health issues;

• raise awareness among students, young researchers and engineers of the health risks associated with technologies and processes, and remind them of their responsibilities in this respect.

**Leader:** Ministry of Education  
**Partners:** Ministries of Sustainable Development and Health, universities, engineering schools  
**Means indicator:** inventory of existing training programmes on environmental and occupational health

**ACTION 57**  
**Educate young people on environmental and occupational health**  
**Leader:** Ministry of Research

• Educate primary and secondary schoolchildren on environmental health hazards.

• Include the subject of environmental and occupational health in all existing teacher training programmes.

• Emphasise the value of implementing best environmental and occupational health education practices in schools.

**Leader:** Ministry of Education  
**Partners:** Afsset, Ademe

**ACTION 58**  
**Develop information tools on environmental and occupational health and measure the impact of these tools**  
**Leader:** Ministry of Health

• Further to actions 35 (improve the performance and integration of information systems in the environmental health field) and 44 (facilitate access to environmental health information and foster public debate) of NEHAP 1, NEHAP 2 proposes to:

  _increase and coordinate the availability of scientifically validated information;_  
  _reinforce national scientific action by scheduling regular national meetings open to the general public and aimed at reviewing and debating progress in terms of knowledge, uncertainty and prevention;_  
  _ensure that local authorities are aware of and knowledgeable about environmental and occupational health, so that they take it into consideration more when defining their plans and projects;_  
  _focus on public information in order to improve prevention: provide pregnant women and women of child-bearing age with more information, to protect them from mutagenic and/or reprotoxic substances in the environment or the workplace; develop specific information for people living close to classified facilities; increase the involvement of the Inpes and the Afsset in prevention and education measures relating to environmental and occupational health;_  
  _conduct another environmental health survey;_  
  _organise another science festival dedicated to environmental health;_  
  _step up the activities of all the organisations involved in circulating information on environmental and occupational health (research bodies, universities, higher education establishments, agencies, institutes)._  

**Leader:** DGS  
**Partners:** Inpes, health safety agencies  
**Performance indicator:** number of training programmes including an environmental health module

**Leader:** Ministry of Research  
**Partners:** Ministries of Sustainable Development and Health, Afsset
### Annex 3

#### FUNDS ALLOCATED to the implementation of NEHAP 2

<table>
<thead>
<tr>
<th>ACTION No.</th>
<th>ACTION TITLE</th>
<th>FUNDS ALLOCATED 2009-2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTION 1</td>
<td>Particulate matter plan</td>
<td>Reduce particle emissions in the domestic sector</td>
</tr>
<tr>
<td>ACTION 2</td>
<td>Reduce particle emissions in the industrial and agricultural sectors</td>
<td></td>
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<tr>
<td>ACTION 3</td>
<td>Better organise transport and reduce unitary emissions from each means of transport</td>
<td></td>
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<tr>
<td>ACTION 4</td>
<td>Improve knowledge of particles</td>
<td></td>
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<tr>
<td>ACTION 5</td>
<td>Reduction of toxic substances in the air and in water</td>
<td>Reduce emissions of six toxic substances into the air and water</td>
</tr>
<tr>
<td>ACTION 6</td>
<td>Improve knowledge of pesticide exposure</td>
<td></td>
</tr>
<tr>
<td>ACTION 7</td>
<td>Indoor air quality</td>
<td>Improve knowledge of and limit indoor pollution sources</td>
</tr>
<tr>
<td>ACTION 8</td>
<td>Better manage indoor air quality in public places</td>
<td></td>
</tr>
<tr>
<td>ACTION 9</td>
<td>Develop clean construction by limiting indoor pollution sources and controlling the installation of aeration, ventilation and air conditioning systems</td>
<td>Reduce asbestos exposure</td>
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<tr>
<td>ACTION 10</td>
<td>Protection of the health and environment of children</td>
<td></td>
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<tr>
<td>ACTION 11</td>
<td>Develop measures to encourage and facilitate the substitution of toxic substances in the workplace, and promote the development of alternative processes</td>
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<tr>
<td>ACTION 12</td>
<td>Reinforce occupational exposure monitoring</td>
<td></td>
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<tr>
<td>ACTION 13</td>
<td>Health and transport</td>
<td>Take into account the health impact of different means of transport</td>
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<td>ACTION 14</td>
<td>Promote alternative and soft forms of transport</td>
<td></td>
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<td>ACTION 15</td>
<td>Reduce the noise pollution generated by transport</td>
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<tr>
<td>ACTION 16</td>
<td>Improve the health and comfort of transport users and workers</td>
<td></td>
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<tr>
<td>ACTION 17</td>
<td>Protection of the health and environment of children</td>
<td>Reduce exposure of children, pregnant women and women of child-bearing age to hazardous substances</td>
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<tr>
<td>ACTION 18</td>
<td>Better manage the risks associated with reprotoxic substances and endocrine disrupters</td>
<td></td>
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<tr>
<td>ACTION 19</td>
<td>Reduce exposure levels in buildings used by children</td>
<td></td>
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<tr>
<td>ACTION 20</td>
<td>Ensure that the greater vulnerability of children, pregnant women and women of child-bearing age is better taken into account when assessing risks</td>
<td></td>
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<tr>
<td>ACTION 21</td>
<td>Step up efforts to prevent hearing disorders and acoustic trauma caused by listening to very loud music</td>
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<tr>
<td>ACTION 22</td>
<td>Protection of the health and environment of people who are vulnerable due to their state of health</td>
<td>Prevent allergies</td>
</tr>
<tr>
<td>ACTION 23</td>
<td>Recruit healthy housing and indoor environment advisors</td>
<td></td>
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<tr>
<td>ACTION 24</td>
<td>Improve the care of patients with potentially environment-related diseases</td>
<td></td>
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<tr>
<td>ACTION 25</td>
<td>The fight against substandard housing</td>
<td>Reinforce and develop the national programme to combat substandard housing</td>
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<td>ACTION 26</td>
<td>Prevent health hazards due to overcrowding</td>
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<td>ACTION 27</td>
<td>Develop social support measures</td>
<td></td>
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<tr>
<td>Action</td>
<td>Description</td>
<td>Budget</td>
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<tr>
<td>28</td>
<td>Protect water within protected area boundaries and within the catchment areas of abstraction points</td>
<td>€4 M</td>
</tr>
<tr>
<td>29</td>
<td>Reduce levels of certain substances in the aquatic environment</td>
<td>€11 M</td>
</tr>
<tr>
<td>30</td>
<td>Control the health quality of distributed water</td>
<td>€2.5 M</td>
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<tr>
<td>31</td>
<td>Maintain water availability</td>
<td>€180 M</td>
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<tr>
<td>32</td>
<td>Identify and deal with areas that are over-exposed to toxic substances</td>
<td>€13 M</td>
</tr>
<tr>
<td>33</td>
<td>Improve prevention measures and control the health and environmental impact of accidents</td>
<td>€0.8 M</td>
</tr>
<tr>
<td>34</td>
<td>Reinforce the management of polluted sites and soils</td>
<td>€4 M</td>
</tr>
<tr>
<td>35</td>
<td>Rehabilitate or manage contaminated areas, especially overseas</td>
<td>€1 M</td>
</tr>
<tr>
<td>36</td>
<td>Assess the health impact of different waste management methods</td>
<td>€1.3 M</td>
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<tr>
<td>37</td>
<td>Incorporate the fight against noise pollution into a global strategy</td>
<td>€9.5 M</td>
</tr>
<tr>
<td>38</td>
<td>Reinforce the noise police</td>
<td>€19.5 M</td>
</tr>
<tr>
<td>39</td>
<td>Develop tools for assessing the health impact of noise</td>
<td>€3.1 M</td>
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<tr>
<td>40</td>
<td>Reduce exposure to radon in buildings</td>
<td>€1 M</td>
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<tr>
<td>41</td>
<td>Control exposure to natural asbestos</td>
<td>€1 M</td>
</tr>
<tr>
<td>42</td>
<td>Improve the surveillance and alert mechanism</td>
<td>€1.3 M</td>
</tr>
<tr>
<td>43</td>
<td>Launch a pluri-annual programme to biomonitor the French population, coupled with a broader health survey including the assay of emerging pollutants</td>
<td>€9.5 M</td>
</tr>
<tr>
<td>44</td>
<td>Increase concerted action on the risks associated with new technologies</td>
<td>–</td>
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<tr>
<td>45</td>
<td>Organise information and concerted action on electromagnetic waves</td>
<td>€1.6 M</td>
</tr>
<tr>
<td>46</td>
<td>Reinforce the regulations, monitoring activities, expert assessment and prevention measures relating to nanomaterials</td>
<td>–</td>
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<tr>
<td>47</td>
<td>Improve knowledge and reduce the risks relating to the release of residues of pharmaceuticals into the environment</td>
<td>€2 M</td>
</tr>
<tr>
<td>48</td>
<td>Make sure that environmental and occupational health is clearly included in the scientific policies of research bodies, and reinforce human and financial resources</td>
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<tr>
<td>49</td>
<td>Structure and coordinate research into environmental and occupational health, and reinforce the necessary tools</td>
<td>€124 M</td>
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<tr>
<td>50</td>
<td>Reinforce key research disciplines and priority research topics, in order to forecast and assess environmental risks and hazards, with a special focus on fast-growing or re-emerging diseases and emerging risks</td>
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<tr>
<td>51</td>
<td>Step up research into contaminants in the food chain</td>
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<tr>
<td>52</td>
<td>Promote technological research and innovation to assist companies in establishing healthier and more environment-friendly practices</td>
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<tr>
<td>53</td>
<td>Better organise the expert scientific assessments carried out to facilitate public policy decisions</td>
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<tr>
<td>54</td>
<td>Strengthen the capacity for expert scientific assessments on environmental and occupational health</td>
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<tr>
<td>55</td>
<td>Develop training programmes on environmental and occupational health for health professionals</td>
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<tr>
<td>56</td>
<td>Develop training programmes on environmental and occupational health for workers in higher education and technical training establishments</td>
<td>€0.1 M</td>
</tr>
<tr>
<td>57</td>
<td>Develop information tools on environmental and occupational health for young people</td>
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<tr>
<td>58</td>
<td>Develop information tools on environmental and occupational health and measure the impact of these tools</td>
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</tbody>
</table>
GLOSSARY

A
AASQUA: Approved association for monitoring air quality
ACNUSA: Airport nuisance control authority
ACSE: National agency for social cohesion and equal opportunities
ADEME: Environment and energy management agency
AFSSA: French food safety agency
AFSSAPS: French health products safety agency
AFSSET: French agency for environmental and occupational health safety
ANAH: National housing agency
ANDRA: National radioactive waste management agency
ANRU: National urban renovation agency
ANR: National research agency
ANRT: National association for technological research
APHP: Paris network of public hospitals
ARS: Regional health agencies

B
BRANCHE AT/MP: the occupational accidents and diseases branch of the health insurance fund
BRGM: Bureau of geological and mining research

C
CAF: Child benefit fund
CCMSA: Central agricultural workers’ and farmers’ mutual welfare fund
CEA: French atomic energy agency
CEMAGREF: National centre for agriculture and forestry, engineering and water management
CERTU: Study centre for urban planning, transport and public facilities
CGDD: Commission for sustainable development
CHU: University hospital
CITEPA: Interprofessional technical centre for studies on atmospheric pollution
CMR: Chemicals classified as carcinogenic, mutagenic or toxic to reproduction
CNAF: National child benefit fund
CNAIMTS: National health insurance fund for salaried employees
CO: carbon monoxide
COMOP: operational committee (Grenelle environment round table).
COPEN: Steering committee for environmentally friendly farming
CRAM: Regional health insurance fund
CRITT: Regional centre for innovation and technology transfer
CSRT: High council for research and technology
CSTB: Scientific and technical centre for the building industry
CTI: Industrial and technical centre

D
DALO: Legally enforceable right to housing
DEB: Water and biodiversity directorate (Ministry of Sustainable Development)
DGAL: General food directorate (Ministry of Agriculture)
DGALN: General directorate for land planning, housing and nature (Ministry of Sustainable Development)
DGAS: General directorate for social action (Ministry of Labour)
DGCCRF: General directorate for competition, consumption and fraud control (Ministry of Economy)
DGCSIS: General directorate for competitiveness, industry and services (Ministry of Economy)
DGEC: General directorate for energy and climate (Ministry of Sustainable Development)
DGGN: General directorate of the National Gendarmerie (Ministry of Internal Affairs)
DGITM: General directorate for infrastructures, transport and the sea (Ministry of Sustainable Development)
DGPAAT: General directorate for agricultural policies, agri-food and territories (Ministry of Agriculture)
DGPR: General directorate for risk prevention (Ministry of Sustainable Development)
DGPN: National police force (Ministry of Internal Affairs)
DGRI: General directorate for research and innovation (Ministry of Research)
DGS: General health directorate (Ministry of Health)
DGTL: General labour directorate (Ministry of Labour)
DHOS: General directorate for hospitalisation and healthcare organisation (Ministry of Health)
DIRECCTE: Regional directorate for business, competition, consumption, labour and employment
DREAL: Regional directorate for the environment, planning and housing (e.g. DRIRE, DIREN, DRE)
DIV: Interministerial delegation for urban and social development (Ministry of Labour)
DRRT: Regional delegation for research and technology
DSCE: Road safety and road traffic directorate (Ministry of Sustainable Development)

HCSP: High committee on public health
IARC: International Agency for Research on Cancer
IFREMER: French institute for marine research
INCA: National cancer institute
INED: National institute for demographic studies
INERIS: National institute for industrial environment and risks
INPES: National institute for prevention and health education
INSERM: National institute for health and medical research
INRA: National institute for agricultural research
INRS: National research and safety institute
INVS: Institute for public health surveillance
IRSN: Institute for radiation protection and nuclear safety

LEEM: Association of pharmaceutical companies
LEPI: Laboratory for the study of inhaled particles

MAP-SAFSL: Ministry of Agriculture, Food and Fisheries – Department of Financial, Social and Logistics Affairs
MA: Mutual agricultural fund
NODU: French treatment frequency index for monitoring the use of pesticides
NOX: Nitrogen oxide

OEL: Occupational exposure limits
OQA: Observatory for indoor air quality
ONEMA: National office for water and aquatic environments
OPAH: Housing improvement programme
ORP: Observatory for pesticide residues
OS: Public-sector organisation fostering development and innovation in small and medium-sized companies
OSPAR: Convention for the protection of the marine environment of the north-east Atlantic
**Annex 4: GLOSSARY**

**P**

- **PAH**: Polycyclic aromatic hydrocarbon
- **PCB**: Polychlorinated biphenyl
- **PDA LPD**: District-level housing programme for disadvantaged people
- **PLAI**: Subsidised loan for low-cost housing
- **PLH**: Local housing programme
- **PM 2.5 - PM 10**: Particulate matter, the average size of which is 2.5 μm (PM 2.5) or 10 μm (PM 10)
- **PNLHI**: National action plan to combat substandard housing
- **PNRPE**: National research programme on endocrine disruptors
- **PNSS**: National nutrition and health programme
- **PREDIT**: National programme of research and innovation in land transport
- **PRIMEQUAL**: Inter-organisational research programme for better air quality at the local level
- **PT**: Total particles

**R**

- **RDT**: Technological development network
- **REACH**: European regulation on the registration, evaluation and authorisation of chemical substances
- **RNSA**: National aero-biological surveillance network
- **RNV3P**: National network for monitoring and preventing occupational diseases

**S**

- **SCHS**: Municipal hygiene and health services
- **SETRA**: Technical centre for highways and motorways
- **SNDD**: National sustainable development strategy
- **SOX**: Sulphur oxide

**T**

- **T GAP**: General tax on polluting activities
- **TGE/TGI**: Very large equipment / Very large research infrastructure

**U**

- **UDI**: Drinking water distribution unit
- **UNDP**: United Nations Development Programme

**V**

- **VOC**: Volatile organic compound

**W**

- **WHO**: World Health Organisation
Concrete measures to prevent environment-related health risks