Energy efficiency action plan for France

Pursuant to Articles 4 and 14 of Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services

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Ministry of the Economy, Finance and Industry

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I. OVERVIEW

The second energy efficiency action plan aims to assess the policies and measures implemented by France in terms of energy savings. Directive 2006/32/EC of 5 April 2006 on energy end-use efficiency and energy services (ESD) sets a 9% energy savings target to 2016 compared with average final energy consumption between 2001 and 2005. France has also undertaken to comply with the terms of the 'Energy/Climate' Package adopted in December 2008 under the French Presidency of the European Council, which provides in particular for a 20% improvement in the European Union's energy efficiency in 2020.

Achievement of the 2016 goal set by the ESD has been estimated as a result of producing 'Energy Climate Air' prospective scenarios, a prospective study concerned with France's energy consumption and emissions of greenhouse gases and air pollutants to 2020 and 2030. Energy savings in 2016 reach 18 Mtoe (million tonnes oil equivalent), against an indicative target of 12 Mtoe. More than 88% of the energy savings come from the residential-service sector, thus reflecting implementation of the programme to manage energy demand in the construction sector established by the Environment Round Table. It is followed by transport (10%) and industry (outside the EU ETS - EU Emissions Trading Scheme; 1%).

With regard to achievement of the 2010 intermediate goal set by the ESD (intermediate indicative target of 5 Mtoe of energy savings), it is assessed using the top-down methods recommended by the European Commission. For the period 2007-2009 the volume of energy savings enumerated within the meaning of the EST is assessed at 5.2 Mtoe, mainly in the residential sector. The 2010 intermediate goal may therefore be considered achieved.

The main policies and measures implemented to achieve these various targets are detailed on a sector-by-sector basis. Among them, demand management occupies a predominant position, particularly through the Energy Efficiency Certificate (EEC) mechanism. This measure alone generated 1.1 Mtoe of savings in 2010.

The construction sector accounts for 44% of France's final energy consumption and, as such, is a major challenge for energy efficiency policies. The Environment Round Table has set very ambitious targets:

- For new build, widespread development of low consumption buildings (BBC) by 2012 and positive energy buildings to 2020;

- For existing building stock, a 38% reduction in primary energy consumption. The target is to achieve primary energy average consumption of 150 kWh_{ep}/m^2/year, compared with a current average of 240 kWh_{ep}/m^2/year.

Introduction of the 2012 Thermal Regulation makes it possible to achieve the BBC standard for new constructions. Sustainable Development Tax Credit and the zero-rated eco-loan are two major measures supporting development of the stock.

The transport sector accounted for 32% of French final energy consumption in 2009. Measures implemented in this sector mainly seek to support modal shift and greater efficiency of the modes of transport used. The ecological 'bonus-malus' enabled France to have, in 2009, the new vehicle fleet with the lowest carbon dioxide emissions in the European Union and, according to the latest statistics, the operating fleet with the second-lowest emissions.

In industry France's energy efficiency policy is based, in particular, on European Directive 2003/87/EC establishing a market for emission permit trading within the European Union, as well as on financial incentives, regulatory measures, support for standardisation

processes and support for development of the most efficient technologies, in particular through the Future Investments mechanism.

The State and territorial authorities also play a very important part in energy efficiency, not just through managing their assets and their direct activities, but also when exercising their responsibilities (for example, with regard to urban development, in the case of authorities). As regards State services, an initial review of implementation of the 'Exemplary State' circular for 2009 shows initial concrete results, in particular in terms of energy audits and purchase of energy-efficient vehicles. In the case of local authorities, they are encouraged to develop territorial climate plans providing a genuine local climate and energy policy within their specific areas of responsibility: more than 200 have now been developed or are being developed. The Grenelle laws also strengthened the provisions allowing urban development master-plans to manage space, resources and energy efficiently by developing levers for demand-side management, the fight against urban sprawl and promotion of the sustainable city.

The agricultural sector is also implementing a significant number of measures to improve energy efficiency, including, in particular, introduction of the Energy Performance Plan for agricultural holdings 2009-2013 (energy savings and conversion to renewable energies).

Lastly, prevention of waste production may make it possible to reduce energy consumption throughout sectors linked to production and marketing of goods, particularly industry and transport. It also allows a reduction in energy consumption linked to waste treatment.

In horizontal terms, major importance is attached to raising general public awareness with regard to energy savings. This awareness-raising involves two main types of action:

- Awareness-raising actions, such as the ADEME (Environment and Energy Management Agency) public campaigns '*réduisons vite nos déchets, ça déborde*' ('let's reduce waste now, it's overflowing') and *'économies d'énergie faisons vite, ça chauffe'* ('energy savings: let's act now, the heat is on!');

- Information actions to direct the behaviour of economic operators, for example via the Energy Performance Diagnoses (DPEs) required in metropolitan France by both private individuals and professionals since 1 November 2006 when any dwelling or building is sold; or through the Energy Info Sites (EIE), which are a valuable source of information and advice on energy efficiency for individuals and businesses.

In addition, a trial of environmental advertising on high-volume consumer products will start in summer 2011.

II. FRANCE'S ENERGY EFFICIENCY STRATEGY

Article 14 of Directive 2006/32/EC of 5 April 2006 on energy end-use efficiency and energy services (ESD) provides for an updated Energy Efficiency Action Plan to be submitted by 30 June 2011. This Directive sets an energy savings target of 9% to 2016. France has also undertaken to comply with the terms of the Energy/Climate Package concluded in 2008, which provides for a 20% improvement in the European Union's energy efficiency in 2020.

The aim of this report is to set out the policies and measures implemented to achieve these various targets. Particular detail will be provided regarding achievement of the volumes of energy savings set under the ESD.

1. Ongoing improvement in energy efficiency…

France has one of the lowest final energy intensities[1] in the European Union. Figure 1 shows France's position among the countries of the European Union in terms of final energy intensity in 2008.

[*Key to Figure 1*]
ktep/€05p = ktoe/€05p
consommation d'énergie finale rapportée au produit intérieur brut en 2008 = final energy consumption in relation to gross domestic product in 2008
Greece, Spain, United Kingdom, Ireland, Germany, Italy, France, Norway, EU27, Denmark, Netherlands, Austria, Croatia, Slovenia, Hungary, Poland, Romania, Slovakia, Czech Republic, Belgium, Sweden, Bulgaria, Latvia, Malta, Luxembourg, Finland, Cyprus, Estonia, Lithuania, Portugal

Figure 1. Classification of European Union countries by final energy intensity in 2008 (source: Odyssée, March 2010)

Figure 2 summarises the change in France's final energy consumption between 1970 and 2009[2] by sector. After two decades of growth, France's final energy consumption (corrected for climatic variations) was virtually unchanged between 2001 and 2008, at around 160 Mtoe a year, thus reflecting the effectiveness of France's public policies to improve energy efficiency. 2009 saw a 3% reduction, with final energy consumption falling to around 156 Mtoe. Data are not yet available for 2010 but the reduction seen internationally in 2009 could simply relate to economic circumstances. Use of 2010 data will assume a specific nature.

[*Key to Figure 2*]
En Mtep = In Mtoe
Transports = Transport; *Résidentiel-Tertiaire* = Residential-Service; *Sidérurgie* = Iron and steel; *Industrie, hors sidérurgie* = Industry, other than iron and steel; *Agriculture* = Agriculture.

Figure 2. Change in France's final energy consumption between 1970 and 2009, corrected for climatic variations, by sector (source: SoeS, 2009 energy balance)

The financial and economic crisis played a significant part in the reduction in final energy consumption seen in 2009, which had already begun in 2008. The fall in industrial activity had a direct impact on energy consumption in this sector (-10%, and as much as -27% for the iron and

[1] Energy intensity is the ratio of energy consumption to gross domestic product (GDP).
[2] Provisional data for 2009.

steel industry). Agricultural demand fell by 3%. Transport consumption again declined (-1.1%, after -0.8% in 2008), due in particular to a fall in road freight transport activity. Consumption in the residential-service sector also fell by 0.9% in 2009 after several years of stop-start increases.

The financial crisis, through its impact on the functioning of the economy and, in particular, the underutilisation of production or transport units, temporarily slowed down the ongoing improvement in France's energy efficiency: after several years of significant reduction, France's energy intensity remained steady in 2008, and then fell by 0.4% in 2009.

2. … prompted by an ambitious energy strategy

2.1 A long-term vision

The Environment Round Table (see inset below) reaffirmed the major objectives of French energy policy enshrined in Programme Law No 2005-781 of 13 July 2005 establishing energy policy guidelines, known as the POPE Law. These four objectives were taken up in Article L.100-1 of the Energy Code established by Ordinance No 2011-504 of 9 May 2011:

- to ensure security of supply;
- to maintain competitive energy prices;
- to protect human health and the environment, in particular by combating climate change;
- to guarantee social and territorial cohesion by ensuring energy access for all.

These are long-term objectives, which set a course for energy policy action for the next 30 years. To achieve them, four major areas have been defined:

- Managing energy demand;
- Diversifying the energy mix;
- Developing research and innovation in the energy sector;
- Providing means of transport and storage suitable for requirements.

Description of the Environment Round Table

Preparation for the Environment Round Table[3] took place between July 2007 and November 2007. It involved all stakeholders: State, territorial authorities, trade unions, businesses and associations. Its aim was to debate environmental issues and define a roadmap for sustainable ecology, development and planning. Organised around six working groups, one of which dealt with combating climate change and managing energy demand, it resulted, at the end of October 2007, in an action plan consisting of 20 concrete and quantifiable measures with the broadest possible participant agreement.

Following this national consultation, 33 operational committees (COM-OP), bringing together all stakeholders, were set up to refine the roadmap and define, for each theme identified as key, a list of targets, as well as specific actions and recommendations to be implemented. In appropriate cases, these operational committees indicated measures not approved by all stakeholders and possible alternatives. They then drew up public overview reports to be used as a subsequent basis for policy decisions.

The topics dealt with by the operational committees included, in particular, improving the performance of buildings (COM-OP 1, 2 and 3), the Exemplary State (COM-OP 4) and improving transport (COM-OP 5, 6, 7 and 8).

Implementation of the Round Table commitments is underway, in particular through:

- the Programme Law of 3 August 2009 implementing the Environment Round Table, known as Grenelle 1, formalising the Round Table commitments from a legislative viewpoint;
- the Law of 12 July 2010 making a national environmental commitment, known as Grenelle 2, implementing most of these commitments in operational terms;
- the various Finance Laws adopted since 2007, which have put in place the financing needed for some Round Table measures;
- the Decrees implementing the Grenelle 1 and Grenelle 2 laws.

2.2 France's energy efficiency commitments

As a framework for the actions to be carried out in the context of the national energy strategy, the POPE Law sets ambitious performance targets and establishes a certain number of incentive programmes for energy savings.

On the subject of energy efficiency, the POPE Law sets targets of reducing final energy intensity by 2% a year by 2015 and by 2.5% a year between 2015 and 2030. However, the economic crisis had a negative impact on results for the period 2006-2009[4]. The very good results achieved in 2006 and 2007 (-4.5% in two years) were interrupted by the economic crisis, with the energy intensity index remaining unchanged in 2008 and falling by 0.4% in 2009. The average annual reduction in France's energy intensity between 2006 and 2009 was therefore 1.2%. On the other hand, the reduction in final energy consumption per inhabitant was significant in 2009, falling by 3.5%, i.e. an average reduction of 1.3% per year for the period 2005-2009.

[3] http://www.legrenelle-environnement.fr/

[4] Crisis periods, when factories do not operate at full capacity, are not favourable to energy efficiency gains.

In 2007 the Environment Round Table strengthened France's energy policy, by setting very ambitious targets in all sectors of the economy, and in particular for the following (see Chapter III for detail of the policies and measures concerned):

- Demand-side management in the construction sector, through a programme of technological advances in new build and radical energy renovation work in existing build. For new build, low consumption buildings will already be widely found from 2012 and positive energy buildings in 2020. For existing build, a 38% target reduction in consumption by 2020 has been set.

- Accelerated growth in modes of transport other than road and air. A set of measures has been introduced to encourage shift of traffic to the modes of transport emitting fewest greenhouse gases and air pollutants and to improve the efficiency of the modes of transport used.

Lastly, in order to meet the requirements of Directive 2006/32/EC (known as the 'ESD'), France has set an indicative target for final energy savings of around 12 Mtoe[5] in 2016. The intermediate target for 2010, set in France's first National Energy Efficiency Action Plan (NEEAP) in 2008, was around 5 Mtoe.

3. Evaluation of energy savings

3.1 Estimated energy savings in 2016 and 2020

A prospective evaluation of the results of implemented or planned measures is required in order to estimate whether the 2016 target will be achieved. France has chosen to evaluate the volume of energy savings achieved in 2016 - in the context of the ESD, and in 2020 - in the context of the Energy/Climate Package, by means of an 'Energy, Climate, Air' prospective scenario exercise. These same scenarios are used to establish changes in France's greenhouse gas emissions to 2020 and 2030, in the context of the report on monitoring mechanisms[6].

Methodology

The methodology used to establish the 'Energy, Climate, Air' prospective scenarios is set out in Annex 2, Chapter I. The scenarios are based on refined modelling of energy demand and contain, in this regard, elements of both bottom-up evaluation (modelling of the impact of individual measures) and top-down evaluation (overall evaluation of energy savings by economic sector).

Two scenarios are used to calculate the volume of energy savings in 2016 and in 2020:

- the 'pre-Round Table' (PG - *pré-Grenelle*) scenario, a trend scenario estimating the change in France's energy consumption without the targets and measures adopted by the Environment Round Table,

[5] This figure equates to 9% of France's average final energy consumption, after removing the air sector, international maritime bunkers and final energy consumers that come under the EU ETS Directive. The uncertainty introduced by this latter term means that the target of 12 Mtoe in 2016 raises the indicative target as set by the ESD.
[6] Under Article 3(2) of Decision No 280/2004/EC of the European Parliament and of the Council of 11 February 2004.

- and the 'with additional measures' (AMS - *avec mesures supplémentaires*) scenario, based on modelling the impact of all of the measures adopted in summer 2010 and the sectoral targets enshrined in law after the Environment Round Table. This scenario describes the change in the French energy system taking account of the targets and measures actually adopted and their effects to date.

Energy savings at a particular date are estimated using the difference between final energy consumption in the PG and AMS scenarios, not including installations that come under the EU ETS Directive, fuels used for air transport and international maritime bunkers[7]. 2016 consumption is obtained by means of a linear interpolation between France's actual 2009 consumption, as shown by the energy balance published by the Observation and Statistics Service (SOeS), and consumption for each scenario in 2020.

In the absence of more specific data, the proportion of energy consumed by industrial sector installations that come under the EU ETS Directive has been considered constant and taken as the average percentage seen between 2001 and 2008[8].

Limits

The PG scenario draws on data (indicators of energy efficiency, structure of consuming stock by fuel, etc.), dating in some cases from 2008 or 2009, in particular in the transport sector. It therefore already includes the impact of certain measures introduced following the Environment Round Table on the energy efficiency of the sectors concerned. For example, the effect of the automobile sector bonus-malus on the average consumption of new private vehicles between 2007 and 2009 is already taken into account in the PG scenario. The PG scenario therefore reduces the trend in France's energy consumption without the Environment Round Table.

Other than on this specific point, the scenarios are a prospective exercise and include the limits inherent in any energy-demand modelling; the results largely depend on hypotheses used to estimate the impact of the different measures on energy consumption.

Results

Figure 3 shows the historical change in France's total final energy consumption between 1990 and 2009, followed by the prospective changes between 2009 and 2020 under the PG and AMS scenarios.

[Key to Figure 3]
Conso énergie finale PNAEE (PG + AMS O) = Final energy consumption NEEAP (PG + AMS O)
Mtep = Mtoe
Historique = Historical change

[7] In accordance with Directive 2006/32/EC. As the Directive considers the installation of solar thermal panels a source of energy saving, solar thermal energy consumption, initially counted in the scenarios as final energy consumption, has been subtracted from total final energy consumption. This is not the case for locally produced electricity (solar, photovoltaic, etc.), the vast majority of which is injected into the network in France, rather than being used for own consumption.
[8] I.e. 49.7%, with a standard deviation of less than 0.9%. The final energy consumption of installations that come under the EU ETS Directive, not including the energy sector, is 18 Mtoe within the industrial sector and 1.1 Mtoe, i.e. less than 6%, outside the industrial sector. It has therefore been assumed that the consumption of installations that come under the EU ETS Directive, not including the energy sector, was included in the industrial sector.

Figure 3. Change in France's final energy consumption between 1990 and 2020 under the PG and AMS scenarios (sources - historical change: SOeS, Pégase database; PG and AMS scenarios: Enerdata study, March 2011)

Implementation of France's energy efficiency strategy makes it possible to reduce national final energy consumption to 135 Mtoe in 2020, compared with 163 Mtoe in the pre-Round Table trend scenario, i.e. a relative reduction of 17%[9].

Table 1 sets out the detailed results obtained in terms of final energy savings in 2016 and 2020, not including consumption in the sectors relating to EU ETS and air transport, international bunkers and solar thermal energy, in line with the scope of Directive 2006/32/EC.

Table 1. Evaluation of energy savings in 2016 and 2020 based on France's final energy consumption under the PG and AMS scenarios, not including consumption in the sectors relating to EU ETS and air transport, international bunkers and solar thermal energy

[Mtoe]	2009*	2016	2020	Energy savings achieved in 2016	Energy savings achieved in 2020
PG scenario	137.8	139.0	139.9		
Residential-service sector	*68.7*	*72.7*	*75.0*		
Transport	*48.3*	*44.1*	*42.0*		
Industry	*16.8*	*18.7*	*19.8*		
Others (agriculture, building and civil engineering works, etc.)	*4.1*	*3.5*	*3.2*		
AMS scenario	137.8	121.0	111.4	**18.0**	28.4
Residential-service sector	*68.7*	*56.8*	*50.0*	*15.9*	*24.9*
Transport	*48.3*	*42.3*	*38.8*	*1.9*	*3.2*
Industry	*16.8*	*18.5*	*19.4*	*0.2*	*0.3*
Others (agriculture, building and civil engineering works, etc.)	*4.1*	*3.5*	*3.2*	*0*	*0*

** Source: Energy balance for France, SOeS*

Energy savings in 2016 reach 18 Mtoe, against an indicative target of 12 Mtoe. 15.9 Mtoe, i.e. more than 88% of the energy savings, come from the residential-service sector, thus reflecting implementation of the demand-side management programme in the construction sector, established by the Environment Round Table. This is followed by transport (1.9 Mtoe - 10%) and industry (not including EU ETS; 0.2 Mtoe - 1%).

It should, however, be noted that actually achieving this ambitious target still depends on dealing appropriately with several 'points of caution', and in particular:

- **The real pace of renewal of existing building stock over the entire period.** Achieving the target of a 38% reduction in consumption by existing building stock to 2020 will require a sustained pace of renewal over the entire period. The scenario used by the Round Table

[9] The Energy-Climate-Air prospective scenarios were presented in the National Reform Programme (PNR) 2011-2014, sent to the European Commission by France in May 2011. They update the 'Round Table' and trend prospective scenarios used in the key elements of the 2011 PNR sent in November 2010.

working groups provided, firstly, for the most energy-consuming buildings to undergo major renewal at a rate of 400 000 renovations per year between 2013 and 2020 and, secondly, for intermediate renewal of 9 million dwellings;

- **Maintaining powerful incentive mechanisms to sustain this pace of renovation over the entire period**, in an increasingly constrained budget environment: even if work to improve the performance of dwellings is often identified as having low, or even negative abatement costs, there are many other constraining factors (household credit access, inadequate information, loss of amenity caused by the work) that hinder effective implementation of work and require the use of incentive mechanisms for housing renovation. That is why the Environment Round Table provided, in particular, for zero-rated eco-loans (*éco-PTZ*) and renewal of Sustainable Development Tax Credit (see Residential Service section);

- **Effective implementation of the programme of planned investment in transport infrastructure**: as regards those travelling, 800 kilometres of high-speed track (of the 2 000 km planned by 2020) have already been started to date and two project calls have already been issued to develop public transport reserved routes. This pace must be maintained to ensure a massive modal shift towards those modes of transport with the lowest emissions;

- **Strengthening the modal shift for freight**: the Round Table set a very ambitious target of a 25% modal share for non-road and non-air freight by 2022 (compared with 14% at present). Increased efforts will be needed for this to be achieved;

- **The effective capacity of branches and sectors to adapt** (innovation, technological breakthroughs, etc.);

- **Level of mobilisation of all actors and efficiency of the support mechanism** (training, behaviour change, etc.).

3.2 Evaluation of energy savings in 2010 towards achieving the intermediate target (top-down analysis 2007-2009)

Methodology

Energy savings over the period 2007-2009 are calculated using the top-down methods recommended by the Commission.

2010 data are not available within a timescale compatible with delivery of the report to the Commission. Since 2008 and, in particular, 2009 were highly atypical years, it seems preferable not to try to estimate energy consumption and activity levels for 2010 by extrapolating from the previous years' data. The intermediate target set under the ESD will therefore be calculated solely for the period 2007-2009.

This calculation takes account of evaluation of the first NEEAP. In fact, this Plan had been drafted in parallel with the Environment Round Table and drew on its main conclusions. These conclusions have been gradually put into practice since 2008. The second NEEAP thus supplements the previous report and reflects concrete implementation of the Environment Round Table, the first effects of which are estimated by means of top-down evaluation for 2007-2009.

Results

Achievement of the 2010 target

France's first NEEAP set a 2010 intermediate indicative target of **5 Mtoe** of energy savings.

For the period 2007-2009 (2010 figures not available), the volume of energy savings identified within the meaning of the ESD is evaluated at **5.159 Mtoe** (see Excel table in Annex 2, Chapter II). It may therefore be assumed that the 2010 intermediate target has been achieved.

Calculation of the indicators produced by the recommended methods for evaluating achievement of the 2010 target (see details of calculations in the annexed Excel sheet). In line with the Commission's recommendations[10], only positive indicators, reflecting the results of energy efficiency efforts, are taken into account.

- Households

Calculation option (a): calculation of preferred indicators (P1 to P5)

Indicator P1 (heating): P1 = 2.972 Mtoe

Indicator P2 (air-conditioning) cannot be calculated in the absence of data on energy consumed for air-conditioning.

Indicator P3 (hot water): P3 = 0.013 Mtoe

Indicator P4 (electrical appliances) calculated for different types of electric appliance (refrigerator, freezer, washing machine, dishwasher, television and tumble drier):

As an aggregate total, P4 = 0.041 Mtoe

Indicator P5 (lighting): P5 = 0.035 Mtoe

[10] Reply from the NEEAP Helpdesk on 15 April 2011.

Aggregate total: 3.061 Mtoe of savings using calculation option (a)

Calculation option (b): calculation of minimum indicators (M1 and M2)

Indicator M1 (household consumption other than electricity): M1 = 3.566 Mtoe

Indicator M2 (household electricity consumption). This indicator is negative: M2 = -0.481 Mtoe

Aggregate total: 3.566 Mtoe of savings using calculation option (b)

Calculation option (c): combination of preferred indicators and minimum indicators (M1 with P4 and P5)

Sum of indicators M1, P4 and P5, as suggested on p. 6 of the methods recommended by the Commission.

Aggregate total: 3.641 Mtoe of savings using calculation option (c)

Conclusion regarding household energy savings:

It is proposed to use calculation option (a), which is more representative of reality.

Energy savings for the period 2007-2009 for the household sector: 3.061 Mtoe

- Service

Calculation option (a): calculation of preferred indicators (P6 and P7)

Indicator P6 (consumption other than electricity) on a branch basis:

P6 = 0.415 Mtoe

Indicator P7 (electricity consumption) on a branch-by-branch basis. This indicator is more negative.

P7 = 0.423 Mtoe

Aggregate total: 0.415 Mtoe of savings using calculation option (a)

Calculation option (b): calculation of minimum indicators (M3 and M4)

Indicator M3 (consumption other than electricity) for the service sector as a whole: M3 = 0.429 Mtoe

Indicator M4 (electricity consumption) for the service sector as a whole. This indicator is negative: M4 = -0.438 Mtoe

Aggregate total: 0.429 Mtoe of savings using calculation option (b)

Conclusion regarding energy savings for the service sector:

It is proposed to use calculation option (c), which is more representative of reality. The energy savings come from an improvement in the energy efficiency of consumption of energy other than electricity.

Energy savings for the period 2007-2009 for the service sector: 0.415 Mtoe

- Transport

Calculation option (a): calculation of preferred or alternative indicators P8 (or A1), P9 (or A2), P10, P11, P12, P13, M7.

Indicator P8 (energy consumption of light vehicles shown in passenger kilometres):

P8 = 0.167 Mtoe

Alternative indicator A1 (energy consumption of light vehicles): A1 = 0.116 Mtoe

The figures are roughly the same for P8 and A1. It is proposed to use indicator P8, which is more representative.

Indicator P9 (energy consumption of heavy goods vehicles (HGVs) and utility vehicles shown in tonne kilometres). This indicator is negative. P9 = -1.368 Mtoe

Alternative indicator A2 (energy consumption of heavy goods vehicles and utility vehicles by vehicle).

A2 = 1.763 Mtoe

The very wide difference between the preferred indicator and the alternative indicator shows a lack of robustness in the proposed indicators in terms of account taken of the economic crisis. In order to have the indicator best representing the trend seen since 2000, it is proposed to calculate energy savings over the period 2007-2009 (indicator 'P9bis') by prolonging the trend seen over the period 2000-2007.

P9a = 0.331 Mtoe

Indicator P10 (energy consumption of rail passenger transport). This indicator is negative.
P10 = -0.046 Mtoe

Indicator P11 (energy consumption of rail freight transport). This indicator is negative.
P11 = -0.170 Mtoe

Indicator P12 (share of public transport in passenger transport). P12 = 0.132 Mtoe

Indicator P13 (share of rail and river transport in freight transport). This indicator is negative. P13 = -0.075 Mtoe

Indicator M7 (energy consumption of river transport). M7 = 0.000 Mtoe

Aggregate total: 0.630 Mtoe of savings using calculation option (a)

Calculation option (b): calculation of preferred or alternative indicators P8, P9bis, P12, P13, M6, M7.

Indicators P8, P9bis, P12, P13 and M7 are already calculated under calculation option (a).

Indicator M6 (energy consumption of rail transport). This indicator is negative.

M6 = -0.068 Mtoe

Aggregate total: 0.630 Mtoe of savings using calculation option (b)

Calculation option (c): calculation of indicators M5, M6, M7, P12, P13.

The indicators M6, M7, P12 and P13 are already calculated under the previous scenarios.

Indicator M5 (energy consumption of road vehicles): M5 = 2.574 Mtoe

Aggregate total: 2.706 Mtoe of savings using calculation option (c)

Conclusion in terms of energy savings for the transport sector:

It is proposed to use calculation option (a), which is more representative of reality.

Energy savings for the period 2007-2009 for the transport sector: 0.630 Mtoe

- **Industry**

Indicator P14 (energy consumption related to the production index) calculated for different branches of activity (chemistry, non-ferrous metals, steel, non-metallic minerals, wood, paper, foodstuffs, textiles, machinery, transport equipment, construction, others). The estimated share of the EU ETS sector, sector by sector, is based on the views of experts.

As an aggregate total of energy savings, P14 = 1.053 Mtoe

Energy savings for the period 2007-2009 for the industrial sector: 1.053 Mtoe

3.3 Evaluation of flagship measures

In order to have a decision-making tool and be in a position to evaluate the extent to which the proposed policies will help achieve France's targets for reducing greenhouse gas emissions, the Ministry of Environment, Sustainable Development, Transport and Housing (MEDDTL) has developed a tool for quantifying reduction of greenhouse gas emissions to evaluate the impact of the main policies and measures individually. This tool, known as SceGES[11] (scenario development for greenhouse gas emissions), is also designed to encourage homogenisation and methodological consistency of evaluations over time, giving the State a unique parameterisation framework and supplying calculation outputs in the format requested by European and international bodies.

This tool also makes it possible to obtain calculation output for final energy savings generated by the evaluated measure. SceGES has been used to estimate the impact of flagship measures and policies in terms of both final energy savings, within the framework of this action plan, and reduction of greenhouse gas emissions, within the framework of the report on monitoring mechanisms[12]. Details of the bottom-up methodology used are provided in Annex 2, Chapter III.

The following measures have been evaluated:
- Energy: regulation under the Ecodesign Directive on lamps (ban on incandescent light bulbs).
- Construction: 2012 Thermal Regulation, zero-rated eco-loan, sustainable development tax credit.
- Transport: measures concerning the performance of new vehicles (bonus-malus, scrappage premium, European regulations), HGV eco-tax.
- Agriculture: introduction of mobile test benches for tuning tractors[13].

The results of each evaluation are presented at the end of the description of each measure, in Chapter III of the Plan, in the form of insets.

A specific bottom-up evaluation method has been used to estimate the impact of the Energy Efficiency Certificate (EEC) mechanism in terms of final energy saving. Ex-post evaluation of final energy savings generated by the actions implemented as at 31 December 2010 is based on analysis of EECs issued in the context of the main standardised operations carried out. It is supplemented by ex-ante evaluation of the second period of the mechanism (2011-2013) based on the same principle. These two evaluations have been supplemented by ex-post evaluation of renewal of the mechanism for a third and fourth period, each with the same target level as the second period. The methodology and hypotheses used are detailed in Annex 2, Chapter IV. The total volume of energy savings produced by the EEC mechanism is:
- 1.1 Mtoe in 2010, or around 22% of France's intermediate target,
- 2.6 Mtoe in 2016 (and in 2020), or around 22% of France's indicative target, for the first and second periods,
- 5 Mtoe in 2016 and 8 Mtoe in 2020 if the mechanism is renewed according to the above-mentioned hypotheses.

It should be emphasised that the flagship measures have been evaluated individually. France's energy efficiency strategy is based on a set of measures targeting a single sector while addressing the various obstacles (investment aid, consumer information and mobilisation,

[11] The SceGES tool was developed, under the aegis of the Directorate-General for Energy and Climate (DGEC) of MEDDTL, by a group of specialist external consultants (*Centre Energétique des Procédés - Armines, Énergies Demain*, CITEPA, INRA and Solagro) in line with their respective areas of expertise.
[12] Under Article 3(2) of Decision No 280/2004/EC of the European Parliament and of the Council of 11 February 2004.
[13] This measure was the subject of a direct bottom-up evaluation not using the SceGES tool, the methodology of which is presented in the same chapter (Annex 2, Chapter III, paragraph 2.4).

regulations, etc). The same energy-saving action[14] may therefore have been generated by several measures at the same time (zero-rated eco-loans, EECs, tax credits, Energy Info Sites, etc.). As these overlaps are extremely difficult to evaluate, the evaluation of individual measures presented in the plan must be considered separately. The impact of each programme of measures, each targeting a sector of the economy, has been analysed using the 'Energy-Climate-Air' prospective scenarios outlined earlier.

[14] For example, the replacement of central heating equipment by more efficient equipment.

III. POLICIES AND MEASURES IMPLEMENTED BY FRANCE

1. Demand-side management

France's demand-side management strategy is based on a set of sectoral policies outlined in the following sections (see Residential-Service section, Transport section, etc.). In addition, horizontal demand-side management measures are implemented, affecting all sectors and including, in particular:
- Energy Efficiency Certificates (EECs), a major measure within French energy efficiency policy, aimed at mobilising sources of energy savings, particularly in the sectors where they are most widely used;
- support for development of energy performance contracts;
- support for the most energy-efficient products by means of regulatory and financial measures;
- future investments;
- research programmes.

Lastly, territorial mechanisms (planning tools, financial support put in place by local authorities), outlined in the Exemplary State and Authorities section, supplement policy implemented at national level.

1.1 Energy Efficiency Certificate mechanism

The **Energy Efficiency Certificate (EEC)** mechanism, created by Programme Law No 2005-781 of 13 July 2005 establishing energy policy guidelines (POPE law) is based on a three-yearly obligation to make EEC energy savings[15] imposed by government authorities on energy suppliers (the 'liable entities' (*les 'obligés'*). The latter are thus encouraged to promote energy efficiency among their clients (households, local authorities or professionals).

EECs are awarded, under certain conditions, by services of the Ministries responsible for energy, to eligible actors (liable entities, but also other legal entities) that undertake energy-saving operations or, in some cases, development of renewable energies, and may be traded. At the end of a period, energy-selling liable entities must demonstrate, on pain of a discharge penalty of two euro cents per missing kWh, that they have met their obligations by holding certificates for an amount equal to these obligations.

The national energy savings target for the first period of the mechanism (from 1 July 2006 to 30 June 2009), was set at 54 TWh_{cumac} and divided between the liable entities[16] in line with their energy sales volumes and tax-inclusive prices. This target was exceeded, with almost 65 TWh_{cumac} of certified energy savings as at 1 July 2009, more than 86% of which were made in the residential sector.

[15] The unit of measurement of EECs is a kWh of final energy cumulated and actualised over the life of the product (*cumac* kWh of final energy). One EEC equates to 1 kWh_{cumac}.
[16] For the first period, the liable entities were suppliers of electricity, gas, LPG and networked heat or cooling energy (above a certain annual sales threshold in GWh) and sellers of domestic fuel (starting from the first litre of fuel oil sold).

The administrative costs linked to operating the Energy Efficiency Certificate register are around 700 k€/year. A study conducted by ADEME, in partnership with CIRED (International Centre for Environment and Development Research), shows the cost of the mechanism for the liable entities during the first period as €210 million, or a unit cost of €0.39 cents per kilowatt hour.

A transitional period was introduced from 1 July 2009. No energy-saving target was set for that period, during which those eligible (including certain liable entities) continued to carry out energy-saving actions. In view of the positive results in the first period, Grenelle 2 renewed the EEC mechanism for a second three-year period[17] and extends energy-saving obligations to those offering automobile fuels for consumption, where their annual sales exceed a certain threshold. The range of entities eligible to request certificates has also been restricted to liable entities, public territorial authorities, ANAH (National Housing Improvement Agency) and social landlords. Lastly, contributing towards programmes to reduce the energy consumption of the least well-off households or towards programmes offering information, training and innovation in support of demand-side management, in particular aimed at developing vehicles with low carbon dioxide emissions, may now lead to issue of EECs.

The obligation levels for the second period are 255 TWh_{cumac} for all sellers of electricity, gas, domestic fuel, LPG and networked heat or cooling energy, and 90 TWh_{cumac} for those offering automobile fuels for consumption. The new period started on 1 January 2011, and will last three years.

As at 31 December 2010, the volume of certificates issued for final energy saved was 163.4 TWh_{cumac}.[18] Analysis of the savings generated by the 65 main standardised operations, which account for 95% of EECs issued as at 31 December 2010, produces the results shown in Table 1.

Table 2. Annual energy savings generated by the EEC mechanism (source: MEDDTL)[19]

	2010	2016	2020
Energy savings generated by all EECs issued as at 31 December 2010 (ex-post evaluation)			
Annual energy saving	1.10 Mtoe	1.05 Mtoe	1 Mtoe
Percentage of target	22%	9%	-
Energy savings generated by all EECs issued as at 31 December 2010 (ex-post evaluation) and by the second period of the mechanism (ex-ante evaluation)			
Annual energy saving	-	2.64 Mtoe	2.59 Mtoe
Percentage of target	-	22%	-
Energy savings generated by renewal of the mechanism until 2016 and 2020			
Annual energy saving	-	4.97 Mtoe	8.03 Mtoe

[17] Articles 14 to 17 of Programme Law No 2005-781 of 13 July 2005 establishing energy policy guidelines, amended by Law No 2010-788 of 12 July 2010 making a national environmental commitment; Decree No 2010-1663 of 29 December 2010 relating to energy savings within the framework of the Energy Efficiency Certificate mechanism; Decree No 2010-1664 of 29 December 2010 relating to Energy Efficiency Certificates.

[18] 158.8 TWh_{cumac} in the context of standardised operations and 4.6 TWh_{cumac} in the context of specific operations.

[19] Evaluation method specified in Annex 2, Chapter IV. Regarding renewal of the mechanism after the second period, each new three-year period is assumed to retain the same target level as the second period.

Percentage of target	-	41%	-

1.2 Dissemination of energy performance contracts

An **Energy Performance Contract (EPC)** is a contractual agreement between a beneficiary and a supplier (usually an energy services company) of an energy efficiency improvement measure. Under an EPC the supplier guarantees the beneficiary a volume of energy savings that enables its holder to obtain an annual savings budget that may be used to repay the financing put in place for the work or actions.

With regard to the residential sector, Article 7 of Grenelle 2 introduces a requirement for private co-ownerships to design an EPC (or an energy-saving work plan) following obligatory audit (see Residential-Service section).

For the public sector, Article 5 of Grenelle 1 enabled public procurement law to be amended to allow EPCs to be concluded, in particular in the form of an overall contract covering design, implementation and operation or maintenance services, since energy efficiency improvements are contractually guaranteed. In March 2010, MAPPP (Support Force for Public-Private Partnerships)[20] published a model contract adapting the EPC, in the context of renovation of public buildings, to partnership contract procedures. Lastly, the Ministries responsible for energy published a guide to EPCs relating to public works[21] in July 2010, for public entities and operators, in order to provide support and clarification for public actors wishing to use EPCs to contribute to the energy-saving targets, and, in addition, the reduced greenhouse gas emission targets, set by the Environment Round Table.

The Energy Efficiency Certificate mechanism also encourages the development of EPCs. Two forms for standardised and specific operations, in the residential sector and in the services sector, allow energy-saving actions carried out under an EPC to be subsidised.

Lastly, France wishes to develop EPCs in the industrial sector.

1.3 Development of smart grids

Development of electrical uses and production based on renewable energy sources places new constraints on electricity systems. These trends, coupled with more expensive primary energy sources and global awareness of climate challenges, call for better demand-side management and greater efficiency of the entire electricity system. The challenges for consumers and citizens are three-fold: to improve the quality and continuity of electricity supply, to guarantee security of supply and to manage energy costs. The emergence of **smart electricity grids** will, in particular, make it possible to meet these challenges and has been identified as a strategic 'green branch'

[20] MAPPP is an expert body attached to the Ministry of the Economy that provides support to public entities, on request, in implementing public-private partnerships. The model contract is available for download at: http://www.ppp.bercy.gouv.fr/cpe_clausier_type.pdf.
[21] Available for download at http://www.developpement-durable.gouv.fr/Guide-du-contrat-de-performance.html

for industry in France (see Industry section). Within the framework of the Research Demonstrator Fund, and then Future Investments, two ADEME Calls for Expressions of Interest (CEIs) enabled several research projects to be launched concerning integration of renewable energies into the grids, as well as various actions concerning electricity demand-side management. A new Call was opened on 1 June 2011 in this field. This action has been allocated €250 million across all CEIs.

Consistent with support for smart grids and to combat electricity consumption spikes, at the end of 2009 France initiated a **general discussion on ways of managing electricity peak demand** through a working group bringing together all of the actors involved. The conclusions of this working group contain 22 proposals. These measures concern, as a priority, electricity demand management, particularly during periods of peak demand[22]. They also provide for the introduction of a capacity obligation for electricity suppliers that should make it possible to balance demand and supply at peak consumption times by making suppliers invest in production and/or suppression capacities. This latter measure was introduced by Law No 2010-1488 of 7 December 2010 reorganising the electricity market, subsequently codified in the Energy Code. A 2012 decree will specify the procedures for implementing this capacity obligation, its aim being to favour suppression of production whenever possible.

1.4 Support for efficient equipment

Regulatory measures concerning products

Regulatory measures targeting energy-consuming products are implemented at Community level.

- **Ecodesign**: Framework Directive 2005/32/EC, replaced by Framework Directive 2009/125/EC, establishes a framework for the setting of ecodesign requirements for energy-using products or energy-related products: generic measures (environmental requirements) or more specific measures (minimum required energy efficiency). The measures may be determined by regulation or by voluntary agreement. Measures adopted by regulation to date cover, for example, standby and off modes for appliances, lighting of streets and service buildings, power supplies and chargers, domestic lighting, electric motors, circulators, cooling appliances, etc. At national level, as regards lamps, a national agreement between the French State and the Lighting Trade Union (*Syndicat de l'Éclairage*) has been signed ahead of the timetable for withdrawing the least efficient lamps from the French market.

Implementation of the regulation under the Ecodesign Directive banning incandescent lamps enables annual final energy consumption to be reduced by 0.17 Mtoe in 2010, 0.76 Mtoe in 2016 and 0.75 Mtoe in 2020[23]

- **Energy labelling** (see Awareness-raising section): European Directive 92/75/EEC of 22 September 1992, replaced by Directive 2010/30/EC, establishes a regulatory framework (criteria justifying the delegated acts, responsibilities of the actors involved and procedure to be followed) for requiring labelling indicating information on consumption of energy and other

[22] Managing peak demand relies on measures that may cause a shift in consumption, but may also lead to genuine energy savings.
[23] Source: SceGES evaluation (see paragraph 1.3.1.3 and Annex 2, Chapter III)

resources on energy-related products, by means of delegated acts. The aim of the labelling is to guide consumers towards those products that are most efficient in terms of energy and other environmental aspects (water, etc); professionals (manufacturers, importers and distributors) are also targeted.

Incentives for businesses

Since the 1990s some materials and equipment intended to save energy and produce energy from renewable sources is eligible for **accelerated depreciation** over 12 months, starting from their first use. The good is therefore depreciated more quickly than justified by economic wear and tear, which makes it possible to obtain higher investment annuities than result from gradual depreciation in the business's annual balance-sheet and, consequently, to reduce company tax for the first year of operation of the equipment. This measure expired on 1 January 2011.

Since 2011 materials and equipment eligible for accelerated or exceptional depreciation have also been eligible for a **50% reduction in their overall rental value** (Article 1518A of the General Tax Code (CGI)), which has allowed them to reduce the amount of business tax (*taxe professionnelle*) paid by the business. The reform of business tax in the course of 2010 removed capital from the basis for taxes paid by businesses, which *de facto* made this measure redundant.

Lastly, support has been provided by the Future Investments programme through OSEO green loans (see Industry section) for businesses to support investment in equipment that consumes less energy or enables the environmental footprint of equipment and production processes to be reduced (€250 million) and by the CEI under the Future Investments programme concerning ecodesign aimed at promoting ecodesigned tools and generic products (€250 million).

Production of renewable energy for own consumption

The National Action Plan for Renewable Energies[24], sent to the European Commission in August 2010, details France's policy in support of renewable energy development as well as the development targets. Of all renewable energy branches considered, only **solar thermal energy** and **renewable energy from heat pumps (PAC)** may be considered in France as being for own consumption and therefore involved in improving energy efficiency within the meaning of Annex III of Directive 2006/32/EC[25].

For the collective housing, service, agriculture and industrial sectors, the main national financial support mechanism for developing renewable heat is the Heat Fund, established by Article 19 of Grenelle 1 with a multi-annual budget of €1.2 thousand million. Managed by ADEME, it uses investment aid to support development of the use of biomass, geothermal energy, solar thermal energy and recovered energy, as well as development of heat networks using these energies. There are two methods of allocating aid: a call for 'BCIAT'[26] biomass projects of more than

[24] Available on the MEDDTL website: http://www.developpement-durable.gouv.fr/Politique-de-developpement-des.13554.html

[25] Support for photovoltaic energy is based on a high purchase tariff for electricity produced, which encourages resale of all electricity produced. Some dispersed-site installations, producing renewable electricity (photovoltaic, wind) and not connected to the network, exist and are growing in number, particularly in the Overseas Territories, but the energy produced is still on a small scale and has not been taken into account here.

[26] '*Biomasse Chaleur Industrie Agriculture Tertiaire*' (biomass heat industry agriculture service)

1 000 toe/year in the industry, agriculture and service sectors, and 'over the counter' regional aid for all other projects of a certain size, in addition to the aid provided by State-Region Project Contracts (CPERs) for smaller projects. More than 1 000 projects were assisted in 2009 and 2010, accounting for annual production of almost 512 ktoe of renewable energy.

Development of solar thermal energy

The Environment Round Table provides for very significant growth in the number of solar thermal collectors installed between 2006 and 2020. The target of producing 817 ktoe of renewable heat from individual solar thermal installations in 2020 translates into equipping almost 30% of individual dwellings, or producing around 48 times more solar thermal energy in this sector than in 2005. In the area of 'collective' installations (collective housing, service), the anticipated growth in shared solar energy equates to an 11-fold increase compared with production in 2005, reaching 110 ktoe in 2020.

Support for solar thermal energy in the residential sector is integrated within overall renewable energy development policy in the construction sector (see Residential-Service section). Particular emphasis is placed, under the 2012 Thermal Regulation, on encouraging installation of individual solar water heating in new private houses from 2013. In the public, service, agriculture and industrial sectors, financial support for solar thermal energy is provided by the Heat Fund and by State-Region Project Contracts (see Territorial Authorities section).

Renewable heat production from solar thermal energy continues to increase, with nearly 81 ktoe in 2009, double the figure in 2005 (38 ktoe).

Lastly, a CEI launched by ADEME in 2010 led to 31 applications, equating to more than €600 million in work concerning the new mechanisms in the thermal energy field.

Development of heat pumps

As in the case of solar thermal energy, the Environment Round Table provides for very significant growth in renewable energy produced by heat pumps to 2020. The total target for renewable energy produced by heat pumps (PAC) across all sectors is 1300 ktoe in 2012 and 1850 ktoe in 2020, compared with estimated production in 2009 of 705 ktoe. In the private residential sector, this target is based on an assumed two million private dwellings equipped with geothermal or aerothermal heat pumps.

In the residential sector, support for heat pump development is part of an overall policy to support renewable energy development in construction (Sustainable Development Tax Credit (CIDD), zero rated eco-loans, EECs). Support for geothermics increased in 2010 with the inclusion of costs of installing underground heat exchangers in the assessment basis of Sustainable Development Tax Credit for geothermal heat pumps. In the public, service, agriculture and industrial sectors, financial support for geothermal heat pumps is provided by the Heat Fund and by State-Region Project Contracts (see Territorial Authorities section).

From 2001, and until operational introduction of the Heat Fund in mid-2009, aid granted to 'exemplary operations', or demonstration operations, and mainly limited to operations with geothermal probes, were integrated into the ADEME aid mechanism. Creation of the Heat Fund, introduced to facilitate mass roll-out of operations to produce renewable heat, allowed all pilot geothermic operations to be integrated within the roll-out aid mechanism (geothermal energy from deep aquifers, geothermal energy from shallow aquifers, geothermal energy from probe fields) and, under the geothermics heading, even to expand the range of eligible solutions to include heat recovery operations from waste water and/or seawater.

Structure of the geothermal branch

Development of geothermics was identified by the Environment Round Table as one of the priority branches for green growth and action to combat climate change and is the subject of a **'green branch' initiative** (see Industry section).

The National Geothermics Commission was launched in July 2010 to speed up the development of geothermics in France, by proposing actions and recommendations to develop geothermics in each of its forms. It started work on four priority challenges: administrative simplification, quality, staff training and dissemination of information to each of the interested parties.

Lastly, the French Association of Geothermics Professionals, bringing together professionals in the sector, was set up in June 2010 with the aim of promoting geothermal businesses, technologies and production in France and in Europe.

Regulatory developments to encourage the growth of geothermics

Installations producing renewable energy using geothermal energy may be subjected to authorisation or declaration procedures under a number of legislative acts, in particular the Mining Code and the Environment Code.
Simplification of the legislative framework relating to minor operations is underway, through new legislative and regulatory provisions to be adopted in 2011.

1.5 Round Table commitment agreements

Round Table commitment agreements are a form of specific commitment made by the professional sectors within the framework of the Environment Round Table. They mobilise the sector across a range of given thematic areas. The targets set in these agreements match the Round Table commitments or even go beyond them. The type and content of actions specified in an agreement depend on the specific features of the sector concerned. The following are a few examples of agreements concluded since 2008:

- Agreement on withdrawal of incandescent bulbs from sale and promotion of low-energy bulbs (December 2008),
- Agreement with the Loans and Consignments Fund (*Caisse des Depôts et Consignations*) to encourage growth of eco-industries and renewable energies in France (March 2009),
- Agreement on the part of actors involved in design, implementation and maintenance of road infrastructure, the road system and urban public space (March 2009),
- Agreement on the part of actors involved in engineering (February 2010), in the field of renewal of existing building stock, ecodesign of cities and 'sustainable travel services,'
- Agreement on reducing energy consumption linked to lighting in the service sector (September 2010).

1.6 Future Investments

On 14 December 2009 the President of the Republic launched '**Future Investments**'. The Future Investments programme, allocated an overall budget of €35 thousand million, allows financing of profitable assets and infrastructure for research and innovation of benefit to France's economic growth.

Five 'priority' strategic axes have been identified (higher education and training, research, industrial branches and SMEs, sustainable development, and SMEs) and will enable France to increase its growth potential.

From the €35 thousand million in appropriations allocated to Future Investments by the Amending Finance Law for 2010, particular provision is made for:

- €1 thousand million for the 'Thematic institutes of excellence for decarbonised energies' programme, managed by the National Research Agency (ANR),
- €1 thousand million for the 'Nuclear energy of tomorrow' programme, managed by the Atomic Energy and Alternative Energies Commission (CEA) and the National Agency for Management of Radio-active Waste (ANDRA),
- €2.8 thousand million split between a number of programmes managed by ADEME, concerning demonstrators and experimental platforms in the field of transport (€1 thousand million), the circular economy (€250 million), renewable energies and green chemistry (€1.35 thousand million) and smart energy networks (€250 million),
- Within the 'Digital economy' thematic area, €2.25 thousand million for the 'Innovative digital uses, services and content' action, managed by the Loans and Consignments Fund (CDC), which covers, in particular, the digital city and smart transport systems[27],
- €1.5 thousand million for the 'Urban development and housing' thematic area, split between €1 thousand million for the 'City of tomorrow' programme, managed by the Loans and Consignments Fund (CDC) (see Exemplary State and Territorial Authorities section), and €500 million for the 'Thermal renewal of housing' programme ('Live Better' - '*Habiter Mieux'*), managed by the National Housing Improvement Agency (ANAH - see Residential-Service section).

The main aim of the programmes[28] being followed by the Government is to speed up the development of decarbonised technologies (renewable energies, CO_2 capture and storage, green chemistry, recycling) and different modes of future transport (road, rail, sea and air), firstly, to meet the challenges of reducing greenhouse gas emissions and the coming exhaustion of natural hydrocarbon resources, and, secondly, to strengthen the competitiveness of the associated industrial branches. For all of the actions, greater involvement of businesses is sought.

1.7 Research and innovation

The '**Thematic institutes of excellence for decarbonised energies**' programme within Future Investments aims to establish world-ranking technology innovation campuses for renewable energies, new energy technologies and energy efficiency. Allocated €1 thousand million, it will support the establishment of between five and ten institutes in line with the rationale behind the competitiveness hubs and the Environment Round Table priorities for energy research. The first

[27] Two project calls were launched in this context in February 2011, available for download at: http://investissement-avenir.gouvernement.fr/content/action-projets/les-programmes/num%C3%A9rique

[28] These programmes are presented in the sections covering the relevant sectors. The programmes are as follows: 'Thematic institutes of excellence for decarbonised energies', 'Demonstrators and technological platforms for renewable and decarbonised energies and green chemistry', 'Vehicle of the future', 'Research in the aeronautics field', 'Nuclear energy of tomorrow' and 'Smart electricity grids (digital economy)'.

project call was published on 19 November 2010 with a closing date of 18 February 2011. Two projects have so far been selected:

- INDEED, *Institut National pour le Développement des Ecotechnologies et des Énergies Décarbonées* (National Institute for the Development of Eco-technologies and Decarbonised Energies) in Lyon (Vallée de la Chimie-Solaize) [green chemistry];
- PIVERT, *Picardie Innovations Végétales, Enseignements et Recherches Technologiques* (Picardy Plant Innovations, Training and Technological Research) in Venette (Compiègne) [green chemistry].

In addition, six projects have been recommended by the chair of the selection committee for further consideration:

- France Énergies Marines, in Brest with test sites in Nantes, Bordeaux and La Réunion and in the Provence-Alpes-Côte d'Azur region [marine energies],
- *France Énergie Solaire - Institut Photovoltaïque d'Ile-de-France* (France Solar Energy - Ile de France Photovoltaic Institute) in Saclay [PV solar energy],
- Greenstars, close to the Thau Basin [green chemistry],
- *Institut Français des Matériaux Agro-Sourcés* (French Institute for Agro-Sourced Materials) in Villeneuve-d'Ascq [green chemistry]
- INEF4, *Institut National d'Excellence Facteur 4 en Réhabilitation et Construction Durables* (National Institute for Factor 4 Excellence in Sustainable Renovation and Construction) in Bordeaux [building/construction],
- SuperGrid, in Villeurbanne [smart grids].

Launched in 2008 and allocated a budget of €325 million for the period 2008-2012, the **Research Demonstrator Fund for New Energy Technologies (NTE)** was designed to finance research demonstrators in the new energy technologies sectors: low greenhouse gas-emission transport, renewable energies, positive energy buildings, smart electricity grids, energy storage, second-generation biofuels, etc. Research demonstrators are a stage in the research-development-industrial development of technologies that comes just before the industrial development stage and may lead to applied research being re-initiated at the end of the demonstrator experiments, in order to optimise technologies or remove certain economic or social obstacles. Implementation of the Future Investments programmes, for which ADEME is an operator, made it possible to expand the Research Demonstrator Fund in mid-2010. It currently accounts for 24 funded projects, totalling €167 million in aid, in the form of subsidies under CEIs relating to vehicles,

second-generation biofuels and CO_2 capture and storage.

Continuing the direction of the Research Demonstrator Fund, in 2010 ADEME was given responsibility for managing three programmes under Future Investments. These programmes are intended to support research demonstrator projects, large-scale pre-industrial testing and technology platforms to develop innovative technologies and forms of organisation. The intervention methods, in addition to the limited role played by subsidies, include new types of financing such as repayable loans and capital holdings. Amending Finance Law for 2010 No 2010-237 of 9 March 2010 relating to the Future Investments programme provides for a budget of €2.85 thousand million, assigned by the State to ADEME via three programmes:

- '**Development of the digital economy**' programme: the 'Smart electricity grids (digital economy)' action, assigned €250 million, seeks to support industrial research and testing of smart grid technologies to manage electricity consumption and integrate renewable energies.
- '**Vehicle of the future**' programme (see Transport section).
- '**Demonstrators and technology platforms for renewable and decarbonised energies and green chemistry**': this programme is based on innovation and deployment of green technologies in the energy branch (renewable energies, positive energy buildings, energy storage, etc.) and the chemistry branch, by taking over from the support fund for research demonstrators managed by ADEME. This will make it possible to support innovative research demonstrator projects and

technology platforms linking public and private actors. This programme is allocated €1.6 thousand million, including €250 million for the circular economy action (sorting and use of waste, de-pollution, product ecodesign).

Projects are selected by means of CEIs drawn up on the basis of national strategic roadmaps produced by experts representing the public and private actors concerned.

Thus, projects have been selected and approved in the thematic areas of smart electricity grids to encourage integration of renewable energies, vehicles with low greenhouse gas emissions and marine energies, after ADEME was instructed by the Commissariat-General for Investment, in relation to more than €100 million in support and almost €350 million in work. In addition, ADEME has launched, or will launch in 2011, more than 20 new CEIs across all of these thematic areas, in particular concerning daily travel of people and goods, positive energy buildings and blocks or smart electricity grids.

In the field of new energy technologies and energy efficiency, targeted action by the **National Research Agency (ANR)** has made it possible to commit almost €70 million a year since the Agency was created. In 2009 the eight programmes[29] targeted towards these thematic areas financed 88 projects through project calls, with a total budget of almost €75 million. These eight programmes implemented in 2010 have been reorganised in 2011 into five programmes, which will be the subject of project calls:
- Efficient and decarbonised energy systems (SEED)
- Sustainable land transport
- Sustainable buildings and cities
- Sustainable production and environmental technologies programme (ECOTECH)
- Renewable production and electricity management (PROGELEC)

The 2010 **Satellites Applications Plan** is MEDDTL's strategic and operational tool to improve the achievement of its tasks through justified use of satellite applications. Within the 'Sustainable mobility' element, the 'Evaluating the possibilities of satellite navigation systems for setting charges for mobility and identifying prerequisites for their deployment' action, also exploratory in nature, comes under the 'Energy efficiency' thematic area.

[29] Bioenergies, Hydrogen and fuel cells, Vehicles for land transport, Energy efficiency and reduction of CO2 emissions in industrial systems, Smart housing and photovoltaic solar energy, Innovative energy storage, Sustainable cities and, lastly, Sustainable Production and environment technologies.

2. Residential-service sector

2.1 State of play

The residential-service sector accounts for around 42% of France's final energy consumption. It is the main sector in terms of final energy consumption, ahead of transport and industry. Due to the significant fall in energy consumption by the industrial sector in 2008 and particularly 2009, its share in France's final energy consumption rose in 2008 and 2009 to reach 44%, with final energy consumption of 68.7 Mtoe.

The trend in final energy consumption in the residential-service sector between 1970 and 2009, by energy type, is shown in Figure 4.

[*Key to Figure 4*]
En Mtep = In Mtoe
Electricité = Electricity
Gaz = Gas
Pétrole = Oil
Charbon = Coal
Energies renouvelables = Renewable energies

Figure 4. Final energy consumption in the residential and service sector, corrected for climatic variations, in Mtoe, between 1970 and 2009 (source: SOeS energy balance 2009)

The energy mix in the residential-service sector has been greatly transformed since the 1970s. Coal use has almost disappeared; use of petroleum products continues to decline[30]. Natural gas and electricity consumption has increased greatly.

In 2009 energy consumption in the residential and service sectors, corrected for climatic variations, fell by 0.9%, after a rise of 2.2% in 2008 and a sustained increase of around 0.7% a year between 2002 and 2008. 2009 consumption thus returned to its 2005 level, while the number of dwellings continued to increase, even though the rate of increase slowed due to the economic crisis (+1.2% in 2009). The following variations were seen in relation to each energy source:

- Natural gas consumption declined significantly, at -3.2%, after -0.8% in 2008. In 2009 it returned to its 2002 level. The period of natural gas expansion (+1% a year between 2002 and 2007), which made it the preferred energy for new build, seems to be over. Part of the fall in consumption also appears to relate to service activities, which have not been spared by the crisis;
- Domestic fuel almost disappeared from new build as regards individual private housing. The continued decline in consumption involves gradual abandonment of the use of domestic fuel in the housing stock, with virtually no new installations;
- Electricity consumption rose by +1.7% (after +3.6% in 2008), mainly due to dynamic growth in specific uses of electricity, particularly those linked to electronics and information technology, and to electrical heating now being used in new dwellings, possibly linked to renewable energies. Growth in electricity consumption for the period 2000-2009 remained very high, at +2.7% a year. The increase seen in 2009 was therefore particularly low;
- Renewable energies grew by 4%, a steady figure. This growth was mainly due to the success of heat pumps and progress in new wood-burning methods, particularly in collective housing.

[30] Except for 2008, when the significant increase in oil prices between 2007 and mid-2008 led consumers to exhaust their stocks, which they replenished in autumn 2008 when prices fell.

2.2 Policies and measures

It is essential to improve the energy performance of buildings in order to achieve the targets set for energy efficiency, reduction of greenhouse gases and development of renewable energies. France has thus set very ambitious targets within the framework of the Environment Round Table:

- For new build, **widespread use of low consumption buildings (BBC)** by 2012 and positive energy buildings to 2020;

- For existing build, **a 38% reduction in primary energy consumption**. The aim is to achieve average primary energy consumption of 150 kWh_{ep}/m^2/year, compared with a current average of 240 kWh_{ep}/m^2/year.

While the potential for reducing consumption and emissions is high, this mainly involves diffuse sources that are therefore more difficult to mobilise. As a result, in order to achieve these targets, France is mobilising a range of diversified instruments: regulations, financial incentives, training, information and awareness-raising.

2.2.1 Improving the energy performance of buildings

Given the lifespan of buildings, improving their energy performance must be based on both use of best available technologies in new build and renewal of existing build.

Strengthened regulations for new buildings

Currently, all constructions with a building permit lodged after 1 September 2006 must comply with the **2005 Thermal Regulation (RT2005)**. This Regulation imposes constraints at a number of levels[31]:

- overall primary energy consumption of the building: for heating, domestic hot water, cooling, auxiliary and lighting equipment, it must be below the reference consumption applicable to that building;
- minimum performance of certain components (insulation, ventilation, heating system, etc.);
- summer comfort.

In addition, this Regulation is accompanied by an option, for contracting authorities that wish to construct more efficient new buildings than required by the Thermal Regulation to obtain an **energy label**. To this end, a label[32] covering five levels has been created, ranging from the HPE (high energy performance) classification, i.e. maximum consumption 10% lower than set by the Regulation, to the BBC (low consumption building) classification, which establishes a maximum primary energy consumption threshold of 50 kWh_{ep}/m^2/year. Achieving the BBC level makes it possible to claim various forms of financial support:

[31] Decree No 2006-592 of 24 May 2006 on the thermal properties and energy performance of structures and Order of 24 May 2006 on the thermal properties of new buildings and new parts of buildings specify, in relation to eight broad climatic zones, the performance levels which new buildings must meet.
[32] Order of 3 May 2007 on the content and terms for award of the 'high energy performance' label.

- Territorial authorities may approve an exemption from property tax on existing buildings (TFPB) of 50% or 100% for new dwellings completed after 1 January 2009 and holding the BBC label;

- From 1 December 2009 the zero-rated loan (PTZ), designed for first-time buyers with limited resources, was increased when the dwelling being built or acquired new, financed by the loan, had the BBC label[33]. The increase amounts to €15 000 for households of between one and three persons and €20 000 for households of four persons or more. Similarly, from 1 January 2009 the tax credit for loan interest (so-called TEPA tax credit) was increased for dwellings with the BBC label: the period of the tax credit was increased from five to seven years and the rate maintained at 40% for the entire period. From 1 January 2011[34] the PTZ and TEPA tax credit provisions are replaced by a new provision known as PTZ+. The amount of PTZ+ varies according to the location of the dwelling and whether it is new or old, but also according to the dwelling's energy performance: only new dwellings with the BBC label and old dwellings in DPE (Energy Performance Diagnosis) class A to D are eligible for the maximum loan percentage. In addition, a further reduction is applied to class G dwellings, compared with that already applied to class E or F dwellings[35].

- From 1 January 2011 aid for investment in rental property ('Scellier' provision) also depends on a dwelling's energy performance: the applicable tax rate reduction is less for dwellings without the BBC label: whereas it was initially set as 25% in 2009 and 2010 and 20% in 2011 and 2012 for all dwellings, it falls to 13% in 2011 and then 9% in 2012 for non-BBC dwellings, while being maintained at 22% in 2011 and then 18% in 2012 for BBC dwellings. In addition, for dwellings for which the building permit application was lodged on or after 1 January 2010, private individuals must demonstrate compliance with the Thermal Regulation in force in order to benefit from the tax reduction.

Lastly, since 1 January 2008 new buildings with a net floor area of more than 1000 m² must undergo a **feasibility study of the various energy supply solutions**, and in particular the use of renewable energies and the most efficient systems.

A new thermal regulation, the **2012 Thermal Regulation (RT)[36]** strengthens requirements concerning the thermal performance of new buildings: all new buildings with a building permit lodged after 1 January 2013 must have primary energy consumption below a threshold of 50 kWh_{ep}/m^2/year. This requirement must be applied early, from 28 October 2011, in the case of public and service buildings and dwellings built in an ANRU[37] zone. The 50 kWh_{ep}/m^2/year requirement concerns consumption of heating, cooling, lighting, domestic hot water produced and auxiliary equipment (pumps and fans). This threshold will also vary according to geographical location, altitude, nature of use of the building, average surface area of the dwellings and greenhouse gas emissions. On this last point, only buildings using wood energy and heat networks with the lowest CO_2 emissions will benefit from a variation in the primary energy

[33] See Finance Law for 2009 and Decree No 2009-1296 and 1297 of 27 October 2009.
[34] See Finance Law for 2011.
[35] Thus, for example, in Zone A (or the most populated areas in the country: Paris Conurbation, French Genevois and Côte d'Azur), first-time buyers are eligible for a PTZ+ equal to 40% of their transaction amount (below a ceiling) if they acquire or have built a BBC dwelling, 27% if this new dwelling does not have a BBC label, 25% if they acquire an old dwelling in energy class A to D, 15% if it is in class E or F, or 5% if the dwelling is in class G.
[36] See Decree No 2010-1269 of 26 October 2010 on the thermal properties and energy performance of structures and the Order of 26 October 2010 on the thermal properties and energy performance requirements of new buildings and new parts of buildings.
[37] Dwellings built in zones reserved for access to property by low-income households and eligible for a VAT rate of 5.5%, instead of 19.6% (ANRU: National Urban Renewal Agency).

consumption threshold, limited to a 30% maximum. The consumption requirement will also be raised by 7.5 kWh_{ep}/m^2/year for collective housing, on a temporary basis until 1 January 2015.

In addition, in order to ensure better implementation of this new Thermal Regulation, Grenelle 2 (Article 1) states that:

- at the time the building permit is lodged, a document is issued by the contracting authority confirming that the Thermal Regulation has been taken into account and the energy supply feasibility study carried out;

- on acceptance of the work, a document confirming that the Thermal Regulation has been taken into account by the project manager is provided by the contracting authority to the service responsible for the building permit.

Implementation of the 2012 Thermal Regulation will allow annual final energy consumption to be reduced by 0.41 Mtoe in 2016 and 1.15 Mtoe in 2020[38]; this assessment only concerns the residential sector and does not take account of gains in the service sector.

In the Overseas Departments (DOM) all new dwellings for which building permit applications or preliminary declarations were lodged on or after 1 May 2010 must conform to the applicable Thermal, Acoustics and Ventilation Regulations (RTAA DOM), a set of three new regulations specific to heating, acoustics and ventilation. The design of these dwellings must, among other things, make it possible to limit energy consumption by favouring bioclimatic design and restricting use of air conditioning, particularly through solar protection devices and use of natural ventilation. In addition, these dwellings must be equipped with a system for producing domestic hot water by means of solar energy to meet a minimum of 50% of needs[39]. In Guyana provision of domestic hot water is not obligatory. However, if the contracting authority decides to install hot water, it must be produced from solar energy.

Improving the energy performance of existing buildings

For existing buildings the Round Table set a very ambitious target of reducing consumption by 38% by 2020. In order to achieve this target, a massive programme of major renovation must be implemented and the target is to achieve 400 000 renovations a year over the period 2013-2020.

Most of the measures implemented are incentive measures to reduce the cost of work in relation to both the residential sector (for private individuals and social landlords) and the service sector. They are based, in particular, on a national programme to support thermal renovation, **the 'Live Better' programme**, managed by ANAH and allocated €500 million from Future Investments (see Energy section), which will be supplemented by ANAH financing estimated at €850 million. This set of measures was significantly strengthened within the framework of the Environment Round Table. Regulatory measures will supplement this mechanism.

[38] Source: SceGES evaluation (see paragraph I.3.1.3 and Annex 2, Chapter III).

[39] See Decree No 2009-424 of 17 April 2009 concerning specific measures relating to the heat, energy, acoustic and ventilation properties of residential buildings in the Guadeloupe, Guyana, Martinique and La Réunion Departments and the Order of 17 April 2009 specifying the minimum thermal properties of new residential buildings in the Guadeloupe, Martinique, Guyana and La Réunion Departments.

Regulatory measures

The **Thermal Regulation (RT) for existing buildings** aims to ensure significant improvement in the energy performance of an existing building when a contracting authority undertakes work with potential for such an improvement. The applicable measures, the global Thermal Regulation and the element-by-element Thermal Regulation, differ according to the scale of the work undertaken.

For major renovation[40] of buildings more than 1000 m², the **global Thermal Regulation[41]** sets a global energy performance target for renovated buildings, other than those built before 1948.

For major renovation of buildings less than 1000 m^2, or buildings more than 1000 m² undergoing minor renovation, the **element-by-element Thermal Regulation[42]** sets a minimum performance level for elements replaced or installed: this concerns, in particular, insulation, heating, hot-water production, cooling and ventilation equipment.

A 'high energy performance - renovation' label[43] has also been created. It includes two levels for residential buildings: a 'high energy performance - renovation, HPE 2009' label for buildings achieving primary energy consumption below 150 kWh_{ep}/m^2/year and a 'low energy consumption building - renovation, BBC 2009' label for buildings achieving primary energy consumption below 80 kWh_{ep}/m^2/year. This label also includes a level for buildings used for non-residential purposes.

Lastly, since 1 January 2008[44] all buildings more than 1000 m^2 that undergo major renovation must, like new buildings, undergo an energy supply feasibility study, in order to encourage contracting authorities to use a renewable energy source or highly efficient system.

Under Grenelle 1 the State undertook to subject all of its buildings, as well as those of its public establishments, to an **energy audit** by the end of 2010 (see Exemplary State section). The aim is to begin renovation of these buildings by 2012, using the diagnosis produced. This renovation should achieve a reduction of at least 40% in energy consumption and 50% in greenhouse gas emissions by State building stock within eight years. In 2009, under the Relaunch Plan, €200 million were devoted to energy renewal of State buildings, split into €50 million for energy audits and €150 million for works.

In addition, Grenelle 2 (Article 3) introduced a **requirement to carry out works to improve energy performance** for existing buildings used for service purposes or in which a public service activity is performed between now and 2020. The provisions implementing this measure, specifying how it will operate, will be published during 2011.

Maintenance of boilers and air conditioning

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[40] Renovation that costs more than 25% of the value of the building, as specified by regulation, excluding land.
[41] See the Order of 13 June 2008 on the energy performance of existing buildings with a surface area of more than 1000m², when they undergo major renovation.
[42] See the Order of 3 May 2007 on the thermal properties and energy performance of existing buildings.
[43] See the Order of 29 September 2009 creating a 'high energy performance - renovation' label for certain existing buildings and the Order of 29 September 2009 on the content and terms of award of the 'high energy performance - renovation' label.
[44] See Article L 111-9 of the Construction and Housing Code, introduced by the Law of 13 July 2005.

Pursuant to Directive 2002/91/EC on the energy performance of buildings, France has implemented a **requirement for annual boiler maintenance**[45] (see Annex 4). It concerns all boilers (gas, domestic fuel, biomass and multifuel) of an effective rated output of between 4 and 400 kW. Maintenance must be carried out every year and a maintenance certificate must be given to the client no later than 15 days after the visit and kept for 2 years by the client to produce in the event of a check. The certificate informs the client about the state of his or her boiler and central heating system. Maintenance must be carried out by a qualified professional.

In addition, in order to explain the new regulations to the general public, a guide aimed at private individuals, jointly produced by MEDDTL and ADEME, was published in December 2009[46]. Professionals in this sector have also combined to draw up a datasheet guide aimed at professionals in order to ensure proper application of the regulations[47].

Lastly, boilers and water heaters will soon be the subject of a regulation under the Ecodesign Directive (see Energy section).

Boilers of an effective rated output of between 400 kW and 20 MW are subject to **minimum energy performances**[48]. The operator is also required to install equipment:

- to control and measure performance,
- and to assess combustion quality.

In addition, they undergo a mandatory check, at least once every two years, to ensure that they meet minimum regulatory performance standards and that operators are undertaking the control and adjustment measures required of them.

Directive 2002/91/EEC also stated that Member States should establish a **periodic inspection of air-conditioning systems** of an effective rated output of more than 12 kW. In France this requirement was transposed within the framework of a decree dated 31 March 2010[49]. It specifies the main inspection stages: inspection of documentation, evaluation of system performance, evaluation of system dimensions in relation to building cooling requirements, provision of necessary recommendations on proper use of the system in place, possible improvements to the installation, possible benefit from its replacement and other potential solutions. Inspections will take place every five years. They cover 300 000 installations in France (10% of installed stock).

Support measures

The aim of Energy Efficiency Certificates (EECs) (see Energy section) is to mobilise energy efficiency sources, notably in the sectors where they are most widely used, such as construction. As at 31 December 2010, almost 85% of EECs issued came from operations carried out in the

[45] See Decree No 2009-649 of 9 June 2009 on annual maintenance of boilers of an effective rated output of between 4 and 400 kilowatts, Article L 111-9 of the Construction and Housing Code, introduced by the Law of 13 July 2005, and the Order of 15 September 2009 on annual maintenance of boilers of an effective rated output of between 4 and 400 kilowatts.
[46] Available for download from the ADEME and MEDDTL sites: www.ademe.fr or www.developpement-durable.gouv.fr.
[47] Available at http://www.energies-avenir.fr/.
[48] Articles R. 224-20 to R. 224-30 of the Environment Code.
[49] See Decree No 2010-349 of 31 March 2010 on inspection of air-conditioning systems and reversible heat pumps, supplemented by two orders: the Order of 16 April 2010 on periodic inspection of air-conditioning systems and reversible heat pumps with a cooling power of more than 12 kilowatts, and the Order of 16 April 2010 specifying criteria for certification of the competences of natural persons undertaking periodic inspection of air-conditioning systems and reversible heat pumps with a nominal cooling power of more than 12 kilowatts and criteria for accrediting certifying bodies.

construction sector. Other mechanisms are specific to the various sectors: private residential, social housing and service.

The service sector has benefited from the accelerated depreciation that applies to some materials and equipment designed to save energy and produce energy from renewable sources (see Energy section).

In the private residential sector, numerous incentives for private individuals have been implemented to encourage improved energy performance of dwellings:

- **Sustainable Development Tax Credit (CIDD)**: since 2005, and the Programme Law establishing energy policy guidelines, private individuals have been eligible for a tax credit to purchase the most efficient materials or equipment in the area of energy saving (for existing build only) or of production of energy from renewable sources (for new and existing build). Following the Environment Round Table, the draft Finance Law for 2009 renewed this mechanism until the end of 2012 and extended it to social landlords. Since it was introduced, the list of equipment eligible for Sustainable Development Tax Credit and the rates applied have been regularly revised in order to speed up the pace of 'minor' thermal renovations and encourage use of the most efficient technologies[50]. This mechanism benefited more than 1.5 million households in 2009 at an estimated tax cost of €2.6 thousand million.

Implementation of Sustainable Development Tax Credit enables annual final energy consumption to be reduced by 0.32 Mtoe in 2009, 0.57 Mtoe in 2010, 1.28 Mtoe in 2016 and 1.43 Mtoe in 2020[51].

- **Zero-rated eco-loan (eco-PTZ)[52]:** available since 1 April 2009, it is designed for owner-occupiers or landlords to finance major renovation work. It includes three options:
  1. Implementation of a 'mix of works';
  2. Achievement of a minimum ‘overall energy performance’ level for the dwelling;
  3. Renewal of a ‘non-public sanitation’ system using a non-energy-consuming mechanism.

This loan finances up to €30 000 of work to improve the energy efficiency of a dwelling over a period of 10 years (which may be extended to 15 years by the bank, without, however, being eligible for tax credit relating to non-charged interest between years 10 and 15).

Until 31 December 2010 it was possible to aggregate zero-rated eco-loans and Sustainable Development Tax Credit subject to availability of resources.

A flagship measure for the 'Construction' strand of the Environment Round Table, zero-rated eco-loans were intended to contribute to the renovation of 200 000 dwellings over the period 2009-2010, and 400 000 dwellings a year from 2013. As at 31 December 2010, there have been an estimated 150 000 eco-loans issued since it began, for work with an average cost of €19 200. The cost of the measure to the State is estimated at €75 million for 2009-2011.

[50] See successive updates of Article 18bis of Annex IV to the General Tax Code.
[51] Source: SceGES evaluation (see paragraph I.3.1.3 and Annex 2, Chapter III).
[52] See Article 99 of the Finance Law for 2009 and the implementing Decrees of 30 March 2009 on repayable interest-free loans to finance renovation work aimed at improving the energy performance of old buildings.

Implementation of zero-rated eco-loans enables annual final energy consumption to be reduced by 0.06 Mtoe in 2010 and 0.81 Mtoe in 2016 and 2020[53].

- **Exemption from property tax on existing buildings:** the Amending Finance Law for 2006 gave local authorities the possibility of granting exemption from property tax on existing buildings for five years, at an exemption rate of 50% or 100%, for structures completed by 1 January 1989 in which significant work eligible for Sustainable Development Tax Credit had been undertaken. This possibility has since been extended to all structures completed by 31 December 2008. Construction of new dwellings completed since 1 January 2009 may also benefit if they hold the BBC label.

- **Lower VAT rate for renovation work[54]:** work completed more than two years ago to improve, convert, upgrade and maintain dwellings (other than certain major equipment) is eligible for a lower VAT rate (5.5% instead of 19.6%). Although this measure is not specific to energy-saving work, it allows, in particular, support for energy renovation of dwellings.

- **Sustainable Development Account (LDD):** since 1 January 2007 the Industrial Development Account (CODEVI) has been replaced by the Sustainable Development Account (LDD), which has an increased deposit ceiling of €6 000 and expanded uses. It was previously restricted to financing SMEs but now grants low-cost loans to finance energy-saving work in dwellings built more than two years ago. The work that qualifies for financing is that eligible for Sustainable Development Tax Credit.

- Under the Future Investments programme, a €500 million support programme for thermal renovation of buildings for owner-occupiers with modest incomes, called 'Live Better' has been implemented (see paragraph on combating energy insecurity).

In addition, various mechanisms have been introduced to remove some of the obstacles to renovation of dwellings or use of good practice:

- The decision-making rules concerning work, which can be very constraining on co-ownerships: Grenelle 2 (Article 7) provides for **amendment of the co-ownership rules** to introduce:
  1. A majority vote of co-owners on performance of works of collective benefit in private areas at the expense of the co-owner concerned.
  2. A majority vote of co-owners on installation of thermal energy meters or heating cost distributors.
  3. Mandatory inclusion of the issue of an energy-saving workplan or an energy performance contract on the agenda of the co-owners' general meeting that follows the drawing-up (see below) of an Energy Performance Diagnosis - or, in appropriate cases, an energy audit - in any building with communal heating or cooling equipment.

- The lack of individualised breakdown of heating costs: since 1974[55], any communally-heated building must be equipped with devices allowing individualised breakdown of heating costs. These texts are currently being revised to take more account of technical issues that make it

[53] Source: SceGES evaluation (see paragraph I.3.1.3 and Annex 2, Chapter III).
[54] See Article 279-0bis of the General Tax Code.
[55] See Law No 74-908 of 29 October 1974 (Article 4).

impossible to install measurement devices and cases where the measure is not economically viable, so that its implementation can then be strengthened.

- The asymmetry between owners/landlords, who pay the cost of work, and tenants, who benefit from the resulting energy savings: in order to encourage a 'win-win' relationship, Mobilising Law No 2009-323 on Housing and Combating Exclusion, adopted on 25 March 2009, provides for a financial contribution to be made by the tenant after energy-saving work is carried out by the owner. Thus, owners will be able to require tenants to contribute half of the amount of service charges saved. This contribution will take the form of a new entry on the rent receipt, lasting for 15 years. This contribution will, however, only be possible if landlords carry out a mix of efficiency work involving at least two actions or enabling a minimum performance level[56] to be reached and have made efforts to consult with their tenant.

In relation to social housing stock, a target has been set to renovate the 800 000 most energy-hungry social dwellings by 2020. Achievement of this target relies on the following measures:

- Since 2005 HLM (low-cost housing) agencies or SEMs (mixed investment companies) that carry out energy-saving work in accordance with the Thermal Regulation in force are eligible for **tax relief on property tax on existing buildings** (TFPB) equal to a quarter of expenditure committed during the year preceding the year in which the tax is imposed[57]. This tax relief is attributable to the TFPB due for the building in which this work took place but also for all other buildings belonging to the same social landlord, where they all come under the same tax centre[58].

- Introduced after the Environment Round Table, **social housing eco-loans** are fixed-interest loans, discounted by 1.9% over 15 years or 2.35% over 20 years. They are available to HLM agencies, SEMs or communes owning or managing social housing in the context of thermal renovation of 'energy-hungry' housing: the loans finance energy-saving work enabling a dwelling to reduce its primary energy consumption from more than 230 kWk_{ep}/m^2/year to less than 150 kWk_{ep}/m^2/year. Dwellings completed before 1 January 1948 come under alternative arrangements. They may benefit from the loans where they come under 'energy' class E, F or G of the Energy Performance Diagnosis and a combination of actions is introduced to improve energy performance in terms of the properties defined in a list of works. Dwellings in 'energy' class D have also been eligible, in some circumstances, since September 2010, up to a limit of 20 000 dwellings.

At the end of February 2011 more than 75 000 social housing eco-loans (*éco-PLS*) had been issued, enabling annual final energy savings of 0.07 Mtoe[59].

- As negotiated at the time of the French Presidency of the EU Council, since 10 June 2009 **investment in energy efficiency and renewable energies in the housing sector has been eligible under the European Regional Development Fund (ERDF).** The amount that

[56] See Law No 2009-323 and Decrees 2009-1438 and 2009-1439 of 23 November 2009.
[57] See POPE Law.
[58] See Law 2009-323 of 25 March 2009.
[59] A social housing eco-loan is issued for a dwelling. Taking the average surface area of a dwelling as 70 m^2, the energy saving depends on the initial energy class (D, E, F or G) and is calculated using the Th-C-E ex method, which gives total energy savings of 804 GWh of final energy a year, or 69 ktoe/year (source: MEDDTL/DGALN/DHUP).

may be mobilised for energy renovation work is 4% of the national ERDF budget, which equates to around €230 million for metropolitan France and €90 million for the Overseas Departments for the period 2009-2013, with no annual expenditure ceiling. A circular was published on 22 June 2009 to provide regional managing authorities with recommendations on use of these funds: these recommendations are mainly intended to ensure consistency with current financial mechanisms to support energy-saving work. Thus, it was recommended that the terms of award of this subsidy be modelled on those granting eligibility for social housing eco-loans. In the Overseas Departments it is recommended that measures designed to improve summer comfort or use renewable energies may be financed by the ERDF, provided that they are innovative or entail significant cost that justifies the need for sources of supplementary financing. Aid must focus on structural operations covering a significant number of dwellings and aimed at exemplary energy performance, in order to give visibility to the involvement of European appropriations in these measures.

Lastly, France intends to strengthen **action to combat energy insecurity** using specific actions.

The National Housing Improvement Agency (ANAH) helps owner-occupiers, subject to an income ceiling, and social landlords to carry out housing improvement work. The Relaunch Plan made it possible, in 2009, to go beyond conventional subsidy of improvement work by making available **eco-subsidies** for low-income owner-occupiers (38 893 beneficiaries in 2009) and **eco-premiums** (of €1 000 for very low-income owner-occupiers and €2 000 for social landlords). In order to receive this eco-premium owner-occupiers had to occupy a dwelling with a pre-work F or G label and make energy gains of at least 30%, and social landlords had to make an improvement of at least two classes and achieve a C or D label. During 2010 establishment of the thermal renovation support fund (see below) and reform of the ANAH support arrangements replaced the eco-premium mechanism from 1 January 2011.

During the last few years, social funds to support energy management work have been put in place in a number of Departments[60]. Amending Finance Law for 2010 No 2010-237 rolls out this mechanism by establishing a national programme to support thermal renovation of housing. The '**Live Better**' programme, managed by ANAH, has been given €500 million from Future Investments (see Energy section), which will be supplemented by ANAH financing estimated at €850 million. It allocates aid additional to that provided by ANAH to low-income owner-occupiers (aid of between €1 100 and €1 600) carrying out work that enables an energy gain of at least 25%. It also provides for specific support, with a subsidy of between €300 in a programmed sector and €430 spread across sectors to support owners' contracting role. The 'Live Better' programme should allow 300 000 renovations between 2010 and 2017.

Lastly, Grenelle 2 (Article 11) introduced a legal definition of energy insecurity. An **energy insecurity observatory** was established in March 2011 to undertake better measurement of energy insecurity phenomena and ensure monitoring of public and private financial support for households in insecure circumstances, as well as monitoring of actions and initiatives at local or national level to measure impact and share experience.

Grenelle 2 also makes provision, under the Energy Efficiency Certificate (EEC) mechanism, for strengthening actions to help combat energy insecurity. Thus, in the second period of the EEC mechanism (see Energy section), energy suppliers subject to energy-saving requirements will

[60] Aisne, Ariège, Drôme, Haute Garonne, Gers, Gironde, Hérault, Jura, Loire, Lot, Oise and Deux Sèvres.

have to meet part of their obligations by reducing the energy consumption of the least well-off households.

2.2.2 Information, awareness-raising, training

Information measures

Within the framework of the Directive on the energy performance of buildings, an **Energy Performance Diagnosis (DPE)** was made mandatory for all dwellings offered for rent or sale (see Awareness-raising section). In addition, Grenelle 2 provides for an Energy Performance Diagnosis to be carried out by 1 January 2017, without anticipation of sale or rental, in the case of buildings equipped with a communal heating or cooling facility. Co-owned dwellings consisting of more than 50 lots and equipped with a communal heating or cooling facility must undergo an **energy audit**, the regulatory procedures for which are being defined.

Concerning building and decorating equipment and products, Grenelle 1 provides for a **framework for communications of an environmental nature**. Methods for calculating environmental impact will be defined, with particular regard to energy consumption and greenhouse gas emissions.

Energy Info Sites (see Awareness-raising section) are particularly intended to provide advice to private individuals on energy renovation of dwellings.

Awareness-raising measures and training of professionals

Procedures for **recognising the competences of building professionals** (designations, qualifications or certification) are aimed at encouraging professionals to develop their competences or have them recognised and encouraging clients to have preferential recourse to qualified businesses. As regards the area of energy savings and renewable energy production, a number of mechanisms have been put in place at the initiative of professionals and/or public authorities:

- The Qualit'EnR association issues designations (QualiPAC, QualiBois, Qualisol, QualiPV, etc.) to installers of renewable energy equipment.
- The Qualiforage label is a quality commitment initiative for drillers using vertical geothermal pumps, initiated by ADEME, the Geological and Mining Research Bureau (BRGM) and the EDF company.
- The QUALIBAT[61] body has introduced new certificates in 'Renewable energies' and 'Energy renovation', as well as the mention of 'Energy efficiency', which is now added to qualifications relating to the shell and to the technical equipment.
- The ECO Artisan label, developed by the Confederation of Craft and Small Businesses in the Construction Field (CAPEB) and awarded by QUALIBAT, identifies craftspeople specialising in overall energy renovation of buildings.
- Lastly, the 'Energy performance pros' label, developed by the French Building Federation (FFB) identifies businesses with either a professional qualification from QUALIBAT or Qualifelec with the mention of 'energy saving' or a QUALIBAT or Certibat certificate of overall energy renovation provision.

[61] Body governed by private law, established in 1949 at the initiative of the Minister for Construction and professional organisations of entrepreneurs, architects and contracting authorities. It delivers qualifications and professional certificates.

In addition, the **Energy Efficiency Certificate** mechanism (see Energy section) provides for certificates to be issued when undertaking the following:

- firstly, actions to train construction sector professionals in energy saving: thus, the 'FEEBAT' (energy-saving training for businesses and craftspeople in the construction sector) training mechanism has operated since the start of 2008 and has provided training for 29 000 placement trainees as at the end of 2010;
- secondly, technical documentation work. This work aims to develop technical documents to support businesses and craftspeople in the construction sector with regard to the renovation, maintenance and construction of buildings in accordance with the Environment Round Table energy targets (low consumption and/or positive energy new buildings, major energy renovation of existing buildings, 'Good practice, Grenelle Building 2012').

Lastly, **the Housing Improvement Club**, in partnership with ADEME, has implemented a training mechanism dedicated to the basics of building renovation crafts: it involves an online learning management system for construction professionals[62].

ADEME also supports a number of programmes aimed at developing resource centres for training construction professionals:

- the PRAXIBAT programme under which ADEME helps regional councils to invest in practical work platforms in order to allocate equipment to training centres to implement solar thermal, photovoltaic, wood-burning and heat pump energy, as well as regarding lighting, ventilation and energy performance of opaque walls.
- The BEEP (built environment - professional space) network: since 2006 this network has sought to pool knowledge and know-how and facilitate access to relevant and validated information and concrete examples. It brings together regional and national research centres, such as the Effinergie association, ResoBAT or the HQE (high environmental quality) association.

2.2.3 Research and demonstration

Following the first **research and testing programme concerning energy in buildings** (PREBAT - see inset), PREBAT2 was launched in 2010 to cover the period 2010-2015. It is a national mechanism to coordinate and be responsible for public research concerning energy in buildings, which involves actions by the Ministries responsible for sustainable development, energy, construction, research and industry and their agencies, ADEME, ANR, ANAH, OSEO and ANRU. PREBAT2 serves two objectives, emerging directly from the exceptional energy performance levels expected in the construction sector by the Environment Round Table: renewal of stock at the best energy-performance level and a blueprint for the new buildings of tomorrow.

[62] www.energiebat.fr

PREBAT1 (2005-2009)

The goals of PREBAT1 were to develop research, technology transfer and testing around a number of strategic axes: sustainable modernisation of existing buildings, a blueprint for the new buildings of tomorrow and positive energy buildings. Making these three main PREBAT objectives a reality called for efforts in three complementary fields of action: acquisition and dissemination of knowledge (studies, training of professionals, dissemination of knowledge, etc.), technological research and testing.

Public financing of more than €100 million was mobilised for the period 2005-2010 under PREBAT1. A significant proportion of the research work concerned technological bricks. PREBAT1 also made it possible to carry out two sets of genuinely large-scale experiments, the exemplary operations programme, run by ADEME, and the research, action research and testing projects run by PUCA (urban development, construction and architecture plan).

A few emblematic PREBAT1 actions

- An international comparison was undertaken in 2005-2007 to analyse foreign good practice (in terms of both research and operational implementation) concerning new and renovated high energy performance buildings;

- The ADEME system of aid for exemplary operations in the construction sector devoted most of its appropriations (€9 million/year) to assisting the creation of a number of very high energy performance new and renovated exemplary buildings, in order to demonstrate their feasibility. It enabled more than 1 100 exemplary buildings to be created, these being selected following regional project calls;

- Launched by PUCA, the REHA testing programme promotes innovative technology and architecture enabling sustainable reclassification of collective housing buildings in the public and private sectors. The first results under the 'REHA' label will be seen in 2011.

The Construction-Energy Foundation was established in 2005 by four major actors in the construction and energy sector - Arcelor-Mittal, EDF, GDF-Suez and Lafarge. Alongside State-supported research programmes, notably PREBAT, this Foundation aims to provide financial support, over at least five years, for research operations, and also to finance evaluation of supported work and its exploitation. When it was set up, it was allocated a budget of €8 million, with half coming from the State.

In addition, **low environmental impact construction** was identified by the Environment Round Table as one of the priority branches for green growth and action to combat climate change, and was the subject of a 'green branch' initiative (see Energy section).

Lastly, within the framework of demonstrators under the Future Investments programme, a Call for Expressions of Interest was launched in 2010 in relation to **positive energy buildings and blocks** - in the case of renovations - with initial operations to be selected in summer 2011. This Call is part of a €1 350 million programme, placed under ADEME management, to finance demonstrators in relation to renewable energies and green chemistry (see Energy section).

3. Transport sector

3.1 State of play

Transport accounts for 31.9% of final energy consumption in France, with 49.8 Mtoe consumed in 2009. This consumption again fell in 2009 (-1.1% after 0.08% in 2008). Private vehicle use increased slightly but HGV traffic declined substantially.

[*Key to Figure 5*]
En Mtep = In Mtoe
Energies renouvelables = Renewable energies
Pétrole = Oil
Electricité = Electricity

Figure 5. Change in final energy consumption for transport between 1970 and 2009, in Mtoe (source: SoeS, 2009 energy balance)

In addition, the graph below shows the share of final energy consumption represented by each mode of transport. In 2008 road transport represented 82.8% of this consumption.

[*Key to Figure 6*]
Mtep = Mtoe
Fluvial = River
Aérien = Air
Ferroviaire = Rail
Route = Road
Uniquement les véhicules françaises = French vehicles only

Figure 6. Final energy consumption by mode of transport between 1970 and 2008, in Mtoe (source: ADEME, energy and climate, key figures, 2009 edition)

3.2 Policies and measures

The Environment Round Table approved the accelerated development of modes of transport other than road and air. Thus, the Programme Law implementing the Environment Round Table (Grenelle 1) set an ambitious target of **reducing transport greenhouse gas emissions to their 1990 level** by 2020 (Article 10). It should be emphasised that, while the target set by France for the transport sector concerns greenhouse gas emissions, its achievement will be made possible, in particular, through reductions in energy consumption.

The policies implemented to achieve this target are based around two axes:
- support for modes of transport with the lowest emissions (modal shift);
- improvement of the efficiency of modes of transport used.

3.2.1 Encouraging modes of transport with the lowest emissions

Grenelle 1 provides for a **National Transport Infrastructure Scheme (SNIT)** to be determined. This tool will make it possible to implement the Round Table transport infrastructure guidelines. It establishes State guidelines on maintaining, modernising and developing the networks under its

responsibility, as well as aid for territorial authorities in developing their own networks. The Scheme is currently at the development stage. A preliminary draft is under public and institutional consultation in the first half of 2011 and the Scheme should be published in autumn 2011. The preliminary draft currently under consultation proposes, in particular:

- a strategy that favours modes of transport other than road and air within an integrated and multi-modal framework in which all modes still have their place and their part to play. It involves, in particular, constructing an efficient transport system that helps meet the State's international, European and national commitments on the environment and the aims of economic growth and social progress;
- 60 actions that will guide infrastructure management policies in terms of the operation, maintenance and updating of networks.

Concerning transport of goods

Grenelle 1 (Article 11) established a target of **25% non-road and non-air modal share by 2022** (compared with 14% currently).

The national commitment concerning rail freight was launched in September 2009. It seeks to revitalise rail freight and comprises the following eight axes:

- To create a **freight-oriented network (ROF)**, i.e. for priority freight use. This involves transforming the existing network around the main structural axes for transport of goods to modernise its operation and improve its efficiency. To this end, State investment will focus on certain priority axes with significant traffic, where freight will benefit from efficient and stable train paths, taking particular account of the interests of shippers.

- To create a **network of regularly scheduled rolling motorways**. The aim is to enable more than 500 000 lorries a year to be transferred to rail by 2020, i.e. a doubling of traffic between 2009 and 2020. The Perpignan-Bettembourg (Luxembourg) lines and the Alpine rolling motorway are already in service today. They will be expanded to offer several return journeys a day. An Atlantic rolling motorway will also be brought into service and a fourth is being studied to connect the Rhone and Atlantic routes.

- To support **development of combined transport**. Support granted to offset the additional trans-shipment costs linked to this mode of transport was increased by 50% in 2010. An experiment has already been conducted to allow trains 850 metres in length to travel on the Paris-Marseille axis and studies are underway to investigate the possibility of making trains even longer.

- To develop **local rail operators** (OFP): the legal rules have been adapted to facilitate the establishment of local rail operators. These operators, in fact, seem the most appropriate solution to offer local transport services in territories with low traffic density and in ports. They are designed to transport sets of wagons or already assembled trains to or from an exchange point with a long-distance rail operator. Four local rail operators have already been established since 2009.

- To develop **high-speed rail freight** between airports using high-speed track outside peak hours to transport goods. France has thus supported the CAREX (cargo rail express)

European project, aimed at introducing a very high-speed European rail freight service between the main European airport cities.

- **To eradicate bottlenecks** (particularly concerning the Lyon conurbation and between Nîmes and Montpellier), the major congestion points of the national rail network.

- **To improve rail service provision for the major** French **ports**. The aim is to double the market share of rail freight for routes to and from the ports.

- **To modernise train path management** (improvement in journey time and in freight trains' adherence to timetables) and treat freight as a priority.

The national commitment to rail freight equates to specific overall public investment of more than €7 thousand million by 2020.

In order to take regular stock of progress in relation to the measures being undertaken, a committee to monitor the national rail freight commitment was set up in January 2010. It brings together all of the stakeholders and, in particular, the State, the French Rail Network (RFF), rail transport businesses, trade unions and NGOs.

Beyond the national rail freight commitment, other measures aim to encourage a modal shift from road transport of goods to other more economical modes with lower emissions:

- **Development of sea motorways**: these are a transport option constructed around a viable, regular and frequent maritime link. The State supports the development of sea motorway routes on the Atlantic and Mediterranean sides of France so as, in particular, to offer alternatives to crossing the Pyrenees and the Alps. The aim is to enable a modal shift of between 5% and 10% of the traffic concerned. A sea motorway started operating in September 2010. It links the ports of Nantes and Gijon (Spain).

- **Reform of the ports** was initiated through the Port Reform Law of 4 July 2008, with the aim of improving their competitiveness, capacity and multi-modal provision of service. In this context, the new bodies governing the main seaports have been put in place and these ports have adopted their strategic projects, which provide for increasing overall investment, of around €2.5 thousand million for the period 2009-2013. The State is supporting these efforts with a budget of €174 thousand million, which doubles, for the period 2009-2013, the appropriations under the State-Region Project Contracts. In 2009 almost €50 thousand million in appropriations were added under the economy relaunch plan. These strategic projects will enable the ports to develop new infrastructure to improve their hinterland service provision and also contribute to the emergence of new services, such as local rail operators (OFP). Thus, the first French local rail operator is port-based. It is located at La Rochelle.

- The State will continue its efforts to modernise the river network known as the Magistral, within the framework of the targets and performance contract 2010-2013 with **French Inland Waterways** (VNF). This investment programme is part of the follow-up to the 2009 annual performance contract concluded on 2 March 2009.

- The financing protocol between French Inland Waterways (VNF), the State and the regions concerned to create the **Seine Nord Europe canal** was concluded on 11 March 2009. The Seine Nord Europe canal project consists in creating a new waterway, 106 kilometres in length, linking the Oise and the Dunkerque-Escaut Canal. The total cost of this project is estimated at €4.2 thousand million. This project will, in 2020, allow a modal shift of 500 000 HGVs to river transport across all of the basins concerned[63].

In accordance with the Finance Law for 2009, Article 11 of Grenelle 1 puts in place a **kilometric eco-tax** to be levied on HGVs. It makes it possible to take account of the cost of using the unassigned national road network of metropolitan France and the routes belonging to territorial authorities liable to see a shift of traffic. The purpose of this eco-tax will be to finance transport infrastructure projects: the proceeds of taxation from the national road network will be allocated to the French Transport Infrastructure Financing Agency (AFITF). The State will retrospectively assign territorial authorities tax proceeds equating to the amounts collected for use of the road network in their ownership. This tax may also be varied upwards for some sections in an effort to produce a balanced shift of traffic to uncongested axes. Over a full year, it should generate revenue of around €800 million to €880 million for the AFITF.

Implementation of this eco-tax enables annual final energy savings of 0.165 Mtoe in 2016 and 0.168 Mtoe in 2020[64].

In the context of developing green branches (see Industry section), the 'logistics and flow management' branch aims to draw up and implement an action programme to support environment-friendly industries with strong growth potential in the logistics branch.

Concerning passenger transport

Article 12 of Grenelle 1 provides for the **construction, by 2020, of 2000 km of high-speed rail track**. The State will provide financing of €16 000 thousand million for this purpose. In particular, the following lines will be built: the South-Europe-Atlantic line, the Brittany-Pays de Loire line, the Mediterranean arc and service provision for eastern France with the completion of the Paris-Strasbourg line and the three branches of the Rhine-Rhone line, etc. An additional programme of 2 500 km will also be determined.

For the first time, an overall rail carbon assessment has been produced for the Rhine-Rhone high-speed line (see inset).

RFF, SNCF (French national rail operator) and ADEME have launched a Carbon Assessment for the eastern branch of the Rhine-Rhone high-speed line

For the first time, the greenhouse gas emissions resulting from the stages of design and completion of the new infrastructure, but also including the two new stations, 30 additional high-speed trains (TGV) and maintenance facilities, were analysed using emission factors proposed by

[63] Source: http://www.seine-nord-europe.com. To 2050 the shift may reach between 1.2 and 2 million HGVs a year, according to the scenarios for anticipated traffic.
[64] Source: SceGES evaluation (see Annex 2, Chapter 3).

ADEME (or specifically developed with its assistance). These results were then supplemented by estimates of greenhouse gas emissions over the first 30 years of commercial operation of the new line after its opening, scheduled for December 2011.

These initial analyses indicate that 1.9 thousand million tonnes CO_2 equivalent (teqCO_2) will be

discharged during the first 30-year operating cycle, including 53% from traction energy and 42% from the initial construction work. By then deducting the greenhouse gas emissions saved during this same period - as a result of shifts from road and air to the new rail option - the study shows that the project's carbon footprint becomes zero from its twelfth year of operation. Thus, operation of the high-speed line makes the project as a whole 'carbon-positive' from 2024 with a 'carbon benefit' that increases each year. It should be noted that, before that date, from 2012 almost 1.5 million new passengers will use the train every year to go to the territories served and thus support their economic growth.

Article 13 of Grenelle 1 provides for a **programme to expand Reserved Public Transport Routes (TCSP) to take them 1 800 kilometres outside Ile-de-France** (compared with 329 km in 2008). An initial project call was launched under the Sustainable Cities programme. It was aimed at local authorities with work starting before the end of 2011. The State committed €810 million to co-finance 52 projects run by 37 authorities, covering more than 400 kilometres of new routes in total. Encouraged by this initial success, the Government launched a second project call on 4 May 2010 for work to be initiated between 2011 and 2013: the results of this project call were published on 9 February 2011 and 78 projects were selected, accounting for 622 km of routes in 54 conurbations. As regards Ile-de-France, an agreement between the State and the Region was concluded in January 2011. It provides for an investment programme of €32.4 thousand million between now and 2025 to modernise the existing network and create an automatic metro link. In addition, in January 2011 MEDDTL announced mobilisation of more than €1 thousand million between 2011 and 2013 to undertake urgent actions aimed at modernising public transport in Ile-de-France. The State will support public transport development with €1.084 thousand million invested in modernising the existing network, creating an automatic metro link and new tram, tram-train and bus routes with a high service value.

In addition, since 1 January 2009 businesses have had to take over half of the cost of public transport season tickets. This measure, introduced in the 1980s, was previously restricted to Ile-de-France.

Introduction of priority air action zones (ZAPA)

In order to reduce the harmful effects of air pollution on health and meet regulatory air quality standards, Grenelle 2 (Article 182) makes available to 'municipalities or groups of municipalities with more than 100 000 inhabitants' a new air quality improvement tool, the 'priority air action zone' (ZAPA). This is one of the flagship measures of the particulates plan introduced by the Programme Law implementing the Environment Round Table of 3 August 2009 and launched on 28 July 2010.

The principle behind priority air action zones is a ban on the highest-polluting vehicles from entering the zone and development of a broader dynamic to reduce air emissions, particularly of particulates and nitrogen oxides (NOx).

Priority air action zones may be introduced, on a three-year trial basis, at the initiative of municipalities or groups of municipalities with more than 100 000 inhabitants, particularly in zones considered pollution blackspots and where the regulatory limit values for air quality are not met - or might not be met in future.

A number of local authorities have already decided to initiate feasibility studies for a priority air action zone trial to evaluate the appropriateness of such a measure for their territory and to determine the methods of implementation best suited to the local context. In particular, this concerns the city of Paris, the community of Plaine Commune, Clermont conurbation, Grenoble-Alpes-métropole, Grand-Lyon, Pays d'Aix, Nice-Alpes Côte d'Azur and the Communauté Urbaine de Bordeaux. These authorities are supported in their initiative by the State, under an ADEME project call of 1 July 2010: 'feasibility study for priority air action zones'.

3.2.2 Improving the efficiency of modes of transport used

Concerning road transport

Improving the performance of new vehicles

The Environment Round Table set a target of reducing average emissions by France's total vehicle fleet from 176 g of $C0_2$/km to 120 g by 2020.

Thus, numerous measures have been put in place at national and Community level to encourage purchase of the most efficient new vehicles in terms of energy consumption and greenhouse gas emissions:

- **The CO_2 label for private vehicles** for sale was made obligatory for new vehicles by decree, starting from 10 May 2006. Its aim is to increase awareness among vehicle buyers but it also allows the implementation of tax measures linked to CO_2 emissions (see below) (see Awareness-raising section).

- Since 2006 the amount of **annual tax on company vehicles** has been established in line with the vehicle's greenhouse gas emissions, rather than its engine rating for tax purposes as previously. Companies are liable for this tax in relation to the vehicles that they use in France, whatever their State of registration, or that they own and are registered in France, where these vehicles are registered in the private vehicle category. The applicable rate goes from €2 per gCO_2 per kilometre for vehicles emitting less than 100 gCO_2/km to €19 per gCO_2 per

  kilometre for vehicles emitting more than 250 gCO_2/km.

- The ‘ecological **bonus malus**’: this mechanism, based on the CO_2 emissions per km of new vehicles, rewards purchase of vehicles with the lowest CO_2 emissions and penalises acquisition of vehicles with the highest emissions (see inset for detail of its implementing procedures and the resulting changes). The mechanism has been highly successful and enabled average emissions of new vehicles registered in France to fall from 149 g of CO_2/km in 2007 to 140 g of CO_2/km in 2008 and 133 g of CO_2/km in 2009, while the historically-based decline, before introduction of the bonus-malus, was around 1.5 g of CO_2/km/year. In 2010 the average level of emissions of registered new vehicles again fell to around 130 g of CO_2/km. Thus, the average emissions of new vehicles sold in France in 2009 was the lowest in Europe.

[*Key to Figure 7*]
Création du bonus-malus = Creation of bonus-malus

Figure 7. Change in CO_2 emissions in gCO_2/km of new vehicles between 2001 and 2009 (source: MEDDTL)

The vehicle bonus-malus: description of a mechanism and the changes made to it

The vehicle bonus-malus comprises three strands:

- The first strand, established by Decree No 2007/1873, consists in allocating a premium or ‘***bonus***’ for any purchase or rental of a new vehicle with low CO_2 emissions. Assistance towards the purchase of a new vehicle running on LPG, natural gas (NGV) or combining electrical energy and a petrol or diesel engine, with low CO_2 emissions, is also proposed.

- The second strand, also established by Decree No 2007-1873, consists in adding to the bonus a ‘***superbonus***’ of €300 if purchase of the vehicle itself is accompanied by scrapping (*mise au rebut*) of a vehicle more than 15 years old. This measure has not been implemented, since another scrappage premium, the ‘*prime à la casse*’ (see below) was more advantageous in 2009 and 2010.

- Lastly, the third strand (Articles 1011bis and 1011ter of the General Tax Code) provides for an additional tax, a ‘***malus***’, applicable to the most polluting vehicles. An exemption has been introduced for vehicles designed for large families, as well as disabled persons; a specific discount has also been introduced for vehicles designed to operate on super ethanol E85. An annual tax has also been introduced (Article 1011ter of the General Tax Code) for vehicles with high CO_2 emissions (more than 245 gCO_2/km in 2010).

To supplement this mechanism, under the Relaunch Plan, a **scrappage premium** has been introduced under the terms set out in Article 12 of Decree No 2009-66 of 19 January 2009, when acquisition or rental of a new vehicle emitting less than 155 gCO_2/km for the year 2010 is accompanied by the destruction of a vehicle more than 10 years old. This measure was initially due to finish at the end of 2009 but was extended into 2010 to avoid too sharp a fall in the automobile market.

The bonus-malus was intended to be a neutral mechanism in terms of public finances. Due to the success of vehicles with low carbon dioxide emissions, the mechanism showed a deficit of around €500 million in 2009. Further changes to the legislation governing the bonus-malus have therefore been made to reduce this deficit, while strengthening the incentive to purchase increasingly clean cars.

At the end of 2009, the mechanism was adapted to market changes in order to follow technological developments and come closer to the aim of balance with regard to public finances: the thresholds for awarding the bonuses were lowered by 5 gCO_2/km and the bonus amounts reduced.

Despite these adaptations, the mechanism again showed a deficit for 2010 (around €490 million). For that reason, major changes to the mechanism have been made for 2011:

- Withdrawal of the €2 000 specific premium for vehicles running on LPG/NGV. These vehicles will be incorporated into the normal bonus scale. On the other hand, the other tax benefits linked to use of these vehicles (lower registration costs, fuel tax exemption, etc.) have not been changed;

- Lowering of the threshold for hybrid electric vehicles to receive financial support of €2 000 from 135 g to 110 gCO_2/km;

- Lowering of the amounts of financial support from €1 000 to €800 and from €500 to €400, as well as withdrawal of the €100 bonus.

For 2012 a further change to the grid setting the thresholds and amounts of the malus has been adopted and incorporates:

- Lowering of the threshold for a malus of €2 600 by 10 gCO_2/km (> 231 gCO_2/km);

- Creation of two further intermediate tranches of malus of €1 100 (181-190 gCO_2/km) and

  €500 (151-155 gCO_2/km);

- Lowering of the threshold for a malus of €200 by 10 gCO_2/km (141-150 gCO_2/km).

From 2012 a bonus of €3 500 will be granted to vehicles in the 50-60 gCO_2/km tranche, the €5 000 bonus being reserved for vehicles with emissions of 50 gCO_2/km or less. Also from 2012 the €400 bonus for the 90-110 gCO_2/km tranche is reduced to €300 and now applies only to vehicles in the 90-105 gCO_2/km tranche, and the €800 bonus for the 60-90 gCO_2/km tranche is reduced to €600.

Implementation of the measures concerning new vehicle performance enable an annual final energy saving of 0.1 Mtoe in 2010, 1.1 Mtoe in 2016 and 2.2 Mtoe in 2020[65]

At European level, **Regulation 443/2009 limits CO_2 emissions of passenger cars** and requires manufacturers to make a phased reduction in CO_2 emissions of new vehicles to 130 gCO_2/km between now and 2015 (65% of the fleet in 2012, 74% in 2013, 80% in 2014 and 100% in 2015). This Regulation also establishes a mechanism of penalties in the event of emission limits being exceeded. In order to send a signal to the industry for subsequent production cycles, it also sets a

[65] Source: SceGES evaluation (see paragraph I.3.1.3 and Annex 2, Chapter III).

new long-term target of 95 gCO_2/km in 2020. The Commission will, from 2013, consider the modalities for reaching that target. Additional measures also accompany this Regulation in order to achieve a supplementary reduction of 10 gCO_2/km: presence of a dashboard tyre deflation indicator, energy labelling of tyres, limitation of tyre resistance to wear, etc.[66].

In addition, with regard to light utility vehicles, a new Regulation on the average emissions of these vehicles is to be published in the first half of 2011; phased implementation is scheduled between 2014 and 2017, to reduce the average emission value of these vehicles to 175 gCO_2/km. An objective value of 147 gCO_2/km has been set for 2020.

Reducing emissions of road vehicles

Directive 2009/33/EC requires account to be taken, when purchasing new vehicles bought in the context of public procurement and delegated public passenger transport services by road and rail, of the lifetime energy and environmental impacts of these vehicles. To this end, the Directive proposes two possible methods:

- setting technical specifications for the environmental and energy impacts of the vehicle;
- including these impacts in the purchasing decision, either as award criteria or by their monetisation.

In the context of transposing this Directive into French law[67], the solution adopted in domestic law has been to transpose all of the options contained in the Directive and leave the choice to purchasers.

Directive 2009/30/EC, regarding the specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce greenhouse gas emissions, provides for lifecycle greenhouse gas emissions per unit of energy from fuel and energy to be reduced by up to 10% by 31 December 2020. This reduction consists of a target of 6%[68] - obtained through the use of biofuels, alternative fuels and reductions in flaring and venting at production sites - as well as two additional indicative targets of 2%, respectively obtained through, firstly, use of environmentally friendly carbon capture and storage technologies and use of electric vehicles and, secondly, through purchase of credits under the Clean Development Mechanism of the Kyoto Protocol.

Concerning air transport

[66] Discussions have also been initiated to adopt measures, concerning the measurement of emission linked to air-conditioning or the presence of a gear shift indicator.
[67] See Law 2011-12 of 5 January 2011 concerning various provisions adapting legislation to European Union law (Article 12).
[68] Compared with the Community average for lifecycle greenhouse gas emissions per unit of energy from fossil fuels in 2010.

Construction of the **Single European Sky**, initiated through the European regulations of 2004, has made it possible to launch an ambitious programme to restructure air navigation services and improve air traffic management in Europe. The **SESAR programme,** the technological pillar of the Single European Sky, aims to develop, for the next 30 years, a safe and efficient new-generation air traffic management system that responds to the challenges of sustainable development. The target is to reduce CO_2 emissions by between 6% and 12% through fuel savings, resulting, in particular, from a reduction in distances covered and waiting and taxi-ing times.

In addition, at national level the introduction of continuous descent procedures for Paris-Orly and Paris Charles-de-Gaulle Airports is being studied with the aim of reducing noise pollution and greenhouse gas emissions: an initial study, carried out into Orly Airport in 2008, proved conclusive and therefore led to implementation at Orly in October 2010. An equivalent study got underway at the start of 2010 for the Paris Charles-de-Gaulle platform.

The **Clean Sky initiative** was launched at the end of 2007 at Community level. It concerns research in the aeronautics field and brings together a significant number of European actors (notably, Airbus, Thalès, Eurocopter, Safran, Dassault and Rolls Royce). Its aim is to bring to more rapid fruition the breakthrough technologies needed to reduce significantly the environmental impact of aviation, consistent with the aim of the Advisory Council for Aeronautical Research in Europe (ACARE), which advocates a 50% reduction in the CO_2 emissions of aircraft by 2020, compared with those of 2000. This initiative is scheduled to last seven years (2008-2014) with total financing of €1.6 thousand million, of which 50% is contributed by the European Commission and 50% by industry operators. Six calls have been launched since mid-2009, equating to more than €90 million in support for various research activities. A seventh call is currently underway.

The '**Research in the aeronautical field'** programme under Future Investments (see Energy section) is focused on the challenges for aeronautical industry research, identified with all of the actors in the air sector, involved in making this mode of transport more environment-friendly (fuel savings, reduced noise pollution, etc.). It has been allocated €1.5 thousand million, comprising one-third in subsidies and two-thirds in repayable loans.

Concerning river and maritime transport

In the field of maritime transport, the main actions concern:

- support for use of new fuels;
- support for the work of the International Maritime Organization (IMO) to limit and control ships' emissions, as well as development of emission control zones. In the context of the discussions underway at the IMO regarding introduction of a market instrument to reduce greenhouse gas emissions, France supports implementation of a permit trading system without free allocations. It has launched a study into the economic consequences of implementing such a mechanism.

3.2.3 Raising awareness and communicating

Aimed at the general public

The following main measures have been put in place to encourage behavioural changes on the part of actors:

- A CO_2 label for private vehicles (see Awareness-raising section);

- A **Mobility Week,** organised every year in September. Since 2009 it has been merged with Road Safety Week and is now called 'Mobility and Road Safety Week'. This Week, which acts as a framework for organising several hundred actions throughout France, aims to generate behavioural changes in relation to travel. In 2010 it particularly highlighted the 'travelling well together' ('*bien circuler ensemble*') principle;

- **Car-sharing** is encouraged, particularly in the context of urban travel schemes (see below) and the State will provide the legal certainty needed for this form of travel. A working group on ways of encouraging car-sharing has been set up at national level and studies in this area are underway;

- A **'car club' ('*autopartage*')**[69]' label is currently being defined at national level and will be the subject of a decree stating the terms of its award and use. Town hall authorities may reserve parking spaces for vehicles with this label;

- Active transport and non-motorised forms of mobility are encouraged through various measures:
  1. Account taken of complementarity between cycling and public transport under project calls regarding development of public transport (see above);
  2. The opportunity for communities in municipalities, conurbations or cities to create self-service cycle services.
  3. A requirement for those constructing buildings for residential or service use, equipped with parking spaces, to make provision for secure cycle parking.

  Lastly, an evaluation will be carried out regarding the requirement to provide cyclist and pedestrian routes when carrying out improvements to urban routes.

  - Establishment of the French Agency for Multi-modal Ticketing Information (AFIMB): in addition to the efforts already made by territorial authorities to improve public transport information available, establishment of this Agency is aimed towards coherent development of all such information systems at national level.

[69] A car club equates to sharing a fleet of motorised land transport vehicles to the benefit of subscribing users.

In addition, measures to encourage **eco-driving** have been implemented: professional road drivers are now trained in eco-driving as part of their initial training and continuing training every five years. In the case of private drivers, the questions bank has been supplemented for the theory element of the driving test to take account of eco-driving. School road safety certificate programmes organised at lower secondary-school level have been supplemented to include this issue.

Lastly, in the context of renewing the Energy Efficiency Certificate (CEE) mechanism for the period 2011-2013 (see Energy section), Grenelle 2 (Article 78) extends this mechanism to those releasing automobile fuel for consumption, if their annual sales exceed a particular threshold. The energy-saving requirement for these professionals, for the three-year period, is 90 TWh of cumulated and actualised final energy. This move will stimulate the development of energy-saving operations in the transport field, such as, for example, modal shift, car sharing or training in eco-driving.

Aimed at territorial authorities and businesses

ADEME has developed various evaluation tools to help territorial authorities undertake a diagnosis of their fleet and direct their purchases towards clean vehicles: for private vehicles, a guide to the consumption and emissions of these vehicles has been posted on the ADEME site[70]; for HGVs, ADEME makes decision-making tools available, particularly with regard to segregated bus lanes, service vehicles, urban buses and household refuse collection vehicles.

ADEME has also developed an online tool to integrate the energy consumption and greenhouse gas emissions 'well to wheel' of different modes of transport and for different types of engine.

Aimed at transport professionals

Article 11 of Grenelle 1 provides for the introduction of **mandatory display of greenhouse gas emissions of services transporting goods or passengers**. In order to determine a common methodology for evaluation of the greenhouse gas emissions of transport services, the Energy, Environment and Transport Observatory (OEET) has been set up. It brings together representatives of the State, trade unions, transport operators and shippers, local authorities and NGOs.

In addition, various voluntary initiatives are currently underway:

- **'CO_2: transport carriers make a commitment'** (***'CO_2: les transporteurs s'engagent'***): this initiative was launched in December 2008 and offers a methodological framework to businesses transporting goods by road that wish to commit themselves, for a three-year period, on the basis of a plan of specific and individualised actions, to achieving an overall

[70] Guide to conventional consumption and CO2 emissions of new private vehicles put on sale in France, pursuant to Directive No 1999/94/EC (www.ademe.fr/carlabelling).

target for reducing their fuel consumption and greenhouse gas emissions. The actions are based around four axes: vehicle, fuel, driver and flow management. At the end of 2010 223 businesses had signed up to this initiative (compared with 66 at the end of 2009), equating to more than 44 000 vehicles (against a target of 50 000 vehicles at the end of 2012). The target reductions agreed by that date equate to a reduction of around 8% in consumption and emissions for an equal volume of activity, or around 260 kteqCO_2.

- The **National Passenger Transport Federation** (FNTV) signed a charter on 14 October 2009 to develop road safety and sustainable development actions. The aim of this charter is to organise a working relationship between the various partners (FNTV, State, ADEME, etc.) to promote environmental and road safety objectives. To this end, it is planned, in particular, to extend the 'CO_2: transport carriers make a commitment' initiative to road passenger transport.
- **In the aviation sector, an agreement was signed in January 2008** under which all actors in the French air transport sector have undertaken to carry out specific actions to combat noise pollution, preserve air quality and combat climate change. The commitments include, in particular, the following actions:
  - Air France has undertaken regularly to replace a significant part of its fleet by aircraft with lower CO_2 emissions;
  - The airline companies have undertaken to make a CO_2 calculator available to users;
  - Aéroports de Paris has undertaken to set up a car-sharing site between its platforms, to acquire a significant number of electrical vehicles to replace the vehicle fleet at airports, etc.

3.2.4 Studies and governance

The Urban Travel Schemes (PDU) introduced by the Framework Law on Internal Transport of 30 December 1982 set out the principles for organising transport of persons and goods and traffic flow and parking in urban transport areas. Since the Law of 30 December 1996 on air and rational energy use, it has been mandatory to draw up an Urban Travel Scheme for urban transport areas included, in whole or in part, in conurbations of more than 100 000 inhabitants.

Under the Schemes, State support for travel schemes of businesses, administrations, schools or activity zones has been reaffirmed, in the context of Article 13 of Grenelle 1. Grenelle 2 (Article 63) also states that Urban Travel Schemes, when being drawn up or revised, must now

include an evaluation of anticipated avoidance of CO_2 emissions resulting from implementation of the scheme. The requirement extends to all greenhouse gases from 2015.

Lastly, **voluntary initiatives to draw up Business-level Travel Schemes (PDE)**, introduced by the Law on solidarity and urban renewal of 13 December 2000 are encouraged, with conurbations of more than 100 000 inhabitants being required, in particular, to put mobility advice structures in place, aimed at all those managing places of activity. In June 2009 ADEME registered 1 170 Business-level Travel Schemes, five times more than in 2005, covering more than a million employees. Travel schemes may also be undertaken by educational establishments. The evaluation carried out by ADEME in 2008-2009 listed 1 470 initiatives, 61% of these involving the introduction of walking buses and 16% a broader initiative, comprising a number of measures.

The Rail Activity Regulatory Authority (ARAF) was established by Law No 2009-1503 of 8 December 2009 on organising and regulating rail transport. An independent regulator, it will be the guarantor of proper application of Community rules by the actors involved and an appeal body in the event of discriminatory practices. It will enable rail transport to become more fluid and efficient, and therefore more attractive to businesses.

The **French Transport Infrastructure Financing Agency (AFITF)** was established in November 2004 to make the State's contribution to financing of transport infrastructure projects. With the introduction of the eco-tax on HGVs, AFITF will have a new source of financing (around €800-880 million from 2012-2013). In order to encourage modal shift, the share of AFITF expenditure devoted to alternatives to road transport continues to grow.

3.2.5 Research

In the area of land transport, a number of study, development or research programmes are underway. They involve the scientific and industrial communities in issues relating to the energy efficiency of the transport chain, resource savings and understanding of mobility.

PREDIT (National Land Transport Research, Testing And Innovation Programme) supports the majority of operational research in the land transport field, in terms of both understanding mobility practices in relation to persons and goods and developments regarding vehicles (transmission system, alternative fuel, hybridisation) and understanding the impact of transport on the environment. PREDIT 4, covering the period 2008-2012, will have a budget of €400 million.

Individual initiatives are currently being supported to encourage technological solutions specific to long-distance freight transport (INNOFRET), in order to reduce the carbon footprint of this activity, which is highly dependent on fossil fuels.

Lastly, a number of projects are supported under the Inter-Ministerial Single Fund (FUI) and the Civil and Urban Engineering Network (RGCU) to encourage construction processes that are more

efficient in terms of energy and noble materials, and to increase the sustainability of works undertaken.

In aviation, particular support is provided to manufacturers in the context of research projects. A significant number of these projects aim to reduce fuel consumption (by simplifying structures, improving engines, using composite materials, etc.). They have been assigned a budget of almost €120 million for 2010.

Furthermore, launch of the Council for Civil Aeronautical Research (CORAC), on 18 June 2009, made it possible to develop a technological roadmap, thus uniting national research efforts. The Council, chaired by the Secretary of State for Transport, brings together all French air transport actors: companies, airports, aeronautics industry, research bodies and Ministries concerned. It works to coordinate aeronautic research activities in France.

In addition, France supports research efforts relating to aviation biofuels. In fact, these biofuels, long considered difficult to design for the air transport sector (due, in particular, to the specific freezing-point requirements of aviation fuel), are the subject of developments that have already allowed certification of a mixture consisting of up to 50% biofuel, using the Fischer-Tropsch procedure (thermochemical pathway), supplemented by kerosene[71]. This opens up new certification possibilities in the short term. As set out earlier, the **Future Investments programme** also contributes €1 500 million in financing for research in the aeronautics field, in particular to develop aircraft of the future.

Under the ADEME Demonstrator Fund (see Energy section), two CEIs were launched in 2008 and 2009 on the theme of 'road vehicles with low greenhouse gas emissions'. Twenty-two projects were approved and are now underway, equating to financing of €75.2 million under the Demonstrator Fund. This Fund has also been extended via **Future Investments** (see Energy section), notably through the **'Vehicle of the future'** programme, which seeks to test and promote, for mobility needs, technologies and forms of organisation that are less energy-consuming and have lower greenhouse gas emissions. Budgets of €750 million for automobile manufacturing, €150 million for rail manufacturing and €100 million for shipbuilding will be mobilised, involving one-third in the form of subsidies, one-third as repayable loans and one-third as industrial development loans or capital injections. A number of CEIs are envisaged in this context and will be launched in 2011 for most of the programmes covered.

[71] Standard D7566- (Standard specification for aviation turbine fuel containing synthesized hydrocarbons) was adopted by the ASTM (American Society for Testing and Materials) on 1 September 2009.

4. Industrial sector

4.1 State of play

The change in final energy consumption on the part of the industrial sector[72] between 1970 and 2009, by type of energy, is shown in Figure 8. Since 2000 the reduction in final energy consumption on the part of the industrial sector has been increasing, averaging -0.7% a year between 2000 and 2006, then accelerating to -1.5% in 2007 and -1.9% in 2008. In 2009 industry's energy consumption decreased very sharply by 9.7% to 33.4 Mtoe[73]. This decrease is closely linked to the fall in industrial production in 2009, amounting to -10.9%, which was the result of a worsening of the economic situation in almost all sectors.

[*Key to Figure 8*]
En Mtep = In Mtoe
Electricité = Electricity
Gaz = Gas
Pétrole = Oil
Charbon = Coal
Energies renouvelables = Renewable energies

Figure 8. Final energy consumption in industry, corrected for climatic variations, in Mtoe, between 1970 and 2009 (source: SoeS, 2009 energy balance)

In terms of market share, industry continues primarily to use gas and electricity (34% and 30%, respectively), rather than oil and coal (14% each). Renewable energies account for 7% of industry's final energy consumption, a doubling in 10 years.

Over the long term, the decoupling of energy consumption and industrial activity, noticeable since 2003 (see Figure 9), bears witness to energy efficiency gains. These gains may be explained by structural effects and by increasing awareness of sustainable development, but also by a search for competitiveness that motivates industry, against a background of expensive energy and limits on greenhouse gas emissions, to increase its energy-saving efforts and replace oil, and above all coal, by gas, electricity or renewable energies when techniques allow. However, in the short term the economic crisis has slowed down new investment and led, in 2009, to factories operating at non-optimal capacities in terms of energy management, leading to an increase in energy intensity in the industrial sector.

[*Key to Figure 9*]
Indice = Index
Mtep = Mtoe
Indice de Production Industrielle (indice base 100 en 2005) = Industrial Production Index (base index 100 in 2005)
Intensité énergétique de l'industrie (indice base 100 en 2005) = Industrial energy intensity (base index 100 in 1990)
Consommation finale énergétique de l'industrie (Mtep) = Industrial final energy consumption (Mtoe)

Figure 9. Final energy consumption in industry, corrected for climatic variations, in Mtoe, between 1970 and 2009 (source: SoeS)

[72] The industrial sector, within the meaning of the energy balance, includes the agri-food, iron and steel and construction industries, but not that which relates to energy processing (power plants, refineries, distribution losses, etc.).
[73] Provisional data.

4.2 Policies and measures

France's policy in terms of energy efficiency and reduction of greenhouse gas emissions in the industrial sector is based around five axes:

- European Directive 2003/87/EC establishing a market for trading in emissions permits within the European Union,
- financial incentives,
- regulatory measures,
- support for standardisation processes,
- support for development of the most efficient technologies, particularly through the Future Investments mechanism.

4.2.1 European Directive 2003/87/EC[74]

European Directive 2003/87/EC establishing a **market for trading in emissions permits within the European Union** (EU ETS Directive) introduced, from 1 January 2005, a cap and trade system for greenhouse gas emissions from the European Union's main industrial and energy activities. In 2010 964 installations in France, operated by 570 businesses in both the energy sector and the industrial sector, came under this Directive.

After a test period from 2005 to 2007, the system became fully operational in 2008, for an initial period of five years until 2012. During the test period, then the initial period, each Member State drew up a National Allocation Plan (NAP) for allowances, followed by an allocation of these allowances to businesses. In France the allowances (including those initially placed in the New Entrant Reserve) totalled 156.51 $MtCO_2$ a year[75] for the period 2005-2007 and 133.4 $MtCO_2$ a year for the period 2008-2012. The New Entrant Reserve of free allowances proved inadequate to subsidise the needs of new installations and expansions of installations and will be supplemented by market acquisition of allowances. This initiative will have no impact on the emissions cap for sectors subject to allowances or the European Union's global emissions cap.

Every business is required to deliver an annual amount of allowances equivalent to its verified emissions and businesses subject to the Directive may then trade these allowances on the market for emissions permit trading. In order to meet this obligation, they may also use credits issued under the clean development mechanisms established by the Kyoto Protocol. In France, during the period 2008-2012 businesses are authorised to use these project credits for up to 13.5% of their allocations for the period.

[74] Although, outside the framework of Directive 2006/32/EC, the market for emissions permit trading is an instrument that, by combating greenhouse gas emissions, has a major impact on energy efficiency in the industrial sector. It is on that basis that this measure is integrated into France's national energy efficiency plan, which thus covers all of the country's final energy consumption. In addition, the other measures aimed at the industrial sector do not differentiate in terms of whether sectors come under the EU ETS Directive.

[75] Amounts envisaged under the NAPs for allowances validated by the Commission.

In France, emissions by sectors that come under the EU ETS Directive amounted to 131.3 $MtCO_2$ in 2005, 127 $MtCO_2$ in 2006, 126.6 $MtCO_2$ in 2007, 124.1 $MtCO_2$ in 2008 and 111.1 $MtCO_2$ in 2009[76].

The **revised EU ETS Directive** was adopted by the European Parliament and by the Council in December 2008 as part of adoption of the Energy-Climate Package. This made it possible to:

- expand its scope. The system will integrate air transport activities from 2012. For the period 2013-2020 the system will be expanded to cover new greenhouse gases and new industrial sectors. It will cover 1174 installations;
- harmonise the methods of allocating allowances to industrial operators with the use of benchmarks for installations overall;
- provide for a mechanism to combat the risk of carbon leakage.

The revised Directive also allows a phased roll-out of auctioning of allowances instead of their free-of-charge allocation.

The EU ETS Directive will make it possible to strengthen targets for reducing greenhouse gas emissions in order to reach the goal set by the March 2007 European Council of a 20% reduction in EU overall emissions in 2020 compared with 1990 levels: emissions by the sectors that come under the EU ETS Directive will thus be reduced by 21% between 2005 and 2020.

4.2.2 Incentive mechanisms

Horizontal incentives set out in the Energy section concern the industrial sector:

- The industrial sector's share of the total number of Energy Efficiency Certificates issued between 2006 and 2010 is around 9.2%, covering an annual volume of energy savings of around 5.6 TWh;

- Among the financial incentives, accelerated depreciation and reduced business tax for equipment enabling energy saving or renewable energy production, set out in the Energy section, were opened up to industry;

- The **ADEME 'Aid for decision-making'** mechanism subsidises, in particular, **energy diagnoses** in the industrial sector, as well as the introduction of energy management systems;

[76] Source: CITL (Community Independent Transaction Log).

- The ADEME '**Rational energy use'** aid system supports investment made in businesses to acquire equipment, make energy savings or modify processes or equipment already in place. The operations supported are demonstration or exemplary operations. The 2010 budget is around €475 000;

- Specifically intended for the industrial sector and introduced under Future Investments, the '**Green loans'** mechanism, put in place in July 2010 with a budget of €500 million, makes SMEs and industrial mid-caps eligible for loans at subsidised rates (total budget of €300 million) and loan guarantees (SMEs only - total budget of €200 million) for investment to increase the competitiveness and energy and environmental performance of their process or products. This mechanism is managed by OSEO, a public undertaking, the role of which is to finance and support innovation and growth among businesses.

4.2.3 Regulatory measures

The minimum performance levels put in place by the **boiler regulations** (see Residential-Service section) also apply to the industrial sector.

Important changes to the regulatory framework for energy consumption in the industrial sector have been underway since 2008. Directive 2008/1/EC of 15 January 2008 concerning integrated pollution prevention and control requires assurance that energy is used efficiently in installations in respect of certain industrial activities (energy industries, production and processing of metals, mineral industry, chemical industry and waste management). This requirement is reinforced by Directive 2010/75/EC on industrial emissions (IED), which will apply in 2012 and makes the conclusions of the BREF (Best Available Technologies - BAT) mandatory, in particular, the BREF on energy efficiency and the energy conclusions of sectoral BREFs. At national level, Article 82 of Grenelle 2 added **rational energy use to the interests protected by legislation on classified installations (ICPE)**.

With a view to implementing Article 82 of Grenelle 2 and preparing for application of the IED, a working group within the French administration discussed the introduction of a joint mechanism for installations coming under the IED with regard to rational energy use.

Grenelle 2 introduces a requirement for **legal persons governed by private law with more than 500 employees** (250 employees in the Overseas Regions and Departments) to draw up, by the end of 2012, an **assessment of their greenhouse gas emissions**[77], to be made public and updated every three years. It is to be accompanied by a summary of planned actions to reduce their greenhouse gas emissions (see Awareness-raising section).

More generally, since Law No 2001-420 on new economic regulations, legislation has provided a framework for publication of social and environmental information by businesses. Information relating to climate challenges covers greenhouse gas emissions, efficiency of use of energy resources and renewable energy use (Article R225-105 of the Commercial Code). Grenelle 2 strengthens businesses' obligations with regard to **social, environmental and societal responsibility** and extends this obligation to new businesses, according to the thresholds to be established by decree. The challenge is to enable investors (particularly so-called 'socially

[77] And therefore, in particular, their energy consumption.

responsible investment' funds) and the various stakeholders to challenge businesses on their policy regarding societal responsibility:

- Article 224 of Grenelle 2 provides for an obligation on the part of managers of funds (UCITS) to indicate, in subscriber documents, how they take account of environmental, social and governance criteria in their investment policy;
- Article 225 of the same Law states that the obligation to make group information available must include subsidiaries and controlled companies. The information communicated must allow comparisons and be consistent with the key international benchmarks. In addition, the information will be verified by an independent third-party body.

4.2.4 Support for standardisation

France actively supports **standardisation in the area of energy efficiency**, particularly aimed at the industrial sector. Various tools are available to industries wishing to improve their energy efficiency:

- **Energy diagnosis**, based on normative document AFNOR BP X30-120. It provides industrial operators with a snapshot of the energy situation of their business and the energy-saving solutions specific to their site, in three stages: performance of a global energy review of the business, in-depth analysis of the main potential sources of savings identified and prioritised specification of actions to be undertaken, with their economic analysis.

- Development of **energy management systems**: standard NF EN 16001 has been designed specifically to respond to the need to optimise businesses' energy costs. It aims to assist bodies in establishing the systems and processes needed to improve their energy efficiency and may be used independently of ISO 14001 (environmental management). A draft version of ISO 50001 is currently being finalised.

4.2.5 Support for development of the most efficient technologies

The green branch initiative

France has committed itself to **organising the industrial branches of the future,** to enable it to propose technologies and services that allow transition to a green economy, these being essential to achieving France's targets for renewable energy production and reduction of energy consumption and greenhouse gas emissions.
In line with implementation of the Environment Round Table commitments, the green branch initiative must meet three major challenges:

- to support the emergence of new occupations or activities, as well as national market or export champions;
- to underpin the occupational changes that will be required in some sectors;
- to adapt existing mechanisms or create new ones, as appropriate, to guide the workforce towards developing sectors and provide them with qualifications. Around 20 strategic branches of the green economy, in terms of growth and employment potential, were identified in December 2009 (see Table 3).

Table 3. Strategic 'green branches' of the green economy in terms of growth and employment potential

Reducing greenhouse gas emissions in the energy field	Smart grids
	CO_2 capture and storage (CSC) and use
	Renewable energies: marine energies, geothermics, wind power, solar energies, biomass energy, biofuels
	Low environmental impact building
Reducing energy needs to combat climate change	Clean vehicles
	Green logistics and flow management
	Energy storage and battery - hydrogen and fuel cell
	Waste recycling and recovery activities
Reducing consumption of natural resources and raw materials	Green chemistry - plant-derived chemistry
	Metrology - Instrumentation of environments
	Optimisation of industrial procedures
	Water - ecological engineering
	Biomass materials

For each of the branches identified, consultation with the actors involved took place in 2010. This work identified priority actions. In 2011, action plans will be finalised on this basis, aimed at developing and structuring these strategic branches of the green economy as part of an ambitious industrial policy. A number of proposals have been made in this context, seeking, in particular, to:

- organise public action (financial support, etc.) and remove regulatory constraints;
- support the organisation of these new branches, notably by encouraging actors to group together;
- enable dissemination of environmental technologies and resulting productivity gains.

With specific regard to the industrial sector, work on '**Optimisation of industrial procedures**' covers products and services that improve the environmental and energy performance of industrial procedures. The actions to be implemented to develop the branch, in terms of both supply and demand, will directly assist in achieving France's energy efficiency objectives.

Support for innovation

Numerous **project calls** on the theme of energy efficiency in the industrial sector, on an annual basis, have already been implemented:

- The ANR **EESI (Energy Efficiency of Industrial Systems) programme** seeks to improve industrial energy efficiency and reduce CO_2 emissions. The research projects approved concern, in particular, development of innovative energy production/conversion methods, with CO_2 capture, as well as development of high-impact new energy transfer/transport materials and components and, lastly, extensive energy integration of industrial systems.

- The ADEME **R&D call for projects 'Improving the energy performance of industrial processes and utilities' (APEPI)** aims to advance any R&D project improving the energy performance and reducing the greenhouse gas emissions of industrial procedures and utilities, prior to the industrial-scale demonstration stage. In its initial 2010-2011 version this project call has a budget of €500 thousand. Depending on the results, ADEME will study the possibility of confirming and strengthening this initiative over a number of years.

- The **Call for Expressions of Interest by ADEME/TOTAL concerning energy efficiency in industry** is a **programme to support the development of horizontal energy-saving utilities and processes** to strengthen the R&D effort in relation to this sector, which currently receives little support, and to **encourage the emergence of reliability-assured technologies** in SMEs aimed at the European and world markets. Projects linking large businesses are also eligible. The programme consists, in particular, of support for demonstration of new technologies enabling improvement in the energy efficiency of horizontal technologies, downstream from the stage covered by APEPI. This CEI has a budget of €100 million over five years (2009-2013).

- Lastly, the **ECOINDUSTRIES programme** (ADEME/OSEO/DGCIS) and its equivalent for upstream research, **ECOTECH** (ANR), aim to speed up introduction of sustainable development concepts into industrial production and innovation in environmental technologies, by supporting the setting-up of demonstration projects concerning

ecotechnologies or innovative services; funds of €26 million were allocated in 2010. One of the five thematic axes specifically concerns preventive technologies and substitution processes in particular, making it possible to move towards sustainable industrial production. These two programmes end, in their current version, in 2011. Other formats for these initiatives may be determined for the coming years.

Under the Future Investments programme (see Energy section), a CEI will be launched in May 2011 in the field of smart electricity grids (programme allocated €250 million), seeking, in particular, to optimise management of industrial networks; in addition, in the field of green chemistry a CEI was launched in 2011 on the theme of plant-derived chemistry.

5. Exemplary State and territorial authorities

The State and the territorial authorities play a primary role in managing greenhouse gas emissions and energy efficiency, not just through managing their assets and direct activities but also in the context of their responsibilities (regarding urban development, for example, in the case of territorial authorities).

Directive 2006/32/EC on energy end-use efficiency and energy services gives particular weight to energy savings in the public sector (Article 5).

In fact, the exemplary nature of the State and the wider public sector in relation to energy efficiency has the capacity to generate longer-term operational energy savings, as well as support for developing energy services.

The Exemplary State strategy is mainly based on the Prime Minister's Circular of 3 December 2008. The way this dynamic transfers to local authorities is indicated. A detailed description of each of the measures set out is annexed.

5.1 The objectives of the Exemplary State policy in France

It is right that the State should be exemplary and ensure that the services under its responsibility (administrations, devolved services, public establishments) apply the principles of eco-responsibility and social responsibility. It may achieve this by acting to guarantee responsible behaviour on the part of its officials but it may also act through public procurement. The latter is indeed a particularly significant lever to help guide and advance more sustainable modes of consumption and production: Public purchasing represents around 10% of GDP and helps to provide market actors with opportunities, due, in particular, to the volume of orders and the direction given by public policies.

In France, the first measures to integrate sustainable development criteria into public procurement were implemented as far back as 2004. A national action plan for sustainable public purchasing was adopted in March 2007 as part of the first national sustainable development strategy (see below). Since 2008 an **'Exemplary State' circular**[78] has set State targets in relation to its eco-exemplary role.

Article 48 of Grenelle 1 enshrines the 'Exemplary State' concept and translates it into a series of actions, in the form of targets to be implemented by administrations and the services under their responsibility. Since then, a number of circulars have been published and have specified the roadmap to be used by administrations, in particular by setting indicators and mandatory targets for 2009[79] and 2010[80].

By way of example, the following indicators have been adopted:

[78] Prime Minister's Circular of 3 December 2008 on the exemplary nature of the State with regard to sustainable development in the operation of its services and its public establishments. This Circular draws on and supplements the Circular of 28 September 2005 on the exemplary role of the State in relation to energy savings.
[79] Circular 451/SG of 11 March 2010.
[80] Circular 5495/SG of 30 September 2010.

- Energy audits of the property assets of administrations' central services: 40% of assets in 2009 and 100% in 2010;
- Purchase of expert tools allowing consumption of fluids (water, gas, electricity and heating) to be monitored;
- Measurement of energy costs in 2009 and a 10% reduction in these costs in 2010;
- Purchase of at least 80% of vehicles in 2009 and 85% in 2010 that meet the emissions threshold for the ecological bonus (respectively, 130 gCO_2/km emitted in 2009 and then 125 gCO_2/km in 2010);
- Measurement of the quantity of paper purchased in 2009 and a target reduction of 20% in 2010;
- Measurement of printer and photocopier stocks at the end of 2010, before setting targets for reducing stocks in the coming years;
- Review of communication actions aimed at raising awareness of sustainable development among Ministry officials (2010 indicator).

A financial incentive mechanism has been linked to achievement of these targets: an amount equal to around 1% of the appropriations allocated to each Ministry for its everyday purchases is frozen each year, i.e. €100 million in 2009 for the Ministries overall. This amount is then redistributed on the basis of the results achieved by each Ministry. The indicators and anticipated performance levels will then be reviewed each year.

Initial assessment of implementation of the Exemplary State circular for 2009

An initial assessment[81] was drawn up at the end of 2010. The main results included the following:

- All Ministries have submitted an Exemplary Administration Plan, forming the core of future eco-exemplar actions;
- Energy audits: at the end of 2009, 12 Ministries out of 13 had met the objective of launching energy audits for 40% of buildings; five of them even stated that they had undertaken audits covering 100% of their occupied property as early as 2009;
- All Ministries have acquired an expert fluid-monitoring tool; four Ministries have already started to use this tool in their buildings;

[81] This assessment is available on the website of the Ministry of Sustainable Development at the following address: http://www.developpement-durable.gouv.fr/spip.php?page=article&id_article=18737

- 2 793 vehicles purchased with emissions below 130 grammes of CO_2 per kilometre (88.6% of vehicles purchased);
- Data on purchases of paper and printers and energy costs have been collected, constituting a baseline that will be used to evaluate subsequent progress.

In addition to the flagship instrument provided by the Exemplary State circular and its various manifestations, other measures have been taken to strengthen State low-carbon management.

Thus, since 2003, under the first National Sustainable Development Strategy (SNDD) 2003-2008, ADEME has been given the role of **resource centre**. This role consists in making appropriate tools, reproducible examples and diverse information concerning eco-responsibility available to State services and its public establishments and territorial authorities.

ADEME thus designed a guide for eco-responsible administrations[82]; national meetings of eco-responsible administrations and territorial authorities are organised; a Sustainable Development Club was created for public establishments and undertakings. The first National Sustainable Development Strategy enabled sustainable development to be integrated into public policies, in particular through the public purchasing plan (vehicle renewal policy, purchasing guides, etc.)[83].

A new National Sustainable Development Strategy 2010-2013 was adopted on 27 July 2010[84]. It is based around nine strategic challenges in achieving a green and equitable economy. These nine challenges include 'sustainable consumption and production', and also 'governance' and 'climate change and energy'.

In each Ministry a **senior sustainable development officer** is responsible for 'preparing the contribution of his or her Ministry to the national sustainable development strategy, coordinating the development of corresponding action plans and monitoring their implementation'[85].

Purchasing guides[86] have also been drawn up. These guides, primarily aimed at public purchasers, make recommendations in such varied areas as purchase of office supplies, maintenance of premises and purchase of workwear. In particular, thematic guides are offered, specifically aimed at taking account of sustainable development issues in the context of public purchasing.

[82] www.administrations-ecoresponsables.ademe.fr
[83] See assessment, available at the following address: http://www.developpement-durable.gouv.fr/Strategie-nationale-de.5946.html
[84] More details are available at http://www.developpement-durable.gouv.fr/SNDD-2010-2013-vers-une-economie.html
[85] Decree No 2003-145 of 21 February 2003 establishing an inter-Ministerial committee for sustainable development
[86] http://www.economie.gouv.fr/directions_services/daj/marches_publics/oeap/gem/table.html

The amendments made to the Public Procurement Code in 2004 and 2006 allow public purchasers to integrate social and environmental criteria into their orders at key stages of the process.

In addition, in the case of captive fleets, the Public Procurement Code is soon to include a cost of €30-€40 per tonne of CO_2[87] to take account of the lifetime energy and environmental impact of vehicles purchased; the cost of emission of other pollutants, such as NO_x, is also to be included.

Additional clarifications concerning application of the requirements of the ESD (Directive 2006/32/EC on energy end-use efficiency and energy services) in relation to the exemplary nature of the State are annexed.

5.2 Strengthening the territorial nature of climate and energy policies

Territorial authorities have been encouraged, since the 2004 National Climate Plan, to develop **territorial climate plans**, translating genuine local climate and energy policy to their own areas of responsibility[88]. More than 200 Territorial Climate-Energy Plans (PCET) have now been developed or are being developed, whether at region, department or major conurbation level. These plans primarily seek to combat climate change through urban development and planning, improved energy efficiency of transport and buildings and development of renewable energies.

Grenelle 1 and 2 generalised this initiative and made it mandatory for local authorities with more than 50 00 inhabitants to have an approved Territorial Climate-Energy Plan by 31 December 2012. This Plan is based on production, also mandatory, of an **assessment of greenhouse gas emissions** linked to the authority's assets and exercise of its responsibilities (see Industry section).

Grenelle 2 (Article 68) also strengthened connection and cohesion between actions at each territorial level by establishing a new regional strategic reference framework: the **Regional Climate, Air and Energy Schemes** (SRCAE) that the regions and the State must produce in summer 2011. These Schemes, jointly developed by regional prefects and regional council presidents, set regional and strategic guidelines for reducing greenhouse gas emissions, combating air pollution, improving air quality, demand-side management, developing renewable technologies and adapting to climate change. Drawn up in consultation with all local actors, they specify the contribution to be made by each region and its territories towards achieving France's national and international targets, particularly for reducing greenhouse gas emissions and developing renewable energy branches (wind, photovoltaic, solar thermal, geothermal, hydraulic and biomass). Territorial Climate-Energy Plans approved between now and 31 December 2012 must be compatible with Regional Climate, Air and Energy Scheme guidelines and targets.

[87] Pursuant to European Directive 2009/33/EC on the promotion of clean and energy-efficient road transport vehicles.
[88] More details regarding Regional Climate, Air and Energy Schemes and Territorial Climate-Energy Plans are available from the following sites: http://www.developpement-durable.gouv.fr/IMG/pdf/Collectivites_territoriales.pdf and http://www.pcet-ademe.fr/

The Grenelle laws also strengthened the provisions allowing **urban development master-plans** to manage space, resources and energy efficiently by developing levers for demand-side management, the fight against urban sprawl and promotion of the sustainable city:

- Territorial Cohesion Schemes (SCOT) and Local Urban Development Plans (PLU) must now take account of Territorial Climate-Energy Plans;

- Territorial Cohesion Schemes and Local Urban Development Plans may specify sectors in which the opening-up of new areas to urbanisation is subject to a requirement for structures to meet tougher energy and environmental targets;

- Territorial Cohesion Schemes and Local Urban Development Plans must contain a retrospective analysis of space consumed and targets for limiting this consumption;

- Territorial Cohesion Schemes and Local Urban Development Plans may set a minimum building density close to existing or planned public transport and link opening-up to urbanisation to public transport services;

- Grenelle 2 allows territorial authorities to authorise building outline and density rules to be exceeded by up to 30% in the case of structures that meet high energy performance criteria or are supplied by efficient equipment producing renewable energy. They may even be exceeded by up to 50% in the case of structures that include social housing;

- In addition, notwithstanding any urban development provision to the contrary, building permits cannot oppose the installation of systems producing renewable energy, other than in protected sectors and areas designated by the authority. Article R112-2 states that additional gross floor areas necessary to develop an existing structure in order to improve its thermal or acoustic insulation are not included in the developed gross surface area of this structure.

Article 8 of Grenelle 1 also states (Article L. 128-4 of the Urban Development Code) that 'Any urban planning action or operation, as defined in Article L. 300-1, that is the subject of an impact study must be the subject of a feasibility study regarding the potential for developing the zone in terms of renewable energies, and, in particular, the possibility of creating a heating or cooling system using renewable and recoverable energies, or of linking to an existing one.' This provision concerns, in particular, Integrated Planning Zones (ZAC).

In order to fight urban sprawl, Amending Finance Law No 2010-1658 of 29 December 2010 introduced a new 'under-density payment' section within the Urban Development Code. This section allows territorial authorities that so wish to set a minimum density threshold below which a payment is due from those seeking building authorisation. Authorities determine this threshold by geographical sector and attach an indicative map of this zoning to the Local Urban Development Plan and, where appropriate, the Land Use Plan. The threshold is set for three years.

The Finance Law also simplified the tax system for urban development. A new 'planning tax' (Article L. 331-1 et seq. of the Urban Development Code) now brings together all of the existing taxes other than the offices fee (*redevance bureaux*) in Ile-de-France and the preventive

archaeology fee (*redevance d'archéologie préventive*). Its aim, in that case also, is to promote efficient use of land and contribute to fighting urban sprawl.

State-Region Project Contracts are a preferred tool to support territorial authorities in implementing their climate and energy policies: in the context of contracts between the State and regions (project contracts for the period 2007-2013), the State has made its priority support for regional climate-energy plans and, through ADEME, is providing €76 million a year to finance territorial energy actions (energy-saving actions and actions to develop renewable energies). This support is extended, through the territorial strand of the State-Region Project Contract, by means of support from the regions for infra-regional climate plans. Regions' commitment to energy efficiency notably involves the introduction of local policies to organise, raise awareness of and support actions to save energy and produce renewable energies, in partnership with the State. In this context, ADEME, through Territorial Target Contracts (COT), funds territories that wish to acquire in-house engineering expertise to run Territorial Climate-Energy Plans.

ADEME also offers a **training mechanism** for territorial authorities, as well as various tools, including a guide to 'Constructing and implementing a Territorial Climate-Energy Plan' and an online resource centre with a Territorial Climate-Energy Plan observatory. It has also introduced *Cit'ergie* labelling aimed at authorities, which, for four years, rewards the quality management process under the authority's energy and/or climate policy.

The State and ADEME will also provide a free method of producing an assessment of greenhouse gas emissions for territorial authorities.

Territorial authorities also have the possibility of profiting from their actions under the **Energy Efficiency Certificate** mechanism, introduced by the Programme and Guidance Law on energy policy of 13 July 2005. This mechanism allows public territorial authorities that undertake energy-saving actions within their areas of responsibility to receive EECs, which they may resell, thus financing part of their actions. They are also eligible for the rates for buying electricity produced from renewable sources (for more details on these two measures, see the Energy section).

Lastly, a number of project calls are aimed at encouraging development of the **Sustainable City**, seeking to implement Article 8 of Grenelle 1, which encourages making use of exemplary operations concerned with 'sustainable development of territories' and conurbations by encouraging the establishment of 'global programmes for energy, architectural and social innovations consistent with existing building stock':

- The aims of the **Ecological Neighbourhoods** (*EcoQuartiers)* project call are to ensure national and international recognition for territorial authorities that have undertaken exemplary initiatives, to draw attention to the best of them by awarding a specific distinction, to promote a new way of building and planning, in line with sustainable development principles, to support existing and future initiatives by creating a 'working Ecological Neighbourhood Operating Club', organised by the Ministry of Sustainable Development. In 2011 a second Ecological Neighbourhood project call was launched by the State on 19 January, with even greater ambitions in terms of project quality. This project call is the prelude to creating an Ecological Neighbourhood label.

- The **EcoCities** (*EcoCités*) initiative is aimed at major conurbations (more than 100 000 inhabitants) and those growing rapidly (around 50 000 additional inhabitants between now and 2020), structured in an inter-municipal way (project undertaken in the area of influence of a public inter-municipal cooperation establishment that is responsible, or is taking on responsibility, for urban development master-plans) that have a significant project concerned with sustainable planning and housing. The EcoCities initiative seeks to identify exemplary strategies for overall urban development (in terms of design, consultation and implementation). A second EcoCities project call is being developed, scheduled for launch in spring. Under Future Investments (see Energy section), the Loans and Consignments Fund manages €1 thousand million devoted to the City of Tomorrow, for which a project call is underway among the 13 existing EcoCities. A second strand is planned at the end of the year for future holders of EcoCity status;

- The initiative concerning **Reserved Public Transport Routes (TCSP)**, which aims to support territorial authorities in developing infrastructures for reserved public transport routes, has led to the launch of a project call. This project call is directed towards authorities organising provincial transport that are planning a metro, tram or bus system with a high service value on which work will begin by 2011 (see Transport section).

160 applications were submitted for the Ecological Neighbourhoods project call; 19 applications were submitted for the EcoCities initiative (13 selected); more than 50 projects will be started by the end of 2011 under the Reserved Public Transport Route project call.

Furthermore, ADEME is formalising a sustainable development strategy for cities with its partners in April 2011, including new ways of obtaining its AEU® (environmental approach to urban development) tool. Within a year, its implementation will lead to a body of methods and tools to boost the Agency's overall involvement in this policy, including, in particular, a resource centre in this area.

6. Agricultural sector

6.1. State of play

The agricultural sector accounted for 2.6% of French final energy consumption in 2009, or a consumption figure of 4.1 Mtoe. Compared with 2008, agriculture reduced its demand by 3%. The distribution of final consumption among the various uses is illustrated below.

(a) (b)

[*Key to Figure 10(a)*]
Mtep = Mtoe
Electricité = Electricity
Gaz = Gas
Produits pétroliers = Petroleum products
Source: MEEDDM/SOeS, données corrigées du climat = Source MEEDDM/SoeS, corrected climate data

[*Key to Figure 10(b)*]
Tracteurs = Tractors
Serres = Greenhouses
Véhicules utilitaires = Utility vehicles
Batîments d'élevage = Livestock buildings
Autres moteurs = Other engines
Irrigation = Irrigation
Laiteries = Dairies
Source: Enquête SCEES, 1992 = SCEES survey, 1992

Figure 10(a) Final energy consumption in the agricultural sector, including fisheries (metropolitan France)
(b) Distribution of final consumption by % use
(source: ADEME, energy and climate, key figures, 2009 edition)

6.2 Policies and measures

Reduction of energy consumption and development of renewable energies in the agricultural and forestry sector are the result of implementing numerous support programmes. Action by the government bodies more specifically concerns the most energy-hungry procedures, particularly heated-greenhouse production, off-land production and use of tractors, and renewable energies.

The **Greenhouse-Energy Plan**, implemented by the Ministry of Agriculture, supports development of market gardening and horticulture production by encouraging energy savings and renewable energy development. It is based around four action axes:

- encouragement for energy savings in existing stock (interest subsidy and exceptional depreciation mechanisms for energy-saving investments, Energy Efficiency Certificates);

- development of renewable energies (geothermics using heat pumps, solar thermal energy, etc.) and improvement of energy efficiency, with priority given to investments linked to renewable energies and support for co-generation;

- strengthening of research & development programmes on managing energy in greenhouses;

- support for long-term partnerships between energy suppliers and greenhouse growers.

The main intervention tools correspond to FranceAgriMer[89] investment aid mechanisms in greenhouse horticulture and market gardening; some also come under the Plant Plan for the Environment (PVE) (see below).

Concerning the mechanisms managed by FranceAgriMer, their budget was close to €12 million in 2009 and more than €10 million in 2010.

The amount of aid paid towards the installation of heat pumps was €200 thousand in 2006 and almost €1.44 million since 2008, and, towards replacement of fossil energy heating systems by renewable energy systems, €187 thousand in 2007 and €3.5 million since 2008.

The **Plant Plan for the Environment**, established by Decree of 14 February 2008 and implemented by the Ministry of Agriculture, encourages energy savings in greenhouses existing as at 31 December 2005, through aid for investment (regulating systems, 'open buffers', heat shields, greenhouse improvements, boiler improvements). It is implemented by translating metropolitan France's rural development plan for 2007-2013 to the regional level. In 2009 commitments made under the Plant Plan for the Environment involved around €2 million, across all those providing finance.

As a result of these two mechanisms (Greenhouse-Energy Plan and Plant Plan for the Environment) around €14 million have been allocated over three years (2007-2009) to finance 389 items of equipment (four heat pumps, 60 regulating systems, 45 'open buffers' and 280 heat screens).

The **Energy Performance Plan for Agricultural Holdings**, a concretisation of the Environment Round Table target of 'increasing energy management of holdings to achieve a level of 30% of agricultural holdings with low energy dependency by 2013', has acted since 2009 to:
- raise awareness among and provide advice to agricultural professionals on saving energy, producing renewable energies and reducing greenhouse gas emissions;
- reduce direct energy consumption (primarily farm tractors and livestock buildings) and indirect consumption (by modifying the behaviour of agricultural production units);
- develop renewable energies (agricultural methanisation, biomass boilers, off-grid photovoltaic, solar water heaters, small wind turbine).

The corresponding support, managed by the Ministry of Agriculture, comes under two strands:

[89] A public establishment under the supervision of the Ministry of Agriculture, concerned with developing the occupational sectors of agriculture and fisheries.

- a national strand to develop mobile engine test benches (since 2008, 10 mobile test benches have been added to the five existing ones) and agricultural methanisation (more than 120 methanisation projects have been given the go-ahead under two project calls launched in 2009 and 2010) (see below);

The introduction of mobile test benches for tuning tractors enables an annual final energy saving of 3.5 ktoe in 2010, 23.2 ktoe in 2016 and 36 ktoe in 2020[90].

- a regional strand, based primarily on developing energy advice to agricultural holdings (almost 4 000 energy diagnoses have been financed under the Energy Performance Plan for Agricultural Holdings; these are in addition to the diagnoses performed previously, which takes to 7 000 the number of diagnoses carried out since 2000). In order to perform these diagnoses, more than 530 diagnosticians have been accredited by the services of the Ministry of Agriculture. Support is also mobilised to reduce energy consumption and develop renewable energies.

Since 2009 almost 4 000 energy-saving investment dossiers have been initiated for agricultural holdings, to which the Ministry of Agriculture assigned €33.6 million in 2009 and €25.7 million in 2010.

Lastly, the **Livestock Building Modernisation Plan** enables the financing of actions to reduce energy consumption and develop renewable energies, other than those already eligible for the Energy Performance Plan and the Plant Plan for the Environment.

In addition to these programmes, more targeted actions have been initiated:

- a new version of the '*Planète'* tool (main tool used to produce energy diagnoses), known as *'Dia'terre*', has been produced by ADEME, with support from the Ministry of Agriculture and numerous agricultural bodies. It should allow large-scale rollout of these initiatives and also centralisation of the results to draw up reference points for advice by production system and/or by region. Similarly, a new '*Climagri*' tool, intended for diagnoses relating to energy consumption and greenhouse gas emissions at territory level, is currently being tested by ADEME and the agricultural bodies on 12 sites. The purpose of this tool is to help design local agricultural strategies for energy and greenhouse gases;

- a synthesis of data obtained at the time of these energy diagnoses has been undertaken. At the same time, the Ministry of Agriculture, in addition to the general agricultural census in 2010, which included questions on energy, will carry out a survey in 2012 specifically on energy consumption and development of renewable energies in agricultural holdings (the previous one took place in 1992). A supplement for agricultural and forestry businesses and wine growing machinery cooperatives (CUMA) is planned in 2011;

- more generally, a database, *AgriBalise*, relating to the environmental impact of agricultural holdings, is currently being set up by ADEME. Also, ADEME supports research and testing to

[90] Source: SceGES evaluation (see paragraph I.3.1.3 and Annex 2, Chapter III).

reduce energy consumption in livestock buildings (testing of equipment, diagnostic tools, etc.) and in greenhouses.

Action has also been initiated around other axes:

- CASDAR[91] allows studies to be carried out to determine possible ways of reducing energy consumption in the agricultural sector still further;

- a forecasting exercise has been piloted by the Ministry of Agriculture, entitled 'Agriculture and Energy Forecast to 2030'.

Lastly, under the Energy Efficiency Certificate mechanism, seven standardised operations sheets[92] have been produced for agriculture. New sheets are currently being developed and discussions have been held in the context of the support programmes put in place by Grenelle 2.

[91] Special Allocation Account for 'agricultural and rural development' managed by the Directorate-General for Education and Research (DGER) of the Ministry of Agriculture.
[92] Hot-water storage tank of 'open buffer' type, hot-water storage tank, milk precooler, climatic computer with temperature integration module, synchronous speed-change drive unit with permanent magnets, electronic speed variation system based on an asynchronous motor, tractor motor control.

7. Waste

While waste is not a sector of the economy directly identified in terms of final energy consumption, preventing waste production may enable energy consumption to be reduced in all sectors linked to the production and marketing of goods, and industry and transport in particular. It also allows a reduction in energy consumption linked to waste processing.

7.1 Waste policy objectives in France

Preventing waste production is included in the Environment Code as the top priority for waste management (Article L. 541.1). Thus, as early as 2003 a goal of stabilising waste production by 2008 had been established (while waste production was increasing by around 1% a year) and, in 2004, the first waste production prevention plan was published.

Since then, France's waste policy has been considerably strengthened by:

- Transposition into French law of the **Waste Framework Directive** (Directive 2008/98/EC) and, in particular, Article 4 of that Directive, which establishes a waste treatment hierarchy: prevention, preparation for re-use, recycling, other recovery, in particular energy recovery, and disposal. **Ordinance No 2010-1579 of 17 December 2010 adapts these various provisions of Community law in the field of waste (see below)**.

- **Grenelle 1** (Article 46), which sets ambitious waste management targets:

1. To reduce annual production of household and assimilated waste per inhabitant by 7% over the next five years[93];
2. To increase recycling of materials and organic matter in order to achieve a recycling rate for household and assimilated waste of 35% by 2012 and 45% by 2015. In 2007 this rate was 34%;
3. To direct 75% of household packaging waste and ordinary business waste towards recycling (other than construction, agriculture, agri-food industries and specific activities) by 2012;
4. To reduce quantities of waste incinerated and stored by 15%.

- **Grenelle 2** (Article 80), which provides, in particular, for an obligation for major producers of biowaste to sort at source with a view to recovery.

The **2009-2012 Waste Action Plan**[94] sets out guidelines for implementing these targets. The phased increase in general tax on polluting activities (see below) sends an economic signal by raising incineration and storage costs and makes it possible to strengthen the State's financial commitment significantly. Appropriations allocated to this policy each year thus increase from €57 million in authorised commitments in 2008 to €98 million in 2009, €166 million in 2010 and €221 million for 2011, 2012 and 2013. These amounts are entrusted to ADEME in its role as public operator. They are mainly allocated to support for local operations (studies, communication and investment), as well as aid for research and awareness-raising campaigns (including the public campaign 'Let's reduce waste now, it's overflowing', see below).

[93] In 2007 household and assimilated waste production amounted to 391 kg/inhabitant/year. Based on stability in 2008, the aim of the Law is to reduce such waste production by 28 kg per inhabitant by 2013, thus reducing it to 362 kg/inhabitant/year.
[94] See also http://www.developpement-durable.gouv.fr/spip.php?page=article&id_article=7315

Transposition into French law of the Waste Framework Directive significantly amends the legislative part of the Environment Code relating to waste, in particular:

- redefinition of the vocabulary of waste (definition of the concepts of management, treatment, recovery, etc.);
- the waste treatment hierarchy;
- introduction of a clear distinction between 'product' and 'waste', as well as the possibility of removal of waste status;
- a requirement to set up a separate collection for, in particular, paper, metals, plastic and glass, if technically, environmentally and economically practicable;
- strengthening of provisions on waste planning: plans now concern all types of waste and must cover the whole territory, and waste disposal plans are replaced by waste prevention and management plans.

7.2 Measures to prevent waste production

Prevention is the top priority of European waste policy. France fully subscribes to that view and wishes to bring about the necessary breakthroughs to reverse waste production trends. With this in mind, the following measures have been put in place:

- All territorial authorities responsible for collection or treatment of household or assimilated waste must, by 1 January 2012, establish a **local programme for prevention of household and assimilated waste**. That programme will set targets for reducing waste quantities and will detail the measure implemented to achieve these. From 1 January 2009, in order to help authorities to plan for this requirement, ADEME set up a mechanism to support implementation of territorial prevention plans and local prevention programmes. After two years of implementation, 36% of the French population is covered by a local prevention programme;

- Grenelle 1 makes it mandatory for territorial authorities to establish, by 2014, a **pricing structure** for public waste disposal services **that provides incentives**. A variable element must be introduced: it may take account of the nature, weight, volume or frequency of waste collections. Since 2009 ADEME has supported pioneering authorities in establishing incentive charging, which makes it possible to benefit from feedback and will facilitate upscaling. Grenelle 2 (Article 195) also introduced the possibility of testing implementation of a variable element using the tax on household waste collection;

- ADEME **awareness-raising actions** have been strengthened: an initial public awareness-raising campaign, 'Let's reduce waste now, it's overflowing', was launched in 2005 for a three-year period and specific actions have been undertaken concerning:
  - A mechanism for refusing printed advertising materials: nine million '*Stop Pub*' stickers have been made available to local authorities through ADEME;
  - A reduction in the quantity of disposable carrier bags: their number has been reduced four-fold in four years.

  A new three-year awareness-raising campaign was launched in 2009. The campaign is intended to promote those gestures that offer most benefit and are easiest to adopt: 'I rent tools', 'I buy loose', 'I use my cup at the office', etc. It is primarily focused on preventing waste production.

Lastly, the ADEME operation ‘Waste target - 10%’, launched in 2003, sought to promote waste prevention and recovery in businesses, by example and by ripple effect. This operation has now ended and ADEME will be able to capitalise on the experience gained by using the documentation assembled as a result to produce exemplary action sheets and develop a toolbox for disseminating good practice.

- Since 2006 a **Week for Waste Reduction** (see Awareness-raising section) has been organised throughout France. In 2009 the Week for Waste Reduction became European, with financing from the Life+ European Programme.

- As regards businesses, legislation on installations classified to protect the environment (ICPE) is one of the levers for applying the principle of waste production prevention: impact studies, required in the context of applications for authorisation to operate such installations must evaluate the volume and polluting nature of waste produced by the installation, as well as planned measures to eliminate, limit and offset the disadvantages linked to operation, particularly in terms of disposing of operational residues.

- Ecodesign initiatives undertaken in businesses are also a significant lever in reducing both waste production and energy consumption at source (see Energy section).

- The *Prévencol* database was designed to allow exchange of experience between pioneering authorities in the waste prevention field. It was accessible via extranet access. The need for authorities to exchange experiences remains great but now concerns all stakeholders (general public, associations, etc.) and a growing number of authorities. For that reason, a new database accessible to everyone via the Web is currently being developed, to be operational in 2011.

7.3 Support for research and development

Under the Future Investments programme, €250 million have been allocated to the **'Circular Economy**' programme, to make it possible to continue and speed up deployment of green technologies by supporting, in particular, innovative research demonstrator projects. It also allows the establishment of technological platforms linking public and private actors and the sharing of testing resources, in order to link upstream research and the pre-industrial development stage.

Two CEIs were launched on 1 June 2011 to support innovative technologies and organisations in the field of:

- waste recycling,
- soil and sediment decontamination.

8. Awareness-raising, training

Awareness-raising among the general public regarding energy saving (and, as a corollary, reducing greenhouse gas emissions) is one of the priorities set by Directive 2006/32/EC on energy end-use efficiency and energy services (Article 7).

It mainly concerns two categories of action:

- awareness-raising actions to bring about a general increase in public awareness of the challenges posed by managing energy and combating climate change;

- information actions to guide the behaviour of economic actors.

8.1 Public awareness campaigns

Various information campaigns have been and are being carried out to raise public awareness with regard to greenhouse gas emission reduction and energy efficiency, including the following:

- The **'Energy is our future, save it'** (***'L'énergie est notre avenir, économisons-la'***) **message**: introduced by the Decree and Order of 28 November 2006, this slogan is mandatory for all publicity undertaken by a company selling electricity, heat or cooling energy, solid, liquid or gas fuels and motor fuels or services relating to the use of these forms of energy.

- **Eco-responsible Publicity Charter**: this Charter, signed on 11 April 2008 between publicity professionals and the Ministry of Sustainable Development, aims to place publicity within a stricter framework as regards sustainable development and the environment to provide a better guarantee of environment-friendly publicity. Publication of the 2010 'Publicity and the Environment' review showed results in line with the commitments made to more eco-responsible publicity[95]. By way of example, the move towards presenting as 'eco-gestures' measures that merely reduce negative impacts (such as less-polluting vehicles being presented as pure-air generators) has been largely stemmed.

- The **'Let's reduce waste now, it's overflowing'** campaign: this campaign[96], carried out by ADEME and the Ministry of Sustainable Development, focuses on concrete gestures in support of waste reduction (see Waste section). Evaluations (see Table 4) of these campaigns ('large-scale public opinion polls of October 2009 and June 2010) show that they have been much valued: in particular, 47% of those interviewed remember an information campaign on waste reduction (12 percentage

[95] For more details, see the following sites: http://www.developpement-durable.gouv.fr/spip.php?page=article&id_article=19681 and http://www.arpp-pub.org/IMG/pdf/Bilan_Pub_et_environnement_2010.pdf

[96] For more information, see the following site: http://www.reduisonsnosdechets.fr

points above the Ifop average for 'ad memory of general interest campaigns').

Table 4. Effectiveness of the 'Let's reduce waste now, it's overflowing' publicity campaign (source: ADEME)

	October 2009	June 2010
A campaign people remember[97]	47%	49%
A much valued campaign	Between 87% and 89% for the films; between 63% and 76% for the press adverts	89% for the TV adverts; 72% for the press
A useful campaign	91%	91%
A campaign that makes you want to act	86%	86%

- **'European Week for Waste Reduction'**[98]: event organised in France since 2006 as part of the national communication campaign for waste reduction. In 2009 the Week became European. Numerous tools have been developed in this context (marketing kits) to make EU and Member State waste prevention and reduction policies widely known (Directive 2008/98/EC of 19 November 2008). There have been more than 2 672 actions in 14 countries, including 1 313 actions in France.

- The 'Energy savings: let's act now, the heat is on!' campaign, jointly led by ADEME and the Ministry of Sustainable Development, this campaign[99] aims to assist awareness of the link between energy consumption and climate change issues, encourage behaviour changes and increase knowledge about available support. Evaluation of this campaign (see Table 5) shows it has been favourably received by the public:

Table 5: Effectiveness of the 'Energy savings: let's act now, the heat is on!' marketing campaign (source: ADEME)

	July 2008	May 2009
A campaign people remember	53%	70%
A much valued campaign	70% liked at least one radio or TV advert	81% liked the TV advert; 72% liked the radio advert
A campaign that makes you want to act	68%	76%

8.2 Information actions

[97] The Ifop average for 'ad memory of general interest campaigns' is 35%.
[98] For more information, see the following site: www.ewwr.eu
[99] For more information, see the following site: http://www.faisonsvite.fr

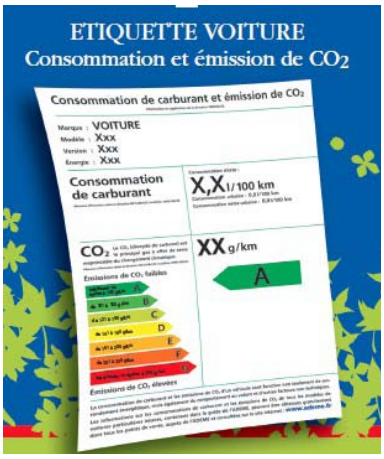
Numerous actions have already been implemented and will be strengthened to inform actors about consumption and resulting greenhouse gas emissions:

- **Energy Performance Diagnosis in buildings** (see Residential-Service sector): an Energy Performance Diagnosis (DPE) has been mandatory when selling any dwelling or building, for both private individuals and professionals, since 1 November 2006 in metropolitan France. From 1 July 2007 it was extended to cover conclusion of rental agreements and handover of new structures. The results must be made available, by the seller or landlord, to any person looking to buy or rent who so requests, as soon as a building or part of a building is put up for sale or rent. Public establishments visited by the public and occupied by staff of an authority or public establishment must display the Diagnosis in the reception area. Since 1 January 2011 it has been mandatory to display the energy class of a dwelling in any property advertisement concerning sale or rental of property. In addition, diagnosticians are required to forward all Energy Performance Diagnoses undertaken to ADEME, and this, over time, will improve knowledge of existing building stock.

[*Key to first graph*]
Logement économe = Efficient dwelling
Logement énergivore = Energy-hungry dwelling
Logement = Dwelling
$kWh_{gp}/m^2.an$ = kWh_{gp}/m^2.year

[*Key to second graph*]
Faible émission de GES = Low greenhouse gas emission
Forte émission de GES = High greenhouse gas emission
Logement = Dwelling

$kg_{éqCO_2}/m^2.an$ = kg_{eqCO_2}/m^2.year



- **CO_2 label for private vehicles**: since May 2006 a 'CO_2 consumption and emission' vehicle label has been mandatory and must be affixed to all new private vehicles, or displayed nearby so that it is visible, in all sales points in France. It enables any potential automobile buyer to get readable, comparative information about a vehicle's CO_2 emissions. Fuel consumption is also shown on the label.

- **Energy label for household electrical appliances** (see Energy section): since 1992 labelling of energy-consuming equipment has been mandatory. A new labelling system, approved by the European Parliament and by the Council in May 2010, will help consumers to evaluate better the operating costs of household electrical appliances. It is still based on a progressive scale from 'A' (ecological 'green' products) to 'G' (poorly-performing 'red' products) but provides for up to three additional classes ('A+', 'A++' and 'A+++') in line with

technological progress. The energy classes of specific products (such as boilers, televisions, hi-fi systems or games consoles) will be determined by a Commission working group.

- **CO_2 impact of products** (agri-food, clothing, household electrical, etc.): a flagship commitment under the Environment Round Table, Article 228 of Grenelle 2 provides for phased consumer information regarding the environmental impact attributable to products over their lifecycle. Carbon-equivalent impact is an indicator common to all product categories. Display of environmental information will be trialled from 1 July 2011 over a minimum one-year period. This trialling will be undertaken on a voluntary basis and more than 200 candidates have come forward. In light of feedback, a regulatory framework will be created to roll out the mechanism. It should be noted that display of environmental information is also aimed at producers, by encouraging dissemination of product ecodesign initiatives.

- **Energy-Environment Transport Observatory and display of transport CO_2** (see Transport section): the Energy-Environment Transport Observatory (OEET) was set up in 2007 under Environment Round Table Commitment No 13. Its particular aim is to evaluate greenhouse gas emissions to enable mandatory display of transport CO_2 emissions; this work is underway.

Other measures to inform the public include the **Eco-Watt mechanism**: this is an alert system (by email, SMS, etc.) to encourage reduced consumption that was introduced in those regions most at risk of a power cut during winter cold spells (Brittany in 2008, Provence Alpes Côte d'Azur in 2010)[100]. An assessment of the second Eco-Watt campaign (2009-2010) in Brittany, conducted by the Electricity Transport Network (RTE)[101], showed greater awareness of the initiative, as well as increasing mobilisation of private individuals, businesses and local authorities.

In addition, **Energy Efficiency Certificates** (see Energy section) may serve to promote awareness-raising actions: during the first Energy Efficiency Certificate period, some information and awareness-raising operations were initiated under this mechanism. The mechanism was strengthened in the second period: in the case of information programmes provided for under Article 15 of the POPE Law, amended by Law No 2010-788 of 12 July 2010 making a national environmental commitment, mere collective information actions (such as posters) will not result in an EEC. In fact, the term 'information' must be taken to mean exhaustive information provided to

[100] For more details, see the following sites: http://www.ecowatt-bretagne.fr/ and http://www.ecowatt-provence-azur.fr/
[101] For more details, see the following address: http://www.rte-france.com/fr/actualites-dossiers/a-la-une/bilan-ecowatt-2009-2010-une-forte-mobilisation-des-bretons-durant-l-hiver-2

final consumers, enabling them to determine which investments will allow them to optimise their energy consumption (e.g. diagnoses).

Comparators are also made available to the public to help them identify the most energy-efficient equipment (cars, household electrical appliances, etc.), along the lines of the 'guide Topten' Internet site[102]: this guide is an initiative of WWF-France and the consumer association CLCV. This buying comparator, developed according to the Swiss model www.topten.ch is supported by ADEME and belongs to the Euro-Topten European network www.topten.info, itself supported by the Commission. This site is currently enjoying a significant boom, in particular through the 'Topten eco' designation, which highlights products that perform best in terms of energy efficiency and at below the average market price.

Coach Carbone® is another tool to help individuals reduce their greenhouse gas emissions. ADEME and the Nicolas Hulot Foundation for Nature and Humankind (*Fondation Nicolas Hulot pour la Nature et l'Homme*) launched this support tool on 7 October 2010, which provides concrete help in relation to the challenge of reducing emissions four-fold by 2050. This innovative application is available free of charge on the Internet[103]. It makes it possible to calculate household carbon emissions under its main headings - housing, transport, equipment and food - and to propose an appropriate action plan, indicating estimated savings in tonnes of CO_2, kWh, litres of fuel and euros. Four months after its launch it has 21 000 subscribers and more than 16 000 diagnoses have been carried out.

In addition, the ADEME **eco-citizen site**[104], set up in April 2009, helps individuals to obtain the information they need as easily as possible. This site has had nearly a million visits a year since it started up. Organised around aspects of French life, this site is characterised by its interactive nature, plus reports and very specific information. It offers Internet users diverse tools, such as practical guides, videos, surveys and links to further information. The most frequently-consulted sections are: (1) Financing my renovation project, (2) My home, (3) Financing my building project and (4) My purchases.

Energy Info Sites are also a major source of information on energy efficiency: created under an ADEME initiative in 2001, with support from partner territorial authorities, Energy Info Sites advise private individuals on energy efficiency and renewable energies. In 2010 192 000 contacts were undertaken by the 400 network advisers and led to work being carried out at a cost of more than €405 million. The direct environmental impact of Energy Info Sites in 2010, evaluated by ADEME, equates to a reduction in

[102] For more information, see the following site: http://www.guide-topten.com/
[103] For more information, see the following site: www.coachcarbone.org
[104] For more information, see the following site: www.ecocitoyens.ademe.fr

greenhouse gas emissions of 145 kteqCO_2.

With regard to **banking services**, between 4 and 10 October 2010 the first Socially Responsible Investment (SRI) Week[105] was held, with the aim of presenting SRI savings products, methods for their analysis and management, labels, etc. SRI is a new form of portfolio management that integrates Environmental, Social and Governance (ESG) criteria, in addition to the traditional financial criteria. Today SRI products are available in large networks but still rarely offered to individual savers. SRI Week was rightly established to bring this form of investment to the notice of the general public and finance professionals. Promotion of SRI is an Environment Round Table commitment, taken up in Grenelle 1 and in the National Sustainable Development Strategy 2010-2013. In addition, Article 224 of Grenelle 2 requires portfolio management companies to indicate the procedures whereby their investment policy takes account of criteria relating to meeting social, environmental and governance quality objectives. A forthcoming decree will define these procedures, which must appear both in management companies' annual reports and in documents aimed at subscribers. By offering a common framework for comparable subscriber information, this mechanism will help develop socially responsible investment.

In addition, Grenelle 2 (Article 75) provides for legal persons governed by private law with more than 500 employees (250 in the Overseas Departments), as well as persons governed by public law with more than 250 employees, the State and territorial authorities with more than 50 000 inhabitants, to undertake an assessment of their greenhouse gas emissions by the end of 2012, and then every three years (see Industry section). Also, it should be emphasised that for a number of years ADEME has been developing a methodology for undertaking carbon assessments and that it offers **training in carbon assessment**, for both professionals and teachers:

- For professionals: design and dissemination of a mechanism for training in the *Bilan Carbone*® (carbon assessment) method. It comprises three training modules: acquiring the basic principles of the method (2 days), mastering the method (2 days) and specialising in the method applied to territories (1 day).

- For teachers: design and dissemination of a module for training in the *Bilan Carbone*® method for teachers. It comprises a section covering development of a tutored project with students (such as implementation of the establishment's *Bilan Carbone*®).

In 2010 more than 2 200 professionals were trained, as well as 80 teachers.

Lastly, various projects are being developed or trialled:

[105] For more information, see the following address: www.semaine-isr.fr

- **Towards clearer consumer information**: Grenelle 2 (Article 79) provides for the possibility of making it mandatory regularly to transmit information enabling consumers to evaluate their energy consumption more accurately (for example by comparison with average consumption) and make energy savings. Article 18 of the NOME (reorganisation of electricity markets) Law (particularly the amendment to Article l.121-92 of the Consumer Code) also states that consumers will have free-of-charge access to their consumption data. Decrees to clarify how these two provisions will be applied are being drawn up and will be published in 2011.

Smart meters: a trial involving 300 000 meters is currently underway in preparation for the deployment of communicative smart meters (Linky meters). These new meters will be capable of taking regular consumption readings within 30 minutes and carrying out a number of operations remotely, thus avoiding operators' physical travel. Their interoperable nature means that these new meters will support numerous downstream meter services, which will enable consumers to understand and manage their consumption better, particularly at peak periods. That trial ended in March 2011. Feedback will be obtained at the end of the trial underway.

ANNEXES

ANNEX 1. Acronyms and abbreviations

ADEME: *Agence de l'environnement et de la maîtrise de l'énergie* (Environment and Energy Management Agency)

AMI: *Appel à Manifestations d'Intérêt* (CEI: Call for Expressions of Interest)

ANAH: *Agence National pour l'Habitat* (National Housing Improvement Agency)

BBC: *bâtiments basse consommation* (low consumption buildings)

CEE: *certificats d'économies d'énergie* (EECs: Energy Efficiency Certificates)

CIDD: *crédit d'impôt développement durable* (Sustainable Development Tax Credit)

COMOP: *comité opérationnel du Grenelle de l'Environnement* (Operational Committee of the Environment Round Table)

CPE: *contrat de performance énergétique* (EPC: Energy Performance Contract)

CPER: *Contrats de Projets État Régions* (State-Region Project Contracts)

DGALN: *Direction Générale de l'Aménagement, du Logement et de la Nature* (Directorate-General for Planning, Housing and Nature) (MEDDTL)

ESD: Directive 2006/32/EC on energy end-use efficiency and energy services

EU ETS Directive: European Directive 2003/87/EC establishing a market for emission allowance trading within the European Union

DPE: *Diagnostic de Performance Énergétique* (Energy Performance Diagnosis)

EIE: *Espaces Info Énergie* (Energy Info Sites)

ERDF: European Regional Development Fund

SRI: Socially Responsible Investment

Grenelle 1: Programme Law No 2009-967 of 3 August 2009 on implementing the Environment Round Table

Grenelle 2: Law No 2010-788 of 12 July 2010 making a national environmental commitment

Nome Law: Law No 2010-1488 of 7 December 2010 reorganising the electricity market

Pope Law: Programme Law No 2005-781 of 13 July 2005 establishing energy policy guidelines

MAAPRAT: *Ministère de l'Agriculture, de l'Alimentation, de la Pêche, de la Ruralité et de l'Aménagement du territoire* (Ministry of Agriculture, Food, Fisheries, Rural Affairs and Spatial Planning)

MEEDDM: *Ministère de l'Écologie, de l'Énergie, du Développement Durable et de la Mer* (Ministry of Ecology, Energy, Sustainable Development and the Sea)

MEDDTL: *Ministère de l'Écologie, du Développement Durable, des Transports et du Logement* (Ministry of Ecology, Sustainable Development, Transport and Housing)

OEET: *Observatoire énergie-environnement des transports* (Energy and Environment Observatory for Transport)

PAC: *pompes à chaleur* (heat pumps)

PCET: *plan climat-énergie territorial* (Territorial Climate-Energy Plan)

PLU: *plans locaux d'urbanisme* (Local Urban Development Plans)

PREBAT: *programme de recherche et d'expérimentation sur l'énergie dans les bâtiments* (Research and Testing Programme on Energy in Buildings)

PTZ: *prêt à taux zéro* (zero-rated loan)

RT: *réglementation thermique* (Thermal Regulation)

RTAA DOM: *Réglementation Thermique, Acoustique et Aération applicable dans les Départements d'Outre-Mer* (Thermal, Acoustic and Ventilation Regulations applicable in the Overseas Departments)

SceGES: *outil d'évaluation des politiques et mesures « Scénarisation des Emissions de Gaz à Effet de Serre »* ('Scenario Development for Greenhouse Gas Emissions' policy and measure evaluation tool)

SCOT: *schémas de cohérence territoriale* (Territorial Cohesion Plans)

SNDD: *Stratégie Nationale de Développement Durable* (National Sustainable Development Strategy)

SNIT: *schéma national des infrastructures de transports* (National Transport Infrastructure Plan)

SOeS: *Service de l'Observation et des Statistiques* (Observation and Statistics Service)

TCSP: *Transports Collectifs en Sites Propres* (Public Transport Reserved Routes)

TGAP: *taxe générale sur les activités polluantes* (General Tax on Polluting Activities)

ZAPA: *zones d'actions prioritaires sur l'air* (Priority Air Action Zones)

ANNEX 2. Evaluation methods

I. PROSPECTIVE ENERGY-CLIMATE-AIR SCENARIOS

1. Introduction

In order to meet its reporting obligations at national level (climate plan[106]) and to the Commission (report under Article 3(2) of Decision 2004/280/EC and national energy efficiency action plan (NEEAP) under Directive 2006/32/EC), MEDDTL launched an exercise in 2010 entitled '*Prospective Energy-Climate-Air Scenarios up to 2030*', piloted by the Directorate-General for Energy and Climate (DGEC) and the Commissariat-General for Sustainable Development (CGDD). The aim of the exercise is to supply forecasts of energy consumption, greenhouse gas emissions (GES) and pollutants up to 2030. It models the emissions of metropolitan France and the Overseas Departments and Communities and, for the first time, deals with the three aspects of forward planning - Energy, Climate and Air - in an integrated way. Thus, the results of this scenario development exercise are used both in this report, to provide a 2011 update of France's climate plan, and in the report under Article 3(2) of Decision 2004/280/EC. In order to conduct this exercise, MEDDTL called on a consortium, so as to ensure reference projections that provide methodological consistency between the energy, climate and air quality approaches and to make hypotheses, modelling methods and results more consistent:

- the Enerdata research bureau carried out modelling of the energy scenarios;

- the Electricity Transport Network (RTE) participated in modelling of the electrical sector;

- the French Petroleum Institute for New Energies (*IFP Énergies Nouvelles*) dealt with modelling of oil supply;

- the Technical Interprofessional Centre for Air Pollution Studies (CITEPA), which also produced the inventories of France's greenhouse gas emissions and air pollutants, carried out modelling of greenhouse gas emissions and air pollutants in line with the national inventory methodology;

- the ARMINES Centre for Prospective Studies, Paris, which produced the inventories of refrigerants and their emissions in refrigeration equipment and air-conditioning at world level, dealt with modelling of refrigerant emissions;

- lastly, the *Énergies Demain* (Energies Tomorrow) research bureau contributed its experience in bottom-up modelling and its detailed knowledge of operation of the SceGES model to reconcile the methodologies of the various forms of modelling used.

It should also be emphasised that broad consultation on this exercise took place with the services of the Ministries concerned, industrial operators, NGOs and trade unions. Thus, throughout the exercise, sectoral steering committees were organised, in partnership with the experts concerned, to adjust the assumptions and present the results.

[106] See Programme Law No 2005-781 of 13 July 2005 establishing energy policy guidelines

The scenarios developed are based on a common core of assumptions, particularly concerning the national, international and European macro-economy, integrating the cyclical effects of the economic crisis and the associated relaunch measures. They present trajectories for energy demand, energy supply and greenhouse gas and air pollutant emissions, taking account of a number of policies and measures. The measures taken into account vary according to the scenarios studied.

Thus, the results used in this report draw on the following two scenarios:

- the 'pre-Round Table' (PG) trend scenario, estimating the change in France's energy consumption without the targets and measures agreed at the Environment Round Table;
- the 'with supplementary measures' (AMS) scenario, which, in addition to the measures already considered in the 'with existing measures' (AME) scenario, takes account of all of the additional measures agreed since 1 January 2010. This scenario describes the change in France's energy system and the trajectory of greenhouse gas emissions, taking account of the targets and measures actually agreed and their effects to date.

2. Establishment of a macro-economic framework for the exercise

The macro-economic framework was produced largely on the basis of a BIPE study[107], carried out in 2010 for MEDDTL, in consultation with French public actors and industrial operators. The calculation assumptions for the various scenarios are summarised below.

2.1 International context

The international macro-economic context used is that of a return to global growth from 2010 but at a more moderate pace than over the historical period.

Trade will continue to expand at world level but the elasticity of international trade in relation to economic growth will diminish. Asia and some other emerging areas will lead global growth but their growth rates will gradually decrease compared with the very high rates seen recently. In Europe it is anticipated that the new EU members will continue to catch up in economic terms. Continued global growth will lead to higher prices for materials, including oil.

2.2 Economic growth trajectory for France

As regards the growth trajectories for France up to 2030, the scenarios use the reference growth forecasts made by the Treasury in the context of the work of the *Conseil d'Orientation des Retraites* (COR) (pensions monitoring body), with a main assumption of a 1.5% growth rate for the period 2010-2015, then 2.2% for the period 2015-2020 and, finally, 1.6% for the period 2020-2030. These assumptions equate to a sluggish recovery scenario. GDP lost due to the crisis would thus be around 3.2% of GDP in 2020, or about 1.6 growth years lost in 2020.

A sensitivity study has also been undertaken to take account of another sustainable recovery growth scenario in which the crisis has no effect on long-term GDP. The values used for the

[107] Macro-economic and sectoral projection up to 2030 for France. Report delivered on 31 March 2010, BIPE.

growth rate over the period 2010-2015 are still 1.5%, increasing to 2.4% for the period 2015-2020 and, finally, 1.9% for the period 2020-2030 (see Sensitivity study section).

Table 6: Growth assumptions for GDP in France (Source: Ministry of Economy and Finance, Directorate-General for the Treasury)

	Year of forecast	2010-2015	2015-2020	2020-2025	2025-2030
Main scenario (Treasury/COR Scenario B)	2010	1.5	2.2	1.6	1.6
Variant scenario (Treasury/COR Scenario A)	2010	1.5	2.4	1.9	1.9

The reference and variant growth scenarios used are based on the 'sustainable recovery' and 'sluggish recovery' prospects for exit from the crisis, outlined by the European Commission, reproduced below.

[*Key to Figure 11*]
Scénario 1: Reprise durable = Scenario 1: Sustainable recovery
Scénario 2: Reprise lente = Scenario 2: Sluggish recovery
Scénario 3: Décennie perdue = Scenario 3: Lost decade

Figure 11: Various economic growth trajectories for exit from the crisis (Source: European Commission)

2.3 Demographics

The demographic assumptions used come from INSEE's 'high birth rate' scenario, updated in 2006[108]. The high variant among the latest official population projections has been used, since the most recent demographic statistics indicate that the 2010 point of the central population growth scenario was already reached in 2008.

Similarly, the 'high number of households' scenario among INSEE's 2006 projections has been used, since recent statistics indicate a greater upward trend than INSEE's central scenario for the number of households, in particular due to an increased number of people no longer living together (*décohabitation*).

For the Overseas Departments (DOM) and Overseas Communities (COM) an extended forecast was made on the basis of the trend in their respective populations (see specific section).

[108] *Projections de population 2005-2050 pour la France métropolitaine,* Insee Résultats n°57 société, September 2006, Robert-Bobée I., Insee.

Table 7. Forecast change in the population of metropolitan France up to 2030 based on the high birth rate scenario (in thousands) (Source: INSEE (2006))

	1990	2005	2010	2020	2030
Population	56 577	60 702	62 461	65 928	68 937

The high projected number of households, coupled with the assumed high birth rate for the population, produces the change in the average number of persons per household shown below:

Table 8. Forecast change in the number of persons per household up to 2030 (Source: INSEE (2006))

	1990	2005	2010	2020	2030
Persons/household	2.65	2.40	2.34	2.27	2.20

2.4 Sectoral growth

The sectoral growth scenario is based on the results of the BIPE macro-economic study.

Table 9. Share of sectors and of households' private consumption in national GDP (Source: according to BIPE, 2010)

	1990	2005	2010	2020	2030
Agriculture	2.7%	2.3%	2.0%	1.5%	1.2%
Construction and mining	6.7%	6.2%	6.2%	5.7%	5.3%
Industry	15.5%	14.1%	13.6%	13.1%	12.7%
Service	75.1%	77.4%	78.2%	79.7%	80.9%
Households' private consumption	56.0%	56.9%	57.6%	56.0%	54.5%

2.5 Energy prices

The main energy price assumptions come from the International Energy Agency (IEA) reference scenario (World Energy Outlook 2009); these projections describe a future in which governments do not change the policies and measures that are currently in place and affect the energy sector. It provides a projection of the trend in behaviour in the absence of additional climate policy.

A sensitivity study has also been carried out in the context of another energy price scenario, the IEA '450 ppm' scenario (World Energy Outlook 2009). This scenario is based on coordinated action by all of the international actors to limit global warming to an increase of +2°C up to 2100.

These energy price assumptions make it possible, in particular, to analyse the impact of international cooperation on reducing greenhouse gas emissions. Moreover, they are comparable with the assumptions used by the European Commission in its projections made using the PRIMES model.

Table 10. Energy price assumptions (main scenario) (Source: IEA, WEO 2009, 'Reference scenario')

	Price ($2008)	**2008**	**2015**	**2020**	**2025**	**2030**
Oil	Crude IEA import price/barrel	97.2	86.7	100	107.5	115
Gas	Mbtu	10.3	10.5	12.1	13.1	14
Coal	Tonne	120.6	91.	104.2	107.1	109.4

Table 11. Energy price assumptions (variant) (Source: IEA, WEO 2009, '450 ppm scenario')

	Price ($2008)	**2008**	**2015**	**2020**	**2025**	**2030**
Oil	Crude IEA import price/barrel	97.2	86.7	90	90	90
Gas	Mbtu	10.3	10.5	11.	11	11
Coal	Tonne	120.6	85.5	80.1	72.5	64.9

2.6 Coal prices

Table 12. Coal price assumptions (in €/t)

	PG trend scenario		AMS scenario	
	2020	2030	2020	2030
EU ETS	18	20	25	39
Non-EU ETS	0	0	0	Calculation of a notional carbon tax necessary to achieve the Factor 4 trajectory

Modelling of the sectors that come under the EU ETS Directive in the two scenarios is identical and is based on implementing the third stage of the mechanism. That is why, for modelling purposes, the price of the CO_2 allowance has been set at €25/tCO_2 in 2020 and €39/tCO_2 in 2030, values resulting from the Baseline scenario produced by modelling under the PRIMES model for the European Commission in 2009.

2.7 USD/€ exchange rate

An average exchange rate of 1.25$/€ is assumed for the period 2009-2030, i.e. the assumption used by the European Commission under the PRIMES model in the Baseline 2009 and Reference 2010 scenarios.

3. Reference energy scenarios

This report does not deal with scenarios for emission of greenhouse gases and pollutants. More information about greenhouse gas emission scenarios is available in the report by France to the European Commission under Article 3(2) of Decision 2004/280/EC.

3.1 Enerdata, MedPro, POLES: general functioning

The energy scenarios were produced by linking the MedPro technical-economic model developed by Enerdata and the POLES model.

MedPro is a technical-economic model for simulating long-term final energy demand, based on detailed representation of energy consumption by sector, by use and by energy.

In addition, the POLES model is a model simulating the global energy system up to 2050. It is a recursive simulation model: the dynamic is set using the initial point, and then by means of progressive year-on-year adjustments to, firstly, supply and demand variables and, secondly, price.

Use of the POLES model is necessary here in order to:
- draw up complete prospective energy balances for France, integrating energy supply and demand;
- take account of the influence of European and world energy changes, in particular through international prices and environmental constraints, on French balances.

Since only final energy consumption projections are within the scope of this report, functioning of the POLES model and the results obtained are not dealt with[109].

3.2 Demand-side management

The MedPro model makes it possible to model the impact of the Ecodesign Directive on the electricity consumption of equipment, as well as the development of equipment producing renewable energy for own consumption.

The main measures modelled under the PG and AMS scenarios and relevant in terms of final energy savings are presented in the Table below.

Table 13. Summary table for the main energy efficiency policies and measures adopted in the energy sector included in the 'pre-Round Table' (PG) and 'with supplementary measures' (AMS) projections

Name of measure	Pre-Round Table scenario	Round Table scenario
Energy Efficiency Certificates (EECs)	X (1st period)	X (1st and 2nd periods)
Ecodesign Directive		X (including the new regulations on electric motors, circulators, television sets, refrigeration appliances, dishwashers and washing machines)
Solar thermal energy and heat pumps		
PPI (Multi-annual Investment Programming) 2009 targets		X
Sustainable Development Tax Credit (CIDD)		X
Zero-rated eco-loan (eco-PTZ)		X
Heat Fund		X

3.3 Residential-service sector

Modelling using the MedPro model makes it possible to distinguish between the impact of measures:
- in the residential sector and in the service sector;
- concerning new build and concerning existing build. In terms of new build, an assumption of 400 000 new structures a year has been used, with individual buildings accounting for 58%.

[109] As previously stated, this information is, however, available in the report by France to the European Commission under Article 3(2) of Decision 2004/280/EC.

In general, and in the absence of contrary feedback, it has been considered that all of the measures introducing an obligation to produce a result on the part of the actors concerned would fully achieve their target. This rule concerns, in particular:

- implementation of the Thermal Regulations or the renovation requirements introduced by Grenelle 1: the additional measures implemented under the Grenelle laws (certificate of conformity on completion of works, etc.) support this assumption;

- the renovation requirements imposed in relation to State buildings and also service buildings (Grenelle 2). For the former, the target contained in the Law has been used. For the latter, since the Law does not specify a target and the implementing decrees are still being drawn up, this requirement has been taken as allowing a 38% reduction in consumption by 2020 (i.e. the average target reduction included in Grenelle 1 for existing stock as a whole).

Under the AMS scenario, the incentive mechanisms (Sustainable Development Tax Credit and zero-rated eco-loans) are considered renewed up to 2020 in order to achieve the target set by Grenelle 1 of a 38% reduction in consumption for existing stock.

Table 14. Summary table for the main energy efficiency policies and measures adopted in the residential and service sectors included in the 'pre-Round Table' (PG) and 'with supplementary measures' (AMS) projections

Name of measure	Pre-Round Table scenario	AMS scenario
New		
Thermal Regulation (RT)	X (RT 2005)	X (RT 2005, then RT 2012)
HPE and THPE labels	X	X
Certificate of conformity on completion of works		X
Thermal Regulation in the Overseas Departments		X
Existing		
Target of a 38% reduction in energy consumption of existing dwellings by 2020		X
Value-Added Tax (VAT) at 5.5% for certain renovation works in the construction sector	X	X
Sustainable Development Tax Credit (CIDD)		X (Renewal of mechanism until 2020)
Zero-rated eco-loan (Eco-PTZ)		X (Renewal of mechanism until 2020)
Energy Efficiency Certificates (EECs)	X (1st period)	X (1st and 2nd periods)
Element-by-element Thermal Regulation	X	X
Global Thermal Regulation		X
Renewal plan for public buildings		X
Renewal plan for social housing		X
Renewal plan for service buildings		X
Boiler maintenance requirement		X
Inspection of air-conditioning systems		X

3.4 Transport

The MedPro model makes it possible to take account of two types of measure:
- technical measures to improve the energy performance of modes of transport;
- measures leading to modal shifts taken into account through traffic change scenarios.

The AMS scenario takes account of all measures approved under Grenelle 1 and, in particular, all transport infrastructure investment programmes approved up to 2020. It is also constrained by achieving the targets set by Grenelle 1:
- target of returning transport emissions to their 1990 level in 2020;
- target of raising the non-road and non-air share of goods transport to 25% by 2022.

Table 15. Summary table for the main energy efficiency policies and measures adopted in the transport sector included in the 'pre-Round Table' (PG) and 'with supplementary measures' (AMS) projections

Name of measure	Pre-Round Table scenario	AMS target scenario
Goods transport		
Target of returning transport emissions to their 1990 level in 2020		X
Target of raising the non-road and non-air share of goods transport to 25% by 2022		X
National rail freight commitment		X
Development of sea motorways	X	X
CAP (actions and performance contract) target contract between French Inland Waterways (VNF) and the State		X
Seine Nord Canal		X
HGV eco-charge		X
Passenger transport		
Development of high-speed rail lines (LGV) (+2 000 km in 2020)		X
Development of reserved public transport routes (1 800 km outside Ile-de-France by 2020)		X
Regulations on CO_2 of private vehicles		X
Automobile bonus-malus		X
Inclusion of aviation in EU ETS		X

3.5 Industry

Modelling of the industrial sector was the subject of joint work with the Directorate-General for Competitiveness, Industry and Services (DGCIS) of the Ministry of the Economy, Industry and Employment, and with industrial operators.

Specific consultation with the High Energy Consuming Industries (IGCE) sector made it possible to supply detailed production projections integrated into the modelling, with account being taken of the coal price constraints used. For other industrial sectors, modelling was based on BIPE sectoral projections.

In order to reconstruct energy demand in MedPro, two approaches are used, depending on the type of industry being considered:

- High Energy Consuming Industries (IGCE) account for almost two-thirds of industry's total energy consumption and are dealt with on the basis of their respective physical outputs, to which is linked a specific energy need per tonne produced;

- Other industries are addressed using their respective value-added, to which is linked an energy intensity that takes particular account of the impact of regulations.

As regards the POLES model, it includes the economic constraint of the EU ETS price signal by means of flexibility to the coal price signal. Possible impacts are of two types:

- Adjustment of the energy performances of production;
- Modification of the structure of value-added (e.g. outsourcing outside France of those elements of the value chain most sensitive to the price signal).

Table 16. Summary table for the main energy efficiency policies and measures adopted in the industrial sector included in the 'pre-Round Table' (PG) and 'with supplementary measures' (AMS) projections

Name of measure	Pre-Round Table scenario	Round Table scenario
EU ETS Directive	X	X (and its revision)
Energy Efficiency Certificates (EECs)	X (1st period)	X (1st and 2nd periods)

For the oil-refining sector, *IFP Énergies Nouvelles*[110] modelled the wraparound between the levels of demand for petroleum products resulting from the PG and AMS scenarios drawn up by Enerdata and production in the sector[111]. This work made it possible, in particular, to evaluate the energy consumption and CO_2 emissions of the French refining industry. A number of behavioural options for actors in the French refining industry were simulated (reduction in capacities, investments, stable situation, etc.)[112].

In order to obtain the total demand for petroleum products in 2020 and 2030, *IFP Énergies Nouvelles* supplemented the assumptions not covered by the Enerdata modelling with, in particular, 2% annual growth in demand for jet fuel used outside national borders and produced by French refineries. Bitumen demand is taken as remaining at its 2005 level.

The simulations undertaken are based on aggregating French refineries into a single refinery, with capacities corresponding to the total French capacities for each of the units.

The production level depends directly on the quantity of crude oil and other throughputs dealt with by the refining industry.

3.6 Agriculture - energy aspect

The energy aspect of agriculture is modelled on the basis of the POLES and MedPro models in line with the change in sectoral value-added used.

As regards development of renewable energies, the AMS scenario is based on the 2013 targets under the COM-OP for agriculture (120 000 m^2 of solar water heater collectors, 300 wood-energy installations, 30 heat pumps) but also on the commitments to '30% of holdings with low energy

[110] *IFP Énergies Nouvelles* is a public research, industrial innovation and training body in the fields of energy, transport and environment.
[111] Impact on refining of the Enerdata - *IFP Énergies Nouvelles* demand scenario, 2011.
[112] The *IFP* scenarios go together with ongoing restructuring of the entire refining sector; moreover, they do not integrate flare and off-side emissions, which account for around 2%-3% of refining emissions.

dependency in 2013' and '50% of holdings broadly engaged in the initiative for environmental certification of agricultural holdings in 2012'.

4. Overseas Departments (DOM) and Overseas Communities (COM)

For the Overseas Departments (Guadeloupe, Martinique, La Réunion, Guyana), the population data used are the latest central scenario projections published by INSEE in 2010. For the Overseas Communities (New Caledonia, French Polynesia, Wallis and Futuna, Mayotte and Saint-Pierre-et-Miquelon), various historical data sources and projects have been used: INSEE, ISPF (French Polynesia), ISEE (New Caledonia). The population assumptions for the Overseas Departments and the Overseas Communities up to 2030 are given in the following Table:

Table 17. Forecast change in the population of the Overseas Departments and Overseas Communities up to 2030 (Source: INSEE (2010), ISPF, ISEE, estimates by CITEPA and Enerdata)

	2000	2005	2010	2020
La Réunion	716	773	824	918
Martinique	384	396	403	415
Guadeloupe	388	399	404	409
Guyana	162	199	238	330
New Caledonia	211	232	249	287
Other Overseas Communities	406	458	492	607

For the Overseas Departments and Overseas Communities, the assumed changes in activity have been constructed either by extending the historical trends (renewable energy consumption) or in line with the change in population (electricity consumption, consumption in the residential-service sector).

5. Evaluation of energy consumption in the EU ETS and non-EU ETS sectors

Installations that come under the EU ETS Directive are outside the scope of Directive 2006/32/EC. However, the models used to draw up the projections for France's energy consumption do not make this distinction. It has therefore been necessary to estimate *a posteriori* the distribution of energy consumption projections up to 2020.

In the absence of more precise data, the proportion of energy consumed by installations that come under the EU ETS Directive, within the industrial sector, has been taken as constant and set at 49.7%, the average percentage seen between 2001 and 2008, with a standard deviation of less than 0.9%. The final energy consumption of installations that come under the EU ETS

Directive, outside the energy sector, is 18 Mtoe within the industrial sector and 1.1 Mtoe, or less than 6%, outside the industrial sector. It has therefore been assumed that installations that come under the EU ETS Directive, outside the energy sector, saw their consumption integrated into the industrial sector.

II. BOTTOM-DOWN ANALYSIS OF ENERGY SAVINGS MADE BETWEEN 2007 AND 2009

III. SceGES EVALUATIONS

SceGES uses a so-called bottom-up approach. Calculation of emissions and energy savings is thus based on detailed activity data from a sectoral viewpoint. For each measure considered, once the resulting changes to the input physical parameters have been evaluated, this tool makes it possible to quantify energy savings and corresponding reductions in greenhouse gas emissions compared with a trend scenario.

1. Methodology

1.1. Principles

In general terms, the SceGES tool has the following features:

- SceGES deals with direct emissions of six greenhouse gases under the Kyoto Protocol. It draws on the official national inventory[113], in line with the geographical scope of Kyoto for 2005, and on a trend up to 2035;

- SceGES deals with the main greenhouse-gas emitting activity sectors taken into account in the national inventory: construction (residential and service), transport (road, air, river and rail), electricity production, manufacturing industries, refining (petroleum products), biofuel production, urban heating, waste treatment (landfill, waste water treatment and incineration), agriculture (crops, livestock) and domestic and industrial uses of refrigerants;

- Calculation of emissions is based on the most detailed description possible of technical stock for most activity sectors (description of housing stock according to year of construction; description of vehicle fleet according to cubic capacity, vehicle age, engine size; description of livestock in the case of agriculture, description of built surface areas hosting service activities by branch, etc.);

- Each greenhouse-gas emitting activity sector is dealt with in the form of a module. Each module is initiated using an official emissions trend going from 2005 as base year to 2035: the DGEMP-OE 2008 trend scenario[114] is used for the transport, construction and electricity production sectors, the *École des Mines de Paris* (Paris School of Mining)[115] scenario for sectors using refrigerants and the INRA 2008 scenario[116] for the agricultural sector. This alignment is adapted at the time when reference prospective exercises are updated;

[113] The inventory methodologies are revised every year at the French level and these updates are then implemented within SceGES. Databases relating to stock are similarly updated.
[114] Reference energy scenario for France up to 2020/2030, April 2008
[115] Inventory of refrigerants and their emissions, projections up to 2021, Armines, 2008
[116] Projected greenhouse gas emissions/absorptions in the forestry and agriculture sectors up to 2010 and 2020, April 2008

- The parameters (description of stock, energy volume or intensity of a particular activity) constituting each of these trends are configurable by users, who may create their own scenario by modifying the rules governing the way these change over time. The results of the calculation are then given in terms of deviation from the so-called 'trend' curve in teqCO_2, with an annual time step.

The table below summarises all of the measures in the Climate Plan that have been evaluated using SceGES.

Table 18. List of measures evaluated using the SceGES tool in the context of this report

Sector	**Measures evaluated**
Energy	- Ban on incandescent bulbs (implementation of 'Ecodesign' Directive)
Construction	- Thermal Regulation 2012 - Zero-rated eco-loan - Sustainable Development Tax Credit
Transport	- Measures to improve new vehicle performance - HGV eco-tax

In the agricultural sector, the introduction of mobile test benches for tuning tractors has also been evaluated directly, without using the SceGES tool.

Data collection and determination of the input assumptions used by SceGES were the subject of consultation with all State services.

1.2 Calculation methodology by activity sector

Only the sectoral modules used to produce evaluations are presented under this heading. All sectors are described in the SceGES user manual[117].

1.2.1 Construction

Only the residential sector is described in this section, since the service sector was not used in the context of the evaluations presented.

[117] SceGES user manual, DGEC, February 2010

Introduction of the residential module into the SceGES model is the result of simplification of the Enerter model[118], developed by *Énergies Demain* (Energies of Tomorrow) with support from MEDDTL. The simulation is based on a detailed description of the housing stock, in order then to calculate heating consumption, using algorithms specific to thermal energy in construction. This same stock basis is used to calculate energy consumption for the purposes of hot-water production and cooking.

Depending on the desired measures for evaluation, it is possible to target part of the housing stock using a number of discriminating criteria (new dwellings/existing dwellings, individual house/collective building, period of construction, etc.).

Thus, for new dwellings it is possible to change:
- the surface area of structures;
- the morphology of buildings: this allows calculation of the average surface areas of the walls according to the habitable surface areas;
- the heat loss coefficients of walls (windows, solid walls, etc.) applicable to the year for simulation according to the Thermal Regulation in force;
- the market shares of the various heating systems;
- the type of ventilation (natural ventilation, single/double flow MCV): this allows calculation of the average rate of air renewal.

In the case of existing dwellings, the following actions may be carried out:
- modification of a 'replacement matrix' for heating systems that have reached the end of their life, so as to describe boiler replacements and technology transfers that take place at the time of these replacements;
- introduction of insulation work: after targeting a stock segment on the basis of a number of discriminating criteria (period of construction, type of dwelling, occupation typology, heating mode and energy), it is possible to select any energy-losing surface and apply a material contained in a pre-implemented library.

Lastly, it is possible to define the technical characteristics of heat production systems for all dwellings. This involves:
- the overall performance of the various heating systems, covering production and distribution. This performance changes in line with the year the heating system was installed in a dwelling;
- the survival rate: this is the percentage of systems of a given age that are still in working order.

It is also possible to simulate regulating actions or behavioural actions through:
- the share of heating installations with efficient programming, by setting a level for programming devices (centralised technical management);
- the possibility of varying the set point temperature of dwellings compared with the theoretical set point of 19°C.

Once all desired configuration has been undertaken concerning changes to heating systems and building renewal actions, the model recalculates the description of the housing stock from year to year. Based on this representative description of the stock in a given year, the thermal calculation is undertaken to determine the heating consumption of the housing stock and the greenhouse gas emissions caused.

[118] Model for simulating the energy consumption of housing stock at every territorial level: http://www.energies-demain.com/spip.php?article13

Any change in electricity needs linked to actions that have an impact on heating or domestic hot-water needs is communicated to the SceGES 'electricity production' module. This module calculates the response of the electricity production stock to a change in demand in this sector.

1.2.2 Electricity production

The SceGES 'electricity' module breaks down into two blocs:
- simulation of national electricity demand in terms of energy and load;
- simulation of electricity production.

Establishment of electricity demand

The simulation principle used for electricity demand is a 'bottom-up' principle. It seeks to describe the physical reality of electricity-consuming appliances in order then to be able to reconstitute overall consumption. For each consuming sector (service branches, industrial branches, residential typologies) and for each electricity use, the parameters determining electricity consumption are:
- 'activity' factor of the consuming sector: surface area of buildings for service sectors, number of employees for industrial sectors, etc.;
- percentage equipment level: number of consuming units installed per typology-determining criterion (e.g. number of televisions per household, number of lights per m^2 of office space, etc.);
- output of the consuming equipment;
- average annual period of use of the selected equipment;
- profile: annual distribution of hours of use.

The resulting time-seasonal load curve, broken down by use, consuming sector and type of day[119] is then aggregated to the monthly time step, then separated for each month of the year into three qualitative groups representative of the strain put on the production system: base, semi-base and peak.

It should be emphasised that calculation of electricity demand takes account of consumption resulting from a number of modules:
- Construction module: electricity consumption for heating and domestic hot water production, electricity production resulting from installation of photovoltaic solar collectors or micro wind turbines;
- Manufacturing Industry module: electricity consumption linked to production;
- Waste Treatment module: electricity production linked to waste incineration;
- Transport module: electricity consumption by electric vehicles, rail freight, mainline rail services, TER (regional rail services) and the *Transilien* (Ile-de-France urban and suburban transport system).

Thus, any change in these activity sectors leads to changes in electricity demand and hence to the electricity supply required.

Determination of electricity supply

Once national electricity demand has been reconstituted, the SceGES supply module aims to calculate the CO_2 emissions linked to electricity production (national production - imports + exports).

[119] Weekday, Saturday or Sunday

Simulation of electricity production is based on the following three principles:

- the need to respond to monthly demand in terms of quantity and quality, i.e. respecting distribution of demand between base, semi-base and peak;
- taking account of installed outputs in non-carbon production stock[120] (trend scenario based on the PPI 2006 forecasts[121]);
- calculation of operating hours by taking account of a hierarchy among means of electricity production, according to the quality of the energy sought.

It should be emphasised that this module leaves the user the possibility of changing:

- outputs of installed non-carbon means of production;
- frequency of maintenance of nuclear power plants, as well as its monthly distribution;
- introduction of 'exceptional' climatic events (droughts and heatwaves): heatwaves reduce the summer availability of nuclear power plants. Droughts reduce the availability of hydroelectric means.

Non-carbon means of production are allocated, by way of priority and up to their maximum capacities, in order of preference (run-of-river hydroelectric, wind, biomass, nuclear, load-following hydroelectric). As decentralised means of electricity production are not subject to any regulation for the specific purposes of balancing supply and demand, they are integrated into the 'centralised electricity production' module in the same way as other priority sources. Lastly, volume of supply not met by non-carbon means of production is supplemented by carbon means of production (gas, fuel oil, coal), which serve as an adjustment variable.

1.2.3 Transport

This module deals with all types of transport: road, air, rail and river. Only the 'road transport' and 'rail transport' sectors will be described here, since the other sectors were not used in drawing up the Climate Plan.

Road transport

This module has been developed by CITEPA (inter-professional technical centre dealing with air pollution), based on estimates of air pollutant emissions up to 2020 produced for MEDDTL and known as OPTINEC II[122]. Vehicle CO_2 emissions are directly linked to their fuel consumption and the nature of the fuels consumed. In order to estimate CO_2 emissions, it is therefore necessary to calculate fuel consumption for each vehicle category.

[120] Unlike non-carbon means of production, the output of carbon means of production is not a variable that can be changed by the user. It is a model adjustment variable: these means will be drawn on to meet residual demand once all other means have been fully mobilised.

[121] Order of 7 July 2006 on the Multi-annual Investment Programme (PPI) for electricity production

[122] Study relating to updating of the programme to reduce air emissions and revision of the National Emission Ceilings (NEC) Directive - OPTINEC II, produced for MEDDTL - July 2008

This consumption depends on:
- the vehicle category;
- the age of the vehicle: for the same type of vehicle, fuel consumption increases with the age of the vehicle, since having been placed on the market in the past, it does not meet the same standards as newer vehicles;
- the vehicle's annual unit consumption;
- annual mileage;
- breakdown of annual mileage into urban, main road or motorway driving;
- type of fuel with which a specific emission factor is associated;
- average speed.

Various emission scenarios may be tested by modifying the following parameters:
- projections of the static fleet: it is possible to affect survival rates and changes in registrations;
- changes in registrations: it is necessary to select a type of vehicle (private vehicle, HGV, etc.), then select a vehicle category (private vehicle using petrol, diesel, etc.) for which another change is to be tested;
- change in survival rate: this makes it possible, for example, to rejuvenate the vehicle fleet following introduction of a scrappage premium;
- projection of the fleet on the road: this function makes it possible to modify the average annual mileage of vehicles to simulate a reduction in journeys, for example;
- change to the average speed per network: three categories are proposed (urban, main road and motorway). The user may then test the impact of measures affecting average speed by road type;
- determination of the percentage change with regard to biofuels: the percentage of biofuels included in petrol and diesel may be modified based on years;
- Change in fuel consumption: it is possible to reduce the consumption of new vehicles.

The vehicle fleet is recalculated each year on the basis of the change rules implemented. The results of the calculations are presented in terms of emission by gas and in teqCO_2, as well as fuel consumption by vehicle type.

Rail transport

This module has been developed on the basis of work carried out by CITEPA under the National Inventory System for Air Pollutant Emissions (SNIEPA) for the rail transport sector.

Four types of activity are considered, using the tonnages or passengers transported and the fuel consumptions extracted from SNIEPA:
- freight traffic;
- mainline passenger traffic;
- passenger traffic on regional lines (TER);
- passenger traffic on the *Transilien*.

Various emission scenarios may be tested by modifying the following parameters:
- activity volumes in tonne kilometres of transported goods or in passenger kilometres of transported passengers;
- consumption of domestic fuel oil by trains or other diesel engines;
- energy intensities[123] of diesel or electric engines for each of the four activities considered.

[123] Ratio of total energy consumption to activity volume

In addition, a link is made to the electricity production module using supplementary data from SNCF. This link makes it possible to take account of a change in electricity demand resulting from a change in activity and to infer from this the variation in greenhouse gas emissions.

River transport

This module has been developed on the basis of work carried out by CITEPA under the National Inventory System for Air Pollutant Emissions (SNIEPA) for the river transport sector. Only goods transport activities are considered using the tonnages transported and the fuel consumptions extracted from SNIEPA.

Various emission scenarios may be tested by modifying the following parameters:
- activity volumes in tonne kilometres of transported goods;
- consumption of domestic fuel oil by barges or other diesel engines;
- energy intensity of the sector.

2. Measures evaluated

2.1 Residential-service sector

2.1.1 RT2012

Presentation of the measure

A new Thermal Regulation, Thermal Regulation (RT) 2012 (see Annex 3, Chapter II), will strengthen heat performance requirements for new buildings: all new buildings for which the building permit is lodged after 1 January 2013 must have primary energy consumption below a threshold of 50 kWh_{ep}/m^2/year.

Sources and assumptions for the evaluation

A study by DGALN (Directorate-General for Planning, Housing and Nature) showed that a number of technical solutions (mix of insulation and equipment) stood out with regard to meeting the requirements of RT2012 (50 kWh_{ep}/m^2/year). Out of some 10 solutions studied by DGALN, three stood out in cost terms. It may therefore reasonably be supposed that a large majority of new buildings required to comply with RT2012 will do so by adopting one of these three technical solutions:
- Joule heating and efficient thermo ECS (operates on extracted air, with double-flow ventilation) + improved BBC build. This is the least costly solution in investment terms but also in terms of overall cost over 20 years, since it only requires a single subscription rather than two (electricity + gas) and does not require heating maintenance cost.
- Heat pump heating + thermo ECS + conventional BBC build
- Gas condensing boiler heating + solar ECS with boiler back-up + conventional BBC build

In order to make it possible to evaluate the impact of RT2012 using SceGES, the following assumptions have been made:

- The period between the building permit being lodged and the dwelling being occupied is one year. The measure therefore produces effects from 1 January 2014;
- All new dwellings built after 1 January 2015 use one of the three solutions listed above in order to comply with RT2012;
- These three solutions are used in equal measure, i.e. each having one-third of the market;
- The number of buildings going beyond RT (HPE = RT-10%, THPE= RT-25%) gradually increases over the years.

Results

Implementation of RT2012 allows an annual energy saving of 0.41 Mtoe in 2016 and 1.15 Mtoe in 2020.

2.1.2 Zero-rated eco-loan

Presentation of the measure

Zero-rated eco-loans are available to all property-owning individuals for projects in their main residences, including co-ownerships and let dwellings. Lasting 10 years, with the possibility of being extended to 15 years by the bank, they allow up to €30 000 in financing for work to improve the dwelling's energy efficiency.

The SGFGAS (Management Company for the Guarantee Fund for Social Access to Home Ownership) database contains the characteristics of contracted loans. An estimate of the tax cost relating to this mechanism is provided below, based on SGFGAS data.

Table 19. Number of zero-rated eco-loans and estimated tax cost (source: SGFGAS)

	2009	2010	2011*	2012*	2013*
Number of zero-rated eco-loans issued	70 933	80 300	240 000	320 000	400 000
Resulting tax cost in M€**	125	144	431	575	719

* From 2011, the number of zero-rated eco-loans corresponds to the targets. The 2009 and 2010 values correspond to loans recorded.
** The tax cost shown for year n is the total tax cost resulting from the loans issued for the year n, obtained by aggregating the annual tax costs for these loans over their lifespan.

Implementation of the measure

The SGFGAS database makes it possible to establish the number of actions of each type carried out in 2009 and 2010 and the type and year of construction of the dwellings where they were carried out. This breakdown has been retained for 2011-2013, while taking the number of contracted loans as being in line with initial targets, although the number of loans in 2009 was higher than anticipated. The number of mixed works, financed by zero-rated eco-loans, taken into account in SceGES is shown in Table 19. The mixed works carried out in 2009 consist of the actions set out in Table 20.

Table 20. Assumption regarding mixed works carried out under zero-rated eco-loans (source: SGFGAS)

	Percentage of loans
Window insulation	75%
Roof insulation	49%
Solid wall insulation	28%
Heat pumps	23%
Condensing boilers	19%
Stoves, fireplaces, wood inserts	17%
Individual solar water heaters	11%
Wood boilers	3%
Low-temperature boilers	2%

All of the actions carried out under zero-rated eco-loans are considered additional to the SceGES trend scenario.

As regards thermal insulation, the number of dwellings benefiting from zero-rated eco-loans is directly included in SceGES using a percentage application of various insulation solutions to the housing stock. Thermal insulation of opaque walls is assumed to have been achieved by application of 20 cm of glass wool (unrolled in loft spaces; R = 6.1) and 10 cm of extruded polystyrene on solid walls (insulation from inside: R = 3.3) and insulation of glazed walls by installing PVC-type windows (U = 1.5). The percentage applications are different for four categories of dwelling, in line with the SGFGAS statistics, as set out in Table 21.

Table 21. Application level of actions as a percentage of the various stocks (source: SGFGAS)

	Windows (%)		Roofs (%)		Solid walls (%)	
	MI (individual house)	IC (collective building)	MI	IC	MI	IC
Before 1975	7.2	1.5	5.4	0.8	3.7	1.0
Between 1975 and 1989	7.3	0.9	5.6	0.5	2.0	0.5

As regards replacement of a heating system by an independent wood-burning appliance or a wood boiler, wood-burning appliances installed using zero-rated eco-loans are initially taken as replacing less efficient end-of-life wood-burning appliances. This assumption is reflected, in SceGES, by an increase in wood boiler performance for the years in question. The performance value then reaches the 2035 reference scenario value. Subsequently, if the number of appliances installed exceeds the number reaching the end of their life, these new appliances are taken as replacing other types of heating.

In the case of heat pumps, zero-rated eco-loans are reflected by an increase in heat pumps replacing end-of-life heating appliances.

For condensing boilers and low-temperature boilers, it is assumed that these boilers are replacing end-of-life traditional fuel oil and gas boilers. This assumption are reflected, in SceGES, by an increase in the average performance of gas and fuel oil boilers (10% for low-temperature boilers

and 20% for condensing boilers compared with the average performance of boilers installed in 2005). The performance value then reaches the 2035 reference scenario value.

Lastly, as regards individual solar water heaters, zero-rated eco-loans are reflected by an increase in the percentage equipment level of the overall stock of dwellings.

Results

Energy savings resulting from zero-rated eco-loans amount to 0.06 Mtoe in 2010 and 0.81 Mtoe in 2016 and 2020.

2.1.3 Sustainable Development Tax Credit

Presentation of the measure

The following equipment is eligible for tax credit: low-temperature boilers (BT - until 2008), condensing boilers, insulation of opaque and glazed walls, solar water heaters (CESI), heat pumps and wood-burning heating appliances.

Source and assumptions for the evaluation

The evaluation carried out relates to the impact of introducing Sustainable Development Tax Credit (CIDD) over the period 2005-2012. The number of dwellings concerned, by type of operation, is shown in Table 22.

In addition, data produced by cross-referencing income tax and housing tax declarations for 2007 make it possible to establish the types of dwelling in which the equipment is installed: year of construction, individual house (MI) or collective building (IC).

Table 22. Number of dwellings concerned by CIDD

	2005	2006	2007	2008	2009	2010	2011	2012
Low-temperature boilers	135 704	130 074	113 481	132 444	0	0	0	0
Condensing boilers	45 727	117 775	151 880	280 690	323 626	111 075	111 075	111 075
Solid wall insulation	186	443	625	15 855	18 281	10 373	10 373	10 373
Roof insulation	1 817	4 322	6 099	245 292	282 813	160 484	160 484	160 484
Glazed wall insulation	303 815	412 271	531 346	382 176	440 634	150 600	150 600	150 600

Individual solar water heaters	13 910	26 222	23 022	28 493	22 228	22 228	22 228	22 228
Combined solar systems	1 561	3 854	3 803	4 568	2 572	2 572	2 572	2 572
Heat pumps	34 885	68 998	129 515	166 985	111 930	111 930	111 930	111 930
Fireplaces/ wood inserts	106 030	144 140	127 135	155 790	130 155	130 155	130 155	130 155
Wood stoves	71 273	125 578	135 902	138 110	192 445	192 445	192 445	192 445
Wood boilers	16 071	22 702	13 696	23 675	17 565	17 565	17 565	17 565

Source: for the past period, the number of items of renewable-energy equipment installed is based on Observ'ER (Renewable Energies Observatory) statistics. The number of dwellings equipped with opaque walls, glazed walls, low-temperature boilers and condensing boilers was inferred from annual tax costs recorded or estimated and from estimated average prices. For the future period, the number of dwellings concerned has been estimated by extending the trends recorded.

Implementation in SceGES

Installation of these various items of equipment is reflected in SceGES in the following way:

- Independent heating appliances (AIC) using wood (fireplaces, inserts and stoves), wood boilers and heat pumps:

1. In existing build, the appliances installed under tax credit replace the same type of appliance, first replacing less-efficient appliances of the same type, leading to energy saving. Subsequently, if the number of appliances installed exceeds the number of appliances installed in the trend scenario, these new appliances replace other types of heating. The replacement depends on the appliance being considered. For example, in the case of independent heating appliances (AIC) using wood, appliances installed over and above the trend scenario replace, as first priority, coal AIC, followed by LPG AIC, electric AIC and, lastly, integrated electric heating.

2. In new build, the appliances installed first replace less-efficient appliances of the same type installed in the trend scenario. Then, if the number of appliances installed under tax credit exceeds the number of appliances installed in the trend scenario, the market share of these appliances is increased at the expense of other heating systems. For example, in the case of AIC using wood, this increase is at the expense of those systems that currently have the lowest market share (coal AIC, electric AIC, fuel oil AIC, networked gas, LPG AIC), and then at the expense of integrated electric heating.

- Solar thermal energy: installation of appliances is reflected in SceGES by an increase in the equipment percentage of the housing stock of each region compared with the trend scenario.

- Condensing boilers and low-temperature boilers: these are installed to replace traditional fuel oil and gas boilers at the end of their life.

- Heat insulation of opaque and glazed walls: the number of dwellings benefiting from tax credit is directly included in SceGES using a percentage of each housing stock concerned. Heat insulation of opaque walls is assumed to be achieved by applying 20 cm of glass wool (loft spaces, R=6.1), and insulation of glazed walls by installing reinforced insulation PVC windows (U=1.5).

Results

The energy savings resulting from zero-rated eco-loans amount to 0.32 Mtoe in 2009, 0.57 Mtoe in 2010, 1.28 Mtoe in 2016 and 1.43 Mtoe in 2020.

2.2 Transport

2.2.1 Measures to improve the performance of new vehicles

Presentation of the measure

The Environment Round Table set a target of reducing average emissions by France's total vehicle fleet from 176 g of $C0_2$/km to 130 g by 2020.

Thus, numerous measures have been put in place at national and Community level to encourage purchase of the most efficient new vehicles in terms of energy consumption and greenhouse gas emissions, including:
- the CO_2 label for private vehicles,
- the 'ecological bonus-malus',
- the scrappage premium.

At European level, Regulation 443/2009 limits CO_2 emissions of passenger cars and requires manufacturers to make a phased reduction in CO_2 emissions of new vehicles to 130 gCO_2/km between now and 2015. It also sets a new long-term target of 95 gCO_2/km in 2020.

Source and assumptions for the evaluation

In order to reflect these measures, the following assumptions have been made regarding average unit values of emissions of new vehicles for a given year:
- 130 gCO_2/km from 2012 up to 2015,
- then a linear decrease to 95 gCO_2/km in 2020.

The effects of the European Regulation on average specific consumption of newly registered vehicles fitted with an internal combustion engine in France will depend, in particular, on the proportion of new registrations made up of rechargeable electric and hybrid vehicles. In the context of this evaluation, the distribution of rechargeable electric and hybrid vehicles is taken as being in line with the SceGES trend scenario assumptions, with marginal penetration of these

vehicles into the new-vehicle market up to 2020. The above targets therefore apply directly to internal combustion engines.

Implementation using SceGES

SceGES makes it possible to test the measure by reducing the unit consumption of new vehicles in proportion to the change in vehicles' unit emissions. The measure only applies to private vehicles (PVs) put into circulation. When they age, these vehicles retain their reduced consumption.

The reduction in the average CO_2 emission factor of all tested private vehicles placed on the market is shown in Table 23. It is directly linked to the reduction in average energy consumption of all private vehicles placed on the market.

Table 23. Assumptions concerning reduction of the average CO_2 emission factor for all PVs placed on the market

	Average CO_2 emissions of new vehicles - gCO_2/km
2005	153.6
2009	133
2010	130
2011	130
2012	130
2013	130
2014	130
2015	130
2016	123
2017	116
2018	109
2019	102
2020	95

The measure has been tested by applying an identical percentage reduction in PV unit consumption to all PVs, whatever the fuel. The scenario concerning percentage registration of petrol PVs and diesel PVs remains the same as the trend scenario.

Results

Implementation of the measures concerning performance of new vehicles allows an annual final energy saving of 0.1 Mtoe in 2010, 1.1 Mtoe in 2016 and 2.2 Mtoe in 2020.

2.2.2 HGV eco-tax

Presentation of the measure

Grenelle 1 provides for introduction of a kilometric eco-tax to be levied on HGVs. This eco-tax will apply to the unassigned national road network of metropolitan France and the routes belonging to territorial authorities liable to see a shift of traffic.

Implementation of the measure

Evaluation of this measure using the SceGES model draws on two data sources:

- a CGDD study of November 2009, 'National and regional impact of the HGV eco-tax':
  This study evaluates the impact of the HGV eco-tax on rail and river modal shift. The study is based on the definition of the eco-tax as initially envisaged and does not take account of the exemption measures introduced by Parliament. Estimated revenue before these exemption measures was €1.2 thousand million, compared with €1 thousand million currently;
- a study of 6 April 2010 by the Ministry of Ecology's Pricing Taskforce. This study reviews the evaluations of various traffic forecasting models and estimates a reduction in HGV fuel consumption as a result of the measure being introduced.

The CGDD thus estimates an increase in traffic on the rail and road network from 2012, amounting to:

- +730 million tonnes.km a year for rail traffic;
- +118 million tonnes.km a year for river traffic.

These assumptions are input into the SceGES model evaluating the impact of this modal shift on greenhouse gas emissions and energy consumption.

The Pricing Taskforce estimates the gain in fuel consumption at 1.24% a year for HGVs.

The average HGV emission factor is estimated at 845 gCO_2/km and their average fuel consumption at 32g per 100 km.

The SceGES model makes it possible then to estimate the impact of this reduced consumption on the total consumption of the sector.

Results

In terms of energy savings, the anticipated annual gain is 0.165 Mtoe in 2016 and 0.168 Mtoe in 2020.

2.3 Energy: implementation of the Ecodesign Directive

Presentation of the measure

The Ecodesign Directive (supplemented in France by a voluntary agreement) provides for a phased ban on incandescent light bulbs in favour of low-consumption bulbs.

Source and assumptions for the evaluation

The following assumptions have been made[124]:

- in the residential sector, the measure will allow, by 2016, an annual saving in electricity consumption due to lighting of 6TWh in relation to the reference consumption of 12TWh (2008);
- in the service sector, the saving in electricity consumption made possible by the measure is estimated at 2TWh of 32TWh (due to the current low use of incandescent bulbs in this sector).

This measure may be modelled in the SceGES tool by changing the average output of the light points used:

- For the residential sector: a halving of the output of an average light point between 2008 and 2016,compared with the trend scenario, has been taken into account;
- For the service sector: a reduction of 1/16 in the output of an average light point between 2008 and 2016 has been taken into account.

These reductions are assumed to be implemented on a regular basis between 2009 (entry into force of the Regulation resulting from the Ecodesign Directive concerning this equipment) and 2016. This assumed linear decrease is based on the fact that the Regulation provides for a phased ban between 2009 and 2012 but it is possible to stockpile incandescent bulbs, stocks that, logically, should, however, run out over time.

Implementation using SceGES

This decrease is implemented in the residential sector for the three uses 'Main residence - individual houses', 'Main residences - collective housing' and 'Secondary residences', based on their respective trend scenarios, and to the service sector for the eight uses concerned.

Results

The introduction of this measure allows an annual final energy saving of 0.09 Mtoe in 2009, 0.17 Mtoe in 2010, 0.76 Mtoe in 2016 and 0.75 Mtoe in 2020.

2.4 Agriculture: introduction of mobile test benches for tuning tractors

This measure was the subject of a direct bottom-up evaluation not using the SceGES tool.

Presentation of the measure

Reducing fossil energy consumption by agriculture helps to develop a sustainable agricultural model, linking economic viability of agricultural holdings with respect for the environment. It contributes, in the context of implementation of the Energy Performance Plan (PPE) for agricultural holdings, launched in 2009 by the Ministry of Agriculture, to achieving the target of 30% of agricultural holdings with low energy dependency by 2013.

[124] Source: ADEME

In addition to performance of Energy Performance Diagnoses for holdings and development of renewable energies, the Energy Performance Plan is based on investment and practices that make it possible to consume less fossil energy. Improved tuning of tractors through a move to mobile test benches is among the practices encouraged to reduce fuel consumption.

Under the Energy Performance Plan it has been possible to finance 10 new mobile test benches, in addition to the five existing ones.

Reflection of these assumptions

A test bench enables 300 diagnoses and tractor tunings to be performed a year; tuning a tractor allows a reduction in fuel consumption of 900 litres a year[125].

Around 1.25 million tractors are in operation in agricultural holdings in France. In 2009 (when the measure was introduced) there were five test benches. Between 2009 and 2011, the Energy Performance Plan will allow the acquisition of 10 additional test benches. This evaluation lastly assumes that tuning of a tractor is permanent and that the life of a tractor is more than 10 years.

Results

Based on all of these assumptions, this measure allows an annual final energy saving of 3.5 ktoe in 2010, 23.2 ktoe in 2016 and 36 ktoe in 2020.

[125] Source: MAAPRAT, 2010

IV. EVALUATION OF ENERGY EFFICIENCY CERTIFICATE MECHANISM

Presentation of the measure

The Energy Efficiency Certificate (EEC) mechanism, created by the Pope Law, is based on a three-yearly obligation to make energy savings in the form of EECs imposed by government authorities on energy suppliers (the 'liable entities'). The latter are thus encouraged to promote energy efficiency among their clients (households, local authorities or professionals).

EECs are awarded to eligible actors that undertake energy-saving operations or, in some cases, development of renewable energies. At the end of a period, energy-selling liable entities must demonstrate, on pain of a discharge penalty of two euro cents per missing certificate, that they have met their obligations by holding certificates for an amount equal to these obligations.

Implementation of the measure

Establishment of targets

The national energy savings target for the first period of the mechanism (from 1 July 2006 to 30 June 2009), was set at 54 $TWh_{cumac.}$

A transitional period was introduced from 1 July 2009. No energy-saving target was set for that period, during which certain liable entities) continued to carry out energy-saving actions.

Grenelle 2 renewed the EEC mechanism for a second three-year period. The obligation levels for the second period are 255 TWh_{cumac} for all sellers of electricity, gas, domestic fuel oil, LPG and networked heat or cooling energy, and 90 TWh_{cumac} for those offering automobile fuels for consumption. The volume of savings made by the liable entities in the first period, above 54 TWh_{cumac}, will be deducted from their obligation level of 255 $TWh_{cumac.}$ The new period started on 1 January 2011, and will last three years.

Ex-post evaluation of the results of the first period and the transitional period (1 July 2006 to 31 December 2010)

As at 31 December 2010, the volume of EECs issued was 163.4 TWh_{cumac}[126]. Evaluation of the reduction in greenhouse gas emissions resulting from the first period of the mechanism and the transitional period are based on analysis of the 65 most common standardised operations[127], which account for 95% of EECs issued as at 31 December 2010.

[126] 158.8 TWh_{cumac} in the context of standardised operations and 4.6 TWh_{cumac} in the context of specific operations.
[127] Including an action to train construction professionals; the EECs issued in connection with this action are not included in the evaluation of greenhouse gas emissions avoided, since this might lead to double-counting

For each of these operations, the total quantity of EECs issued, in kWh_{cumac}[128], has been converted into annual energy savings in line with the lifespan of the action under consideration. The lifespan of the actions has been taken into account in such a way as to include, for 2015 and 2020, only those actions still having an effect.

By way of example, the BAR-TH-06 standardised operation concerns installation of an individual condensing boiler in an existing residential building. The conventional lifespan is 16 years. This standardised operation has led to issue of 28 million EECs, i.e. 28 TWh_{cumac} (17% of all EECs issued). The corresponding annual energy savings are therefore 2.3 TWh/year, over 16 years.

The total energy savings made is calculated by dividing the sum of the evaluations for each standardised operation by the percentage of EECs issued in relation to the 65 standardised operations studied (95%).

Ex-ante evaluation of the results of the second period

In order to evaluate the energy savings resulting from the second period of the mechanism, the following assumptions have been made:

- the total target is 345 TWh_{cumac}, from which are deducted the EECs issued during the first period and the transitional period over and above the target set of 54 TWh_{cumac}, i.e. a total target of around 236 TWh_{cumac};
- the weighted average lifespan of the standardised operations is around 17 years;
- the average conversion factor between aggregated and updated energy savings (kWh_{cumac}) and annual energy savings (kWh/year) will remain similar to that recorded in the first period.

The total target for the entire second period therefore produces annual energy savings of 18.5 TWh, or 1.59 Mtoe, in 2016 and 2020.

Renewal of the mechanism

The mechanism has been renewed until 2020, based on the following assumptions:

- retention of the evaluation assumptions used for the second period;
- total target for each three-year period taken as identical to that of the first period, i.e. 345 $TWh_{cumac.}$

Each three-year period (2014-2016 and 2017-2019) therefore resulted, at its end date, in final energy savings of 2.33 Mtoe. It was taken that one-third of this amount resulted for 2020.

Results

The gains achieved are shown in the following Table:

[128] A standard volume of energy savings made, aggregated and updated over the standardised lifespan of the operation, corresponds to each standardised operation

Table 24. Annual energy savings generated by the EEC mechanism (source: MEDDTL)

	2010	2016	2020
Energy savings generated by all EECs issued as at 31 December 2010 (ex-post evaluation)			
Annual energy saving	1.10 Mtoe	1.05 Mtoe	1 Mtoe
Percentage of target	22%	9%	-
Energy savings generated by all EECs issued as at 31 December 2010 (ex-post evaluation) and by the second period of the mechanism (ex-ante evaluation)			
Annual energy saving	-	2.64 Mtoe	2.59 Mtoe
Percentage of target	-	22%	-
Ex-ante evaluation of renewal of the mechanism until 2016 and 2020			
Annual energy saving	-	4.97 Mtoe	8.03 Mtoe
Percentage of target	-	41%	-

ANNEX 3. Policies and measures

Contents

I. DEMAND-SIDE MANAGEMENT

Summary

1. Energy Efficiency Certificates (Measure E.1)

Reference texts

Name of text	Content
Laws	
Articles 14 to 17 of Amended Programme Law No 2005-781 of 13 July 2005 establishing energy policy guidelines (this Law was amended by Law No 2010-788 of 12 July 2010 making a national environmental commitment)	- definition of the Energy Efficiency Certificate mechanism.
Article 35 of Amending Finance Law for 2006 No 2006-1771 of 30 December 2006	- - reminder of the principle that the release payment and the relevant late payment penalty, which are provided for under Article 14(IV) of Amended Programme Law No 2005-781 of 13 July 2005 establishing energy policy guidelines, are not eligible for deduction from taxable profits.
Decrees	
Decree No 2010-1663 of 29 December 2010 relating to energy savings within the framework of the Energy Efficiency Certificate mechanism	- setting of individual energy-saving obligations; - creation of collective structures; - declaration of annual energy sales;

	- notification of individual energy-saving obligations; - verification of compliance with these obligations; - cancellation of Energy Efficiency Certificates; - formal notice; - setting of compensatory levy.
Decree No 2010-1664 of 29 December 2010 relating to Energy Efficiency Certificates	- definition of persons eligible under the Energy Efficiency Certificate (EEC) mechanism; - definition of actions liable to lead to issue of an EEC; - maximum period between completion of an energy-saving operation and request for issue of a corresponding EEC; - calculation of the EEC amount to be awarded at the end of an energy-saving operation; - procedures for approving an energy-saving action plan; - submission and examination of an EEC request; - minimum energy-saving threshold for which an EEC request may be made; - grouping of eligible persons in order to reach this threshold; - maximum volume of EECs to be issued under information, training and innovation programmes; - period of validity of EECs; - making available to the State, for control purposes, documents relating to energy-saving operations carried out; - evaluation of the mechanism.
Decree No 2006-604 of 23 May 2006 relating to the keeping of a national Energy Efficiency Certificate register	- role of keeper of the national Energy Efficiency Certificate register; - covering of costs relating to introduction and keeping of the register.
Orders	
For an operation initiated after 1 January 2011: Order of 29 December 2010 establishing the list of	- list of supporting documents for an Energy Efficiency Certificate request;

elements of an Energy Efficiency Certificate request and the contents of a request for approval of an energy-saving action plan For an operation initiated before 1 January 2011: Order of 19 June 2006 establishing the list of documents for an Energy Efficiency Certificate application Order of 29 December 2010 on procedures for applying the Energy Efficiency Certificate mechanism	- contents of a request for approval of an energy-saving action plan; - amendment of an energy-saving action plan; - suspension or withdrawal of approval. - list of supporting documents for an Energy Efficiency Certificate request. - declaration of annual energy sales to households and service sector businesses; - for fuel oil, establishment of the flat-rate element relating to sales to households and service sector businesses; - discount rate; - subsidy for zones not connected to the electricity transport network for mainland metropolitan France; - minimum threshold for submission of an Energy Efficiency Certificate application.
Order of 23 December 2010 establishing costs of maintenance of the national Energy Efficiency Certificate register **Opinions** Emergency Committee Opinion No 2006-D of 4 October 2006 on the accounting method for the Energy Efficiency Certificate mechanism	costs of maintenance 2011 and 2012. - establishment of the accounting method for Energy Efficiency Certificates

Date of entry into force

1 July 2006 to 31 December 2013

Description

The Energy Efficiency Certificate (EEC) mechanism, created by Articles 14 to 17 of Programme Law No 2005-781 of 13 July 2005 establishing energy policy guidelines (Pope Law) is one of the instruments for demand-side management. In fact, this mechanism is based on a three-yearly obligation to make energy savings in the form of EECs (1 EEC = 1 kWh_{cumac} of final energy) imposed by government authorities on energy suppliers (the 'liable entities'). The latter are thus

encouraged to promote energy efficiency among their clients (households, local authorities or professionals).

EECs are awarded, under certain conditions, by services of the Energy Ministry, to eligible actors (liable entities, but also other legal entities) that undertake energy-saving operations. At the end of a period, energy-selling liable entities must demonstrate that they have met their obligations by holding certificates for an amount equal to these obligations. These Certificates are obtained following action undertaken by these liable entities or through purchase of EECs from other actors that have performed energy-saving actions. If they do not meet their obligations, liable entities are required to pay a release penalty of two euro cents per missing kWh.

Standardised operations sheets have been produced to facilitate the organisation of energy-saving actions. They establish, for the most common operations, the flat-rate amounts of energy savings in kWh_{cumac}. Energy savings made outside standardised operations correspond to specific operations (in April 2011, the number of sheets was 214: 65 in the residential sector, 89 in the service sector, 26 in the industrial sector, 11 in the networks sector, 16 in the transport sector and 7 in the agricultural sector).

Lastly, the EEC mechanism in addition to demand-side management, also contributes to developing renewable energies, In fact, provision is made for installation of equipment enabling replacement of a non-renewable energy source by a renewable energy source, for production of heat consumed in a locality used for housing or agricultural or service activity, to lead to issue of EECs, in line with specific calculation methods (see Article 15 of Law No 2005-781 of 13 July 2005).

First period of the mechanism (mid-2006 to mid-2009):

During the first period of the mechanism (from 1 July 2006 to 30 June 2009), a national energy savings target of 54 TWh_{cumac} was set for liable entities. Liable entities were, above a certain annual sales threshold in GWh, suppliers of electricity, gas, LPG or networked heat or cooling energy. In the case of domestic fuel oil sellers, they were subject to energy-saving obligations from the first litre of fuel oil sold. This global target was then divided among the operators in line with their energy sales volumes and tax-inclusive prices.

The range of entities eligible to request certificates was very broad, since it encompassed liable entities, public authorities, and also all legal entities, provided that their energy-saving operations were not part of their main activity and did not earn them direct revenue.

Transitional period (mid-2009 to end 2010):

A transitional period was introduced, starting from 1 July 2009. No energy-saving target was set for that period, during which certain liable entities continued to carry out energy-saving actions.

Second period (start 2011 to end 2013):

In view of the positive results in the first period (see ‘Evaluation’ heading below), Article 78 of Law No 2010-788 of 12 July 2010 making a national environmental commitment renewed the EEC mechanism for a second third-year period. This Article also extends the energy-saving obligations to those offering automobile fuels for consumption, where their annual sales exceed a certain threshold. In addition, unlike the first period, domestic fuel oil sellers are subject to energy-saving obligations if their annual sales are above a given threshold. The obligation levels for the second

period are 255 TWh_{cumac} for all sellers of electricity, gas, domestic fuel oil, LPG and networked heat or cooling energy, and 90 TWh_{cumac} for those offering automobile fuels for consumption.

In addition, Article 78 of the Law of 12 July 2010 restricts the range of entities eligible to request certificates to liable entities, public authorities, the National Housing Improvement Agency (ANAH) and social landlords.

Lastly, this Article also states that contributing towards programmes to reduce the energy consumption of the least well-off households, in the context of combating energy insecurity, or towards programmes offering information, training and innovation in support of demand-side management, in particular aimed at developing vehicles with low carbon dioxide emissions, may now lead to issue of EECs. The new period began on 1.1.2011.

Support for training and engineering actions

The mechanism also provides for certificates to be issued in the context of carrying out the following:

- firstly, actions to train construction sector professionals in energy saving: thus, the 'FEEBAT' (energy-saving training for businesses and craftspeople in the construction sector) training mechanism has operated since the start of 2008 and has provided training for 29 000 placement trainees as at the end of 2010;
- secondly, engineering work. This work aims to draw up technical documents to support businesses and craftspeople in the construction sector with regard to the renovation, maintenance and construction of buildings in accordance with the Environment Round Table energy targets (low consumption and/or positive energy new buildings, major energy renovation of existing buildings).

Type of measure

Energy Efficiency Certificates

Targeted by measure

The measure mainly targets private individuals (in particular energy-insecure households), service sector businesses and territorial authorities.

Indicators for monitoring implementation

The statistics forwarded by the keeper of the national EEC register include, in particular:

- nationally, the number of kWh_{cumac} saved, together with the sector distribution (residential, service, industrial, networks, transport) and the distribution by theme (shell, equipment, thermal energy, service, building, utility, lighting, heat and cooling energy, specific operations) of the number of kWh_{cumac} saved;
- for each standardised operations sheet, the number of kWh_{cumac} saved nationally;
- the regional distribution of the number of kWh_{cumac} saved.

Costs for the first period

For the State:

The budget costs for the public actors involved may be broken down broadly as follows:
- Energy Ministry: 2.5 FTE (in charge of drawing up and monitoring the legal framework);
- regional services: 8 FTE (in charge of examining requests for EECs and control operations);
- ADEME: 2.5 FTE (in charge of technical support and evaluating the mechanism).

Thus, the administrative costs associated with operating the register are around €700k/year. As regards tax costs, these are nil.

For liable entities:

A study conducted by ADEME, in partnership with CIRED (International Centre for Environment and Development Research), shows the cost of the mechanism for the liable entities during the first period as €210 million, or a unit cost of €0.39 cents per kilowatt hour. The liable entities' costs appear to be split as follows: €74 million in direct costs (premiums and subsidised-rate loans granted to energy-saving operation beneficiaries) and €136 million in indirect costs (staff training, development of provision: support and advice, administrative management of certificate applications, marketing campaign, etc.). State tax aid (outside the mechanism: Sustainable Development Tax Credit and zero-rated eco-loans) have facilitated implementation of energy-saving operations carried out by liable entities and thus made it possible to limit their costs.

Sectors concerned by the energy savings made

The energy savings concern the residential, service, industrial, networks, transport and agricultural sectors.

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies, internal air quality

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of Energy (Directorate-General for Energy and Climate), in partnership with ADEME

Available evaluations

The first-period target was exceeded. Thus, as at 1 July 2009 certified energy savings of 65 thousand million kilowatt hours had been made. These energy savings were distributed as follows: 86.7% for the residential sector, 4.3% for the service sector, 7.4% for the industrial sector, 1.3% for networks and only 0.4% for the transport sector. This distribution is not surprising since, in the first period, the mechanism was more specifically aimed at sources of energy savings in the residential and service sectors.

In addition, as at 1 July 2009 around 75% of energy savings were the result of replacement of standard heating systems by more efficient equipment (low-temperature or condensing boilers and air/air or air/water-type heat pumps). On the other hand, the share of energy savings linked to improving the shell of buildings (loft or roof space insulation, installation of insulating glass

windows, etc.) was only 14%. In fact, firstly, it is likely that liable entities have directed their efforts towards renewal of heating systems in order to retain customer loyalty. Secondly, this trend may also be explained by the difficulty for energy suppliers in convincing households to insulate their dwellings. In fact, despite the level of value attached to insulating actions in the form of certificates, the cost for individuals to carry out such operations remains relatively high.

Although the overall energy savings target was exceeded as at 1 July 2009, not every individual obligation was met. Thus, at the end of the first period, 375 entities (out of a total of 2 502 liable entities, 373 are domestic fuel oil sellers) had been given formal notice to meet their obligations by adding the missing quantity of Energy Efficiency Certificates to an account in the national register. At the end of this formal notice period, 218 entities are still not in good standing with the administrative authorities. With a financial penalty of two euro cents per missing kilowatt hour, the amount of penalties extends from €6.02 to more than €680 000, totalling around €3.2 million. Revenue demands (payment demand) to be paid to the Public Treasury are currently being issued by the Ministry of Energy in order to recover these penalties.

As at 31 December 2010, the volume of energy saved was 163.4 TWh_{cumac}, i.e. 158.8 TWh_{cumac} under standardised operations and 4.6 TWh_{cumac} under specific operations. Analysis of the savings generated by the 65 main standardised operations, which account for 95% of EECs issued as at 31 December 2010, produces the results shown below:

Table 25. Annual energy savings generated by the EEC mechanism (source: MEDDTL)[129]

	2010	2016	2020
Energy savings generated by all EECs issued as at 31 December 2010 (ex-post evaluation)			
Annual energy saving	1.10 Mtoe	1.05 Mtoe	1 Mtoe
Percentage of target	22%	9%	-
Energy savings generated by all EECs issued as at 31 December 2010 (ex-post evaluation) and by the second period of the mechanism (ex-ante evaluation)			
Annual energy saving	-	2.64 Mtoe	2.59 Mtoe
Percentage of target	-	22%	-
Energy savings generated by renewal of the mechanism until 2016 and 2020			
Annual energy saving	-	4.97 Mtoe	8.03 Mtoe
Percentage of target	-	41%	-

2. Ecodesign Directive (Measure E.2)

Reference texts

Directive 2005/32 of 6.7.2005, revised by Directive 2009/125 of 21 October 2009, and associated ecodesign regulations

Date of entry into force

[129] Evaluation method specified in Annex 2, Chapter IV. Regarding renewal of the mechanism after the second period, each new three-year period is assumed to retain the same target level as the second period.

10.11.2009

Description

European Directive 2005/32/EC, amended by Directive 2009/125/EC, establishes a regulatory framework (criteria justifying measures and procedure to be adopted) enabling ecodesign measures to be undertaken in relation to energy-related products: generic measures (environmental requirements) or more specific measures (minimum energy efficiency performance).

Regarding ecodesign measures for bulbs, at national level an agreement with the Lighting Trade Union (*Syndicat de l'Éclairage*) provides for withdrawal of the least-efficient bulbs from the national market earlier than scheduled.

Type of measure

These are regulatory measures (at present) pursuant to a European directive; voluntary agreements are also being negotiated. They are supplemented by a work programme, monitoring of implementation (studies) and, at national level, the agreement on withdrawal of the least-efficient bulbs from the national market.

Targeted by measure

Professionals (manufacturers and importers) and administrative authorities (responsible for regulating and supervising the market).

Indicators for monitoring implementation

11 implementing measures were adopted in 2008, 2009 and 2010:
- horizontal regulation on standby modes (2008)
- regulation on lighting of streets and service buildings (2008)
- regulation on simple digital decoders (2008)
- regulation on external power supplies and electric chargers (2008)
- regulation on domestic lighting (2008)
- regulation on electric motors with a power rating of more than 0.75 kW (2009)
- regulation on circulators (independent and integrated into a boiler) (2009)
- updating of regulation on cooling appliances (refrigerator, freezer and combined appliances) (2009)
- regulation on television sets (2009)
- regulations on washing machines and dishwashers (2010)
- regulation on ventilation and air-condition appliances (ecodesign regulation) (2010)

Public costs

N/A, other than market supervision

Sectors concerned

Residential, service, industrial, etc.

Cross-effects

Positive effects for some pollutants and greenhouse gases, increased risks for others (e.g. mercury).

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL and MINEFI

Available evaluations

Evaluations are available on a European Union scale.

3. Energy labelling of products (Measure E.3)

Reference texts

Directive 92/75 of 22.9.1992, revised by Directive 2010/30 of 19.5.2010.

Date of entry into force

- Entry into force: 19.6.2010, other than Article 5 (responsibilities of suppliers): 31.7.2011;
- End date of implementation: the first Directive was implemented from 1994 by means of implementing directives ('white' goods, cooling appliances, etc.); work continues under the new Directive by means of delegated acts (the first four cover TVs, cooling appliances, washing machines and dishwashers).

Description

European Directive 92/75/EEC of 22 September 1992, amended by Directive 2010/30/EC, establishes a regulatory framework (criteria justifying delegated acts, responsibilities of the actors involved and procedure to be followed) for requiring labelling indicating information on consumption of energy and other resources on energy-related products, by means of delegated acts.

Type of measure

Regulatory measure. It is supplemented by a work programme and monitoring of implementation (studies).

Targeted by measure

The aim of the labelling is to guide consumers towards those products that are most efficient in terms of energy and other environmental aspects (water, etc); professionals (manufacturers, importers and distributors) who make and market efficient products (classed at the top of the scale), as well as administrative authorities (responsible for market regulation and supervision) are also targeted.

Indicators for monitoring implementation

Market supervision is being introduced (together with application of the revised Ecodesign Directive).

Public costs

N/A

Sectors concerned

Residential

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL and MINEFI

Available evaluations

European studies concerning each type of product are available.

4. Accelerated depreciation (Measure E.4)

Reference texts

- Article 39 AB of the General Tax Code (CGI)
- Article 2 of Annex IV to the General Tax Code

Date of entry into force

1992, 2002, 2005 or 2008, depending on the technologies. The mechanism under Article 39 AB of the General Tax Code expired on 1 January 2011.

Description

Accelerated depreciation over 12 months, starting from first use, is granted for materials and equipment, designed to save energy and produce energy from renewable sources, appearing in Article 2 of Annex IV to the General Tax Code (most recently updated by Order of 27 December 2005, published in the JORF (Official Journal of the French Republic) of 31 December 2005).

Type of measure

Tax incentive

Targeted by measure

All businesses subject to payments-based tax arrangements.

Indicators for monitoring implementation

-

Public costs

The annual cost is assessed by the Finance Law at around €3 million. However, it is considered that expenditure corresponding to this measure does not constitute a tax loss insofar as tax avoided one year is collected subsequently.

Sectors concerned

Energy production, industrial, service

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies.

Authorities in charge of implementation, monitoring and evaluation of results

MINEFI - Directorate for Tax Legislation - Directorate-General for Energy and Climate

Available evaluations

Not known

5. Reduction in overall rental value (Measure E.5)

Reference texts

Article 1518 A of the General Tax Code

Date of entry into force

2001-2010

Description

Since 2011 materials and equipment eligible for accelerated or exceptional depreciation have also been eligible for a 50% reduction in their overall rental value, which has allowed them to reduce the amount of business tax paid by a business. The reform of business tax in the course of 2010 removed capital from the basis for taxes paid by businesses, which *de facto* made this measure redundant.

Type of measure

Tax incentive

Targeted by measure

Businesses

Indicators for monitoring implementation

-

Public costs

Not known

Sectors concerned

Industrial, service

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies.

Authorities in charge of implementation, monitoring and evaluation of results

MINEFI

Available evaluations

-

6. Research Demonstrator Fund for New Energy Technologies (Measure E.6)

Reference texts

-

Date of entry into force

2008 to mid-2010

Description

Launched in 2008, the Research Demonstrator Fund was designed to finance research demonstrators in the new energy technologies (NTE) sectors: low greenhouse gas-emission transport, renewable energies, positive energy buildings, smart electricity grids, energy storage, second-generation biofuels, etc. Research demonstrators are a stage in the research-development-industrial development of technologies that comes just before the industrial development stage and may lead to applied research being re-initiated at the end of the demonstrator experiments, in order to optimise technologies or remove certain economic or social obstacles. The Research Demonstrator Fund was closed in mid-2010, following implementation of the Future Investments programmes, for which ADEME is an operator.

Type of measure

Research

Targeted by measure

-

Indicators for monitoring implementation

The Research Demonstrator Fund accounts for 24 projects, financed in the form of subsidies under CEIs relating to vehicles, second-generation biofuels and CO_2 capture and storage.

Public costs

The initial budget was €325 million for the period 2008-2012. Following closure of the mechanism, the amount of aid allocated is €167 million.

Sectors concerned

Energy production, transport

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies.

Authorities in charge of implementation, monitoring and evaluation of results

ADEME

Available evaluations

-

7. Development of Energy Performance Contracts (Measure E.7)

Reference texts

Legislative texts

- Article 5 of Programme Law No 2009-967 of 3 August 2009 on implementing the Environment Round Table

- Article 7 of Law 2010-788 of 12 July 2010 making a national environmental commitment

Guides and assimilated

- Standard clause for an Energy Performance Contract, MAPPP (Support Force for Public-Private Partnerships)-MINEFI, March 2010

- Guide to Energy Performance Contracts relating to public works - for public entities and operators, MEEDDM, July 2010

EEC sheets

- BAR-SE-03
- BAT-SE-01

Date of entry into force

-

Description

An Energy Performance Contract (EPC) is a contractual agreement between a beneficiary and a supplier of an energy efficiency improvement measure. Under an EPC the supplier guarantees the beneficiary a volume of energy savings that enables its holder to obtain an annual savings budget that may be used to repay the financing put in place for the work or actions.

With regard to the residential sector, Article 7 of Grenelle 2 introduces a requirement for private co-ownerships to design an EPC (or an energy-saving work plan) following obligatory audit (see Construction section).

For the public sector, Article 5 of Grenelle 1 enabled public procurement law to be amended to allow EPCs to be concluded, in particular in the form of an overall contract covering design, implementation and operation or maintenance services, since energy efficiency improvements are contractually guaranteed. In March 2010, MAPPP published a model contract adapting the EPC, in the context of renovation of public buildings, to partnership contract procedures. Lastly, MEEDDM published a guide to EPCs relating to public works in July 2010, for public entities and operators, in order to provide support and clarification for public actors wishing to use EPCs to contribute to the energy-saving targets set by the Environment Round Table.

The Energy Efficiency Certificate mechanism also encourages the development of EPCs. Two standardised and specific operations sheets, in the residential sector and in the service sector, allow energy-saving actions carried out under an EPC to be subsidised.

Type of measure

Regulatory, awareness-raising, information

Targeted by measure

Businesses, territorial authorities, co-ownerships

Indicators for monitoring implementation

Number of Energy Performance Contracts concluded as public-private partnerships

Public costs

N/A

Sectors concerned

Industrial, residential-service, public

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL, MINEFI, ADEME

Available evaluations

-

8. Round Table commitment agreements (Measure E.8)

Reference texts

Commitment agreements available for download on the Environment Round Table website: http://www.legrenelle-environnement.fr/-Engagements-soutenus-par-le-.html

Date of entry into force

2008

Description

Round Table commitment agreements are a form of specific commitment made by the professional sectors within the framework of the Environment Round Table. They mobilise the sector across a range of given thematic areas. The targets set in these agreements match the Round Table commitments or even go beyond them. The type and content of actions specified in an agreement depend on the specific features of the sector concerned.

Type of measure

Voluntary agreement

Targeted by measure

Businesses

Indicators for monitoring implementation

27 Round Table agreements were signed at the end of March 2011.

Public costs

N/A

Sectors concerned

Transport, industrial, residential-service, etc.

Cross-effects

Greenhouse gas emissions, waste, etc.

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL

Available evaluations

-

9. Future Investments (Measure E.9)

Reference texts

- Amending Finance Law for 2010 No 2010-237 of 9 March 2010.
- Future Investments website: http://www.gouvernement.fr/gouvernement/des-investissements-d-avenir-pour-construire-la-france-de-demain-0

Date of entry into force

March 2010

Description

On 14 December 2009 the President of the Republic launched '**Future Investments**'. The Future Investments programme, allocated an overall budget of €35 thousand million, allows financing of profitable assets and infrastructure for research and innovation of benefit to France's economic growth.

Five 'priority' strategic axes have been identified (higher education and training, research, industrial branches and SMEs, sustainable development, and SMEs) and will enable France to increase its growth potential.

From the €35 thousand million in appropriations allocated to Future Investments by the Amending Finance Law for 2010, particular provision is made for:

- €1 thousand million for the 'Thematic institutes of excellence for decarbonised energies' programme, managed by the National Research Agency (ANR),
- €1 thousand million for the 'Nuclear energy of tomorrow' programme, managed by the Atomic Energy and Alternative Energies Commission (CEA) and the National Agency for Management of Radio-active Waste (ANDRA),
- €2.8 thousand million split between a number of programmes managed by ADEME, concerning demonstrators and experimental platforms in the field of transport (€1 thousand million), the circular economy (€250 million), renewable energies and green chemistry (€1.35 thousand million) and smart energy grids (€250 million),
- Within the 'Digital economy' thematic area, €2.25 thousand million for the 'Innovative digital uses, services and content' action, managed by the Loans and Consignments Fund (CDC), which covers, in particular, the digital city and smart transport systems[130],
- €1.5 thousand million for the 'Urban development and housing' thematic area, split between €1 thousand million for the 'City of tomorrow' programme, managed by the Loans and Consignments Fund (CDC-see Exemplary State and Territorial Authorities section), and €500 million for the 'Thermal renewal of housing' programme, managed by the National Housing Improvement Agency (ANAH - see Construction section).

The programmes being followed by the Ministry of Sustainable Development are:

- 'Thematic institutes of excellence for decarbonised energies'. This programme aims to establish world-ranking technology innovation campuses for renewable energies, new energy technologies and energy efficiency. It will support the establishment of between five and ten institutes in line with the rationale behind the competitiveness hubs and the Environment Round Table priorities for energy research. The first project call was published on 19 November with a closing date of 18 February 2011.
- 'Demonstrators and technological platforms for renewable and decarbonised energies and green chemistry'
- 'Vehicle of the future'
- 'Research in the aeronautics field'
- 'Nuclear energy of tomorrow'
- 'Smart electricity grids (digital economy)'

Continuing the direction of the Research Demonstrator Fund, in 2010 ADEME was given responsibility for managing part of the Future Investments Programme via three programmes:

- 'Development of the digital economy' programme: the 'Smart electricity grids (digital economy)' action, assigned €250 million, seeks to support industrial research and testing of smart grid technologies for electricity distribution and consumption and integration of renewable energies,
- 'Vehicle of the future' programme (see Transport section),

[130] Two project calls were launched in this context in February 2011, available for download at: http://investissement-avenir.gouvernement.fr/content/action-projets/les-programmes/num%C3%A9rique

- ‘Demonstrators and technology platforms for renewable and decarbonised energies and green chemistry': this programme is based on innovation and deployment of green technologies in the energy and chemistry branches, by taking over from the support fund for research demonstrators managed by ADEME. This will make it possible to support innovative research demonstrator projects and technology platforms linking public and private actors. This programme is allocated €1.6 thousand million, divided between two actions: demonstrators in renewable energy and green chemistry (€1 350 million) and the circular economy (sorting and use of waste, de-pollution, product ecodesign - €250 million).

Projects are selected by means of CEIs drawn up on the basis of national strategic roadmaps produced by experts representing the public and private actors concerned. Funds are allocated to developing innovative technologies and forms of organisation. They serve to support research demonstrator projects, large-scale pre-industrial development testing and technology platforms.

Type of measure

Incentive; research and innovation

Targeted by measure

Businesses, territorial authorities, private individuals

Indicators for monitoring implementation

-

Public costs

€6.3 thousand million for the thematic areas linked to sustainable development, energy efficiency and renewable energies - the intervention methods, apart from subsidies, include new types of financing such as repayable loans and capital holdings.

Sectors concerned

Transport, energy production, smart grids, residential-service, industrial, urban development.

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies.

Authorities in charge of implementation, monitoring and evaluation of results

Commissariat-General for Investment (CGI); CEA, ANDRA, ADEME, ANAH, ANR, Loans and Consignments Fund, MEDDTL (non-exhaustive list).

Available evaluations

-

10. Smart grids and smart meters (Measure E.10)

Reference texts

- Law No 2010-1488 of 7 December 2010 reorganising the electricity market (Nome Law)
- Poignant-Sido Report on peak electricity demand management
- Decree No 2010-1022 of 31 August 2010 on metering mechanisms for public electricity grids

Date of entry into force

- The capacity obligation is scheduled to enter into force three years after signature of the implementing decree.
- The current trialling of the new communicative meters is scheduled to end in March 2011.

Description

Development of electrical uses and production based on renewable energy sources places new constraints on electricity systems. These trends, coupled with more expensive primary energy sources and global awareness of climate challenges, call for better demand-side management and greater efficiency of the entire electricity system. The challenges for consumers and citizens are three-fold: to improve the quality and continuity of electricity supply, to guarantee security of supply and to manage energy costs.

The emergence of smart electricity grids will, in particular, make it possible to meet these challenges and has been identified as a strategic 'green branch' for industry in France (see Industry section).

Within the framework of the Research Demonstrator Fund, two ADEME Calls for Expressions of Interest (CEIs) enabled several research projects to be launched concerning integration of renewable energies into the grids, as well as various actions concerning electricity demand-side management. In the context of Future Investments, ADEME will undertake CEIs in these thematic areas from 2011.

Consistent with support for smart grids and to combat electricity consumption spikes, at the end of 2009 France initiated a general discussion on ways of managing electricity peak demand through a working group bringing together all of the actors involved. The conclusions of this working group contain 22 proposals. These measures concern, as a priority, electricity demand

management, particularly during periods of peak demand. They also provide for the introduction of a capacity obligation for electricity suppliers that should make it possible to balance supply and demand at peak consumption times by making suppliers invest in production and/or suppression capacities. This latter measure was introduced by Law No 2010-1488 of 7 December 2010 reorganising the electricity market (so-called Nome Law). A forthcoming Council of State decree will specify the procedures for implementing this capacity obligation, to be introduced three years after it is signed, its aim being to avoid any bias in favour of production to the detriment of suppression of consumption.

In addition, France is currently trialling new communicative meters. These meters are an essential element in the development of smart grids, on which numerous projects will be able to draw. These new meters will be capable of taking regular consumption readings within 30 minutes and carrying out a number of operations remotely, thus avoiding operators' physical travel. Their interoperable nature means that these new meters will support numerous downstream meter services, which will enable consumers to understand and manage their consumption better, particularly at peak periods. The trial is being conducted, under the aegis of the Energy Regulating Commission, by the distribution grids manager ERDF and covers 300 000 meters for the Tours and Lyon regions. Decree No 2010-1022 of 31 August 2010 states that the decision to roll out these new meters will be taken on the basis of the technical and economic review to be undertaken at the end of this trial, scheduled for completion in March 2011.

Type of measure

Infrastructure, research and development

Targeted by measure

Electricity grids, communicative meters

Indicators for monitoring implementation

N/A

Public costs

Not known

Sectors concerned

Industrial, residential-service

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL, MINEFI, ADEME

Available evaluations

-

11. Heat Fund (Measure E.11)

Reference texts

Article 19 of Programme Law No 2009-967 of 3 August 2009 on implementing the Environment Round Table

Date of entry into force

2009

Description

Established in December 2008 under the fifty-measure plan to develop renewable energies of high environmental quality, launched in November 2008 by Jean-Louis Borloo, Minister of State, the Heat Fund was set up to support production of heat from renewable sources. This support mechanism is one of the Environment Round Table commitments and is realised by means of Article 19 of Grenelle 1. It has a budget of €1.2 thousand million for the period 2009-2013.

The Heat Fund supports development of the use of biomass (forestry, agricultural, biogas, etc.), geothermal energy (through direct use or by means of **heat pumps**), **solar thermal energy**, recovered energies, and also development of heat networks using these energies.

The sectors concerned are collective housing, service, agriculture and industry - sectors where the target for additional production of renewable heat by 2020 equates to almost 5.47 million tonnes of oil equivalent (toe), or more than a quarter of the overall target set by the Environment Round Table (20 million toe of additional renewable energy to 2020).

By encouraging heat networks to make use of renewable and recovered energies, the Heat Fund also has a significant positive impact in social terms (reducing and stabilising the cost of heating predominantly social housing) and in terms of diversification of energy supplies. Management of the Heat Fund has been delegated to ADEME. The Heat Fund has two forms of intervention:

- for large biomass installations (renewable heat production of more than 1 000 toe/year) in the industrial, agricultural and service sectors, national project calls are organised on an annual basis. The first project call was launched on 5 December 2008 and the results announced on 19 October 2009. A second call was launched on the same day, with the results announced on 5 October 2010. The third project call was launched on 9 September 2010.

- for other branches, whatever the sector, and for biomass installations not covered by the project calls (installations outside the industrial sector, or within in the industrial sector but producing less than 1 000 toe/year), the Heat Fund is managed at regional level by the regional directorates of ADEME. It covers installations above a certain size. The aim of the Heat Fund is to finance projects producing heat from renewable thermal energies, while guaranteeing a price for the heat produced that is around 5% lower than that resulting from conventional energies.

Aid from the Heat Fund complies with Community framework rules for State aid. It cannot be aggregated with either Energy Efficiency Certificates (EECs) or domestic projects. On the other hand, businesses or heat networks that come under the National Allocation Plan (NAP) for allowances are eligible for Heat Fund aid. Heat Fund aid may be aggregated with other subsidies (European funds, aid from local authorities), provided that this aid is taken into account when the project is designed.

Type of measure

Financial incentive

Targeted by measure

Business, territorial authorities, collective housing

Indicators for monitoring implementation

Number of projects carried out, volume of renewable energy produced (in toe - see Evaluation section), public costs per toe of renewable energy produced.

Public costs

The provisional budget for the Heat Fund is €1.2 thousand million for 2009-2013. For the period 2009-2010, the Heat Fund budget was around €432 million (€417 million in investment aid), including:

- €10.4 million in aid for heat pump operations (groundwater, probes or wastewater),
- €31 million for solar thermal operations.

Sectors concerned

Residential-service sector, industrial sector, territorial authorities.

Cross-effects

Concerning air quality issues, the high environmental quality of biomass projects is ensured by strict requirements regarding particulate emissions, which go beyond regulatory obligations.

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL, ADEME

Available evaluations

At the end of 2010 the Heat Fund had financed:

- some 87 heat pump installations, with annual production of renewal energy (and final energy savings) of around 2.4 ktoe,

- some 575 solar thermal installations - around 52 000 m^2 - with total annual production of renewable energy (and final energy savings) of around 2.6 ktoe.

II. RESIDENTIAL-SERVICE SECTOR

Summary

1. Thermal Regulations for new buildings (Measure B.1)

Reference texts

RT2005
- Decree No 2006-592 of 24 May 2006 on the thermal properties and energy performance of structures
- Order of 24 May 2006 on the thermal properties of new buildings and new parts of buildings
- Order of 6 May 2008 confirming approval of the Th-C-E calculation method provided for in Articles 4 and 5 of the Order of 24 May 2006 on the thermal properties of new buildings and new parts of buildings

RT2012
- Article 1 of Grenelle 2
- Decree No 2010-1269 of 26 October 2010 on the thermal properties and energy performance of structures
- Order of 26 October 2010 on the thermal properties and energy performance requirements of new buildings and new parts of buildings
- Publication of the Order 'Th-BCE calculation Method 2012', scheduled for summer 2011.

In addition to implementation of the Round Table commitments, RT2012 enables transposition of Articles 4, 6 and 9 of Directive 2010/31/EU on the energy performance of buildings (recast).

RTAA DOM (Thermal, Acoustics and Ventilation Regulations for the Overseas Departments)
- Decree No 2009-424 of 17 April 2009 concerning specific measures relating to the heat, energy, acoustic and ventilation properties of residential buildings in the Guadeloupe, Guyana, Martinique and La Réunion Departments
- Order of 17 April 2009 specifying the minimum thermal properties of new residential buildings in the Guadeloupe, Martinique, Guyana and La Réunion Departments
- Order of 17 April 2009 on the acoustic properties of new residential buildings in the Guadeloupe, Martinique, Guyana and La Réunion Departments
- Order of 17 April 2009 on ventilation of new residential buildings in the Guadeloupe, Martinique, Guyana and La Réunion Departments

Date of entry into force

The provisions of RT2005 apply to all construction projects for which a permit application or a preliminary declaration was lodged on or after 1 September 2006, and up to 28 October 2011 for service, public and ANRU (National Urban Renewal Agency) buildings and up to 1 January 2013 for all other structures, these being the dates from which RT2012 applies.

The provisions of RTAA DOM apply to all construction projects for which a permit application or a preliminary declaration was submitted on or after 1 May 2010.

Description

New buildings must comply with a minimum energy performance that equates to theoretical consumption in standardised conditions. Regulatory performance levels are regularly strengthened.

RT2005

Three conditions must be met in respect of the building to be constructed:

- Energy saving: the building's overall energy saving under the headings of heating, domestic hot water, cooling and auxiliary equipment, as well as lighting in the case of service buildings, must be below the reference consumption for that building. The latter equates to the consumption this building would have based on the performances required for the works and equipment of which it consists.

  The Regulation therefore gives the designer the option of using equipment or materials with below-reference performance, within safeguard limits and subject to above-reference performance under the other loss headings.

  RT2005 also introduces a consumption ceiling for dwellings. The energy consumption of these buildings, with regard to heating, cooling and domestic hot water, must in fact be below a maximum value, which depends on the type of heating and climate.

- Summer comfort: the conventional internal temperature reached in summer must be below the reference temperature.

- Safeguards: minimum performances are required for a number of components (insulation, ventilation, heating system, etc.). Introduced by RT2000, these minimum performances are strengthened by RT2005, particularly with regard to thermal bridge losses.

In accordance with the Order of 24 May 2006, a building's conformity to RT2005 is verified either by calculation or by application of a technical solution approved by order.

In all cases, this verification leads to a summary standardised thermal study being drawn up. This document must be provided to the person responsible for drawing up the Energy Performance Diagnosis for the structure. On request, it must also be provided to persons authorised to control application of RT2005.

RT2012

Implementation of RT2012 strengthens requirements concerning the thermal performance of new buildings: all new buildings with a building permit lodged after 1 January 2013 must have primary energy consumption below a threshold of 50 kWh_{ep}/m^2/year on average (energy performance level equivalent to the 'low consumption building' level of labels under RT2005). This requirement must be applied early, from 28 October 2011, in the case of public and service buildings and ANRU dwellings. The 50 kWh_{ep}/m^2/year requirement concerns consumption of heating, cooling, lighting, domestic hot water produced and auxiliary equipment (pumps and fans). This threshold will also vary according to geographical location, altitude, nature of use of the building, average surface area of the dwellings and greenhouse gas emissions. With regard to greenhouse gas emissions, only wood energy and heat networks with the lowest CO_2 emissions will benefit from a

variation of this requirement, limited to a 30% maximum. The consumption requirement will also be raised by 7.5 kWh_{ep}/m^2/year for collective housing, on a temporary basis until 1 January 2015.

In addition, energy performance labels for new build continue to apply until RT2012 enters into force (see specific sheet below).

Lastly, a document confirming that the Thermal Regulation has been taken into account by the project manager on acceptance of the work must be provided by the contracting authority to the service authorising building permits. This confirmation is to be drawn up by an architect, an energy performance diagnostician, a building certification body or a technical inspector.

A document must also be provided by the contracting authority at the time the building permit is lodged confirming that the Thermal Regulation has been taken into account and the energy supply feasibility study (see below) carried out.

RTAA DOM

In the Overseas Departments all new dwellings for which building permit applications or preliminary declarations were lodged on or after 1 May 2010 must conform to the applicable Thermal, Acoustics and Ventilation Regulations (RTAA DOM), a set of three new regulations specific to heating, acoustics and ventilation. The design of these dwellings must, among other things, make it possible to limit energy consumption by favouring bioclimatic design and restricting use of air conditioning, particularly through solar protection devices and use of natural ventilation. In addition, these dwellings must be equipped with a system for producing domestic hot water by means of solar energy to meet a minimum of 50% of needs. In Guyana provision of domestic hot water is not obligatory. However, if the contracting authority decides to install hot water, it must be produced from solar energy.

Type of measure

Regulatory

Targeted by measure

Private individuals, businesses, State, territorial authorities, professionals

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

Construction

Cross-effects

Impact on internal air quality, development of renewable energies.

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL - DGALN and DGEC

Available evaluations

SceGES: in the residential sector, RT2012 enables estimated energy savings of 0.41 Mtoe in 2016 and 1.15 Mtoe in 2020.

2. Labels associated with RT2005 (Measure B.2)

Reference texts

Order of 3 May 2007 on the content and terms for award of the ‘high energy performance’ label

Date of entry into force

16 May 2007 - date of entry into force of RT2012

Description

Contracting authorities that wish to construct more energy-efficient new buildings than required by the regulations in force have the option of obtaining an energy label if the building meets minimum energy performance standards corresponding to theoretical consumption under standardised conditions.

The High Energy Performance label targets new buildings that come under a sustainable development initiative. This label consists of five different performance levels, characterised by renewable energy use and maximum consumption:

- HPE (high energy performance), maximum consumption reduced by 10%
- HPE EnR (high energy performance - renewable energy) 2005, maximum consumption reduced by 10% with use of renewable energy
- THPE (very high energy performance) 2005, maximum consumption reduced by 20%
- THPE EnR (very high energy performance - renewable energy) 2005, maximum consumption reduced by 30% with use of renewable energy
- BBC/Effinergie

As an energy performance label for low consumption buildings, the BBC/Effinergie label sets a threshold for maximum primary energy consumption of 50 kWh/(m^2.year) on average for new dwellings. This limit may vary slightly in line with the climate type and altitude of the construction zone.

The label also concerns buildings other than dwellings, with a target of limiting consumption to 50% of reference conventional consumption.

Type of measure

Voluntary initiative: the label makes it possible to highlight operations where performance exceeds regulatory requirements. However, achieving the BBC level makes it possible to claim certain forms of financial support: increased zero-rated eco-loans with a BBC label, possibility of (partial or total) exemption from the land occupation coefficient (COS) property tax on existing buildings - subject to the territorial authority voting in favour of this.

Targeted by measure

Private individuals, businesses, State, territorial authorities, professionals

Indicators for monitoring implementation

Almost 45 000 BBC labels were awarded between 2008 and mid-2010.

Public costs

N/A

Sectors concerned

Residential-service

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL/DGALN and DGEC

Available evaluations

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3. Feasibility study for energy supplies (Measure B.3)

Reference texts

- Article L. 111-9 of the Building and Housing Code introduced by the Law of 13 July 2005
- Decree No 2007-363 of 19 March 2007 on feasibility studies for energy supply, thermal properties and energy performance of existing buildings and display of Energy Performance Diagnoses
- Order of 18 December 2007 on feasibility studies for energy supply for new buildings and new parts of buildings and for renovations of certain existing buildings in metropolitan France

Date of entry into force

1 January 2008

Description

Since 1 January 2008, for a construction operation involving a net floor area (SHON) of more than 1 000 m^2 or very major renovation of an existing building more than 1 000 m^2, the contracting authority must, before lodging the building permit, carry out a technical and economic feasibility study regarding the various energy supply solutions for the structure.

This measure, applicable in metropolitan France, is intended to encourage use of renewable energies and the most efficient systems. The contracting authority is free to choose the source, or sources, of energy for the structure, guided by the findings of this study, which will, in particular, be based on energy, environmental and economic indicators.

Under RT2012, the contracting authority must, at the time the building permit is lodged, provide a document confirming that the Thermal Regulation has been taken into account and the energy supply feasibility study carried out.

Type of measure

Regulatory/information

Targeted by measure

Contracting authorities (businesses, territorial authorities, developers)

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

Construction

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL/DGALN

Available evaluations

-

4. Thermal Regulations for existing buildings (Measure B.4)

Reference texts

Global and element-by-element RT
- Pursuant to Article 6 of Directive 2002/91/EC on the energy performance of buildings
- Order of 13 June 2008 on the energy performance of existing buildings with a surface area of more than 1 000 square metres undergoing major renovation
- Order of 3 May 2007 on the thermal properties and energy performance of existing buildings

'High energy performance - renovation' label
- Decree No 2009-1154 of 29 September 2009 creating a 'high energy performance - renovation' label for certain existing buildings
- Order of 29 September 2009 on the content and terms of award of the 'high energy performance - renovation' label.

Date of entry into force

The global RT has been fully applicable since publication of the Order of 13 June 2008 in the Official Journal of the French Republic.

The provisions of the element-by-element RT apply to work for which the date of acceptance of the quotation or award of the contract or, in the absence of these, purchase of the equipment covered is later than 31 October 2007.

Description

Global RT (for buildings with a surface area of more than 1 000 m^2)

An overall performance target is set for renovated buildings, other than those built before 1948.

Since 1 April 2008, buildings have been required to undergo a technical and economic feasibility study regarding the various energy supply solutions. This latter requirement also applies to buildings built before 1948 and undergoing major renovation.

Element-by-element RT

For buildings with a surface area of less than 1 000 m^2 or buildings with a surface area of more than 1 000 m^2 undergoing minor renovation, or not having all of the items liable to improve energy efficiency, the Regulation sets a minimum performance level for replaced or installed elements. This Regulation does not, however, apply to buildings consisting of so-called 'old' ('*anciennes*') walls.

'High energy performance - renovation' label
A label has been created for renovation of buildings. It includes two levels for buildings for residential use:

- The ‘high energy performance - renovation, HPE renovation 2009’ label for conventional primary energy consumption concerning five uses of 150 kWhEP/m^2/year on average;
- The ‘low energy consumption building - renovation, BBC renovation 2009’ label for conventional primary energy consumption concerning five uses of 80 kWhEP/m^2/year on average; this label also includes a level for buildings for non-residential use, ‘low consumption building - renovation, BBC renovation 2009’ for conventional primary energy consumption concerning five uses 40% below reference conventional consumption.

Type of measure

Regulatory, voluntary initiative regarding labels

Targeted by measure

Private individuals, businesses, State, territorial authorities, professionals

Indicators for monitoring implementation

Regarding labels: number of operations

Public costs

N/A

Sectors concerned

Construction

Cross-effects

Impact on internal air quality

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL/DGALN

The four certifying bodies (Cequami, Cerqual Patrimoine, Certivéa and Promotelec) contracted by the Ministry to issue HPE renovation labels must supply an annual report on their activity.

Available evaluations

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5. Energy performance diagnosis (Measure B.5)

Reference texts

- European Directive 2002/91/EC of 16 December 2002 on the energy performance of buildings, Article 7
- Law No 2004-1343 of 9 December 2004 simplifying the law
- Ordinance No 2005-655 of 8 June 2005 on housing and construction
- Decree No 2006-1114 of 5 September 2006 on property diagnoses and amending the Building and Housing Code and the Public Health Code
- Decree No 2006-1147 of 14 September 2006 on energy performance diagnosis and on the status of interior gas installation for certain buildings
- Order of 16 October 2006 specifying criteria for certification of the competences of natural persons undertaking energy performance diagnosis and criteria for accreditation of certifying bodies
- Order of 9 November 2006 approving various calculation methods for energy performance diagnosis in metropolitan France
- Decree No 2006-1653 of 21 December 2006 on the periods of validity of documents contained in the technical diagnosis file
- Decree No 2007-363 of 19 March 2007 on energy supply feasibility studies, thermal properties and energy performance of buildings and display of energy performance diagnoses
- Order of 7 December 2007 on display of energy performance diagnoses in public buildings in metropolitan France
- Order of 8 December 2009 amending the Order of 16 October 2006 specifying criteria for certification of the competences of natural persons undertaking energy performance diagnosis and criteria for accreditation of certifying bodies
- Article 1, Grenelle 2
- Decree No 2010-1662 of 28 December 2010 on mention of the energy class of buildings in property advertisements

<u>Energy Performance Diagnosis (DPE) at time of sale</u>

- Order of 15 September 2006 on energy performance diagnosis for existing buildings offered for sale in metropolitan France
- Order of 15 September 2006 on methods and procedures applicable to energy performance diagnosis for existing buildings offered for sale in metropolitan France
- Order of 4 May 2009 amending the Order of 15 September 2006 on energy performance diagnosis for existing buildings offered for sale in metropolitan France

<u>DPE at time of rental</u>

- Order of 3 May 2007 on energy performance diagnosis for existing buildings primarily for residential use, offered for rent in metropolitan France
- Decree No 2008-461 of 15 May 2008 on energy performance diagnosis at time of offering for rent buildings primarily for residential use and amending the Building and Housing Code

<u>Guides to drawing up a DPE</u>

- DPE - <u>Guide to on-site inspection of the property asset for diagnosis V2 (May 2009)</u>
- DPE - <u>'Recommendations' guide for use by diagnosticians V3 (March 2009)</u>

Date of entry into force

- DPE at time of construction: 30 June 2007
- DPE at time of sale: 1 September 2006
- DPE at time of rental: 1 July 2007
- Display of energy performance in property advertisements: 1 January 2001

Description

An Energy Performance Diagnosis (DPE) provides information about the energy performance of a dwelling or building by evaluating its energy consumption and its impact in terms of greenhouse gas emissions. It aims, in particular, to allow objective comparison of the quality of dwellings and buildings offered for sale or rented.

It describes the building or dwelling (surface area, orientation, walls, windows, materials, etc.), as well as its equipment for heating, domestic hot water production, cooling and ventilation. It indicates, as appropriate, either the quantity of energy actually consumed (based on invoices) or the estimated energy consumption for standardised use of the building or dwelling.

Two labels, with seven classes from A to G, make it easier to read the DPE:

- the energy label covers primary energy consumption,

- the climate label covers greenhouse gas emissions.

[Key to first graph]
Logement économe = Efficient dwelling
Logement énergivore = Energy-hungry dwelling
Logement = Dwelling
$kWh_{EP}/m^2.an$ = kWh_{EP}/m^2.year
Étiquette énergie = **Energy label**
à = to

[Key to second graph]
Faible émission de GES = Low greenhouse gas emission
Forte émission de GES = High greenhouse gas emission
Logement = Dwelling
$kWh_{éqCO2}/m^2.an$ = kWh_{eqCO2}/m^2.year
Étiquette climat = **Climate label**
à = to

The diagnosis also includes recommendations enabling the buyer, owner, landlord or tenant to be aware of the most efficient energy-saving measures.

Since 1 November 2007, certification by a body accredited by COFRAC (French accreditation committee) has been mandatory in order to undertake a DPE.

Lastly, Grenelle 2 (Article 1) states that diagnosticians are required to forward all DPE undertaken to ADEME for the purposes of statistical studies, evaluation and methodological improvement. This provision will be implemented in a decree to be published in the first six months of 2011.

Requirement to undertake a DPE

A DPE is required for:

- new buildings and new parts of buildings for which the building permit application was lodged after 30 June 2007;
- since 1 September 2006, for all buildings or part of buildings offered for sale (with exceptions);
- since 1 July 2007, for residential or service buildings offered for rent (other than seasonal lets);
- since 2 January 2008, for certain public buildings open to the public; the DPE must then be displayed in the entrance hall of the building;
- and for buildings equipped with a communal heating or cooling facility, within five years from 1 January 2012 (except for those subject to the requirement to undergo an energy audit - see Measure B.7 below).

Lastly, since 1 January 2011, it has been mandatory to display the DPE 'energy' label in property advertisements.

Except in special cases, a DPE is valid for 10 years.

Type of measure

Information

Targeted by measure

Private individuals (buyers, tenants), businesses, administrative authorities

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

Residential-service

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL

Available evaluations

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6. Obligation regarding work in existing service buildings (Measure B.6)

Reference texts

- Article 3 of Grenelle 2; publication of implementing acts scheduled for the end of 2011.

Date of entry into force

1 January 2012 to 31 December 2019

Description

Grenelle 2 introduces a requirement to carry out work to improve energy performance for existing buildings used for service purposes or in which a public service activity is performed between now and 2020. The provisions implementing this measure, specifying how it will operate, will be published during 2011.

Type of measure

Regulatory

Targeted by measure

Businesses, State, territorial authorities

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

Service sector

Cross-effects

Reduced greenhouse gas emissions, impact on internal air quality.

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL/DGALN

Available evaluations

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7. Evaluation of energy performance of co-ownerships (Measure B.7)

Reference texts

- Article 1 of Grenelle 2

Date of entry into force

1 January 2012 to 31 December 2016

Description

An Energy Performance Diagnosis (DPE) is mandatory, without anticipation of sale or rental, in the case of buildings equipped with a communal heating or cooling facility, within a period of five years from 1 January 2012.

Co-owned dwellings primarily for residential use, consisting of 50 lots or more and equipped with a communal heating or cooling facility, must undergo an energy audit instead of a DPE.

Type of measure

Regulatory/information

Targeted by measure

Co-owners and tenants

Indicators for monitoring implementation

-

Public costs

N/A

Sectors concerned

Residential and service

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL/DGALN

Available evaluations

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8. Boiler maintenance and periodic control (Measure B.8)

Reference texts

Maintenance of boilers of between 4 kW and 400 kW

- Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings, Article 14
- Law No 2008-757 of 1 August 2008 on environmental responsibility and various provisions adapting to Community law in the environment field > II(2) of Article L224-1 of the Environment Code
- Decree No 2009-649 of 9 June 2009 on annual maintenance of boilers of a rated output of between 4 kilowatts and 400 kilowatts (Decree implementing Law No 2008-757 of 1 August 2008)
- Order of 15 September 2009 on annual maintenance of boilers of a rated output of between 4 kilowatts and 400 kilowatts

Periodic control of energy efficiency and polluting emissions of boilers of between 400kW and 20 MW

- Decree No 2009-648 of 9 June 2009 on control of boilers of a rated output of more than 400 kilowatts and less than 20 megawatts; Articles R. 224-31 to R. 224-41-3 of the Environment Code.

Date of entry into force

Maintenance of boilers of between 4 kW and 400 kW: the new regulations apply from June 2009.

Periodic control of boilers of between 400 kW and 20 MW: first periodic control to be undertaken within a period of two to three years, depending on the output of the installation, starting from June 2009.

Description

See Annex 4 (France's report under Article 14.4 of Directive 2010/31/EU on the energy performance of buildings).

Type of measure

Regulation, information

Targeted by measure

Private individuals, businesses

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

Construction, industry

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL

Available evaluations

-

9. Minimum energy performances of boilers (Measure B.9)

Reference texts

- Order of 9 May 1994 on the performance of liquid or gaseous fuel fired hot-water boilers and their marking
- Articles R. 224-20 to R. 224-30 of the Environment Code (regarding minimum performances and equipment of boilers of an output of between 400 kW and 20 MW).

Date of entry into force

1998

Description

Boilers of an output of between 400 kW and 20 MW are subject to minimum energy performances, shown in Table 26.

The operator is also required to install devices:
- to control and measure performance,
- and to assess combustion quality.

Periodic control (see above) is, in particular, the time when implementation of these requirements is checked.

Table 26. Minimum performances applicable to boilers of between 400 kW and 20 MW (R. 224-23 of the Environment Code)

Fuel used	Performance (as a percentage)
Domestic fuel oil	89
Heavy fuel oil	88
Gaseous fuel	90
Coal or lignite	86

Type of measure

Regulatory

Targeted by measure

Private individuals, businesses

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

Construction, industry

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL/DGEC

Available evaluations

-

10. Inspections of air-conditioning and reversible heat pump systems (Measure B.10)

Reference texts

- Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings, Article 9
- Article L. 224-1 of the Environment Code (Article 27 of Programme Law No 2005-781 of 13 July 2005 establishing energy policy guidelines and Article 8 of Law No 2008-757 of 1 August 2008 on environmental responsibility and various provisions adapting to Community law in the environment field)
- Decree No 2010-349 of 31 March 2010 on inspection of air-conditioning and reversible heat pump systems; Articles R. 224-59-1 to R. 224-59-11 of the Environment Code
- Orders of 27 April 2010

Date of entry into force

Deadline of two to three years, depending on the output of the installation, to carry out the first periodic inspection, starting from April 2010.

Description

Periodic inspection is mandatory for air-conditioning and reversible heat pump systems of a rated cooling output of more than 12 kilowatts. In total, this mechanism covers some 300 000 air-conditioning systems in France, which amounts to around 10% of installed stock.

This obligation is the responsibility of the building's owner or co-ownership association. Frequency of inspection is every five years, with the first inspection required to take place during the calendar year following replacement or installation of a new system.

The inspection must include:
- inspection of documentation;
- assessment of system performance, at the time of on-site inspection;
- assessment of the scale of the system in relation to the cooling requirements of the building, at the time of on-site inspection;
- provision of the necessary recommendations concerning proper use of the system in place, possible improvements to the installation as a whole, any benefit from its replacement and other potential solutions. These recommendations are provided in a report, given to the inspection client no later than one month after the on-site inspection visit.

The inspector must be certified by an accredited body.

Type of measure

Regulatory, information

Targeted by measure

Businesses

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

Construction, industry

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL/DGEC

Available evaluations

-

11. Sustainable Development Tax Credit (Measure B.11)

Reference texts

- Programme Law No 2005-781 of 13 July 2005 establishing energy policy guidelines (Pope Law)
- Article 200 quater of the General Tax Code, which changes each year with finance laws and orders:
- Amending Finance Law for 2009 No 2009-1674 of 30 December 2009
- Amending Finance Law for 2010
- Order of 30 December 2009, adopted pursuant to Article 200 quater of the General Tax Code, on equipment costs for a principal residence under the heading of energy savings and sustainable development and amending Article 18 bis of Annex IV to that Code

Date of entry into force

2005 to end 2012

Description

Sustainable Development Tax Credit (CIDD) is a tax credit for the purchase of the most efficient materials and equipment in terms of energy saving and reduction of greenhouse gas emissions. Only work in existing buildings is eligible, other than in the case of renewable energies, which may be financed for both new and existing buildings.

The draft Finance Law 2009 renewed CIDD until the end of 2012 for the purchase of the most efficient materials and equipment in terms of energy saving and reduction of greenhouse gas emissions and extended it to new equipment.

The draft Finance Law 2010 amended CIDD by making new materials eligible, withdrawing others from the mechanism and amending certain rates. Particular reference may be made to the reduction in the percentage tax credit from 25% to 15% for condensing boilers and glass walls, as well as the addition of thermodynamic systems producing domestic hot water (at a rate of 40%) and underground heat exchangers for geothermal heat pumps (also at a rate of 40%) to the list of equipment eligible for tax credit.

Type of measure

Financial incentive

Targeted by measure

Private individuals

Indicators for monitoring implementation

Number of tax credits granted, cost of a tonne of CO_2 avoided by eligible equipment.

Public costs

The tax cost is assessed at €2.8 thousand million in 2009, €2.6 thousand million in 2010 and €2.1 thousand million in 2011.

Sectors concerned

Residential

Cross-effects

Internal air quality, comfort of occupants, acoustics

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of the Economy, Industry and Employment

MEDDTL - DGALN and DGEC

Available evaluations

SceGES: the impact of this measure in terms of final energy savings is estimated at 0.32 Mtoe in 2009, 0.57 Mtoe in 2010, 1.28 Mtoe in 2016 and 1.43 Mtoe in 2020.

12. Zero-rated eco-loan (Measure B.12)

Reference texts

- Finance Law for 2009 No 2008-1425 of 27 December 2008, in particular Article 99
- Implementing decrees:

- Decree No 2009-344 of 30 March 2009 on interest-free repayable loans intended to finance renovation works to improve the energy performance of old buildings
- Decree No 2009-346 of 30 March 2009 on interest-free repayable loans intended to finance renovation works to improve the energy performance of old buildings
- Order of 30 March 2009 on implementing terms for provisions concerning interest-free repayable loans intended to finance renovation works to improve the energy performance of old buildings

Date of entry into force

1 April 2009 to end 2012

Description

In order to promote energy efficiency within existing building stock, France has introduced the zero-rated eco-loan. This is an interest-free loan that may be accessed without means testing.

Designed for property-owning individuals to finance major renovation work, the loan has been available since 1 April 2009 from credit institutions that have concluded an agreement with the State.

It includes three options:

- implementation of a 'mix of works',
- achievement of a minimum ‘overall energy performance’ level for the dwelling,
- renewal of a ‘non-collective sanitation’ system using a non-energy-consuming mechanism.

The work must be undertaken by a professional on behalf of the owner, the co-ownership or both concurrently. Eligible dwellings are those completed before 1 January 1990 and, with regard to the ‘overall energy performance’ option, after 1 January 1948. They must be occupied, or intended to be occupied, as principal residence by the owner, a tenant or a partner in a non-commercial company.

This loan finances up to €30 000 of work to improve the energy efficiency of a dwelling over a period of 10 years (which may be extended to 15 years by the bank).

Type of measure

Financial incentive

Targeted by measure

Owner-occupiers or landlords and non-commercial companies not liable for company tax, with at least one of its partners being a natural person.

Indicators for monitoring implementation

A flagship measure under the Round Table Building Plan, zero-rated eco-loans seek to contribute to renovation of 200 000 dwellings between now and the end of 2010, and 400 000 dwellings a year once fully operational.

71 000 eco-loans were requested in 2009, i.e. well above the target of 50 000 loans initially envisaged, and 130 000 as at 1 September 2010. The average loan amount is around €16 500. With average work cost of €19 000, the corresponding investment was more than €2.5 thousand million for 2009 (over nine months: mechanism implemented in April).

Public costs

The annual tax cost was nil in 2009 and is estimated at €20 million in 2010 and €50 million in 2011 (source: draft Finance Law 2011). The total cost of zero-rated eco-loans granted each year is estimated at:

- €125 million for the 71 000 eco-loans granted in 2009,
- €144 million for the 80 300 eco-loans granted in 2010,
- €719 million for a volume of 400 000 eco-loans once fully operational.

Sectors concerned

Residential

Cross-effects

Improved air quality in the case of ventilation work.

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL/DGALN; banks

Available evaluations

SceGES: the impact of this measure in terms of final energy savings is estimated at 0.06 Mtoe in 2010 and 0.81 Mtoe in 2016 and 2020.

13. Exemption from property tax on existing buildings for BBC dwellings (Measure B.13)

Reference texts

- Finance Law for 2009 (Article 107)
- Decree No 2009-1529 of 9 December 2009, adopted pursuant to Article 1383-0 B bis of the General Tax Code, on exemption of construction of new high energy performance dwellings from property tax on existing buildings

Date of entry into force

Entry into force on the date of issue of the Decree (9 December 2009) for dwellings with a BBC label completed after 1 January 2009

Description

Territorial authorities and public establishments for inter-municipal cooperation that are separately taxed may, following consideration under the conditions provided for under section I of Article 1639 A bis, grant 50% or 100% exemption from property tax on existing buildings for construction of new dwellings completed from 1 January 2009 and having a BBC label.

Type of measure

Financial incentive

Targeted by measure

Private individuals

Indicators for monitoring implementation

-

Public costs

The cost of the measure is supported by the territorial authorities (loss of tax revenue) without compensation from the State.

Sectors concerned

Residential

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

Territorial authorities and public establishments for inter-municipal cooperation that are separately taxed.

Available evaluations

-

14. Targeting of Scellier aid for rental investment towards BBC dwellings (Measure B.14)

Reference texts

- Amending Finance Law for 2008 No 2008-1443 of 30 December 2008
- Finance Law for 2010 No 2009-673 of 30 December 2009
- Decree No 2010-823 of 20 July 2010, adopted pursuant to Article 199 septvicies of the General Tax Code, on tax relief on income from rental property investment

Date of entry into force

1 January 2011 (1 January 2010 for cross-compliance)

Description

The Finance Law for 2010 provided for 'greening' of the so-called 'Scellier' tax relief for rental investment, that is to say, phased decrease in the tax reduction rate applicable to dwellings without a 'BBC - low energy consumption building' label. The aim of this measure is to develop a more energy-efficient offer and thus to accelerate the acquisition of know how by construction professionals before the BBC standard becomes mandatory in 2013.

The applicable tax reduction rate was thus to fall from 25% in 2010 to 15% in 2011, then 10% in 2012; the rate applicable to dwellings with a BBC label, on the other hand, was to be maintained at 25% in 2011, then 20% in 2012.

In addition, for dwellings for which the building permit application was lodged on or after 1 January 2010, private individuals must demonstrate compliance with the Thermal Regulation in force in order to benefit from the tax reduction (cross-compliance principle).

Type of measure

Tax incentive

Targeted by measure

Private individuals (property investors)

Indicators for monitoring implementation

Number of BBC dwellings that have benefited from the tax relief.

Public costs

(Entry into force in 2011)

Sectors concerned

Residential

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL/DGALN

Available evaluations

-

15. Targeting of aid for housing purchase towards BBC dwellings (Measure B.15)

Reference texts

PTZ (zero-rated eco-loan)

- Finance Law for 2009 No 2008-1425 of 27 December 2008
- Decree No 2009-1296 and Decree No 2009-1297 of 27 October 2009 on increased interest-free repayable loans for the purchase or construction of new dwellings with a high energy performance level for home buyers
- Order of 19 November 2009 on procedures for demonstrating high energy performance level with regard to increased interest-free repayable loans for the purchase or construction of dwellings for home buyers
-

CITEPA (TEPA tax credit)

- Finance Law for 2009 No 2008-1425 of 27 December 2008
- Finance Law for 2010 No 2009-1673 of 30 December 2009
- Decree No 2009-1 of 2 January 2009, adopted pursuant to Article 200 quaterdecies of the General Tax Code, on income tax credit on interest on loans contracted as a result of purchase or construction of a principal residence

PTZ+

- Finance Law for 2011 No 2010-1657 of 29 December 2010, Article 56

Date of entry into force

PTZ: 1 December 2009 to 31 December 2010

CITEPA: 1 January 2009 (increase for new BBC dwellings); 1 January 2010 (decrease for new non-BBC dwellings) to 31 December 2010

PTZ+: 1 January 2011 to 31 December 2014

Description

PTZ

The zero-rated access loan, or PTZ, is an interest-free loan designed for first-time buyers with low incomes. Since 1 December 2009 the amount of the zero-rated loan has been increased when the dwelling being built or acquired new, financed by the loan, has a BBC (low energy consumption building) label. The increase amounts to €15 000 for households of between one and three persons and €20 000 for households of four persons or more.

CITEPA

The Finance Law for 2009 initiated ‘greening’ of tax credit on interest on loans contracted for purchase or construction of a principal residence (‘TEPA tax credit’) by increasing tax credit (extending the period of the tax credit from five to seven years and maintaining the rate at 40% for the entire period) for purchase of new dwellings ahead of the Thermal Regulation in force (at present, dwellings with a ‘low consumption building, BBC 2005’ label). The same Law introduced a cross-compliance principle: the requirement for new buildings to demonstrate compliance with the Thermal Regulation in force in order to be eligible for tax credit.

The ‘greening’ of TEPA tax credit has been strengthened by the Finance Law for 2010, which provides for a gradual reduction in tax credit rates from 2010 for new buildings without a BBC label, in order to increase the proportion of more energy-efficient dwellings built and speed up the acquisition of know how by construction professionals before this standard becomes mandatory in 2013.

PTZ+

In the context of reform of home ownership, the draft Finance Law 2011 has replaced PTZ and CITEPA by a new mechanism, PTZ+. PTZ+ is intended for first-time buyers and is granted without means testing. However, the total resources of the borrower and of all persons intended to occupy the dwelling are taken into account to determine the loan repayment terms. The amount of PTZ+ varies according to the location of the dwelling and whether it is new or old, but also according to the dwelling’s energy performance: only new dwellings with the BBC label and old dwellings in DPE class A to D are eligible for the maximum loan percentage. In addition, a further reduction is applied to class G dwellings, compared with that already applied to class E or F dwellings.

Thus, for example, in Zone A (or the most populated areas in the country: Paris Conurbation, French Genevois and Côte d’Azur), first-time buyers are eligible for a PTZ+ equal to 40% of their transaction amount (below a ceiling) if they acquire or have built a BBC dwelling, 27% if this new dwelling does not have a BBC label, 25% if they acquire an old dwelling in energy class A to D, 15% if it is in class E or F, or 5% if the dwelling is in class G.

Type of measure

Financial incentive

Targeted by measure

Private individuals

Indicators for monitoring implementation

Number of dwellings that have benefited from the increases.

Public costs

€0 in 2009 and 2010

Sectors concerned

Residential

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL/DGALN

Available evaluations

-

16. Relief from property tax on existing buildings (Measure B.16)

Reference texts

- Programme Law No 2005-781 of 13 July 2005 establishing energy policy guidelines
- Article 1391 E of the General Tax Code
- Law No 2009-323 of 25 March 2009 on 'mobilisation for housing and combating exclusion'

Date of entry into force

2008

Description

HLM (low-cost housing) agencies or SEM (mixed investment companies) that carry out energy-saving work in accordance with the Thermal Regulation in force are eligible for **tax relief on property tax on existing buildings** (**TFPB)** equal to a quarter of expenditure committed during the year preceding the year in which the tax is due.

The tax relief has been extended to tax relating to buildings taxed in the same municipality or in other municipalities that come under the same tax service in the name of the same landlord.

The State is responsible for the full cost of this measure.

Type of measure

Tax incentive

Targeted by measure

Low-cost housing agencies, territorial authorities.

Indicators for monitoring implementation

N/A

Public costs

The tax cost is estimated at €3 million in 2009, €20 million for 2010 and €50 million for 2011 (source: draft Finance Law 2011).

Sectors concerned

Residential

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

MINEFE/DGFIP

Available evaluations

17. Sustainable Development Account (Measure B.17)

Reference texts

1. Amending Finance Law for 2006 No 2006-1771 of 30 December 2006

- Order of 4 December 2008 on rules of use of funds collected under the Livret A account and the Sustainable Development Account and not centralised by the Loans and Consignments Fund, as well as on information enabling these uses to be monitored

Date of entry into force

1 January 2007

Description

The funds deposited (and not centralised by the Loans and Consignments Fund) in this savings account, which replaces the CODEVI and has expanded uses, previously reserved for financing small and medium-sized businesses, together with an increased ceiling, make it possible to grant loans at favourable rates to finance energy saving work in dwellings built more than two years ago.

The work that can be financed is that eligible for Sustainable Development Tax Credit (defined in Article 18 bis of Annex IV to the General Tax Code).

Type of measure

Financial incentive

Targeted by measure

Private individuals

Indicators for monitoring implementation

Number of loans granted.

Public costs

No direct cost to the State.

Sectors concerned

Residential

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

MINEFI/Treasury

Available evaluations

-

18. Change to co-ownership decision-making rules (Measure B.18)

Reference texts

- Articles 10-1, 24-4, 25 and 26 of Law No 65-557 of 10 July 1965, amended by Grenelle 2 (Article 7)

Date of entry into force

2010

Description

The decision-making rules concerning work can be very constraining on co-ownerships. Grenelle 2 (Article 7) provides for amendment of the co-ownership rules to introduce:

- A majority vote of co-owners on performance of works of collective benefit in private areas at the expense of the co-owner concerned.
- A majority vote of co-owners on installation of thermal energy meters or heating cost distributors.
- Mandatory inclusion of the issue of an energy-saving workplan or an energy performance contract on the agenda of the co-owners' general meeting that follows the drawing-up of an Energy Performance Diagnosis - or, in appropriate cases, an energy audit - in any building with communal heating or cooling equipment.

Type of measure

Regulatory

Targeted by measure

Co-owned collective residential buildings.

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

Residential (co-ownerships)

Cross-effects

Reduced greenhouse gas emissions.

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL/DGALN

Available evaluations

-

19. Individualised breakdown of heating costs (Measure B.19)

Reference texts

- Article 4 of Law No 74-908 of 29 October 1974 on energy savings
- Decree No 91-999 of 30 September 1991 codified in the Building and Housing Code (CCH) (Articles L131-3 and R131-2 to R131-8)
- Order of 30 September 1991 on distribution of heating costs in collective buildings.

Date of entry into force

1991 (currently being updated)

Description

Any communally-heated building must be equipped with devices allowing individualised breakdown of heating costs.

The texts are currently being revised to take more account of technical issues that make it impossible to install measurement devices and cases where the measure is not economically viable.

Type of measure

Regulatory, information

Targeted by measure

Private individuals, social landlords

Indicators for monitoring implementation

Number of dwellings

Public costs

N/A

Sectors concerned

Residential (service in the case of mixed-use buildings)

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL/DGALN and DGEC

Available evaluations

This measure is based on an assumed reduction in the building's total heating consumption of 10%.

20. Distribution of energy savings between owner/landlord and tenant (Measure B.20)

Reference texts

- Law No 2009-323 of 25 March 2009 on mobilisation for housing and combating exclusion
- Decree No 2009-1438 of 23 November 2009 on tenants' contribution to cost savings resulting from energy-saving works carried out by social landlords
- Decree No 2009-1439 of 23 November 2009, adopted pursuant to Article 23-1 of Law No 89-462 of 6 July 1989 aimed at improving rental relations, on tenants' contribution to cost savings resulting from energy-saving works carried out by private landlords
- Order of 23 November 2009 on tenants' contribution to cost savings resulting from energy-saving works carried out by private landlords
- Order of 23 November 2009 on tenants' contribution to cost savings resulting from energy-saving works carried out by social landlords

Date of entry into force

23 November 2009

Description

In order to encourage a 'win/win' relationship, a financial contribution by tenants after energy-saving work is carried out by the owner has been provided for in the Law on mobilisation for housing and combating exclusion, adopted on 25 March 2009.

Thus, owners will, at the end of the energy renovation work, be able to require a tenant to contribute half of the estimated costs saved. This contribution will take the form of a third entry on the rent receipt, lasting for a limited period of 15 years. This contribution will, however, only be possible if landlords have made efforts to consult with their tenant and have carried out a mix of efficiency work involving at least two actions or if a range of effective work is carried out to bring the dwelling's energy consumption below a minimum energy performance threshold.

Type of measure

Financial incentive

Targeted by measure

Owner landlords of private and public stock

Indicators for monitoring implementation

-

Public costs

N/A

Sectors concerned

Residential

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL/DGALN/DHUP

Available evaluations

-

21. Possibility of exceeding land occupation coefficient (Measure B.21)

Reference texts

- Article 20 of Grenelle 2
- Order of 3 May 2007, adopted pursuant to Article R. 111-21 of the Building and Housing Code, on eligibility conditions for exceeding the land occupation coefficient where a construction project complies with energy performance requirements

Date of entry into force

Publication of the Order of May 2007 in the Official Journal of 15 May 2007 enables municipalities to give immediate consideration to implementation of this procedure. This measure will be amended when the act adopted pursuant to Article 20 of Grenelle 2 is published.

Description

The Order of 3 May 2007 establishes the criteria for authorising the possibility of exceeding the land occupation coefficient (COS) by 20%. This measure may be applied to both new structures and extensions to existing structures, on condition, however, that the municipal council or public inter-municipal cooperation establishment concerned has discussed its principle, has a Local Urban Development Plan that sets a land occupation coefficient and has indicated the zones concerned. The excess part of the structure does not incur the payment resulting from exceeding the legal density ceiling.

In order to be eligible for this mechanism, new structures must meet the criteria for the THPE EnR or BBC levels of the 'high energy performance' label.

For new insulated individual houses, eligibility to exceed the land occupation coefficient may be granted on two conditions: having a consumption level at least 20% below the reference consumption resulting from application of RT2005 and meeting one of the four conditions concerning use of renewable energies or efficient heat pumps.

For existing structures, the conditions apply to the building and its extension, to meet the aim of limiting energy consumption. High floors in the loft space of the building and its extension must be sufficiently insulated. The building must undergo work to install renewable energy or heat pump equipment so that the entire premises made up of the existing part and the extension and belonging to the same owner comply with one of the conditions set.

In the latter two cases, the contracting authority must attach to the building permit application its undertaking to install equipment for producing renewable energy, together with a document drawn up by a diagnostician qualified to draw up Energy Performance Diagnoses confirming that the conditions are met at the building permit stage.

The new mechanism resulting from Grenelle 2 enables the municipal council or the deliberative body of the public inter-municipal cooperation establishment to authorise:

- the rules on the outline and land occupation density resulting from the Local Urban Development Plan to be exceeded
- within a 30% limit
- for structures meeting high energy performance criteria or supplied using efficient equipment for production of renewable energy or recovery
- in urban and urbanisation zones

The Law introduces the possibility of varying the excess over all or part of the relevant territory of the municipality or public inter-municipal cooperation establishment (EPCI). However, the new mechanism does not apply in the following sectors: safeguarded sector; zone of protected architectural, urban and countryside heritage (ZPPAUP), protection area around a listed building, listed site, heart of national park.

Type of measure

Financial incentive

Targeted by measure

Any contracting authority for a construction project, whether public or private

Indicators for monitoring implementation

Number of beneficiaries

Public costs

N/A

Sectors concerned

Residential and service

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

Municipality or public inter-municipal cooperation establishment as contracting authorities under the Local Urban Development Plan

Available evaluations

-

22. Social housing eco-loan (Measure B.22)

Reference texts

- Agreement of 26 February 2009 between the State and the Loans Fund
- Amendment to the Agreement of 17 September 2010

Date of entry into force

26 February 2009. The subsidised loans budget is fixed. Initially planned for 2009-2010, the measure has been renewed in 2011 to allow all of the appropriations to be used.

Description

A social housing eco-loan (*éco-PLS*) is a loan at a highly subsidised interest rate of 1.90% over a period of 15 years. Since May 2010, social housing eco-loans may also be granted at a fixed rate of 2.35% over 20 years. This alternative version of the loan follows requests from social landlords and makes it possible, at unchanged cost, to reduce their repayment annuities.

Social housing eco-loans are accessible to low-cost housing agencies, mixed investment companies and also municipalities owning or managing social housing that is the subject of an APL (personalised housing aid) agreement, in the context of thermal renovation of the most energy-consuming dwellings.

The loans finance energy-saving work enabling a dwelling to reduce its primary energy consumption from more than 230 kWh_{ep}/m^2/year to less than 150 kWh_{ep}/m^2/year.

Dwellings completed before 1 January 1948 come under alternative arrangements. They may benefit from the loans where they come under 'energy' class E, F or G of the Energy Performance Diagnosis (DPE) and a combination of actions is introduced to improve energy performance in terms of the properties defined in a list of works.

Dwellings in energy class D have also been eligible since September 2010, up to a limit of 20 000 dwellings, subject to:

- achieving a minimum energy gain of 85 kWh_{ep}/m^2/year and reducing energy consumption below a figure of 151 kWh_{ep}/m^2/year,

- or reducing their energy consumption below a figure of 80 kWh_{ep}/m^2/year;

- or, in the case of dwellings completed before 1 January 1948, the same conditions as apply to dwellings in energy class E, F or G.

Social housing eco-loans are loans offered by the Loans and Consignments Fund (CDC), financed from the Savings Fund and subsidised by the Savings Fund and the general section of the Loans and Consignments Fund.

Type of measure

Financial incentive

Targeted by measure

Low-cost housing agencies, mixed economy companies and municipalities that own or manage social housing that is the subject of an APL agreement.

Indicators for monitoring implementation

Number of operations financed, number of dwellings renovated. As at 28 February 2011, the number of dwellings renovated was broken down as follows, in terms of pre-work DPE class: D: 13 276, E: 47 903, F: 11 173, G: 2 974, giving a total of 75 146 social housing eco-loans made.

Public costs

The Loans and Consignments Fund is responsible for the additional cost (estimated at €110 million/year) linked to subsidising the loan.

Sectors concerned

Residential sector

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL/DGALN/DHUP

Available evaluations

Renovations carried out as at 28 February 2011 enable an annual final energy saving estimated at 804 GWh, or around 69 ktoe (source: MEDDTL/DGLAN/DHUP).

23. ERDF (Measure B.23)

Reference texts

- Council Regulation (EC) No 1083/2006 of 11 July 2006
- Circular of 22 June 2009

Date of entry into force

10 June 2009 to 1 January 2014

Description

Since 10 June 2009, date of entry into force of the amended Structural Fund Regulation (published in the OJEU of 21 May), investment in energy efficiency and renewable energy in the housing sector has been eligible for the European Regional Development Fund (ERDF).

The amount that may be mobilised for energy renovation work is 4% of the ERDF national budget, which equates to around €230 million for metropolitan France and €90 million for the Overseas Departments for the period 2009-2013, with no annual expenditure ceiling. In order to comply with this national limit, DATAR (delegation for territorial planning and regional action) has asked each region to apply this limit to its own budget.

The Circular of 22 June 2009, co-signed by the Minister for Ecology and the State Secretary for Spatial Planning, guides authorities managing the funds in amending the operational programmes. The recommendations are primarily intended to ensure consistency with current financial mechanisms to support energy-saving work. Thus, it was recommended that the terms of award of this subsidy should be modelled on those granting eligibility for social housing eco-loans in relation to public stock and zero-rated eco-loans in relation to private stock. In the Overseas Departments it is recommended that operations designed to improve summer comfort or use renewable energies may be financed by the ERDF, provided that they are innovative or entail significant cost that justifies a need for sources of supplementary financing.

Each region must define its own strategy for ERDF use in consultation with actors in the housing sector.

Aid must be focused on structuring operations covering a significant number of dwellings and aimed at exemplary energy performance, in order to give visibility to the involvement of European appropriations in these measures.

The fund is open to private and public stocks.

Type of measure

Financial incentive

Targeted by measure

Low-cost housing agencies and co-ownerships in poor condition

Indicators for monitoring implementation

N/A

Public costs

ERDF: €420 million (from a pre-existing ERDF 2007-2013 allocation of around €100 thousand million)

Sectors concerned

Residential

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

DATAR

Available evaluations

-

24. Indicators of quality in construction (Measure B.24)

Reference texts

- ECO Artisan agreement signed on 17 April 2009 between CAPEB (Confederation of Craft and Small Businesses in the Construction Field) and MEEDDM (Ministry of Ecology, Energy, Sustainable Environment and the Sea).
- Energy performance pros agreement, signed on 4 November 2010 between FFB (French Building Federation) and MEEDDM.
- Qualit'EnR quality charters

Date of entry into force

- ECO Artisan: April 2009
- Energy performance pros: November 2010
- Qualit'EnR: 2006

Description

Procedures for recognising the competences of building professionals (designations, qualifications or certification) are aimed at encouraging professionals to train and encouraging clients to have preferential recourse to qualified businesses. A number of qualification mechanisms exist for professionals, such as qualifications based on a specific profession or qualifications based on ecological competence for all or some of a range of professions (ECO Artisan, Energy performance pros).

Procedures for recognising the competences of building professionals (designations, qualifications or certification) are aimed at encouraging professionals to develop their competences or have them recognised and encouraging clients to have preferential recourse to qualified businesses. As regards the area of energy savings and renewable energy production, a number of mechanisms have been put in place at the initiative of professionals and/or public authorities:

- The Qualit'EnR association issues designations (QualiPAC, QualiBois, Qualisol, QualiPV, etc.) to installers of renewable energy equipment.
- The Qualiforage label is a quality commitment initiative for drillers using vertical geothermal pumps, initiated by ADEME, the Geological and Mining Research Bureau (BRGM) and the EDF company.
- The QUALIBAT[131] body has introduced new certificates in 'Renewable energies' and 'Energy renovation', as well as the mention of 'Energy efficiency', which is now added to qualifications relating to the shell and to the technical equipment.
- The ECO Artisan label, developed by the Confederation of Craft and Small Businesses in the Construction Field (CAPEB) and awarded by QUALIBAT, identifies craftspeople specialising in overall energy renovation of buildings.

Lastly, the 'Energy performance pros' label, developed by the French Building Federation (FFB) identifies businesses with either a professional qualification from QUALIBAT or Qualifelec with the mention of 'energy saving' or a QUALIBAT or Certibat certificate of overall energy renovation provision.

Type of measure

Training, information

[131] Body governed by private law, established in 1949 at the initiative of the Minister for Construction and professional organisations of entrepreneurs, architects and contracting authorities. It delivers professional qualifications and certificates.

Targeted by measure

Construction professionals

Indicators for monitoring implementation

Number of qualified businesses

Public costs

Energy performance pros, Eco Artisan: self-financing mechanisms.
Qualit'EnR: ADEME subsidies of around €1.25 million for the period 2008-2010, to support development and dissemination of the initiative under the Round Table, with the mechanism intended eventually to be self-financing.

Sectors concerned

Residential-service

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL/DGALN and DGEC; ADEME, BRGM, FFB, CAPEB, SER, ENERPLAN, etc.

Available evaluations

-

25. e-nergieBat training platform (Measure B.25)

Reference texts

- Grenelle 1, Article 6

Date of entry into force

The pedagogical content of the site has been fixed and its promotion to potential users actually launched by members of the Housing Improvement Club in October 2010.

Description

e-nergieBat (www.energiebat.fr) is an online learning management system for construction professionals. The aim is to make available a tool for acquiring the basics of energy renovation of dwellings, as an addition to or preparation for face-to-face training and with the advantage of permanent availability made necessary by the constraints on craftspeople and workers in the construction sector. The project was launched in 2007 by the Housing Improvement Club. It has been subsidised since the end of 2008 mainly by ADEME, with an initial contribution from ANAH.

The Housing Improvement Club is an 'association under the 1901 Law', which today brings together about fifty members, representing the entire renovation branch: State bodies, professional federations, construction businesses, project managers, dealers in materials and equipment, construction industrial operators, energy suppliers and banking institutions. Its purpose is to help develop the renovation market by giving actors involved in the branch the means to understand it better.

Type of measure

Training

Targeted by measure

Construction professionals

Indicators for monitoring implementation

Number of active user accounts

Costs

The budget is €810 000 for development of the tool (platform and content) and the first months of dissemination, to which are added the voluntary work of Club members, monitoring of the project and validation of the content by ADEME.

Sectors concerned

Residential-tertiary

Cross-effects

Internal air quality, noise, water savings

Authorities in charge of implementation, monitoring and evaluation of results

Still to be determined among the members of the Housing Improvement Club[132]

Available evaluations

-

26. ANAH financial support for combating energy insecurity (Measure B.26)

Reference texts

- ANAH Management Board discussions of 22.9.2010
- Article 8 of Amending Finance Law for 2010 No 2010-237, OJ 20.7.2010: State-ANAH agreement
- Order of 6.9.2010 on the Thermal Renovation Support Fund (FART) regulation

Date of entry into force

1.1.2009 to 31.12.2010 (replaced by the 'Live Better' programme)

Description

The National Housing Improvement Agency (ANAH) helps owner-occupiers, subject to an income ceiling, and owner-landlords to carry out housing improvement work.

Eco-subsidies and eco-premiums

The Relaunch Plan made it possible, in 2009, to go beyond conventional subsidy of improvement work of the ANAH by making available eco-subsidies for owner-occupiers and eco-premiums (of €1 000 for very low-income owner-occupiers and €2 000 for owner-landlords). In order to receive this eco-premium owner-occupiers had to occupy a dwelling with a pre-work F or G label and

[132] http://www.cah.fr/pub/amc.php?id=81

make energy gains of at least 30%, and owner-landlords had to make an improvement of at least two classes and achieve a C or D label.

During 2010 establishment of the thermal renovation support fund and reform of the ANAH support arrangements put an end to the eco-premium mechanism from 1.1.2011. In addition, help with project contracting to ensure an overall vision of work to be done is encouraged, or even made essential, with a subsidy of €130 to €430 per dwelling.

Financial support for housing improvement work

Low-income owner-occupiers will be eligible for financial support towards housing improvement work of between 20% and 50%, subject to a ceiling of €20 000 (€50 000 in the case of major work), supplemented, if the territory is covered by a local commitment contract, by ecological solidarity support (ASE) from the thermal renovation support fund (see sheet below)

cross-compliance of financial support

For owner-landlords, cross-compliance has been introduced so that rented and Government-regulated housing have a minimum energy quality. Thus, in order to obtain support from ANAH and be eligible for the relevant tax mechanism, owners will have to demonstrate that their dwelling has an E label.

Type of measure

Financial incentive

Targeted by measure

Private individuals with low incomes

Indicators for monitoring implementation

Number of dwellings dealt with and financed with regard to energy insecurity:
- eco-subsidy: 38 893 beneficiaries in 2009
- eco-premiums: 5 338 beneficiaries in 2009, including 752 owner-occupiers with very low incomes

Public costs

The ANAH overall annual budget is around €540 million, to which is added the budget for the 'Live Better' programme (€500 million for the period 2010-2017).

Sectors concerned

Residential sector

Cross-effects

Effect on health and poverty (combating energy insecurity)

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of Sustainable Development

Available evaluations

-

27. Energy Insecurity Observatory (Measure B.27)

Reference texts

Agreement signed by the partners on 1 March 2011

Date of entry into force

1 March 2011

Description[133]

The success of actions to tackle energy insecurity is based on a precise understanding of the reality of the phenomenon in all its forms: badly heated homes, obsolete and dangerous installations, respiratory illnesses, etc. And yet these realities are relatively poorly understood and poorly measured.

Following on from the legal definition of energy insecurity in Law No 2010-788 of 12 July 2010 making a national environmental commitment (Article 11), creation of the Energy Insecurity Observatory should make it possible to measure energy insecurity phenomena better and ensure monitoring of public and private financial support given to households in an insecure situation, as well as monitoring of actions and local or national initiatives to measure impact and share experiences.

[133] http://www.developpement-durable.gouv.fr/Un-Observatoire-national-de-la.html

Thus, the main objectives assigned to the Observatory are as follows:
- to define and characterise the concept of energy insecurity;
- to measure the change in this phenomenon and identify the areas most concerned in order to identify the causes; to be done in a detailed way for the housing field and an exploratory way for the transport field. This work may lead to surveys being conducted;
- to monitor public and private financial support given to households in an insecure situation;
- to monitor actions and local or national initiatives to measure impact and share experiences.

The permanent members of the Observatory are:
- the services of the Ministry of Ecology, Sustainable Development, Transport and Housing and the Ministry of the Economy, Finance and Industry
- ADEME (Environment and Energy Management Agency)
- ANAH (National Housing Improvement Agency)
- ARF (Association of Regions of France)
- *Electricité de France* (EDF)
- FNCCR (National Federation of Licensor and Direct-control Territorial Authorities)
- *Fondation Abbé Pierre* (Abbé Pierre Foundation) for Housing Disadvantaged Persons
- GDF Suez
- HCPLD (High Committee for Housing Disadvantaged Persons)
- MNE (National Energy Ombudsman)
- ONPES (National Poverty and Social Exclusion Observatory)
- Round Table Building Plan
- UNCCAS (National Union of Municipal and Inter-municipal Social Action Centres)
- USH (Social Union for Housing)

Type of measure

Information

Targeted by measure

Indicators for monitoring implementation

N/A

Public costs

Sectors concerned

Residential

Cross-effects

Effect on health and poverty (combating energy insecurity).

Authorities in charge of implementation, monitoring and evaluation of results

Steering committee of the Energy Insecurity Observatory

Available evaluations

-

28. 'Live Better' programme for thermal renovation of dwellings (Measure B.28)

Reference texts

- Article 8 of Amending Finance Law for 2010 No 2010-237, OJ 20.7.2010: State-ANAH agreement
- Order of 6.9.2010 on the Thermal Renovation Support Fund (FART) regulation

Date of entry into force

October 2010 to 2017

Description

Over recent years, social funds to provide financial support for energy management work have been set up in a number of Departments (Aisne, Ariège, Drôme, Haute Garonne, Gers, Gironde, Hérault, Jura, Loire, Lot, Oise and Deux Sèvres) as a supplementary alternative to the non-permanent solutions provided by the housing solidarity funds (FSL). These funds, for which a methodological guide was produced by ADEME in March 2008, support the carrying-out of work and help beneficiaries achieve more energy-saving behaviour. At the end of 2009 they were the subject of a recommendation in the Pelletier Report.

Following feedback provided by these Department-based social funds, the Amending Finance Law for 2010 established a national programme to support thermal renovation of dwellings, allocated €500 million from Future Investments. Managed by ANAH, this 'Live Better' programme allocates aid (€1 100 to €1 600) additional to that provided by ANAH to low-income owner-occupiers carrying out work that enables an energy gain of at least 25%. It also provides for specific support, with a subsidy of between €300 in a programmed sector and €430 spread across sectors to support owners' contracting role.

In order to encourage concentration of resources on combating energy insecurity, payment of this aid takes place under local commitment contracts to combat energy insecurity, which group together actors (territorial authorities, CAF/MSA (Family Allowance Fund/Agricultural Social Mutual Fund), CNAV (National Retirement Pension Fund), operators, energy companies, CAPEB, FFB, etc.) to ensure that difficult circumstances are noticed and help beneficiary households achieve solvency.

Type of measure

Financial incentive and information

Targeted by measure

Private individuals with limited resources

Indicators for monitoring implementation

Various indicators have been established under the State-ANAH agreement and are monitored on a three-monthly basis: they concern, in particular, the spread of local commitment contracts (CLE) across the country and the number of dwellings dealt with, against a target of 300 000 between 2010 and 2017.

Public costs

€500 million, to which are added standard financial support from ANAH and any contributions from partners (territorial authorities or others)

Sectors concerned

Residential

Cross-effects

Effect on health and poverty (combating energy insecurity)

Authorities in charge of implementation, monitoring and evaluation of results

ANAH, Ministry of Housing, Commissariat-General for Investment (CGI)

Available evaluations

-

III. TRANSPORT SECTOR

Summary

1. SNIT (Measure T.1)

Reference texts

Grenelle 1, Article 16

Date of entry into force

2011

Description

‘A national transport infrastructure scheme (SNIT) shall set State guidelines on maintaining, modernising and developing the networks under its responsibility and reducing the environmental impact and consumption of agricultural and natural spaces, and on financial support provided to territorial authorities to develop their own networks.

It seeks to promote the conditions for a shift towards those modes of transport that are most environment-friendly.’

A version of the preliminary draft SNIT was submitted for consultation in February and March 2011. It takes account of the opinion of the Environment Authority, the comments of the National Sustainable Development Committee and the Environment Round Table, as well as the contributions made by elected representatives, actors in the economic or voluntary sectors or private individuals.

Type of measure

Planning

Targeted by measure

Transport infrastructure

Indicators for monitoring implementation

N/A

Public costs

Being validated in the context of SNIT validation

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of Sustainable Development

Available evaluations

N/A

2. Freight-oriented network (Measure T.2)

Reference texts

- Grenelle 1, Article 11(II)
- National rail freight commitment

Date of entry into force

September 2009

Description

Announced in September 2009, the national rail commitment seeks to give new impetus to rail freight. It is organised around eight axes. Axis 1 seeks to create a freight-oriented network (ROF), i.e. for priority freight use. This involves transforming the existing network around the main structural axes for transport of goods into a genuine freight-oriented network. The aim comes from a commitment to the quality of train paths and the level of reliability of this infrastructure, particularly through modernising its operation and improving its efficiency.

In addition, four axes aim to modernise the freight-oriented network:
1. Robustness of the network in relation to operating constraints
2. International traffic

3. Flow of traffic in Ile-de-France (studies concerning alternative routes, such as Le Havre-Paris, permanent contra-flow installations)
4. Electrification

To this end, State investment will focus on certain priority axes with significant traffic, where freight will benefit from efficient and stable train paths, taking particular account of the interests of shippers.

Type of measure

Planning

Targeted by measure

Businesses

Indicators for monitoring implementation

Not available

Public costs

€1 500 million in 15 years to modernise the freight network

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions, improved air quality

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of Sustainable Development

Available evaluations

Not available

3. Rolling motorways (Measure T.3)

Reference texts

- Grenelle 1, Article 11(II)
- National rail freight commitment

Date of entry into force

September 2009

Description

Axis 2 of the national rail commitment: creating a genuine network of regularly scheduled rolling motorways. The Perpignan-Bettembourg and Alpine rolling motorway (AFA) lines are already in service today. The aim is to enable more than 500 000 lorries a year to be transferred to rail by 2020.

To that end, the following projects have been identified:
1. Development and extension of the Alpine rolling motorway to achieve a rate of 10 return journeys a day, i.e. trains scheduled every hour from 2013 and a target of 100 000 HGVs a year.
2. Development of the Perpignan-Luxembourg rolling motorway (AFPL): 10 mixed shuttles a day in 2015, i.e. trains scheduled every hour, making it possible to transport more than 100 000 lorries a year.
3. Creation of the Atlantic rolling motorway: to provide more than 10 shuttles a day, i.e. trains scheduled every hour, to transport 100 000 HGVs a year.
4. To study the introduction of a fourth rolling motorway to connect the Rhone and Atlantic routes.

Type of measure

Planning

Targeted by measure

Businesses

Indicators for monitoring implementation

Number of trains scheduled on the rolling motorways each day.

Public costs

Adaptation of infrastructure will receive supplementary public financing of €50 million and creation of multimodal platforms for standard or high-speed freight will received financing of €50 million.

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions, improved air quality.

Authorities in charge of implementation, monitoring and evaluation of results

DGITM (DG for Infrastructure, Transport and the Sea)

Available evaluations

No evaluations available to date

4. Combined transport (Measure T.4)

Reference texts

- Grenelle 1, Article 11(II)
- National rail freight commitment

Date of entry into force

September 2009

Description

Axis 3 of the national rail commitment: supporting combined transport

An experiment has already been conducted to allow trains 850 metres in length to travel on the Paris-Marseille axis. Financial support for combined transport will be developed to compensate partly for the additional cost linked to trans-shipment: aid towards operation and new aid towards start-up of new services.

This aid will be granted to every inter-modal transport unit trans-shipped within a terminal located in French territory; the amount increased from €12 to €15.6, i.e. an increase of 30%, in 2009.

Studies will also be undertaken to investigate the possibility of increasing train length still further. The target is to shift 500 000 lorries a year to rail by 2020, i.e. a doubling of traffic between 2009 and 2020.

Type of measure

Financial, regulatory (regulatory change to authorise long trains)

Targeted by measure

Businesses

Indicators for monitoring implementation

Number of lorries shifted to rail

Public costs

Not available

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions, improved air quality

Authorities in charge of implementation, monitoring and evaluation of results

DGITM

Available evaluations

No evaluations available to date

5. Local rail operators (Measure T.5)

Reference texts

- Grenelle 1, Article 11(II)
- National rail freight commitment
- Law of 8.12.2009 on organisation and regulation of rail transport (Article 4.1)
- Order of 19.10.2009

Date of entry into force

2009

Description

Axis 4 of the national rail commitment: developing local rail operations (OFP) to serve territories and port zones through light and appropriate forms of organisation, in order to meet the demand for rail traffic in the form of single wagonloads.

These small-scale rail operators are a new response to short-distance transport within territories or within ports. They are designed to transport sets of wagons or already assembled trains to or from an exchange point with a long-distance rail operator.

These local rail operators seem the most appropriate solution to offer local transport services in territories with low traffic density and in ports.

Legal rules have been adapted to facilitate establishment of these local rail operators.

4.12.2009: protocol of agreement on creation of NaviRail Atlantique at the port of La Rochelle

5.2.2010: protocol of agreement on creation of a local rail operator in Auvergne: SAS Ferovergne

May 2010: TPCF Fret (Languedoc-Roussillon), which obtained its rail company licence in January 2010, obtained its safety certificate

21.7.2010: The *Compagnie Ferroviaire Régionale* (Regional Rail Company) (Morvan), having obtained its rail company licence in May 2010, obtained its safety certificate

27.7.2010: TPCF Fret carried its first traffic on the Saint-Martin-Lys — Rivesaltes line

Type of measure

Regulatory (adaptation of legal rules to facilitate establishment of local rail operators)

Targeted by measure

Rail experts, logisticians, shippers

Indicators for monitoring implementation

Number of local rail operators established

Public costs

Not available

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions, improved air quality

Authorities in charge of implementation, monitoring and evaluation of results

DGITM

Available evaluations

Four local rail operators have already been established in 2009-2010.

6. High-speed rail freight (Measure T.6)

Reference texts

- Grenelle 1, Article 11(II)
- National rail freight commitment

Date of entry into force

September 2009

Description

Axis 5 of the national rail commitment: developing high-speed rail freight between airports using high-speed track outside peak hours to transport goods. France has thus supported the CAREX European project, aimed at introducing a very high-speed European rail freight service between the main European airport cities.

Type of measure

Planning

Targeted by measure

Businesses

Indicators for monitoring implementation

Number of lorries and aeroplanes shifted to rail.

Public costs

This axis provides for investments of €170 million in the rail terminals of Roissy and Saint-Exupéry and €300 million in rolling stock.

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions, improved air quality.

Authorities in charge of implementation, monitoring and evaluation of results

DGITM

Available evaluations

No evaluations available to date

7. Eradication of bottlenecks (Measure T.7)

Reference texts

- Grenelle 1, Article 11(II)
- National rail freight commitment

Date of entry into force

September 2009

Description

Axis 6 of the national rail commitment: eradicating bottlenecks, major congestion points of the national rail network. To that end, a programme of investment has been approved, particularly concerning the Nîmes-Montpellier bypass and the Lyon conurbation bypass.

Type of measure

Planning

Targeted by measure

Businesses

Indicators for monitoring implementation

N/A

Public costs

Lyon conurbation: €2.9 thousand million; Nimes Montpellier: €1.6 thousand million

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions, improved air quality

Authorities in charge of implementation, monitoring and evaluation of results

DGITM

Available evaluations

N/A

8. Improvement of rail provision for major ports (Measure T.8)

Reference texts

- Law of 4 July 2008
- Grenelle 1, Article 11(II)
- National rail freight commitment

Date of entry into force

September 2009

Description

Axis 7 of the national rail commitment: improving rail service provision for the major ports.

The aim is to double the market share of rail freight for routes to and from the ports. To that end, the State will support the development of port capacities and will create the conditions for an efficient land service to be provided for the major French seaports using high-volume modes of transport, rail and road, while respecting continental and estuarine aquatic environments. Rail service provision between the ports and their hinterland must thus be markedly improved by developing lines dedicated to freight and taking it into account in the context of projects to

improve the mainline network or create new sections. The target is to shift 2.2 thousand million t.km of traffic a year, i.e. 400 000 fewer HGVs.

Type of measure

Planning

Targeted by measure

Businesses

Indicators for monitoring implementation

Establishment of local rail operators in the major ports

Public costs

Not available

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions, improved air quality

Authorities in charge of implementation, monitoring and evaluation of results

DGITM

Available evaluations

No evaluations available to date

9. Modernisation of train path management (Measure T.9)

Reference texts

- Grenelle 1, Article 11(II)
- National rail freight commitment

Date of entry into force

September 2009

Description

Axis 8 of the national rail commitment: modernising train path management. This involves improving the service provided by RFF (French rail operators' network) to those requesting authorised rail freight paths in order to integrate them into industrial and commercial processes, while including the necessary network repair work. A client service will be established at RFF. It will make it possible to supervise train paths on every route and consult with clients on the organisation of work. Financial commitments concerning frequency and quality targets will also be made. The aim is to improve journey times and adhere to freight train timetables.

The rail performance contract between the State and RFF has the aim of modernising infrastructure and provides for ways of developing the network's commercial offer, so as to improve quality, services and safety, leading to better shift of passengers and freight.

Type of measure

Negotiation of quality contracts

Targeted by measure

Businesses

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions, improved air quality.

Authorities in charge of implementation, monitoring and evaluation of results

DGITM

Available evaluations

Negotiations on a framework agreement and quality contracts have been initiated by RFF with Fret SNCF, Lorry Rail and ECR.

10. Sea motorways (Measure T.10)

Reference texts

Grenelle 1

Date of entry into force

2010

Description

The State will support, together with the various parties concerned, the development of sea motorway routes on the Atlantic side between France, Spain and Portugal and on the Mediterranean side between France, Spain and Italy so as to offer alternatives to crossing the Pyrenees and the Alps. The aim is to enable a modal shift of between 5% and 10% of the traffic concerned. The State will be able to support these projects, in particular, through public service obligations and, if necessary, through financing.

A sea motorway started operating in September 2010. It links the ports of Nantes and Gijon (Spain)[134].

Type of measure

Financial incentive

Targeted by measure

Businesses

Indicators for monitoring implementation

Number of lines opened

Public costs

Not available

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions, improved air quality

Authorities in charge of implementation, monitoring and evaluation of results

DGITM

Available evaluations

No evaluations available to date

[134] More details are available at the following addresses: http://www.developpement-durable.gouv.fr/L-autoroute-de-la-mer-entre-Nantes.html and http://www.developpement-durable.gouv.fr/spip.php?page=article&id_article=16141.

11. River port reform project (Measure T.11)

Reference texts

Port Reform Law of 4 July 2008

Date of entry into force

2008

Description

Reform of the ports was initiated through the Port Reform Law of 4 July 2008, with the aim of improving their competitiveness, capacity and multi-modal provision of service. In this context, the new bodies governing the main seaports have been put in place and these ports have adopted their strategic projects, which provide for significantly increased overall investment, of around €2.5 thousand million for the period 2009-2013. The State is supporting these efforts with a budget of €174 thousand million, which doubles, for the period 2009-2013, the appropriations under the State-Region Project Contracts. In 2009 almost €50 thousand million in appropriations were added under the economy relaunch plan. These strategic projects will enable the ports to develop new infrastructure to improve their hinterland service provision and also contribute to the emergence of new services, such as local rail operators. Thus, the first French local rail operator is port-based. It is located at La Rochelle.

Type of measure

Planning

Targeted by measure

Seaports

Indicators for monitoring implementation

Not available

Public costs

€224 million

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions, improved air quality

Authorities in charge of implementation, monitoring and evaluation of results

DGITM

Available evaluations

No evaluations available to date

12. Targets contract between VNF and the State (Measure T.12)

Reference texts

2009 annual performance contract

Date of entry into force

2010

Description

The State will continue its efforts to modernise the river network known as the Magistral, within the framework of the targets and performance contract 2010-2013 with French Inland Waterways (VNF). This investment programme is part of the follow-up to the 2009 annual performance contract concluded on 2 March 2009.

Type of measure

Target contract

Targeted by measure

River transport

Indicators for monitoring implementation

Investment made

Public costs

Not available

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions, improved air quality

Authorities in charge of implementation, monitoring and evaluation of results

DGITM

Available evaluations

No evaluations available to date

13. Seine Nord Europe canal (Measure T.13)

Reference texts

- Grenelle 1, Article 10(V)
- Public utility declaration of 11 September 2008

Date of entry into force

Entry into service: 2016

Description

The Seine Nord Europe canal project consists in creating a new waterway 106 km in length, in European class Vb, linking the Oise, at Compiègne (60) and the Dunkerque Escaut canal, at Aubencheul-au-Bac (near Cambrai - 59). It will, in particular, allow navigation by convoys pushed by two barges loaded on three container levels.

The main aims of this project are:
1. To contribute to a rise in river traffic, in particular due to the modal shift from road and by encouraging inter-modality with rail and road;
2. To improve business competitiveness, spatial planning and creation of jobs and added value and to enable European logistics to be restructured to the advantage of the Greater Paris Basin and Nord-Pas-de-Calais within a spatial planning rationale.
3. To develop and improve the competitiveness of French seaports by structuring and expanding their hinterland;
4. To make the most of the multi-activity nature of the waterway, in particular hydraulic advantages and tourism activities.

Type of measure

Infrastructure

Targeted by measure

Businesses

Indicators for monitoring implementation

N/A

Public costs

The project, with a cost of €4.2 thousand million, will be co-financed under a public-private partnership contract, by the European Union, territorial authorities and the State.

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions, improved air quality.

Authorities in charge of implementation, monitoring and evaluation of results

DGITM

Available evaluations

Studies concerning the preliminary draft[135].

14. HGV eco-tax (Measure T.14)

Reference texts

Grenelle 1, Article 11(VI); LFI (Initial Finance Law) 2009; Decrees 2009-1589 and 2009-1588

Date of entry into force

Scheduled for 2012

Description

In accordance with the conclusions of the Environment Round Table, introduction of a kilometric 'eco-charge' seeks to make HGVs pay for use of the unassigned national road network (currently free-of-charge) and routes in Departments or municipalities that are liable to see a significant shift of traffic due to existing or future toll roads. Grenelle 1 established the principle of its introduction and the amount paid being charged to the beneficiary of the transport service. The Finance Law for 2009 specified the implementing procedures.

Article 11(VI) of Grenelle 1 states: '*The purpose of this eco-tax will be to finance transport infrastructure projects. To this end, the proceeds from this taxation will be allocated each year to the Agency for financing of France's transport infrastructure as concerns the national road network. The State will retrospectively assign territorial authorities tax proceeds equating to the amounts collected for use of the road network in their ownership, after deducting relevant costs incurred.'*

Due to the complexity of the mechanism to be introduced, the principle of calling on a third party, under a public-private partnership contract, to undertake financing, implementation, collection and

[135] More details are available at the following address:
http://www.vnf.fr/sne/article.php3?id_article=97&id_rubrique=7&lang=fr

automatic control of the HGV eco-tax has also been adopted. The award procedure was launched in March 2009 and led to the preferred supplier being selected on 11 January 2011. This procedure was annulled at first instance by the Cergy-Pontoise administrative court but the Government has appealed to the Council of State against this annulment. The French Government thus hopes to be able to restart the project in a few months' time in order to finalise the procedure and allow this charge to be introduced in 2013.

This measure seeks to encourage modal shift for long distances and rationalisation of the road mode for long and short distances.

Type of measure

Financial

Targeted by measure

Transport businesses

Indicators for monitoring implementation

Tax proceeds (revenue of around €800 million to €880 million a year for the French Transport Infrastructure Financing Agency (AFITF)).

Public costs

N/A

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

DGITM

Available evaluations

SceGES evaluation: the anticipated annual gain is 0.165 Mtoe in 2016 and 0.167 Mtoe in 2020.

15. Development of high-speed rail track network (Measure T.15)

Reference texts

Grenelle 1, Article 12(III)

Date of entry into force

2010

Description

To encourage inter-urban rail passenger transport, an alternative mode to road and air.

Creation of 2000 km of new high-speed track by 2020:

1. The southern Europe-Atlantic line, made up of a central section Tours-Bordeaux and three branches Bordeaux-Toulouse, Bordeaux-Hendaye and Poitiers-Limoges;

2. The Brittany-Pays de Loire line;

3. The Mediterranean arc, with the Nîmes and Montpellier bypass, the Montpellier-Perpignan line and the Provence-Alpes-Côte d'Azur line;

4. Service provision for eastern France with the completion of the Paris-Strasbourg line and the three branches of the Rhine-Rhone line;

5. The southern link for high-speed lines in Ile-de-France;

6. French access points to the Lyon-Turin international rail link tunnel, which is the subject of a Franco-Italian treaty.

Possibility of an additional programme of 2500 km: in particular, Paris-Orléans-Clermont-Ferrand-Lyon, Paris-Amiens-Calais and Toulouse-Narbonne lines; an East-West exchange (*'barreau'*) and an exchange improving service provision for Béarn and the Bigorre.

Type of measure

Finance/planning

Targeted by measure

Private individuals

Indicators for monitoring implementation

Kilometres of high-speed track initiated

Public costs

€16 thousand million between now and 2020

Sectors concerned

Transport

Cross-effects

Improved air quality; environmental impact via footprint.

Authorities in charge of implementation, monitoring and evaluation of results

DGITM

Available evaluations

No evaluations available to date

16. Development of reserved public transport routes (Measure T.16)

Reference texts

Grenelle 1, Article 13(III) and Article 14

Date of entry into force

2009

Description

A programme has been implemented to increase, by 2020, the extent of Reserved Public Transport Routes (TCSP) to 1 800 kilometres outside Ile-de-France, compared with 329 km today.

An initial project call was launched in 2009 under the Sustainable Cities programme, aimed at local authorities with work starting before the end of 2011. The State committed €810 million to co-finance 52 projects run by 37 authorities, covering more than 400 kilometres of new routes in total.

Encouraged by this initial success, the Government launched a second project call in 2010. It takes up the main provisions of the previous call and concerns Reserved Public Transport Route projects for which work will be initiated between the start of 2011 and the end of 2013. The results of this project call were published on 9 February 2011 and 78 projects were selected, accounting for 622 km of routes in 54 conurbations.

As regards Ile-de-France, an agreement between the State and the Region was concluded in January 2011. It provides for an investment programme of €32.4 thousand million between now and 2025 to modernise the existing network and create an automatic metro link.

Type of measure

Planning

Targeted by measure

Territorial authorities, private individuals

Indicators for monitoring implementation

Number of projects and kilometres achieved

Public costs

For project calls outside Ile-de-France: €2.5 thousand million between now and 2020, including €810 million in 2009; Ile-de-France: €32.4 thousand million between now and 2025.

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions, improved air quality

Authorities in charge of implementation, monitoring and evaluation of results

DGITM

Available evaluations

No evaluations available to date

17. Employer responsibility for half of the cost of public transport season tickets (Measure T.17)

Reference texts

Article 20 of LFSS (Social Security Finance Law) 2009

Date of entry into force

1982, then extended in 2009

Description

Since 1 January 2009 businesses have been made responsible for half of the cost of their employees' public transport season tickets. This measure had previously existed only in Ile-de-France (since 1982).

Type of measure

Regulatory

Targeted by measure

Businesses, private individuals

Indicators for monitoring implementation

N/A

Public costs

Not available

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions, improved air quality

Authorities in charge of implementation, monitoring and evaluation of results

DGITM

Available evaluations

N/A

18. Tax on company vehicles - CO_2 basis (Measure T.18)

Reference texts

Article 1010 et seq. of the General Tax Code

Date of entry into force

Based on CO_2 since 2006

Description

Since 2006 the amount of annual tax on company vehicles has been established in line with the vehicle's greenhouse gas emissions, rather than its engine rating for tax purposes as previously.

Companies are liable for this tax in relation to the vehicles that they use in France, whatever their State of registration, or that they own and are registered in France, where these vehicles are registered in the private vehicle category.

The applicable tariff for vehicles subjected to Community type approval and first put into circulation on or after 1 June 2004, which had not been owned or used by the company before 1 January 2006, is as follows:

Carbon dioxide emission rate (grammes per kilometre)	**Applicable tariff per gramme of carbon dioxide**
Less than or equal to 100	2 EUR
More than 100 and less than or equal to 120	4 EUR
More than 120 and less than or equal to 140	5 EUR
More than 140 and less than or equal to 160	10 EUR
More than 160 and less than or equal to 200	15 EUR
More than 200 and less than or equal to 250	

More than 250	17 EUR 19 EUR

For other vehicles the applicable tariff is as follows:

Engine rating for tax purposes (horse power)	**Applicable tariff**
Less than or equal to 4	750 EUR
Between 5 and 7	1 400 EUR
Between 8 and 11	3 000 EUR
Between 12 and 16	3 600 EUR
More than 16	4 500 EUR

These provisions and scales are regularly reviewed within the framework of the draft finance laws.

Type of measure

Financial/tax incentive

Targeted by measure

Businesses

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of the Budget, Public Accounts, the Civil Service and State Reform

Available evaluations

N/A

19. Automobile bonus-malus (Measure T.19)

Reference texts

- Decree No 2007/1873 of 26 December 2007 establishing financial support for the acquisition of clean vehicles, as updated
- Article 1011 bis of the General Tax Code

Date of entry into force

2008

Description

The ‘ecological bonus-malus’ mechanism is the first concrete application of the ‘price signal’ proposed by the Environment Round Table. This mechanism, based on the CO_2 emissions per km of new vehicles, rewards purchase of vehicles with the lowest CO_2 emissions and penalises acquisition of vehicles with the highest emissions.

Type of measure

Economic instrument, financial/tax incentive

Targeted by measure

Buyers of vehicles and automobile industry professionals

Indicators for monitoring implementation

Average emissions of new vehicles registered

Public costs

The success of the mechanism is accompanied by a budget imbalance, with income from the malus being significantly less than the amount of financial support granted. Due to its success, the bonus-malus showed a deficit for the 2009 financial year, of around €525 million. The mechanism is also likely to show a deficit in 2010, of around €490 million.

The changes to the mechanism approved for the years 2011 and 2012 should make it possible gradually to restore the budget balance of the measure.

Sectors concerned

Transport

Cross-effects

Accelerated renewal of the automobile stock; fuel consumption gains

Authorities in charge of implementation, monitoring and evaluation of results

MEEDDM and MEIE

Available evaluations

SceGES joint evaluation with Measure T.21 'European regulation on CO_2 emissions of new vehicles': implementation of these measures concerning new-vehicle performance makes it possible to avoid an annual 6.1 Mt eq CO_2 in 2020 and save 0.68 Mtoe.

20. European regulation on CO_2 emissions of new vehicles (Measure T.20)

Reference texts

Regulation (EC) No 443/2009

Date of entry into force

2009

Description

The main obligations that apply to manufacturers with regard to reducing CO_2 emissions are outlined at European level by Regulation (EC) No 443/2009. This directly applicable act, limits CO_2 emissions of passenger cars and requires manufacturers to make a phased reduction in CO_2 emissions of new vehicles to 130 gCO_2/km between now and 2015 (65% of the fleet in 2012, 74% in 2013, 80% in 2014 and 100% in 2015). It also sets a new long-term target of 95 gCO_2/km in 2020 and establishes a similarly-phased mechanism of penalties in the event of emission limits being exceeded.

The Commission will, from 2013, consider the modalities for reaching that target. Additional measures also accompany this Regulation in order to achieve a supplementary reduction of 10 gCO_2/km: presence of a dashboard tyre deflation indicator, energy labelling of tyres, limitation of tyre resistance to wear, etc.

In addition, with regard to light utility vehicles, a new Regulation on the average emissions of these vehicles is to be published in the first half of 2011; phased implementation is scheduled between 2014 and 2017, to reduce the average emission value of these vehicles to 175 gCO_2/km. An objective value of 147 gCO_2/km has been set for 2020.

Type of measure

Directly applicable European regulation

Targeted by measure

Automobile manufacturers

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions, improved air quality

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of Sustainable Development

Available evaluations

SceGES joint evaluation with Measure T.19 'Automobile bonus-malus': implementation of these measures concerning new-vehicle performance makes it possible to avoid an annual 6.1 Mt eq CO_2 in 2020 and save 0.68 Mtoe.

21. Directive 2009/33 on clean road transport vehicles (Measure T.21)

Reference texts

- Directive 2009/33/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of clean and energy-efficient road transport vehicles.

- Law 2011-12 of 5 January 2011 concerning various provisions adapting legislation to European Union law (Article 12).

Date of entry into force

2011

Description

This Directive requires contracting authorities (*pouvoirs adjudicateurs*), contracting entities (*entités adjudicateurs*) as well as certain operators to take into account lifetime energy and environmental impacts, including energy consumption and emissions of CO_2 and of certain pollutants, when purchasing road transport vehicles.

The Directive applies to all vehicles bought in the context of public procurement and delegated public passenger transport services by road and rail. On the other hand, it is relatively flexible as regards the methods to be used. While it requires account to be taken of energy and environment criteria when purchasing vehicles, it does not impose emission ceilings or a minimum energy performance, and allows a choice between two methods:
1. Setting technical specifications for the energy and environmental impacts of the vehicle;
2. Including these impacts in the purchasing decision, either as award criteria or through their monetisation.

The solution adopted in domestic law has been to transpose all of the options contained in the Directive and leave the choice to purchasers.

The possibility of exempting certain special-use vehicles is provided for and only amounts exceeding European contract thresholds are covered.

Type of measure

Transposed European directive

Targeted by measure

Public purchasers and delegated public services

Indicators for monitoring implementation

N/A

Public costs

Not available

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of Sustainable Development

Available evaluations

N/A

22. Single European Sky (Measure T.22)

Reference texts

European Regulations of 2004. Two new Regulations were published in November 2009.

Date of entry into force

2004

Description

Construction of the Single European Sky, initiated through the European regulations of 2004, has made it possible to launch an ambitious programme to restructure air navigation services and improve air traffic management in Europe. The SESAR programme, the technological pillar of the Single European Sky, aims to develop, for the next 30 years, a safe and efficient new-generation European air traffic management system that responds to the challenges of sustainable development.

France will be a major contributor to the SESAR European programme, which involves the Directorate of Air Navigation Services (DSNA), Airbus, Thalès and EGNOS, the satellite-guided air navigation programme involving CNES (national space study centre) and DSNA and is preparing for GALILEO.

Type of measure

Regulatory, research, planning

Targeted by measure

Entire aeronautics sector

Indicators for monitoring implementation

Average en-route flight efficiency

Public costs

Not available

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

DGAC (Directorate-General for Civil Aviation)

Available evaluations

Not available

23. Clean Sky initiative (Measure T.23)

Reference texts

Council Regulation (EC) No 71/2008 of 20 December 2007 setting up the Clean Sky Joint Undertaking

Date of entry into force

2008

Description

Clean Sky is a European joint technological initiative concerning research in the aeronautics field. It brings together a significant number of European actors, notably, Airbus, Thalès, Eurocopter, Safran, Dassault and Rolls Royce. Its aim is to bring to more rapid fruition the breakthrough technologies needed to reduce significantly the environmental impact of aviation. Clean Sky envisages the implementation of collaborative technological demonstration platforms at European level, which should, over time, validate the potential of certain technologies to meet the aim of the Advisory Council for Aeronautical Research in Europe (ACARE), which advocates a 50% reduction in the CO_2 emissions of aircraft by 2020, compared with those of 2000.

Type of measure

Research

Targeted by measure

Industrial operators in the aeronautics sector

Indicators for monitoring implementation

N/A

Public costs

This initiative is scheduled to last seven years (2008-2014) with total financing of €1.6 thousand million, of which 50% is contributed by the European Commission and 50% by industry operators.

Six calls have been launched since mid-2009, equating to more than €90 million in support for various research activities. A seventh call is currently underway.

Sectors concerned

Transport

Cross-effects

Reduced perceived noise, reduced NO_x emissions

Authorities in charge of implementation, monitoring and evaluation of results

DGAC

Available evaluations

N/A

24. Mobility Week (Measure T.24)

Reference texts

LAURE (Law on air and rational energy use), December 1996

Date of entry into force

1996

Description

Further to the Air Law (LAURE, December 1996), it had been decided to organise a 'car-free' day in France ('*En ville sans ma voiture*'). In 2000 this initiative was repeated on a European scale ('European Mobility Week'). In 2009 the Ministry of Sustainable Development renamed it and merged it with Road Safety Week to create 'Mobility and Road Safety Week'.

Mobility and Road Safety Week takes place each year from 16 to 22 September. This operation is coordinated by the Ministry of Sustainable Development in partnership with ADEME, *GIE Objectif transport public* (Public Transport EIG), FUB (Bicycle Users' Federation) and *Club des villes et territoires cyclables*' (Cycle Towns and Territories Club). The 2010 version particularly highlighted the 'travelling well together' ('*bien circuler ensemble*') principle. The aim is to generate behavioural changes in relation to travel.

Type of measure

Information, awareness-raising

Targeted by measure

General public

Indicators for monitoring implementation

Number of actions organised

Public costs

The Ministry of Sustainable Development finances communication about these days (Internet site, posters) and it is local organisers that finance their actions. The Ministry of Sustainable Development organises this Week and sets up the Internet site www.bougezautrement.gouv.fr, which enables organisers to register their action.

ADEME determines the mobility and travel messages and rolls them out via all of the communication media disseminated by the Ministry to organisers registered for the Week. These communication tools are made available free of charge to participants registered for the Mobility Week; in 2010 this involved posters.

The ADEME CO_2 and travel comparators ('*calculette Eco-déplacement*' (eco-travel ready reckoner) and '*comparateur Eco-déplacement*' (eco-travel comparator)) are also made available to organisers for Internet links.

Sectors concerned

Transport

Cross-effects

Reduced urban air pollution linked to traffic; reduced noise

Health benefits (adoption of non-motorised and active modes, namely walking and cycling)

Better road safety (prevention)

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of Sustainable Development, ADEME

Available evaluations

600 actions were organised throughout France in 2010 (780 in 2009) but the assessment of the 2010 version is not yet available.

The 2008 and 2009 assessments showed that the main organisers were:
1. Government and public services 34%
2. Associations 27%
3. Towns and other territorial authorities 21%
4. Businesses 13%
5. Businesses operating a transport network 5%

The actions concerned the following axes:
1. Travel schemes, inter-modality, alternatives to the car 20%
2. Public transport 17%
3. Motorised two-wheelers 12%
4. Cycling 27%
5. School travel 8%
6. Eco-driving 16%

25. Car-sharing (Measure T.25)

Reference texts

Grenelle 1, Article 13(I), Article 48

Date of entry into force

2009

Description

The State will, in the context of urban development schemes, encourage the development of car-sharing and will provide the legal certainty it needs.

A CERTU (Centre for the Study of Urban Planning, Transport and Public Facilities) study is being carried out concerning mechanisms for encouraging the use of alternatives to private vehicles in European countries, including car-sharing; the study has been finalised but has not yet been made public.

A working group organised by the Ministry of Sustainable Development, consisting of representatives of DSCR (Road Safety and Traffic Directorate), DGITM, the Interior Ministry, ADEME and GART (Group of Authorities responsible for Transport), is considering potential ways of encouraging the development of this mode of travel. A guide will be produced in the subject.

Type of measure

Study

Targeted by measure

Private individuals, businesses

Indicators for monitoring implementation

N/A

Public costs

Study appropriations to produce a guide: €50 000

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of Sustainable Development

Available evaluations

N/A

26. Car club (Measure T.26)

Reference texts

Grenelle 1, Article 13; Grenelle 2, Article 54

Date of entry into force

2011

Description

Aim: to encourage the development of car club activity

Car club activity is defined as making a fleet of motorised land transport vehicles available to subscribing users on a shared basis. Each subscriber may have access to a vehicle, without a driver, for the journey of his or her choice and for a limited period.

A ‘car club’ label is currently being defined at national level and will be the subject of a decree stating the terms of its award and use. Town hall authorities may reserve parking spaces for vehicles with this label.

A CERTU study concerns mechanisms for encouraging the use of alternatives to private cars in European countries, including car clubs. The study has been finalised but has not yet been made public.

Type of measure

Regulatory (publication of a decree), study

Targeted by measure

Professionals and territorial authorities

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

DGITM

Available evaluations

N/A

27. Development of non-motorised and active modes (Measure T.27)

Reference texts

- Decree of 1 August 2008
- Grenelle 1, Article 13
- Grenelle 2, Articles 51 and 57

Date of entry into force

2008/2009/2010

Description

Active transport and non-motorised forms of mobility are encouraged through various measures:

1. Encouragement for growth in cycle use, particularly by developing support for territorial authorities: account taken of complementarity between cycling and public transport under 'urban transport' project calls, improved cycle storage facilities at stations on reserved public transport routes successful under the first project call are eligible for subsidy; under the second project call, launched on 4 May 2010, cycle paths running along or close to the route may also be subsidised.

2. The opportunity for combined towns and cities, conurbations or municipalities to create self-service cycle services.

3. A requirement for those constructing buildings for residential or service use, equipped with parking spaces, to make provision for secure cycle parking.

4. Effective implementation of the provisions of Article L.228-2 of the Environment Code, which sets a requirement to provide cyclist and pedestrian routes when carrying out improvements to urban routes, will be evaluated.

5. CERTU study concerning mechanisms for encouraging the use of alternatives to private cars in European countries, including cycle use. The study has been finalised but has not yet been made public.

Type of measure

Financial incentive under calls for urban transport projects and studies

Targeted by measure

Businesses

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions, improved air quality

Authorities in charge of implementation, monitoring and evaluation of results

DGITM

Available evaluations

N/A

28. CO_2 display and OEET (Measure T.28)

Reference texts

- Mission statement of 10 December 2008
- Grenelle 1, Article 11(VI)
- Grenelle 2, Article 228(II)

Date of entry into force

2008

Description

Article 11 of Grenelle 1 provides for the introduction of mandatory display of greenhouse gas emissions of services transporting goods or passengers. In order to determine a common methodology for evaluation of the greenhouse gas emissions of transport services, the Energy, Environment and Transport Observatory (OEET) has been set up.

The OEET brings together representatives of the different stakeholders belonging to the five panels: NGOs, local authorities, transport operators and shippers, trade unions and the State (CGEDD (General Council for the Environment and Sustainable Development) and DGITM).

The tasks of the OEET are, first, 'to evaluate the greenhouse gas emissions of transport services using a common methodology enabling mandatory display of these emissions and production of eco-comparators. They will subsequently be extended to cover other types of nuisance, notably air pollution and noise pollution'.

The OEET must also 'propose methods for evaluating the impact, in terms of greenhouse gas emissions, of projects to improve or create transport infrastructure. They will then be extended to cover investment programmes'.

Type of measure

Legislative, regulatory, information

Targeted by measure

Goods and passenger transport

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of Sustainable Development

Available evaluations

N/A

29. Voluntary commitment 'CO2: transport carriers make a commitment' (*CO_2, les transporteurs s'engagent*') (Measure T.29)

Reference texts

- Grenelle 1, Article 11(VI)
- Charter of 16 December 2008

Date of entry into force

2008

Description

This commitment is based on a voluntary initiative. It offers a methodological framework to businesses transporting goods by road (TRM) that wish to commit themselves, for a three-year period, on the basis of a plan of specific and individualised actions, to achieving an overall target for reducing their fuel consumption and therefore their carbon dioxide (CO_2) emissions. The actions are based around four axes: vehicle, fuel, driver and flow management. This initiative meets the Round Table requirements since it seeks to improve the environmental performance of the sector. Launched in March 2007, the initiative was deployed at regional level on 16 December 2008.

Type of measure

Voluntary agreement

Targeted by measure

Road passenger transport businesses

Indicators for monitoring implementation

Number of signatory businesses, number of vehicles involved

Public costs

N/A

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions, improved air quality

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of Sustainable Development, ADEME

Available evaluations

At the end of 2010, 223 businesses had signed up to this initiative (compared with 66 at the end of 2009), equating to more than 44 000 vehicles (against a target of 50 000 vehicles at the end of 2012). The target reductions agreed by that date equate to a reduction of around 8% in consumption and emissions for an equal volume of activity, or around 260 kteqCO_2.

30. Voluntary commitment by the FNTV (Measure T.30)

Reference texts

Charter of 14 October 2009

Date of entry into force

2009

Description

The National Passenger Transport Federation (FNTV) has signed a charter to develop road safety and sustainable development actions, in particular with support from the Ministry. The aim of this charter is to organise a working relationship between the various partners (FNTV, MEEDM, but also ADEME and the National Health Insurance Fund for Employees (CNAMTS)) to promote environmental and road safety objectives, strengthening and deploying actions already introduced by the sector and encouraging the deployment of further actions of simultaneous benefit to passengers, businesses, employees and the environment. To this end, it is planned, in particular, to extend the 'CO_2: transport carriers make a commitment' initiative (applicable to road freight transport) to road passenger transport.

Type of measure

Voluntary agreement

Targeted by measure

Road passenger transport businesses

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of Sustainable Development, ADEME

Available evaluations

N/A

31. Voluntary commitment in the aviation sector (Measure T.31)

Reference texts

Agreement of 28 January 2008

Date of entry into force

2008

Description

On 28 January 2008 all actors in the French air transport sector undertook, in an agreement, to continue and intensify their efforts towards increasingly environment-friendly air transport.

Under this agreement, each actor has undertaken to carry out specific actions to combat noise pollution, preserve air quality and combat global warming, which are the three main issues concerning sustainable air transport.

The commitments include the following, in particular:

1. To continue fleet modernisation. Air France has undertaken regularly to replace a significant part of its fleet by newer aircraft with lower CO_2 emissions.

2. To improve the environmental performance of freight aviation: a charter was signed on 28 January 2009 by 49 businesses, representing around 80% of the sector workforce, and a barometer survey is published regularly to monitor a number of indicators.

3. To inform passengers about the environmental impact of aviation: airline companies have undertaken to make a CO_2 calculator available to users, either by means of direct access to the company site or by creating a link to the calculator available on the DGAC site.

4. To improve the environmental performance of airports: new structures created in compliance with HQE (high environmental quality) standards, setting-up of a car-sharing site for Aéroports de Paris (ADP) platforms, a commitment by ADP to acquire a significant number of electrical vehicles to replace the vehicle fleet at airports, etc. A good practice guide was published by the UAF (French Airports Union) on 28 January 2009.

Type of measure

Voluntary agreement

Targeted by measure

Professionals, private individuals, businesses

Indicators for monitoring implementation

An annual report is published during February each year. In addition, the FNAM (National Freight Aviation Federation) barometer survey allows the indicators put in place for the airline companies to be monitored on a regular basis.

Public costs

Information not available

Sectors concerned

Transport

Cross-effects

Reduced noise impact around airports and improved local air quality

Authorities in charge of implementation, monitoring and evaluation of results

DGAC

Available evaluations

- FNAM barometer survey: www.observatair.fr
- Annual report on the agreement of 28 January 2010

32. Travel schemes (Measure T.32)

Reference texts

- Grenelle 1, Article 13
- Grenelle 2, Article 16

Date of entry into force

2009/2010

Description

The Urban Travel Schemes (PDU) introduced by the Framework Law on Internal Transport of 30 December 1982 set out the principles for organising transport of persons and goods and traffic flow and parking in urban transport areas. Since the Law of 30 December 1996 on air and rational energy use, it has been mandatory to draw up an Urban Travel Scheme for urban transport areas included, in whole or in part, in conurbations of more than 100 000 inhabitants.

Under the Schemes, State support for travel schemes of businesses, administrations, schools or activity zones has been reaffirmed, in the context of Article 13 of Grenelle 1. Grenelle 2 (Article 63) also states that Urban Travel Schemes, when being drawn up or revised, must now include an evaluation of anticipated avoidance of CO_2 emissions resulting from implementation of the scheme. The requirement extends to all greenhouse gases from 2015.

Type of measure

Planning

Targeted by measure

Territorial authorities, businesses

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of Sustainable Development

Available evaluations

N/A

33. AFITF (Measure T.33)

Reference texts

Decree of 26 November 2004

Date of entry into force

2004

Description

The French Transport Infrastructure Financing Agency (AFITF) plays a central role in financing the transport pillar of the Environment Round Table. AFITF, a public establishment created by Decree of 26 November 2004 with a purely financial purpose, makes the State's contribution to financing of transport infrastructure projects. Its intervention takes the form of investment subsidies or repayable loans.

The expenditure includes a road strand with a decreasing share (€880 million to €1 100 million/year) and a road alternatives strand that is increasing (from €1 400 million to more than €2 000 million/year).

AFITF is a tool for modal shift towards means with the lowest greenhouse gas emissions: It enables road transport resources to be assigned to multi-modal programmes.

Type of measure

Governance

Targeted by measure

State

Indicators for monitoring implementation

N/A

Public costs

State balancing subsidy (€900 million to €1 200 million/year)

Sectors concerned

Transport

Cross-effects

Reduced greenhouse gas emissions, improved air quality due to modal shift

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of Sustainable Development

Available evaluations

N/A

IV. INDUSTRIAL SECTOR

Summary

1. EU ETS Directive (Measure I.1)

Reference texts

Revised European Directive 2003/87/EC establishing a market for trading in emissions permits within the European Union

Date of entry into force

1 January 2005; revised in December 2008

Description

European Directive 2003/87/EC establishing a market for trading in emissions permits within the European Union (EU ETS Directive) introduced, from 1 January 2005, a cap and trade system for greenhouse gas emissions from the European Union's main industrial and energy activities. In 2010 964 installations in France, operated by 570 businesses in both the energy sector and the industrial sector, came under this Directive.

After a test period from 2005 to 2007, the system became fully operational in 2008, for an initial period of five years until 2012. During the test period, then the initial period, each Member State drew up a National Allocation Plan (NAP) for allowances, followed by an allocation of these allowances to businesses. In France the allowances (including those initially placed in the New

Entrant Reserve) totalled 156.51 $MtCO_2$ a year[136] for the period 2005-2007 and 133.4 $MtCO_2$ a year for the period 2008-2012.

Every business is required to deliver an annual amount of allowances equivalent to its verified emissions and businesses subject to the Directive may then trade these allowances on the market for emissions permit trading. In order to meet this obligation, they may also use credits issued under the clean development mechanisms established by the Kyoto Protocol. In France, during the period 2008-2012 businesses are authorised to use these project credits for up to 13.5% of their allocations for the period.

In France, emissions by sectors that come under the EU ETS Directive amounted to 131.3 $MtCO_2$ in 2005, 127 $MtCO_2$ in 2006, 126.6 $MtCO_2$ in 2007, 124.1 $MtCO_2$ in 2008 and 111.1 $MtCO_2$ in 2009[137].

The revised EU ETS Directive was adopted by the European Parliament and by the Council in December 2008 as part of adoption of the Energy-Climate Package. This made it possible to:

- expand its scope. The system will integrate air transport activities from 2012. For the period 2013-2020 the system will be expanded to cover new greenhouse gases and new industrial sectors from 2013. It will cover 1 174 installations;
- harmonise the methods of allocating allowances to industrial operators with the use of benchmarks for installations overall;
- provide for a mechanism to combat the risk of carbon leakage.

The revised Directive also allows a phased roll-out of auctioning of allowances instead of their free-of-charge allocation.

Type of measure

Market in allowances

Targeted by measure

Businesses

Indicators for monitoring implementation

-

Public costs

The New Entrant Reserve of free allowances proved inadequate to subsidise the needs of new installations and expansions of installations and will be supplemented by market acquisition of

[136] Amounts envisaged under the NAPs for allowances validated by the Commission.
[137] Source: CITL (Community Independent Transaction Log).

allowances. This initiative will have no impact on the emissions cap for sectors subject to allowances or the European Union's global emissions cap.

Sectors concerned

Industrial sector, energy production, transport (air)

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL

Available evaluations

The EU ETS Directive will make it possible to strengthen targets for reducing greenhouse gas emissions in order to reach the goal set by the March 2007 European Council of a 20% reduction in EU overall emissions in 2020 compared with 1990 levels: emissions by the sectors that come under the EU ETS Directive will thus be reduced by 21% between 2005 and 2020.

2. ADEME aid for decision-making to support energy diagnoses (Measure I.2)

Reference texts

ADEME Management Board Discussion No 09-5-4 of 7 October 2009, amended by Discussion No 10-2-6 of 28 April 2010, amended by Discussion No 10-3-4 of 30 June 2010

Date of entry into force

1990s

Description

The Agency's mechanism for supporting studies extends across all subject areas (waste, air pollution, noise, energy efficiency, renewable energies, polluted sites and land and transport) and

horizontal initiatives: environmental management, ecodesign, greenhouse gases, urban development, etc.). This mechanism is organised around three complementary levels: pre-diagnosis, diagnosis and project design, with different bases. The aid rates vary according to the status of the contracting authority (non-competitive sector, small, medium-sized or large business), as summarised below (other than specific cases: agricultural businesses, etc). Studies arising out of a regulatory obligation are not eligible. Allocation of aid depends on the quality and exemplary nature of the projects.

		Maximum ADEME aid rate			
Category of service	ADEME basis ceiling	Non-competitive sector	Competitive sector	Subsidy for medium-sized business	Subsidy for small business
Pre-diagnosis	€5 000	70%	50%	60%	70%
Diagnosis	€50 000				
Project designs	€100 000				

Type of measure

Financial incentive

Targeted by measure

All contracting authorities (businesses in any sector, territorial authorities, property managers, etc.), other than private individuals and the State.

Indicators for monitoring implementation

In 2009 the total number of allocations of aid for decision-making - 8 200 - rose slightly. The amounts committed increased by nearly 30% to €31 million in aid, giving a total amount for studies financed of €97 million, after an increase of 40% between 2007 and 2008.

Public costs

€31 million in 2009 for all subject areas combined.

Sectors concerned

Industrial, residential, service, agricultural

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies

Authorities in charge of implementation, monitoring and evaluation of results

ADEME

Available evaluations

-

3. ADEME 'URE - Investment' aid (Measure I.3)

Reference texts

ADEME Management Board discussions, particularly the Annex to Management Board Discussion No 10-4-5 of 6 October 2010

Date of entry into force

Mechanism in existence since 1999, with periodic amendments (most recent: 6 October 2010)

Description

The ADEME 'URE (rational energy use) - Investment' aid system supports investment made in businesses (including agricultural businesses) to make energy savings in their production procedures.

The operations supported are demonstration or exemplary operations:

- demonstration operations are initial full-scale operational applications of new technologies, new procedures or innovative systems and savings resulting from R&D or transferred to a new sector;
- and exemplary operations are aimed towards rapid creation of national and regional references in the area of energy management and sustainable development, in an effort to bring about a genuine ripple effect.

Eligible investment is that intended to acquire equipment or modify existing processes or equipment in order to make energy savings. The ceiling on the aid basis is €1 million for exemplary operations and €5 million for demonstration operations, with the maximum rate of aid ranging from 20% to 40% depending on the size of the business (other than SMEs in the primary agricultural sector, for which the rate of aid is 60% with no aid basis ceiling).

Type of measure

Financial incentive

Targeted by measure

Businesses in all activity sectors

Indicators for monitoring implementation

Around 20 projects under the exemplary heading were supported in 2009, at a cost of €0.475 million and at an average rate of 6%. This low rate is explained, in particular, by the Community framework rules on State aid, which require, when setting up this system, that the amount of savings resulting from the supported investment during the first five years be deducted from the eligible basis. This method of calculation has generally resulted in the eligible investment basis being very significantly reduced, whereas the period of return on investment for the projects remains more than three years, which means that the investment decision is not easily triggered. The change in the framework arrangements towards a framework regime exempt from notification X 63/2008 in October 2010 should make it possible to overcome this obstacle.

Public costs

€0.475 million in 2010

Sectors concerned

Industry, agriculture

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

ADEME

Available evaluations

-

4. OSEO subsidised Green Loans (Measure I.4)

Reference texts

Amending Finance Law for 2010 No 2010-237 of 9 March 2010

Date of entry into force

July 2010

Description

Under Future Investments, the State entrusted OSEO with implementing, by the end of 2013, a new financing mechanism comprising two strands: Subsidised Green Loans and underpinning bank financing guarantees.

<u>Subsidised green loans</u>

They are intended to:

- finance competitive investment meeting the aim of taking account of environmental protection challenges;
- encourage marketing of products concerning environmental protection and reduction of energy consumption.

The programme must include tangible investment representing at least 60% of the overall programme amount. The amount of the loans is between €50 000 and €3 000 000 within a limit of the amount of aid authorised under European aid regulations (so called *de minimis* aid). No guarantee is required against the assets of the business or the property assets of the director. Provision is made for a retention payment of 5% of the initial loan amount, refunded after reimbursement of the loan. The loan period is seven years, in arrears, with a 24-month grace

period on the capital. The rate is subsidised fixed or variable (convertible to fixed-rate), increased by additional remuneration based on change in turnover.

Underpinning bank financing guarantees

The loan must be systematically linked to bank support lasting a minimum of five years or contributions from shareholders, venture capital companies or equity loans, equal to one euro of Subsidised Green Loan for one euro of external financing. In order to encourage the involvement of banking institutions in underpinning Green Loans granted to SMEs, an OSEO guarantee mechanism for bank support has been set up, up to 60% within a limit of €1 500 000.
The linked bank financing is:

- Bank support at least equivalent in amount to the Green Loan
- Minimum period of five years
- Covering the same programme, carried out in the last six months

Type of measure

Financial incentive

Targeted by measure

Independent businesses more than three years old and with fewer than 5 000 employees

Indicators for monitoring implementation

Number of loans granted

Public costs

Total budget of €500 million (green loans: €300 million, loan guarantees: €200 million)

Sectors concerned

Small and medium-sized businesses

Cross-effects

Support for SME development, reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

OSEO

Available evaluations

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5. Change in the regulatory framework: IED and rational energy use in installations classified for environmental protection (Measure I.5)

Reference texts

- Directive 2008/1/EC of 15 January 2008 concerning integrated pollution prevention and control
- Directive 2010/75/EC on industrial emissions (IED)
- Article 82 of Grenelle 2

Date of entry into force

- July 2010 (Grenelle 2)
- IED: 2012

Description

Directive 2008/1/EC of 15 January 2008 concerning integrated pollution prevention and control requires assurance that energy is used efficiently in installations in respect of certain industrial activities (energy industries, production and processing of metals, mineral industry, chemical industry and waste management).

This requirement is reinforced by Directive 2010/75/EC on industrial emissions (IED), which will apply in 2012 and makes the conclusions of the BREF (Best Available Technologies - BAT) mandatory, in particular, the BREF on energy efficiency and the energy conclusions of sectoral BREFs.

Lastly, at national level, Article 82 of Grenelle 2 added rational energy use to the interests protected by legislation on classified installations (ICPE).

With a view to implementing Article 82 of Grenelle 2 and preparing for application of the IED, a working group within the French administration is discussing the introduction of a joint mechanism for installations coming under the IED with regard to rational energy use, through a decree to be issued.

Type of measure

Regulatory

Targeted by measure

The decree to be issued is intended to apply to classified installations requiring authorisation that exist on the date of its publication, carry out the activities covered by Annex I to the IED, other than intensive poultry and pig rearing, and reach the capacity and output thresholds covered by this Annex.

Indicators for monitoring implementation

-

Public costs

N/A

Sectors concerned

Industry

Cross-effects

This change to the regulatory framework goes in the same direction as the greenhouse gas emission allowance trading scheme by reducing CO_2 emissions. However, energy efficiency and performance in terms of reducing CO_2 emissions are two different things, since some CO_2 emission reduction processes (biofuels, carbon storage, etc.) may ultimately worsen the energy efficiency of the processes. Similarly, application of economically efficient technical processes that reduce emissions of certain pollutants (SO_2, NO_x, heavy metals) may lead to a parallel increase in CO_2 emissions.

Authorities in charge of implementation, monitoring and evaluation of results

DGEC and DGPR (DG for Policies and Research) within MEDDTL, ADEME

Available evaluations

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6. Strengthening the social, environmental and societal responsibility of businesses (Measure I.6)

Reference texts

- Law No 2001-420 of 15 May 2001 on new economic regulations
- Article R225-105 of the Commercial Code
- Articles 224 and 225 of Grenelle 2

Date of entry into force

The provisions stated below and provided for by Article 225 of Grenelle 2 apply from the financial year ended 31 December 2011 in the case of businesses listed on a regulated market and from the financial year ended 31 December 2016 for all businesses concerned.

Description

Since Law No 2001-420 on new economic regulations, legislation has provided a framework for publication of social and environmental information by businesses. Information relating to climate challenges covers greenhouse gas emissions, efficiency of use of energy resources and renewable energy use (Article R225-105 of the Commercial Code). Grenelle 2 strengthens businesses' obligations with regard to social, environmental and societal responsibility and extends this obligation to new businesses, according to the thresholds to be established by decree.

The challenge is to enable investors (particularly so-called 'socially responsible investment' funds) and the various stakeholders to question businesses on their policy regarding societal responsibility:

- Article 224 of Grenelle 2 provides for an obligation on the part of managers of funds (UCITS) to indicate, in subscriber documents, how they take account of environmental, social and governance criteria in their investment policy, according to procedures to be defined by decree;
- Article 225 of the same Law states that the obligation to make group information available must include subsidiaries and controlled companies. The information communicated must allow comparisons and be consistent with the key international benchmarks. In addition, the information will be verified by an independent third-party body. All implementing methods will be stated in a Council of State decree, scheduled for publication in 2011.

The mechanism does not provide for specific penalties, since ordinary law provisions apply: civil liability of directors or boards in the event of lack of information or erroneous data, accuracy of information communicated regarding UCITS. In addition, the legislation offers recourse opportunities for the parties concerned, who may take legal action to obtain information (Article L225-102 of the Commercial Code).

Type of measure

Regulatory - information awareness-raising

Targeted by measure

Fund managers, businesses, investors

Indicators for monitoring implementation

-

Public costs

N/A

Sectors concerned

All sectors

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of Sustainable Development, Commissariat-General for Sustainable Development

Available evaluations

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7. Support for industrial branches of the future - 'Green branches' initiative' (Measure I.7)

Reference texts

For each of the branches identified (see description), consultation with the actors involved took place in 2010. This work identified priority actions. In 2011, action plans will be finalised on this basis, aimed at developing and structuring these strategic branches of the green economy as part of an ambitious industrial policy. A number of proposals will be made in this context, seeking, in particular, to:

- organise public action (financial support, etc.) and remove regulatory constraints;
- support the organisation of these new branches, notably by encouraging actors to group together;

- enable dissemination of environmental technologies and resulting productivity gains.

Date of entry into force

2009

Description

France has committed itself to organising the industrial branches of the future, to enable it to propose technologies and services that allow transition to a green economy, these being essential to achieving France's targets for renewable energy production and reduction of energy consumption and greenhouse gas emissions.
In line with implementation of the Environment Round Table commitments, the green branch initiative must meet three major challenges:

- to support the emergence of new occupations or activities, as well as national market or export champions;
- to underpin the occupational changes that will be required in some sectors;
- to adapt existing mechanisms or create new ones, as appropriate, to guide the workforce towards developing sectors and provide them with qualifications. Around 20 strategic branches of the green economy, in terms of growth and employment potential, were identified in December 2009 (see Table below).

Table 27. Strategic 'green branches' of the green economy in terms of growth and employment potential

Reducing greenhouse gas emissions in the energy field	Smart grids
	CO_2 capture and storage (CSC) and use
	Renewable energies: marine energies, geothermics, wind power, solar energies, biomass energy, biofuels
Reducing energy needs to combat climate change	Low environmental impact building Clean vehicles Green logistics and flow management Energy storage and battery - hydrogen and fuel cell
Reducing consumption of natural resources and raw materials	Waste recycling and recovery activities Green chemistry - plant-derived chemistry Metrology - Instrumentation of environments Optimisation of industrial procedures
	Water - ecological engineering
	Biomass materials

With specific regard to the industrial sector, work on 'Optimisation of industrial procedures' covers products and services that improve the environmental and energy performance of industrial procedures. The actions to be implemented to develop the branch, in terms of both supply and demand, will directly assist in achieving France's energy efficiency objectives.

Type of measure

Strategy - planning

Targeted by measure

Industrial branches of the green economy

Indicators for monitoring implementation

-

Public costs

Not determined

Sectors concerned

Industry, transport, residential-service, energy production

Cross-effects

Economic development

Authorities in charge of implementation, monitoring and evaluation of results

MEDDTL - MINEFI

Available evaluations

-

V. EXEMPLARY STATE AND TERRITORIAL AUTHORITIES

Summary

1. Exemplary State circular (Measure P.1)

Reference texts

Circular of 3 December 2008; Prime Minister's circulars, published from January 2010, have specified the roadmap to be used by administrations, in particular by setting indicators and mandatory targets for 2009 (Circular 451/SG of 11 March 2010) and 2010 (Circular 5495/SG of 30 September 2010).

Date of entry into force

From January 2009

Description

Definition of the Exemplary State concept

The Exemplary State concept is based on concrete application, by the services under its responsibility (administrations, decentralised services, public establishments), of the principles of eco-responsibility and social responsibility.

This concept of eco-responsibility designates responsible and environment-friendly behaviour in a broad sense. It equates to the total actions put in place by an entity in order to be exemplary in its operation with regard mainly to environmental criteria. The eco-responsibility measures that may be implemented in any administration, independent of or accompanying public procurement, in particular to reduce its volume or improve its quality, are based on responsible behaviour on the part of officials, for example by means of efficient energy management of public buildings and introduction of reasoned polices for business travel or waste management.

Public procurement in general is a significant lever in realising these two ambitions, since it can guide and advance more sustainable modes of consumption and production.

Environmental issues involved in the Exemplary State policy

The State has the capacity to provide a powerful incentive for economic and public actors. Conducting a genuine Exemplary State policy is based around major tasks:

- Making a significant contribution to taking up environmental challenges: reducing the environmental impact of the work of administrations due to a policy of sustainable procurement and eco-responsible behaviour;

- Leading by example, creating a ripple effect and disseminating good practice: making the sustainable development policy promoted by the State credible with public actors, consumers and businesses;

- Structuring and guiding production and consumption of eco-responsible and socially responsible products and services: public procurement represents around 10% of GDP and helps to provide market operators with opportunities, due in particular to the volume of orders and the direction given by public policies.

Areas for which guidelines have been provided to limit the environmental impact of administrations

- Office equipment
- Printing solutions
- Paper
- Office supplies
- Food
- Clothing
- Furniture
- Wood and derived products
- Cleaning of premises
- Waste management
- Green and non-built spaces

- Private vehicles
- Eco-driving training and awareness-raising
- Travel
- Energy and water
- Lighting
- Assessment of energy consumption and greenhouse gas emissions
- Training

Type of measure

In terms of legislative texts, Article 48 of Programme Law No 2009-967 of 3 August 2009 *on implementing the Environment Round Table* enshrines the 'Exemplary State' concept and translates it into a series of actions, in the form of targets to be implemented by administrations and the services under their responsibility, concerning, in particular, their purchasing and behaviour, in order to reduce the ecological impact of the State.

This measure also has a number of specific features: it is an economic instrument; through its direct effect on supply, public procurement is now a powerful public policy instrument. It also involves introducing a planning element into the operation of administrations by profoundly altering the behaviour of officials and services; lastly, the exemplary role and the ripple effect sought exist together within the initiative.

Targeted by measure

Directly: public actors and purchasers

Indirectly: economic actors, through structuring of supply

Secondarily: consumers and citizens, by encouraging replicated behaviour and changed habits among officials (in their professional context) that will spread to their non-professional life.

Indicators for monitoring implementation

Initially, specific monitoring indicators have only been established for the criteria under the so-called bonus-malus circulars. In environmental terms, this involves:

- Energy audits of 40% in 2009 and 100% in 2010 of the built property assets of administrations' central services;
- Purchase of expert tools allowing consumption of fluids (water, gas, electricity and heating) to be monitored;
- Measurement of energy costs in 2009 and a 10% reduction in these costs in 2010;
- Purchase of at least 80% of vehicles in 2009 and 85% in 2010 that meet the emissions threshold for the ecological bonus (respectively, 130 g/km of CO_2 emitted in 2009 and then 125 g/km in 2010);
- Measurement of the quantity of paper purchased in 2009 and a target reduction of 20% in 2010;

- Measurement of printer and photocopier stocks at the end of 2010, before setting targets for reducing stocks in the coming years;
- Review of publicity actions aimed at raising awareness of sustainable development among Ministry officials (2010 indicator).

Public costs

In the context of setting up an inter-Ministerial incentive fund, the financial mechanism was allocated €100 million for 2010 (based on 2009 indicators, see Circular of 11 March 2010).

The Relaunch Plan also enabled the State to be allocated a budget of €150 million in 2009 to carry out energy audits of buildings.

Sectors concerned

Public buildings (scope limited at this stage to buildings belonging to the State/France Domaine and permanently occupied by services of Ministries' central administrations): at present, the requirement has consisted, in 2009, of auditing at least 40% of stock, with 100% of stock having to be audited by the end of 2010. At the same time, based on 2009 energy consumption statements, savings of 10% (in value) are anticipated in 2010 and 15% (in value against the 2009 base) in 2011.

Transport and travel: to limit the number of journeys (development of video-conferencing), substitute cycling and public transport for traditional automobile journeys (administrations' travel scheme), to green the automobile fleet of administrations by favouring, at the time of its renewal, vehicles that meet the CO_2 emissions threshold set for the ecological bonus, to limit the kilometres covered by aeroplane (2011 onwards).

Service and waste: to limit the use of energy-consuming equipment (photocopiers, printers) by reducing the number of units in services and rationalising their number and use. To limit paper consumption and hence waste paper.

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies

Authorities in charge of implementation, monitoring and evaluation of results

CGDD (Commissariat-General for Sustainable Development), office of responsible public services

Available evaluations

Report on the 2009 results obtained by Ministries with regard to indicators under the financial mechanism established within the framework of the Exemplary State services initiative regarding sustainable development (available on the MEEDDM site).

This assessment is available on the Internet site of the Ministry of Sustainable Development at the following address:
http://www.developpement-durable.gouv.fr/spip.php?page=article&id_article=18737

2. ADEME as a resource centre for the exemplary role of the State and its public establishments with regard to integrating sustainable development (Measure P.2)

Reference texts

- National Sustainable Development Strategy (SNDD) 2003-2008
- National Sustainable Development Strategy 2010-2013
- Grenelle 1 Guidance Law, Grenelle 2
- Prime Minister's Circular, the Exemplary State

Date of entry into force

June 2003 for SNDD 2003-2008; July 2010 for SNDD 2010-2013

Description

Under the first National Sustainable Development Strategy (SNDD), adopted in June 2003, ADEME was given the role of resource centre.

The State strengthened its goals with regard to exemplary integration of sustainable development into its day-to-day operation, in particular by means of the Prime Minister's Circular of 3.12.2008 and the revised SNDD 2009-2012.

The 'resource centre' role consists in making appropriate tools, reproducible examples and diverse information concerning eco-responsibility available to State services, its public establishments and territorial authorities.

Type of measure

ADEME technical support for implementing the Exemplary State with regard to sustainable development:

- Design of inter-Ministerial tool for reporting indicators (IDEE site www.administration-durable.gouv.fr)

- Design of methodological tool (Guide for eco-responsible administrations www.administrations-ecoresponsables.ademe.fr)
- Support for implementation and content of eco-responsibility training
- Pooling of experience and a network of exemplary public actors (www.ecoacteurs.ademe.fr; national meetings of eco-responsible administrations and territorial authorities)
- Participation in and membership of the Sustainable Development Club for Public Establishments and Undertakings

Targeted by measure

Work carried out by ADEME as eco-responsibility resource centre targets services of the State, public establishments and public undertakings, as well as local and other territorial authorities.

Indicators for monitoring implementation

No specific indicators

Public costs

Costs for ADEME (only for the Exemplary State element of the resource centre):

Investment costs	
Design of tool for monitoring Exemplary State indicators	€114 000
Maintenance of tool for monitoring indicators per year	€35 000
Support for administering tool	€47 000
Guide for eco-responsible administrations and public establishments: updating	€118 000
Eco-actors	€20 000
Colloquium on 'Bringing together eco-responsible territorial authorities and administrations'	€120 000

Operating costs	
engineer	0.3 FTE
head of IT project	0.1 FTE
in charge of publicity	0.1 FTE

Sectors concerned

The service sector is predominantly the one directly concerned. Integrating example-setting principles into public establishments may spill over into various activities that are core functions of these establishments (establishments open to the public, research laboratories, etc.).

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies

Authorities in charge of implementation, monitoring and evaluation of results

The service in charge of monitoring achievement of the targets set for an Exemplary State with regard to integrating sustainable development is the Commissariat-General for Sustainable Development, Office for Economic Regulations (IDAE3), Service for Economy, Evaluation and Integration of Sustainable Development (SEEIDD). ADEME plays a technical support and advice role to enable public actors to reduce the environmental impact linked to their direct and indirect activities.

Available evaluations

Evaluation carried out by *ATEMA Conseil* for ADEME in December 2008, covering the following tools:

- Guide for eco-responsible administrations and public establishments (first version dating from 2005)
- *Bilan Carbone* (carbon assessment) (based on administration-specific training, disseminated by IFORE (Innovation for Renewal))

The results of this evaluation made it possible to update the Guide for administrations and improve the *Bilan Carbone* training module.

3. Senior sustainable development officers (Measure P.3)

Reference texts

1. Article 1 of Programme Law No 2009-967 of 3 August 2009 on implementing the Environment Round Table
2. Environment Code, regulatory section: Articles D134-8 to D134-11
3. Decrees of 21 February 2003 and 24 June 2004
4. National Sustainable Development Strategy 2010-2013
- Circular of 27 September 2010

Date of entry into force

February 2003

Description

Each Ministerial department rolls out the National Sustainable Development Strategy and its strategic choices by means of Ministerial sustainable development strategies or action plans, relying in particular on the senior sustainable development officer (HFDD). The latter, a high-level member of staff designated by his or her Minister, is responsible for preparing the contribution of his or her administration to the Strategy, organising its roll-out, particularly through action plans, and monitoring its application. Senior sustainable development officers form a permanent committee, chaired by the inter-Ministerial Sustainable Development Representative.

Type of measure

Network of senior civil servants providing inter-Ministerial coordination

Targeted by measure

All Ministries

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

Public sector

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of Sustainable Development - Sustainable Development Office

Available evaluations

N/A

4. Public purchasing guides (Measure P.4)

Reference texts

Assigned to the Ministry of the Economy, Finance and Industry, the Economic Observatory for Public Procurement (OEAP) was established by Order of 10 November 2005 pursuant to Article 130 of the Procurement Code, annexed to Decree No 2006-975 of 1 August 2006. It was set up to meet the requirements for national statistics under Directives 2004/17/EC and 2004/18/EC. Pursuant to Article 132 of the Public Procurement Code, Standing Market Research Groups were established - replaced under Article 6 of the Decree of 28 August 2006 by Market Research Groups (GEM). The Sustainable Development Market Research Group (GEM-DD) was created by the Executive Committee of the Economic Observatory for Public Procurement, by means of Decision No 2006-01 of 1 March 2007.

Date of entry into force

November 2005

Description

Bringing together all actors involved in public procurement - professional organisations, those responsible for implementing economic policies and purchasers' representatives - the OEAP has been set three tasks:

- To collect and assemble accounting, financial and economic data relating to public procurement, enabling sound management, savings, transparency and competition, particularly through economic data survey of public purchasing;
- To establish, based on these data, relevant economic analyses;

- To act as a forum for consultation between public procurement actors regarding the technical and economic aspects of public purchasing, in particular through the Market Research Groups and discussion workshops.

OEAP activity advising purchasers has led it to publish a series of purchasing guides, notices, recommendations and technical specifications. These may be consulted on the website of the Legal Affairs Directorate:

http://www.economie.gouv.fr/directions_services/daj/marches_publics/oeap/gem/table.html

These guides, primarily aimed at public purchasers, make recommendations in such varied areas as purchase of office supplies, maintenance of premises and purchase of workwear. By way of example, there are guides dealing with purchase of electronic communication services or energy efficiency in relation to heating contracts.

GEM-DD has the task of drawing up documents to help public purchasers to integrate sustainable development into public contracts, both at the time of award and at the time the contracts are performed. According to Article 6 of Constitutional Law No 2005-205 of 1 March 2005 on the Environmental Charter, sustainable development reconciles protection and development of the environment, economic growth and social progress. It has published a number of guides in this regard.

Type of measure

Thematic guides made available by GEM-DD:

- Guide to eco-responsible public purchasing of products, published in February 2005
- Guide to eco-responsible public purchasing of copy paper and graph paper, published in February 2005
- Information notice on tools to promote sustainable management of forests in procurement of wood and derived products, published in March 2005
- Guide to eco-responsible public purchasing of wood and construction materials, published in December 2005
- Guide to eco-responsible public purchasing - Energy efficiency in heating and air conditioning contracts concerning existing property stock, published on 4 April 2006
- Guide to sustainable purchasing - Environmental quality in construction and renovation of public buildings, published in February 2008
- Guide to sustainable purchasing - Purchase of cleaning products, equipment and services, published in February 2009
- Information notice on socially responsible public purchasing, published in July 2009
- Guide to sustainable public purchasing - Purchase of clothes, published in July 2009
- Guide to taking account of global cost in public procurement of project management, project contracting and works, published in May 2010

Targeted by measure

The OEAP Market Study Groups bring together public purchasers, economic operators and representatives of the administrations regulating the area(s) concerned. These various actors are the target of consultation within these Groups.

The guides drawn up at the time of this consultation are intended for public purchasers, to support their purchasing initiative, but also for economic operators, so that they are informed regarding changes in purchaser requirements and able to anticipate them.

Indicators for monitoring implementation

The OEAP offers 110 publications, including 11 linked to sustainable development.

There are 19 new publications scheduled for 2011 and updates are regularly produced for the documents already available.

There are 255 Internet pages citing guides published by GEM-DD.

Public costs

Those involved in the Market Research Groups participate on a voluntary basis. Monitoring and organisation of each of these are undertaken by one FTE. The OEAP Secretariat-General involves 17 FTEs.

Sectors concerned

Public and private sectors

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

The Legal Affairs Directorate of the Ministry of the Economy provides the OEAP Secretariat-General. The State Purchasing Service (SAE) leads the OEAP Market Research Groups.

Available evaluations

The OEAP annual general meeting, open to the press and professional organisations, provides the opportunity for regular assessment of OEAP work.

5. Territorial Climate-Energy Plans (PCET) (Measure P.5)

Reference texts

Law of 12 July 2010

Date of entry into force

July 2010

Description

The 2004 Climate Plan, provided for by Article 2 of the Law of 13 July 2005 on energy policy planning, enabled territorial authorities to establish Territorial Climate-Energy Plans translating genuine local climate and energy policy to their own areas of responsibility. More than 200 Territorial Climate-Energy Plans (PCET) have now been developed or are being developed, whether at region, department or major conurbation level. These PCET primarily seek to combat climate change through urban development and planning, improved energy efficiency of transport and buildings and development of renewable energies. These PCET have involved, alongside the territorial authorities concerned, decentralised State services and ADEME. In the context of contracts between the State and regions (project contracts for the period 2007-2013), the State has made its priority support for regional climate-energy plans and is providing €76 million a year to finance territorial energy actions. This support is extended, through the territorial strand of the State-Region Project Contract (CPER), by means of support from the regions for infra-regional climate plans.

The Programme Law of 3 August 2009 on implementing the Environment Round Table strengthens this local dynamic by requiring all territorial authorities with more than 50 000 inhabitants to draw up and approve a Territorial Climate-Energy Plan by 2013, which must deal with local policy for both mitigating and adapting to climate change. The Law of 12 July 2010 making a national environmental commitment also consolidates territorial cohesion and the strategic framework for local actions by establishing a Regional Climate, Air and Energy Scheme.

Support for rolling out Territorial Climate-Energy Plans and establishing regional schemes is provided by the Ministry of Ecology and by ADEME.

Type of measure

Legislative and regulatory; planning

Targeted by measure

Territorial authorities

Indicators for monitoring implementation

Number of PCET underway or approved (monitored by the ADEME Observatory)

Public costs

Between €25 000 and €100 000 per territorial authority (not including investment costs linked to implementation of Climate Plan actions); €76 million (State) a year under CPER energy measures (including aid for drawing up regional PCET and infra-regional PCET under the territorial strand of the CPER).

Sectors concerned

All sectors covered by territorial authority responsibilities (spatial planning, residential, transport, waste, awareness-raising and organisation of territorial activity, etc,) and their assets (buildings, public purchases).

Cross-effects

Reduced greenhouse gas emissions, combating air pollution, development of renewable energies

Authorities in charge of implementation, monitoring and evaluation of results

Territorial authorities, ADEME, DGEC

Available evaluations

N/A (CGDD/ADEME/CERTU study underway to evaluate the contribution made by combined conurbations and combined towns and cities towards achieving Energy-Climate Package targets).

6. Mandatory assessment of greenhouse gas emissions (Measure P.6)

Reference texts

1. Article 75 of Grenelle 2 (Law No 2010-788 of 12 July 2010 making a national environmental commitment)
- Article L.229-25 of the Environment Code

Date of entry into force

13 July 2010

Description

Extract from Article L.229-225 relating to the State and territorial authorities:

‘3. The State, regions, departments, combined towns and cities, combined conurbations or combined municipalities with more than 50 000 inhabitants, as well as other legal entities governed by public law employing more than 250 people.

The State and the entities mentioned under 1 to 3 shall attach to this assessment a summary of planned actions to reduce their greenhouse gas emissions.

This assessment shall be made public. It shall be updated every three years.

It must have been drawn up by 31 December 2012. A method for drawing up this assessment shall be made available free-of-charge to territorial authorities and their groupings.

Assessments of greenhouse gas emissions by the entities mentioned under 3 shall cover their assets and their areas of responsibility.

In each region, the regional prefect and the regional council president shall be responsible for coordinating data collection, producing a summary of the situation and verifying the consistency of the assessments.’

Type of measure

Regulatory

Targeted by measure

State, territorial authorities, public establishments

Indicators for monitoring implementation

Not available

Public costs

Not available

Sectors concerned

Public sector - property assets

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies

Authorities in charge of implementation, monitoring and evaluation of results

CGDD

Available evaluations

State partial assessment of 6.10.10

7. Regional Climate, Air and Energy Schemes - SRCAE (Measure P.7)

Reference texts

Law of 12 July 2010

Date of entry into force

1. Entry into force: July 2010
- Date of implementation: July 2011 (for producing the SRCAE)

Description

Regional Climate, Air and Energy Schemes (SRCAE), jointly developed by regional prefects and regional council presidents, set regional and strategic guidelines for reducing greenhouse gas

emissions, combating air pollution, improving air quality, demand-side management, developing renewable technologies and adapting to climate change.

They must be approved in the year following entry into force of the Law of 12 July 2010. They include an annex entitled 'Regional wind power scheme', which specifies the favourable areas within which territorial authorities may propose setting up wind power development zones.

SRCAE specify the contribution to be made by each region and its territories towards achieving France's national and international targets, particularly for reducing greenhouse gas emissions and developing renewable energy branches (wind, photovoltaic, geothermal, hydraulic and biomass).

Type of measure

Legislative and regulatory

Targeted by measure

Territorial authorities

Indicators for monitoring implementation

Regional targets for reducing greenhouse gas emissions; regional targets for developing renewable energy branches; regional objectives for improving air quality and reducing air pollutant emissions.

Public costs

Between €9 million and €11.7 million (total cost for State and regions)

Sectors concerned

Development of renewable energies, energy management, construction, transport, agriculture, industry.

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies, improved air quality and strengthening of health/climate co-benefits.

Authorities in charge of implementation, monitoring and evaluation of results

Regional councils, DREAL (Regional Directorates for Environment, Planning and Housing), DGEC

Available evaluations

No available evaluations (SRCAE currently being drawn up)

8. Reform of the Urban Development Code (Measure P.8)

Reference texts

Law of 3 August 2009; Law of 12 July 2010

Date of entry into force

2009/2010

Description

The Grenelle 1 and 2 laws redefined the aims of territorial authorities and urban development documents.

Article 7 of the Law of 3 August 2009 (Grenelle 1) adds to and strengthens the global aims assigned to any urban development document (planning or operational) by requiring:

- reduction of greenhouse gas emissions
- demand-side management
- saving of fossil resources
- recognition of local authorities' responsibility for urban development action in combating climate change

This Article states that urban planning law must take account of the fight against urban sprawl and energy loss, and also make it possible to revitalise city centres, to design urban development in a global way by harmonising guidance documents and planning documents drawn up at

conurbation level, to preserve biodiversity, particularly through conservation, restoration and creation of ecological continuities, to ensure efficient management of resources and space and re-examine, from this angle, tax mechanisms and financial incentives relating to housing and urban development, to allow implementation of work to improve the energy efficiency of buildings, particularly external insulation, by adapting the rules on protecting the public domain, and to create a link between density and public transport service levels.

Territorial authorities must have tools in this regard that enable them, in particular, to make the creation of new districts and planning operations primarily involving housing or offices conditional on the creation or appropriate strengthening of transport infrastructure, as well as to prescribe, in certain zones, minimum density thresholds or energy performances better than required by regulation.

The Law of 12 July 2010 (Grenelle 2) strengthened the account taken of the fight against urban sprawl and efficient management of resources in urban development documents by requiring numerical targets to be set in the Territorial Cohesion Schemes (SCOT) and Local Urban Development Plans (PLU) regarding consumption of space, minimum construction density and energy and environmental performance of buildings and minimum and maximum parking thresholds. It enshrines the principle of integrating, within planning documents, all urban issues (transport, housing, energy, etc.). In the energy field, the following points are of particular note:

- Territorial Cohesion Schemes (SCOT) may link opening up to urbanisation to public transport services and set minimum densities taking account of accessibility of public transport but also, and this is newer, make such urbanisation conditional on energy performance;

- Commercial equipment projects must be compatible with Territorial Cohesion Schemes;

- Territorial Cohesion Schemes and Local Urban Development Plans must take account of Territorial Climate-Energy Plans;

- Land occupation coefficients may be exceeded by up to 30% depending on the energy performance of the buildings concerned, and by up to 50% if they include social housing;

- Project declaration mechanisms (allowing the building rules specified in urban development documents to be relaxed - Decree of 24 March 2010) and for public interest projects strengthen urban development in terms of project-based urban development.

Tax reform:

Taxation linked to urban development has, since 1967, been the result of multiple taxes and contributions taking root. It was realised that such taxation had a high overall cost and did not

encourage resource-efficient projects[138]. A series of reforms has been adopted under the Amending Finance Law for 2010.

- Insertion of a new section entitled 'under-density payment' within the Urban Development Code. This section allows territorial authorities that so wish to set a minimum density threshold below which a payment is due from those seeking building authorisation. Authorities determine this threshold by geographical sector and attach an indicative map of this zoning to the Local Urban Development Plan and, where appropriate, the Land Use Plan. The threshold is set for three years.

- Simplification of the tax system for urban development. A new 'planning tax' (Article L. 331-1 et seq. of the Urban Development Code) now brings together all of the existing taxes other than the offices fee (*redevance bureaux*) in Ile-de-France and the preventive archaeology fee (*redevance d'archéologie préventive*). Its explicit aim is to promote efficient use of land and contribute to fighting urban sprawl. It is based on construction, reconstruction and extension of buildings and all kinds of improvements requiring an urban development permit and it is introduced automatically in municipalities with a Local Urban Development Plan or Land Use Plan. The taxable basis consists of the value, set at a flat rate per square metre of surface area of the structure. The net floor area (SHON) is amended in this regard and is now taken as the total closed or covered floor surfaces, higher than 1.8 metres, calculated inside the walls of the building so as not to penalise insulation work.

Type of measure

Legislative

Targeted by measure

Territorial authorities

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

[138] See the MEEDDM press file 'Towards project-based urban development', 23 June 2010: http://www.developpement-durable.gouv.fr/spip.php?page=article&id_article=16870

Urban development, transport, construction, energy management, development of renewable energies

Cross-effects

Reduced air pollutant emissions (for measures targeting transport)

Authorities in charge of implementation, monitoring and evaluation of results

DGALN (DG for Planning, Housing and Nature)

Available evaluations

No available evaluation

9. State-Region Project Contracts (CPER) - Combating Climate Change strand (Measure P.9)

Reference texts

Circulars of 25 April 2007 and 4 May 2007[139].

Date of entry into force

Mechanism in force from 2007 to 2013

Description

In the context of contracts between the State and regions (project contracts for the period 2007-2013), the State has made its priority support for regional climate-energy plans and is providing €76 million a year to finance territorial energy actions. This support is extended, through the territorial strand of the State-Region Project Contract (CPER), by means of support from the regions for infra-regional climate plans.

Type of measure

[139] More details are available from the DATAR site: http://www.datar.gouv.fr/fr_1/amenagement_du_territoire_655/contrats_etat_regions_173/

Planning

Targeted by measure

Territorial authorities

Indicators for monitoring implementation

NECATER method for calculating carbon emissions linked to financed programmes

Public costs

€76 million a year

Sectors concerned

Transport, energy management, development of renewable energies, construction, agriculture and forestry

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies; possible cross-effects through economic growth

Authorities in charge of implementation, monitoring and evaluation of results

Regional councils, regional prefectures, DATAR, ADEME

Available evaluations

The NECATER Method makes it possible to evaluate the carbon impact of an investment programme by taking the entire lifecycle of the financed project into account.

It is noted that, at national level, an 80 kt reduction in carbon emissions is seen, achieving neutrality after 56 years (carbon impact is calculated over the lifespan of investments and not just over the duration of programmes). Neutrality would therefore be respected due to public transport and actions in support of energy management and renewable energies. On the other hand, savings from building renovation do not offset emissions in relation to new build, the main heading under which emissions occur, along with agriculture and economic growth. The majority of regions would be slightly CO_2-emitting (nine regions between 26 kt and 283 kt - often industrial

or agricultural), as against five regions slightly saving CO_2 (between -7 and -54), and Ile-de-France, saving a great deal due to its major transport aspect.

10. ADEME support tools for PCET (Measure P.10)

Reference texts

Law of 12 July 2010

Date of entry into force

2008/2009/2010, depending on the measures

Description

- Training: since October 2009, design, followed by dissemination, of a training mechanism comprising four modules to raise awareness and then enable implementation of PCET in territorial authorities (project-based territories and competence-based territories). Deployment across all national territory, including Overseas Departments (adapted modules).

- Cit'ergie label: since 2008 - introduction of Cit'ergie labelling (the French version of the European Energy Award label) to reward territorial authorities that establish an ambitious energy policy. Disseminated by ADEME regional directorates in the context of their support for territorial authorities in setting up PCET. Existence of an Internet site (www.citergie.ademe.fr), booklet and promotional film. Work with the other countries that have adopted the European Energy Award has been initiated to incorporate more climate criteria into the label, thus enabling Cit'ergie to be in complete alignment with the PCET initiative. This new version of Cit'ergie will apply in 2011.

- Production of a guide 'Constructing and implementing a PCET' in March 2009 and its availability to territorial authorities via download.

- Introduction of Territorial Target Contracts (COT) to finance territories wishing to acquire in-house engineering expertise to run PCET.

- ADEME thus supports organisation (putting in place a policy officer for three years) planning studies and underpinning actions (publicity, awareness-raising, training).

- In March 2010 launch of a web portal for the PCET resource centre and a PCET observatory (www.pcet-ademe.fr) where territorial authorities are able to find, free of charge, all of the necessary information to produce their PCET.

- Staging of a colloquium on PCET in October 2010, involving 16 partners (association of territorial authorities, NGOs, etc.) and more than 600 participants.

Type of measure

Training, labelling, technical initiative, guide, provision and exchange of information, organisation, financial incentive.

Targeted by measure

Territorial authority elected representatives and decision-makers, territorial authority heads of PCET projects, research bureaus

Indicators for monitoring implementation

- Training: number of sessions held, regions involved, number of persons trained, category of persons trained
- Number of PCET in the Observatory, number of territorial authorities with the Cit'ergie label, number of territorial authorities that have signed a Territorial Target Contract with ADEME

Public costs

- Training: €466 700, including taxes

- Cit'ergie: Cost to a territorial authority (adviser + auditor) of around €30 000 over four years and 0.005 cents/inhabitant/year.

- PCET (ADEME): €100 000 as the budget for the measure (to set up the Internet site and create the content) + one full-time person for 12 months at ADEME

- COT (ADEME): 2007, 2008, 2009 and 2010 - around €3.5 million under the COT

Sectors concerned

All sectors within the areas of responsibility of territorial authorities (spatial planning, residential, transport, waste, etc.) and their assets (buildings, public purchases), but also the business and agriculture sector.

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies, impact on air quality and health

Authorities in charge of implementation, monitoring and evaluation of results

ADEME

Available evaluations

- Training: 35 sessions held in 2010; 19 regions involved (including two Overseas Departments), 740 persons trained, including 25% elected representatives, 15% directors, 50% policy officers and/or project heads and 10% research bureaus.

- Cit'ergie: as at 1 January 2010, four territorial authorities had received the label and four were on the way to the label. Since January 2010 the number of territorial authorities engaged in the Cit'ergie initiative has greatly increased, since they now number 18.

- Currently, 100 territories (combined conurbations, combined municipalities or regional natural areas or parks) hold Territorial Target Contracts.

- More than 200 territories that have produced a PCET are registered with the Observatory, including around 100 liable entities (*obligés*).

- Evaluation of Territorial Target Contracts underway.

11. Sustainable City project call (Measure P.11)

Reference texts

Sustainable City Plan[140], Circular of 14 November 2008

Date of entry into force

2008

Description

[140] More details are available at the following address: http://www.developpement-durable.gouv.fr/-Les-appels-a-projet-Ecoquartier-.html

A set of measures to support innovative actions on the part of territorial authorities in the area of sustainable urban planning (Ecological Neighbourhoods (*EcoQuartiers)* project call, EcoCities ((*EcoCités*) initiative, Reserved Public Transport Routes project call (*TCSP)*).

- The aims of the Ecological Neighbourhoods project call are to ensure national and international recognition for territorial authorities that have undertaken exemplary initiatives, to draw attention to the best of them by awarding a specific distinction, to promote a new way of building and planning, in line with sustainable development principles, to support existing and future initiatives by creating an 'Ecological Neighbourhood Operating Club', organised by the Ministry of Sustainable Development. 160 applications were submitted between 2008 and 2009. In 2011 a second Ecological Neighbourhood project call was launched by the State on 19 January, with even greater ambitions in terms of project quality. This project call is the prelude to creating an Ecological Neighbourhood label (currently being discussed). ADEME is a member of the partnership committee and the scientific committee. More information is available on the site dedicated to the competition and to the Ecological Neighbourhoods Club: http://www.ecoquartiers.developpement-durable.gouv.fr/.

- The EcoCities initiative is aimed at major conurbations (at least 100 000 inhabitants) that are growing rapidly (an increase of around 50 000 additional inhabitants was sought over the next generation), structured in an inter-municipal way (project undertaken in the area of influence of a public inter-municipal cooperation establishment that is responsible, or is taking on responsibility, for urban development master-plans) that have a significant project concerned with sustainable planning and housing. The EcoCities initiative seeks to identify exemplary strategies for overall urban development (in terms of design, consultation and implementation). 19 applicants have been registered. 13 EcoCities have been selected for iterative discussion. A second EcoCities project call is being developed, scheduled for launch in spring. Under Future Investments (see Energy section), the Loans and Consignments Fund manages €1 thousand million devoted to the City of Tomorrow, for which a project call is underway among the 13 existing EcoCities. A second strand is planned at the end of the year for future holders of EcoCity status. ADEME is a member of the steering committee for City of Tomorrow and the steering committee for EcoCities and participates in EcoCity local workshops.

- The project call concerning Reserved Public Transport Routes (TCSP), which aims to support territorial authorities in developing infrastructure for reserved public transport routes, has led to the launch of a project call. This project call is directed towards authorities organising provincial transport that are planning a metro, tram or bus system with a high service value on which work will begin by 2011. More than 50 Reserved Public Transport Route projects will be initiated by the end of 2011.

Type of measure

Regulatory, planning, research

Targeted by measure

Territorial authorities

Indicators for monitoring implementation

- Number of applications submitted for Ecological Neighbourhoods project call
- Number of applications submitted for the EcoCities Call for Expressions of Interest and number of applications selected
- Number of projects initiated by the end of 2011 under the Reserved Public Transport Routes project call

Public costs

- EcoCities initiative: €1 thousand million
- Reserved Public Transport Routes project call: between 2009 and 2011 the State will provide €810 million. This aid reflects an unprecedented State effort to support urban transport.

Sectors concerned

Urban development, housing, transport, etc.

Cross-effects

Reduced greenhouse gas emissions, positive impact on air quality

Authorities in charge of implementation, monitoring and evaluation of results

DGALN, DGITM, CDC (ADEME)

Available evaluations

160 applications submitted for the Ecological Neighbourhoods project call; 19 applications submitted for the EcoCities initiative (13 selected); more than 50 projects started by the end of 2011 under the Reserved Public Transport Route project call.

Additional information concerning Ecological Neighbourhoods

<u>2009 project call</u>
Launched in October 2008 by the Ministry of Sustainable Development and aimed at territorial authorities, the Ecological Neighbourhoods project call is one of the responses to the commitments made by the State at the time of the Environment Round Table.

In this context, in March 2009 the Ministry received 160 applications from territorial authorities wishing to make their development projects exemplary operations in terms of sustainable development and genuine levers in creating the sustainable city of tomorrow.

This exemplary role was rewarded by the Ministry in November 2009 through a winners' list, covering the 28 best projects on a variety of themes. The winners' list makes it possible to

promote new ways of living, fair and reasonable territorial development, and also efficient use of resources and agricultural or natural space.

National Club in 2010

Wishing to sustain the motivation of all and encourage emulation and progress, the Ministry has, since the end of 2009, organised the National Ecological Neighbourhoods Club 2010, bringing together the teams of the 160 applicant territorial authorities. It involves, through a programme of working groups and conferences, ensuring rapid dissemination of good practice, identifying obstacles and imagining solutions.

Three working sessions have been organised for each group (March, June and October 2010), bringing together more than 600 participants over the first two sessions as a whole (territorial authorities, SEM (mixed investment companies), planners, CETE (public works technical study centres), State decentralised services and central administration), including almost 280 participants from territorial authorities.

A new Ecological Neighbourhoods project call in 2011

Along the lines set by the Environment Round Table and in order to follow up the success of the 2008-2009 version, the Ministry of Ecology, Sustainable Development, Transport and Housing is launching a new Ecological Neighbourhoods project call. It is directed towards all territorial authorities with ambitious sustainable development projects, with no pre-conditions regarding the size or type of town or city. The challenges posed by sustainable development in fact concern all territories and today need to be met within all types of project, whatever their scale or locality.

This new project call is based on the work of the National Club and on establishment of an Ecological Neighbourhoods benchmark.

A new winners' list in 2011

The 2011 Ecological Neighbourhoods Winners' List seeks to show that all territories are now concerned and, for this purpose, it includes special prizes targeting specific territories: 'Medium-sized town or city', 'Rural environment' and 'Urban renewal'.

The 2011 Ecological Neighbourhoods Winners' List will also reward projects with specific mentions relating to sustainable development: 'Ecological performance', 'Nature in the city' and 'From project quality to neighbourhood life'.

Towards a label in 2012

Since establishment of the Sustainable City Plan at the end of 2008, work and exchanges between the various partners and members of the Ecological Neighbourhoods Club have shown that Ecological Neighbourhoods operations must meet the challenges of the Environment Round Table in terms of the quality of both the results and the initiative. This thinking has guided the drawing-up of the 'Ecological Neighbourhoods' benchmark, scheduled for 2012.

One year from the deadline, the Ministry wishes to accelerate the initiative and is openly considering the possibility of creating an Ecological Neighbourhoods label based on this benchmark.

Alongside the Ecological Neighbourhoods Club and the new project call, the Ministry has therefore proposed for 2011 to create and organise a planning committee for the Ecological Neighbourhoods label under a collegiate and participatory initiative, following on from the Environment Round Table.

The Ministry has established a roadmap for that purpose:
- This Ecological Neighbourhoods label will not be based on a standard;
- It must be adaptable to all contexts, all sizes of town or city and all stages of project progress;
- It will be based on transparent criteria.

12. Additional points regarding compliance with the ESD

Reference texts

The exemplary role of the public sector is a priority under the ESD, with an article (Article 5) and an annex (Annex VI) specifically devoted to it. The main reasons for highlighting this theme are as follows:
- the direct opportunity for a public authority to act with regard to its own energy consumption and purchasing;
- the aim of managing public sector expenditure (reducing overall costs linked to energy);
- the anticipated leverage effects from exemplary practices.

With more specific regard to the requirements under Annex VI to the ESD, 'List of eligible energy efficient public procurement measures', the Member States must apply at least two of the six requirements referred to in Annex VI.

France applies requirements (b) and (e) listed in Annex VI; actions are carried out concerning the other points, but without any systematic mandatory nature:

- (a) requirements concerning the use of financial instruments for energy savings, including energy performance contracting, that stipulate the delivery of measurable and pre-determined energy savings (including whenever public administrations have outsourced responsibilities): Energy Performance Contract guide published by the CGDD, a notable example being the Alsace EPC;

- (b) requirements to purchase equipment and vehicles based on lists of energy-efficient product specifications of different categories of equipment and vehicles to be drawn up by the authorities or agencies referred to in Article 4(4), using, where applicable, minimised life-cycle cost analysis or comparable methods to ensure cost-effectiveness: requirement under the Exemplary State circulars to purchase at least 80% of vehicles in 2009 and 85% in 2010 that meet the emissions threshold for the ecological bonus (respectively, 130 g/km of CO_2 emitted in 2009 and then 125 g/km in 2010); Law No 2011-12 of 5 January 2011 (Article 12);

- (c) requirements to purchase equipment that has efficient energy consumption in all modes, including in standby mode, using, where applicable, minimised life-cycle cost analysis or comparable methods to ensure cost-effectiveness: account taken of environmental impact in public procurement, numerous guides to eco-responsible purchasing;

- (d) requirements to replace or retrofit existing equipment and vehicles with the equipment listed in points (b) and (c): Exemplary State circulars referred to above setting environmental constraints for vehicle fleet renewal;

- (e) requirements to use energy audits and implement the resulting cost-effective recommendations: requirement under Grenelle 1 and 2;

- (f) requirements to purchase or rent energy-efficient buildings or parts thereof, or requirements to replace or retrofit purchased or rented buildings or parts thereof in order to render them more energy-efficient: in the Exemplary State circulars, requirement to purchase a fluid consumption tool; energy audits initiated will lead to proposals for action to improve energy efficiency.

VI. AGRICULTURAL SECTOR

Summary

1. Greenhouse-Energy Plan (Measure A.1)

Reference texts

Circular VINIFLHOR 2008/10 of 28 August 2008

Date of entry into force

2006

Description

The Greenhouse-Energy Plan supports development of market gardening and horticulture production by encouraging energy savings and renewable energy development. It is based around four action axes:

- encouragement for energy savings in existing stock (interest subsidy and exceptional depreciation mechanisms for energy-saving investments, Energy Efficiency Certificates);
- development of renewable energies and improvement of energy efficiency, with priority given to investments linked to renewable energies and support for co-generation;
- strengthening of research & development programmes on managing energy in greenhouses;
- support for long-term partnerships between energy suppliers and greenhouse growers.

The main intervention tools correspond to FranceAgriMer investment aid mechanisms in greenhouse horticulture and market gardening, supplemented by aid under the Plant Plan for the Environment (see Measure A.2).

Type of measure

Financial incentive

Targeted by measure

Market gardening and horticulture holdings

Indicators for monitoring implementation

Number of applications, investment amounts, public aid amounts, type of equipment

Public costs

The amount of aid paid towards the installation of heat pumps was €200 thousand in 2006 and €1.4 million in 2008, and, towards replacement of fossil energy heating systems by renewable energy systems, €187 thousand in 2007 and €2.15 million in 2008.

Concerning all of the mechanisms managed by FranceAgriMer, the financial commitments in 2009 were around €12.5 million.

Sectors concerned

Agricultural sector

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies, economic development of the agricultural sector

Authorities in charge of implementation, monitoring and evaluation of results

MAAPRAT, FranceAgriMer

Available evaluations

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2. Plant Plan for the Environment (Measure A.2)

Reference texts

- Order of 14 February 2008 on the Plant Plan for the Environment
- Inter-Ministerial Circular C2008-3008 of 1 August 2008 on the Plant Plan for the Environment
- Inter-Ministerial Circular C2008-5015 of 1 April 2008 supplementing the Circular of 30 April 2007 and following on from approval of the Rural Development Plan for Metropolitan France (PDRH)
- Inter-Ministerial Circular C2007-5025 of 30 April 2007 on implementation of the Plant Plan for the Environment for the period 2007-2013

Date of entry into force

2007 to 2013

Description

The Plant Plan for the Environment (PVE) encourages, in particular, energy savings in greenhouses existing as at 31 December 2005, through aid for investment (regulating systems, open buffers, heat shields, greenhouse improvements, boilerhouse improvements). It is implemented by translating the Rural Development Plan for Metropolitan France 2007-2013 to the regional level.

This Plan is financed by a single fund. It comes under the second pillar of the CAP and the Rural Development Plan for Metropolitan France (PDRH) and calls on Community co-financing of 50%. The fund is financed from multiple sources: the Ministry of Agriculture and Fisheries, territorial authorities, water agencies, etc.

Type of measure

Financial incentive

Targeted by measure

Greenhouses existing as at 31 December 2005

Indicators for monitoring implementation

Number of applications, investment amounts, public aid amounts, type of equipment

Public costs

Around €14 million have been allocated over three years (2007-2009) to finance 383 items of equipment (four heat pumps, 60 regulating systems, 45 ‘open buffers’ and 280 heat screens).

Sectors concerned

Agricultural sector

Cross-effects

Reduced greenhouse gas emissions, economic development of the agricultural sector

Authorities in charge of implementation, monitoring and evaluation of results

MAAPRAT

Available evaluations

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3. Performance Plan for Agricultural Holdings (Measure A.3)

Reference texts

- Amended Order of 4 February 2009 on the Energy Performance Plan for agricultural holdings (online since October 2010)
- Circular DGPAAT/SDEA/SDBE/C2010-3038 of 15 April 2010: specifying certain provisions relating to the PPP (Energy Performance Plan) for the 'agricultural holdings' strand
- Circular DGPAAT C2009-3036 of 2 April 2009: national calls for applications for methanisation units and engine test benches under the PPE
- Circular DGPAAT C2009-3013 of 18 February 2009 on establishing a national mechanism for energy performance diagnosis of agricultural holdings
- Circular DGPAAT C2009-3012 of 18 February 2009 on the Energy Performance Plan (PPE) for agricultural holdings
- Memorandum DGPAAT No 2009-3011 of 1 April 2009 on the rules for linking Ministry of Agriculture and Fisheries aid under the Energy Performance Plan (PPE) for agricultural holdings to other investment aid, notable the ERDF

Date of entry into force

2009 to 2013

Description[141]

[141] http://agriculture.gouv.fr/plan-performance-energetique

The Energy Performance Plan (PPE) seeks to increase the number of agricultural holdings with low energy dependency. The challenge of the Plan for agricultural holdings is to have a direct impact on consumption of direct energy (petroleum products, electricity, etc.) and indirect energy (energy used to manufacture inputs, equipment and buildings) in order to start to reduce consumption and hence the energy bill, as well as greenhouse gas emissions.

Since 2009 the PPE has acted to reduce energy consumption (farm tractors, livestock buildings, greenhouses, etc.), develop renewable energies (agricultural methanisation, biomass, photovoltaic, solar water heaters, small wind turbine) and develop advice.

The Plan is based around eight axes:
- Axis 1: Better evaluation of the energy balance of agricultural holdings
- Axis 2: Mass dissemination of energy diagnoses
- Axis 3: Improved energy efficiency of agroequipment
- Axis 4: Improved energy efficiency of agricultural production
- Axis 5: Promotion of production of renewable energies
- Axis 6: Account taken of the specific characteristics of the Overseas Departments
- Axis 7: Promotion of research and innovation
- Axis 8: Organisation of national monitoring of the Plan and its transfer to the territorial level and publicity regarding improved energy performance

Axes 1 to 4 take the form of financial support for carrying out Energy Performance Diagnoses. This includes an inventory of direct and indirect energy consumption. It makes it possible to identify scope for progress and actions that farmers may undertake to improve the energy performance of their holding, production, equipment or buildings. These actions may cover:
- adoption of more energy-saving practices (adapting use of agricultural machinery, choosing crops that are less hungry in terms of energy and nitrogen fertilisers, etc.);
- choice of equipment (machinery and buildings) requiring less energy;
- the opportunity for some holdings to produce their own renewable energy.

The Energy Performance Diagnosis for the holding must be undertaken by competent persons, registered on a Department list, using a specification validated by the central authorities. The target adopted for the Energy Performance Plan is to carry out 100 000 diagnoses by 2013.

PPE financial support comes under two strands:

- a national strand to develop mobile test benches (since 2008, 11 mobile test benches have been added to the five existing ones, with the target of one test bench per region; these make it possible to tune 3 000 engines a year, leading to reduced greenhouse gas emissions of around 10% to 20%) and agricultural methanisation (82 methanisation projects were given the go-ahead under a project call launched in March 2009);

- a regional strand, based primarily on developing energy advice to agricultural holdings (almost 1 800 energy diagnoses have been financed under the PPE; these are in addition to the diagnoses performed previously, which takes to 4 500 the number of diagnoses carried out since 2006). In order to perform these diagnoses, more than 530 diagnosticians have been accredited by the services of the Ministry of Agriculture. Support is also mobilised to reduce energy consumption and develop renewable energies.

Type of measure

Financial incentive

Targeted by measure

Agricultural holdings

Indicators for monitoring implementation

Number of applications, number of tractors tuned each year, investment amounts, public aid amounts, type of equipment (see Description section)

At the end of 2010 almost 2 000 energy-saving investment operations had been started for agricultural holdings, equating to €15.3 million in MAAPRAT appropriations (the balance of the €25.7 million being allocated to methanisation units). By way of example, in mid-2010 the PPE had thus enabled farmers to acquire 370 milk pre-coolers, 150 milk tank heat recovery units, 170 air-air heat exchangers, etc.

Public costs

For 2010 MAAPRAT has allocated €25.7 million to the PPE, to which are added €0.5 million from territorial authorities and €3 million from the European Union (EAFRD), as well as aid from ADEME. These public appropriations have had a significant leverage effect, since they will have made it possible to generate total investment estimated at €127 million.

Sectors concerned

Agricultural sector

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies, economic development of the agricultural sector

Authorities in charge of implementation, monitoring and evaluation of results

MAAPRAT, ADEME, regions

Available evaluations

The introduction of mobile test benches for tuning tractors enables an annual final energy saving of 7 ktoe in 2010, 66 ktoe in 2016 and 111 ktoe in 2020 (see Annex 2, Chapter 3, paragraph 2.4).

4. Livestock Building Modernisation Plan (Measure A.4)

Reference texts

Order of 18 August 2009 on the Modernisation Plan for livestock holdings with cattle, sheep and goats and other livestock branches

Date of entry into force

1 January 2005

Description

The Livestock Building Modernisation Plan is part of the regional strands of the Rural Development Plan for Metropolitan France (PDRH) 2007-2013. It applies throughout French territory (except Corsica and the Overseas Departments) and concerns the livestock rearing sector. This Modernisation Plan is financed by a single fund financed from multiple sources: State (Ministry of Agriculture), water agencies and territorial authorities. Coming under the second pillar of the CAP, it calls on Community co-financing of 50%.

The Livestock Building Modernisation Plan enables the financing of actions to reduce energy consumption and develop renewable energies, other than those already eligible for the Energy Performance Plan and the Plant Plan for the Environment.

Type of measure

Financial incentive

Targeted by measure

Livestock holdings with cattle, sheep and goats and, subject to conditions, other livestock branches

Indicators for monitoring implementation

Number of applications, investment amounts, public aid amounts, type of equipment

Public costs

-

Sectors concerned

Agricultural sector

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies, economic development of the agricultural sector

Authorities in charge of implementation, monitoring and evaluation of results

MAAPRAT

Available evaluations

-

5. Technical advice and diagnoses (Measure A.5)

Reference texts

-

Date of entry into force

-

Description

It involves encouraging the supply of technical advice to agricultural holdings and the performance, at local level, of technical-economic and energy diagnoses for agricultural holdings (overall advice at agricultural holding level and specific advice on equipment and technical improvements) through financing and provision of tools:

- ADEME and MAAPRAT co-finance (see previous measures) performance of energy diagnoses, generally carried out using the global energy diagnosis tool for agricultural holdings (*Planète*) developed by ADEME.

- A synthesis of data obtained at the time of these energy diagnoses is underway. At the same time, the Ministry of Agriculture, at the time of the general agricultural census in 2010, will carry out a survey specifically on energy consumption and development of renewable energies in agricultural holdings (the previous one took place in 1992). A supplement for agricultural and forestry businesses and winegrowing machinery cooperatives (CUMA) is planned in 2011.

- The *Climaterre* tool is currently being tested by ADEME, with a view to carrying out energy and greenhouse gas diagnoses at territorial level.

- The *Diaterre* tool is currently being developed jointly by ADEME, MAAPRAT and the agricultural organisations to refine energy diagnosis of greenhouse gases at holding level (it is to take over from *Planète*).

Type of measure

Financial incentive, information, awareness-raising

Targeted by measure

Agricultural holdings

Indicators for monitoring implementation

Number of diagnoses

Public costs

Not known

Sectors concerned

Agricultural sector

Cross-effects

Reduced greenhouse gas emissions, development of renewable energies, economic development of the agricultural sector

Authorities in charge of implementation, monitoring and evaluation of results

MAAPRAT, ADEME

Available evaluations

-

VII. AWARENESS-RAISING AND INFORMATION

Summary

1. 'Energy is our future, save it' message (Measure S.1)

Reference texts

- Decree No 2006-1464 of 28 November 2006
- Order of 28 November 2006 on publicity in the energy field

Date of entry into force

1 March 2007

Description

The Decree of 28 November 2006 states that 'all publicity undertaken for a business within the scope specified in Article 1, concerning energy or aimed at its consumption, shall include a message promoting rational energy use and encouraging energy savings, with the terms and conditions of its dissemination to be established by order of the Minister responsible for energy.

The requirement referred to in Article 2 shall cover publicity within and beyond points of sale. It concerns messages disseminated via bill-posting, electronic media, press, television or radio broadcasting services, cinema, publicity correspondence aimed at private individuals and printed publicity materials distributed to the public. It shall not concern financial and recruitment publicity.'

The message adopted is: 'Energy is our future, save it!' It must be clearly legible, audible or intelligible. In the case of television services it is in sound or visual form.

Type of measure

Awareness-raising

Targeted by measure

General public

Indicators for monitoring implementation

N/A

Public costs

N/A

Sectors concerned

Sale of electricity, heat or cooling energy, solid, liquid or gas fuels and motor fuels, as well as services relating to the use of these forms of energy.

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of Energy

Available evaluations

N/A

2. Eco-responsible Publicity Charter (Measure S.2)

Reference texts

- Charter of 11 April 2008[142]
- New ARPP (Professional Regulatory Authority for Advertising) recommendation on sustainable development, which came into force in October 2009

Date of entry into force

April 2008

Description

On 11 April 2008, in the context of the Environment Round Table, commitments were made between advertising professionals and the Ministry of Sustainable Development in order to achieve the following objectives:
- To place publicity within a stricter framework as regards sustainable development and the environment
- To develop the current self-regulation rationale towards one of co-regulation of advertising with a more partnership-oriented and open body, in order to provide a better guarantee of environment-friendly publicity.

This Charter was supplemented by adoption of a new ARPP sustainable development recommendation, which came into force in October 2009[143].

Type of measure

Commitment by the profession

Targeted by measure

Advertising practitioners

Indicators for monitoring implementation

Number of breaches recorded

Public costs

N/A

Sectors concerned

[142] Available at the following address: http://www.legrenelle-environnement.fr/Charte-avec-le-Bureau-de.html
[143] Available at the following address: http://www.arpp-pub.org/IMG/pdf/RecoDDJuin09-3.pdf

Publicity: all economic sectors concerned, paying particular attention to the automobile and housing sectors

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

Professional Regulatory Authority for Advertising, ADEME, Ministry of Sustainable Development

Available evaluations

The 2010 'Publicity and the environment' review shows results in line with the commitments made to more eco-responsible publicity:

	2010[7]	2009[7]	2007	2006	Change 06-10
Visuals viewed	11 067	15 698	17 129	15 101	-27%
Visuals linked to the environment[8]	548	988	508	181	Multiplied by 3
Share of visuals linked to the environment	5%	6%	3%	1%	+4 points
Breaches	18 visuals	28 visuals	30 visuals	11 visuals	+7 visuals
Provisos	47 visuals	73 visuals	62 visuals	54 visuals	-7 visuals
Total conformity	483 visuals	887 visuals	416 visuals	116 visuals	Multiplied by 4
Percentage of total conformity	88%	90%	82%	64%	+24 points
Percentage of breaches	3%	3%	6%	6%	Divided by 2

Note: when reading the change in the above figures, account must be taken of the change in methodology. ***These figures are strictly comparable between 2006, 2007 and 2009. For 2010, account should be taken of the change in the reference rules, as well as in the media and the volume of sectors studied****.*

Source: http://www.developpement-durable.gouv.fr/spip.php?page=article&id_article=19681

3. ADEME waste awareness campaign (Measure S.3)

Reference texts

- National Waste Production Prevention Plan of February 2004[144]
- 2009-2012 Waste Action Plan[145]

Date of entry into force

An initial three-year national mobilisation campaign was launched for the period 2005-2007. In light of the positive results of that campaign, a further three-year mobilisation campaign was launched in 2009.

Description

'Let's reduce waste now, it's overflowing' waste reduction campaign, jointly led by ADEME and the Ministry of Sustainable Development.

2009-2011 objectives

[144] More details are available at the following address: http://www.developpement-durable.gouv.fr/spip.php?page=article&id_article=2936
[145] Available at the following address: http://www.developpement-durable.gouv.fr/IMG/le-plan-d-actions-dechets-2009-2012.pdf

1- To focus on teaching about easily adoptable waste reduction gestures and to devote each intervention to a single gesture

2- To develop publicity solely based on prevention messages, without possible inclusion of selective sorting

3- To highlight the fact that the waste reduction effort depends on mobilising everyone (general public, local authorities and businesses)

Conduct of the operation

1- **October 2009**: launch of the campaign by promoting, via a multimedia mechanism, 13 public gestures (I limit my packaging; I compost; I limit my printing; I use a '*Stop Pub* (No Junk Mail)' sticker; I donate clothes; I donate books; I donate toys; I rent tools; I use rechargeable batteries; I use a shopping bag; I get my appliances repaired; I buy loose; I use eco-refills), promotion of exemplars with regard to business and territorial authority waste reduction, launch of a dedicated website, www.reduisonsnosdechets.fr (using which the general public and professionals can find information and tools for download/dissemination)

Launch of the national mobilisation campaign around 13 powerful gestures aimed at the general public (TV, radio, web, press) and professionals (press)

2- **June 2010**: continuation of actions initiated in 2009, with the promotion of two new gestures (I use my cup at the office; I choose reusable crockery for outdoor eating), supplementing those developed the previous year, further examples of businesses and territorial authorities involved in reducing waste, updated and enhanced website

Large-scale opinion poll 06/10-08/10: *general public* (TV, radio, web, press) and *professional* (press, web)

3- **November 2010**: third intervention, with the promotion of a new high-impact reduction gesture, reducing wasted food, a games application targeting the very young (less aware of waste reduction than their elders), broadcasting of short programmes highlighting exemplary businesses with regard to waste reduction, promotion of new territorial authority examples.

Large-scale opinion poll 11/10-12/10: *general public* (TV, radio, web, press) and *professional* (TV, radio, press, web)

Type of measure

Information, awareness-raising

Targeted by measure

Private individuals, professionals (businesses and territorial authorities)

Indicators for monitoring implementation

Public perception: percentage of people remembering the campaign, valuing it, etc. (see evaluation below)

Public costs

- 2009-2011 budget (not including buying of space): €3.5 million, including taxes
- Estimated cost of buying space: 2009 = €5 million and 2010 = €5.9 million

Sectors concerned

All sectors liable to generate waste

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

ADEME

Available evaluations

Salient points of the two post-tests carried out for the large-scale public opinion polls

► October 2009:

A campaign people remember:

- 47% of those interviewed remember an information campaign on waste reduction (i.e. 12 percentage points above the Ifop average for 'ad memory of general interest campaigns')
- 84% of them are able to quote at least one element actually relating to the campaign (in particular, *Détritos*, seemingly the most memorable element of this campaign)

A much valued campaign:

- 89% approval for the films on 'composting' and 'limiting packaging', 87% for the film on 'limiting printing'
- Between 63% and 76% approval for the press adverts
- 87% of those interviewed described the campaign as 'original'

An informative, useful campaign, not aimed at making people feel guilty:

- 86%: ‘clearly shows the urgency’
- 81% ‘teaches things about household waste’
- 91% ‘is useful’
- 85%: ‘gives me concrete solutions to reduce the amount I waste’
- 64%: ‘does not aim to make me feel guilty’

An involving and encouraging campaign

- 85%: ‘is convincing’ and ‘makes me think’
- 89%: ‘it is at the time of purchase that you need to think about the amount of waste’
- 74%: ‘affects me personally’
- 86%: ‘makes me want to act’
- 87%: ‘encourages me to try to reduce the amount I waste’

► June 2010:

A much valued TV campaign:

- 89% approval for the TV adverts
- 81% approval for the radio adverts
- 72% approval for the press
- 78% approval for the banners

A TV campaign people remember:

- Spontaneously, 49% of those interviewed remember having seen an information campaign on reducing household waste, and with assistance:
- 76% of those interviewed stated that they recognised at least one of the three films broadcast
- 58% of those interviewed stated that they recognised at least one of the adverts broadcast
- 33% of those interviewed stated that they recognised at least one of the radio adverts broadcast
- 63% of those interviewed stated that they recognised at least one of the web banners displayed

An informative campaign with a very good level of encouragement to take action:

- 86% think that the campaign encourages action
- 91% consider that ‘this is a useful campaign’
- 86% consider that ‘this is a convincing campaign’
- 84% consider that ‘this campaign provides concrete solutions’
- 74% consider that ‘this campaign affects them personally’
- 87% think that the campaign encourages people to talk about waste reduction to those around them

Salient points of the post-test carried out for the large-scale opinion polls of June 2010:

A campaign with a good approval rating

- 65% approval for the ‘sponsored news’
- 68% approval for the e-mailing
- 56% approval for the web banner

A campaign that encourages action:

- 78% of respondents think that the campaign encourages action
- 76% see the slogan ‘‘Let’s reduce waste now, it’s overflowing’ as encouraging
- 69% think that the campaign encourages people to talk about waste reduction to those around them

… and manages to raise awareness among all elements of the public, including those that are resistant

Almost three-quarters of those that are resistant think that the campaign encourages action; 93% of those that are resistant think that the campaign is useful.

A campaign seen, in particular, as useful (93%), clear and easy to understand (79%), relevant (79%), convincing (73%), educational (82%) and encouraging (makes you think: 83%; makes you want to act: 66%).

4. European Week for Waste Reduction (Measure S.4)

Reference texts

- National Waste Production Prevention Plan of February 2004
- 2009-2012 Waste Action Plan

Date of entry into force

Since 2006. 2009-2011 strand underway

Description

Event organised in France since 2006 as part of the national publicity campaign for waste reduction. In 2009 the Week became European. Numerous tools have been developed in this context (publicity kits) to make EU and Member State waste prevention and reduction policies widely known (Directive 2008/98/EC of 19 November 2008).

Objectives:

- To reduce the amount of waste generated in Europe by involving all actors concerned through awareness-raising programmes
- To organise, over three years, a European Week for Waste Reduction based on the example of the French Week
- To increase awareness of the waste prevention and reduction strategy and policies of the EU and the Member States (Directive 2008/98/EC of 19 November 2008)
- To mobilise the maximum possible number of parties concerned (citizens, local authorities, businesses, associations, etc.)
- To give concrete form to the concept of waste reduction (waste prevention)

- To contribute to sustainable achievement of waste reduction measure: by disseminating tools and good practice and providing support for launch of awareness-raising actions
- To evaluate the effectiveness and relevance of the Week and ensure its sustainability

Consortium partners

- ADEME - leader - France - DICOF (Directorate for Communication, Training and Development) coordination
- ACR+ (Association of Cities and Regions for Recycling and Sustainable Resource Management) - Belgium
- IBGE (Brussels Institute for Management of the Environment) - Belgium
- ARC (Catalan Waste Agency) - Spain
- LIPOR (Inter-municipal Waste Management Service of the Greater Porto Region) - Portugal

Conduct of the project:

1- Production of a publicity kit

2009 KIT → website (www.ewwr.eu), web banners and signature e-mail, visual identity, promotional poster, presentation poster for the Week, exhibition kit, shopping list notebooks, booklet, 'No Junk Mail' sticker, board game, badge, e-newsletter, slides template. This kit is produced in six languages (French, English, Dutch, Spanish, Catalan and Portuguese).

2010 KIT → development of part of the 2009 Kit in other languages, promotional clip in 22 languages, Muckwads cartoon e-book in 14 languages, 'Operation Empty Garbage Bin!' game in 13 languages.

2- EWWR 2009 (21-29 November) 2009:

20 official organisers - authorities responsible for waste prevention (that have undertaken to organise the Week in their territory): Andorra, Belgium (Brussels-Capital, Flanders and Wallonia regions), Estonia, France, Ireland, Spain (Gipuzkoa, Balearic Islands, Navarra, Valencia and Catalonia), Portugal (national scale and Porto region), Sweden, United Kingdom (City of Belfast, Eastern England, Scotland and Wales). Actions also undertaken, however, in Finland, Malta, Greece and Serbia.

3- EWWR 2010 (20-28 November) 2010:

31 organisers mobilised in 16 European countries + the 'Minas Gerais' region of Brazil: Germany, Andorra, Austria, Belgium (Wallonia, Flanders and Brussels-Capital regions), Denmark, Estonia, France, Finland, Ireland, Italy, Spain (Asturias, Gipuzkoa, Navarra, Valencia and Catalonia provinces), Malta, Portugal (national scale and Porto region), Slovenia, Sweden, United Kingdom (Greater London, City of Belfast, Eastern England, Scotland, Wales, Warrington, Yorkshire and the Humber).

4- EWWR events

- European Conference on Waste Reduction (24-25 November 2010) in Girona, Catalonia - organised by the Catalan Waste Agency (ARC)

- EWWR 2009 European Awards - Among the 2 672 actions undertaken, 60 actions were pre-selected and then submitted to a European independent jury. The most exemplary actions were presented and rewarded at the EWWR trophy presentation ceremony on 15 March 2010 in Brussels, in the presence of the Brussels Environment Minister and European Commission representatives. In total, six trophies were awarded, one for each category of project developer

- Administration/public authority: 'Let's do it with Ferda', Environmental Council, Estonia

- Association/NGO: '*Enrenou de Roba*', '*Roba Amiga*', Catalonia, Spain

- Business/industry: Eurest, Sweden

- Educational establishment: 'You Make the Difference', School 7 Circolo didattico Pozzuoli, Campania, Italy

- Others: *Prêche Aguas Santas*, Greater Porto Region, Portugal

- Jury special prize: '*Bienvenue à Poubellec'h*, Combined Municipalities of Presqu'île de Crozon, France

- European Training Seminar in Porto (17-18 June 2010)

Forthcoming events: EWWR 2010 European Awards (28 March 2010, Brussels), final closing conference in France

Type of measure

Information, awareness-raising

Targeted by measure

General public, administration/public authority, association/NGO, business/industry, educational establishment, others: hospitals, leisure centres, etc.

Indicators for monitoring implementation

- For the publicity kit:

Website → number of visitors, number of downloaded documents, number of registered project developers (that do not have official organisers)

Other documents (poster, exhibition, etc.) → number of publicity documents produced, number of documents disseminated

- EWWR → number of official organisers, number of actions undertaken

- EWWR events: number of participants

Public costs

Total project budget (for three years, 2009-2011): €2 146 644 (EC financing of 50%). Allocation of budget among the various partners:
- ADEME financing: €489 731
- ACR+ financing: €110 982.50
- IBGE financing: €181 726
- ARC financing: €161 087.50
- LIPOR financing: €129 790

Sectors concerned

All sectors

The EWWR concerns the theme of waste production prevention, highlighting five common threads:

- **Too much waste**: emphasising the impact of waste prevention in environmental, sociological and economic terms, in particular to avoid confusion between the act of prevention and that of waste sorting.
- **Better production**: enhancing measures taken to reduce the quantity of waste generated by different types of activity, not just by reducing waste produced and increasing awareness among suppliers, but also by integrating waste prevention into product design criteria and at all stages of manufacturing.
- **Better consumption**: encouraging consumers to think about their consumption choices (preferring tap water to bottled water, selecting eco-designed and/or eco-labelled products, buying in bulk, choosing the paper-free option, etc.).
- **A longer life for products**: remind people that products may have a second life through repair, donation, etc.
- **Less waste thrown away**: showing that our household purchases do not always have to end up in the bin, by checking product use-by dates, home composting, etc.

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

ADEME

Available evaluations

Three types of questionnaire were produced in 2009 (questionnaires for European organisers, project developers and activity participants) in order to evaluate the EWWR in general, with particular feedback on publicity tools, perception of waste reduction, etc. For 2010 these questionnaires were updated and an additional questionnaire developed targeted at 'children':

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- European evaluation of EWWR 2009 (evaluation questionnaires sent to European organisers, project developers and participants)

- French evaluation of EWWR 2009 (evaluation questionnaires sent to project developers and participants)

- Evaluations of EWWR 2009 carried out by European project partners are also available: evaluation of EWWR in Brussels, Porto and Catalonia.

In its 2009 version (21-29 November), EWWR was organised in 14 European countries, with more than 2 672 badged actions (1 313 actions undertaken in France). Twenty official European organisers - authorities responsible for waste prevention - undertook to organise the Week in their territory.

Statistical review of the 2009 European version	Statistical review of the 2009 French version
Public targeted • General public: 71% • School pupils/children: 17% • Professionals/salaried employees (private sector): 5% • Professionals/salaried employees (public sector): 3% • Others: 1%	**Public targeted** • General public: 73% • School pupils/children: 16% • Professionals/salaried employees (public sector): 4% • Professionals/salaried employees (private sector): 3% • Others: 4%
Project developers • Public authorities: 46% • Associations/NGOs: 23% • Business/industry: 20% • Educational establishments: 9% • Others (hospitals, retirement homes, etc.): 1%	**Project developers** • Public authorities: 43% • Associations/NGOs: 21% • Business/industry: 28% • Educational establishments: 8% • Others: —

In its 2010 version (20-28 November), there were 31 organisers in 18 countries (16 European countries mobilised, plus the Minas Gerais region in Brazil and the Dominican Republic). In total, there were 4 346 badged actions, including 1 960 in France.

France had almost 50% of supplementary actions between 2009 and 2010 (1 313 actions in 2009).

Type of project developer	Type of public
• Administration/public authorities: 39% • Business/industry: 41% • Associations/NGOs: 15% • Educational establishments: 3% • Others: 2%	• General public: 77.1% • School pupils/children: 9.2% • Professionals/salaried employees (public sector): 6.6% • Professionals/salaried employees (private sector): 2.8% • Others: 4.2%

A joint event to launch 'BatucaMob' Week took place in around 20 European territories. Symbolic, playful and memorable, this operation aimed to issue a call to positive action on waste reduction and to organise an identical action, occurring simultaneously in the European territories participating in the Week.

The European Waste Reduction Awards ceremony will take place in Brussels on Monday 28 March (Radisson Hotel). The various trophies will be presented by European Commissioner Janez Potocnik (responsible for Environment), as well as the Brussels-Capital Environment Minister, Evelyne Huytebroeck.

5. ADEME energy-saving awareness campaign (Measure S.5)

Reference texts

Climate Plan

Date of entry into force

Since 2004. 2008-2010 strand underway

Description

Energy saving campaign, 'energy savings: let's act now, the heat is on!', jointly led by ADEME and the Ministry of Sustainable Development.

2008-2010 objectives:

- Assist awareness of the link between energy consumption and climate change issues;
- Encourage 'taking action', particularly investment in energy management by private individuals, drawing on tax credit and all of the incentive measures under the Climate Plan;
- Increase knowledge about the 'response tools' put in place to answer questions (*tel. AZUR*, Internet, local information network of Energy Info Sites);
- Mobilise professionals, particularly in the construction industry.

Conduct of the campaign:

- Campaign launch phase in **2008**, promoting measures to encourage taking action: Energy Performance Diagnosis (DPE), ecological bonus;

  2008: one large-scale public opinion poll (TV, radio, web) in June → DPE and bonus; one large-scale opinion poll (radio, press and web) → launch of the Heat Fund and the first project call at the end of 2008

- Continuation of information actions in **2009**, linked to heavy promotion of zero-rated eco-loans and tax credit and an increase in actions directed towards professionals, particularly the Heat Fund; overall publicity regarding environmental change, re-contextualising and reinforcing the messages to encourage taking action;
  2009: three large-scale public opinion polls (TV, radio, press, web, professionals strand) in April, June and November → zero-rated eco-loans and Energy Info Sites; one large-scale opinion poll (press, web) Nov-Feb → Heat Fund)

- Third phase in **2010**: continuation of actions to encourage major investment decisions by making the public and professionals even more aware of the powerful lever offered by the Environment Round Table mechanisms, such as zero-rated eco-loans or the Heat Fund. Promotion of Energy Info Sites and the Energy Fair to the general public and promotion of the FEE Bat training mechanism to construction professionals and, lastly, more in-depth understanding and mobilisation around environmental change.

  2010: two large-scale public opinion polls (TV, radio, press, web, professional strand) in February and September → zero-rated eco-loans, Energy Info Sites/Energy Fair;

  One large-scale professional opinion poll (radio, press, web) May-Oct → FEE Bat; one large-scale opinion poll (press, web, direct marketing) underway Oct-Nov → launch of second Heat Fund project call.

Type of measure

Information, awareness-raising

Targeted by measure

Private individuals and professionals, particularly construction businesses

Indicators for monitoring implementation

Public perception: percentage of people remembering the campaign, valuing it, etc. (see evaluation below)

Public costs

€5 946 696 (not including buying of space); estimated cost of buying space: €8.9 million in 2009 - €6.4 million in 2010.

Sectors concerned

The campaign concerns the energy, transport and residential sectors.

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

ADEME

Available evaluations

Salient points of the three post-tests carried out for the large-scale public opinion polls:

► July 2008: the measures are known and have a good approval rating.

- Good level of awareness: **35%** for Energy Performance Diagnoses (DPE) and **46%** for the ecological bonus.
- **70%** of French people liked at least one of the two adverts (TV or radio). In total, **53%** of French people remember at least one advert, i.e. more than one person in two. This campaign is perceived as 'saying important things' by **76%** of French people, 'making you think' by **67%** and 'making you want to act and make energy savings' by **68%.**

► May 2009: effectiveness in terms of impact, approval and encouragement to act.

- **70%** of French people heard or saw the radio or TV advert; **65%** of readers of the regional daily press saw or read a press advert (**71%** in conurbations with fewer than 100 000 inhabitants).
- **81%** of French people who recognised it liked the TV advert, **72%** the radio advert; **88%** of readers of the regional daily press valued the press campaign (**97%** in higher socio-professional categories).
- It makes **76%** of French people want to act and make energy savings and **72%** want to get information about/benefit from zero-rated eco-loans, and makes **46%** of readers in higher

socio-professional categories who read the regional daily press want to contact an Energy Info Site adviser.

► December 2009: good visibility, etc. Word-of-mouth, a lever to be exploited, etc. Engagement-generating messages on the environment and energy saving:

- **76%** saw the TV advert; TV and radio are the best performing points of contact for the general public, press and the Internet for professionals.
- **72%** know about zero-rated eco-loans (**77%** in the case of owners)
- **38%** knew about the campaign by word-of-mouth, a powerful lever in developing intentions to get information

► October 2010: confirmed good campaign effectiveness in this, its third year.

- **63%** of those interviewed saw at least one of the campaign visuals.
- Ongoing increase in the level of awareness about tax credit, up from **70%** in May 2009 to **90%** in October 2010, and about zero-rated eco-loans, up from **62% to 73%**, with awareness about Energy Info Sites remaining steady, up from **30% to 31%.**
- A campaign still perceived as encouraging action: **71%** for zero-rated eco-loans/Energy Info Sites, **73%** for Energy Info Sites/Energy Fair.
- High approval rating: between **65%** and **77%** for all zero-rated eco-loan media used, an increase on previous large-scale opinion polls.

6. CO_2 impact of products (Measure S.6)

Reference texts

Article 228 of Grenelle 2, amending the Consumer Code:

Article L.112-10

'From 1 July 2011, and after consultation with all actors in the branches concerned, a trial shall be conducted, for a minimum period of one year, to provide phased information to consumers, by any appropriate procedure, regarding the carbon-equivalent content of products and their packaging, as well as the consumption of natural resources or the impact on natural environments attributable to these products over their life cycle.

This trial shall be the subject of an assessment transmitted to Parliament, evaluating the possibility of rolling out this mechanism.

Based on this assessment, where appropriate, a Council of State decree shall establish the methods for rolling out this mechanism. Taking account of the specific nature of very small businesses in terms of meeting the desired objective, it shall state the nature of the information to be provided, the information media, the respective responsibilities of the economic actors involved, the methods of recording data and the methods of accessing the scientific data on which this information is based, as well as the categories of product covered by this requirement.

Based on the rules thus defined, Council of State decrees shall state, for each category of product, the nature of the relevant information, depending on its mode of distribution, the information media, and also the benchmarks to be used.'

Date of entry into force

1 July 2011

Description

Trial phase for CO_2 labelling of products and their packaging, as well as consumption of natural resources or impact on natural environments attributable to these products over their life cycle.

Type of measure

Awareness-raising

Targeted by measure

General public

Indicators for monitoring implementation

Not available

Public costs

Not available

Sectors concerned

All consumer products

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of Sustainable Development

Available evaluations

Process that will get underway in July 2011; no evaluation available

7. Energy Info Sites (Measure S.7)

Reference texts

Under the National Plan to Combat Climate Change, the French Government, in autumn 2000, assigned ADEME the task of developing and coordinating the Energy Info Site network. This goal was reaffirmed and strengthened in 2006 when the National Climate Plan was updated.

Date of entry into force

2001

Description

Establishment of sites to advise private individuals on energy efficiency and renewable energies. Professionals may also consult them (ADEME initiative in partnership with territorial authorities).

On 12 November 2009, Valérie Létard announced an increase in the number of advisers that the State places at citizens' disposal.

The energy advisers' network will be stabilised and professionalised (with an increase from €15 000 per adviser to €20 000 from 2010). The number of advisers increased from 300 to 400 between 2007 and 2009, and is to reach 500 by the end of 2010.

At the time of the Energy Fair, held from 25 September to 1 October 2010, more than 400 Energy Info Site advisers were mobilised throughout France and invited people to participate in free events, such as site visits, cine-debates, conferences or exhibitions on the theme of home energy saving.[146]

[146] More information is available at the following address:
http://www.developpement-durable.gouv.fr/spip.php?page=article&id_article=18565

Type of measure

Information

Targeted by measure

Private individuals, professionals

Indicators for monitoring implementation

- **Number of contacts**: number of times advice given by energy info advisers

- **Economic impact of the Energy Info Site Programme**. The economic and environmental impact is calculated on the basis of:
- data produced by aggregating the 14 regional evaluations undertaken (extent to which action taken, extent of contribution made by Energy Info Sites);
- national data: number of times advice given (advice given 220 000 times in 2009).

- **Environmental impact**

Public costs

In 2009 the ADEME contribution was €10.5 million, targeted towards ensuring the network's long-term sustainability and developing it: organisation of training for Energy Info advisers, publicity campaign to promote the mechanism, co-financing of missions of Energy Info advisers.

A number of territorial authorities also contribute towards developing the network. This support involves, in particular, including in the State-Region Project Contract (CPER) Regional Council financing for Energy-Info Sites in almost all cases. Locally, General Councils (50% of cases) and local authorities also make a financial contribution to ensuring structures' sustainability and developing new Energy Info Site support structures.

Sectors concerned

Energy, residential

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

ADEME

Available evaluations[147]

Number of contacts (2009): 220 000

Number of contacts (2010): 192 000

Economic impact: based on the evaluations undertaken regionally, it is estimated that Energy Info advisers made a contribution to work carried out totalling €405 million in 2010 (compared with €465 million in 2009).

Environmental impact: the direct environmental impact of Energy Info Sites in 2009 equates to a reduction in greenhouse gas emissions of 166 620 teqCO_2. This is equivalent to the emissions of a fleet of around 76 300 vehicles over a year.

The direct environmental impact of Energy Info Sites in 2010, evaluated by ADEME, equates to a reduction in greenhouse gas emissions of 145 kteqCO_2 (equivalent to the emissions of a fleet of 66 500 vehicles).

8. Banking services/Socially Responsible Investment (Measure S.8)

Reference texts

Grenelle 1 (Article 53): 'Socially and ecologically responsible investment shall be encouraged via incentive mechanisms and information campaigns'.

Grenelle 2 (Article 224): 'UCITS and management companies shall mention, in their annual report and in documents intended to inform their subscribers, the methods whereby they take account of social, environmental and quality of governance criteria in their investment policy. They shall state the nature of these criteria and the way they apply them, using a standard presentation format set by decree. They shall indicate how they exercise the voting rights attached to financial instruments resulting from these choices': by providing a common framework for comparable subscriber information, this provision should assist the development of socially responsible investment.

[147] The ADEME evaluation methodology includes a technical specification, practical advice, questionnaires (private individuals, organisations, professionals) and a method for undertaking evaluation of environmental impact based on the Dialogie software tool.

National Sustainable Development Strategy 2010-2013: socially responsible investment appears here as a lever enabling current production and consumption modes to be directed towards sustainable production and consumption modes.

Socially Responsible Investment (SRI) Week was created in 2010, at the initiative of the Forum for Responsible Investment, in order to promote this form of investment to a wide public. It is supported by the Ministry of Sustainable Development.

Date of entry into force

- For Grenelle 1: August 2009
- For Grenelle 2: July 2010
- For SRI Week: first staged in 2010

Description

The first Socially Responsible Investment (SRI) Week[148] was held from 4 to 10 October 2010, under the patronage of the Ministry of Sustainable Development. SRI is defined as an investment and portfolio management strategy that integrates Environmental, Social and Governance (ESG) criteria, in addition to the traditional financial criteria, in order to determine the choice of securities included. Today SRI products are available in large networks but still rarely offered to individual savers. The networks have a potential public, however, who wish to invest according to their values but without losing sight of performance. The EIRIS/IPSOS poll, carried out in 2010 to measure French consumers' knowledge of and interest in SRI, in fact showed that 42% of them would like to know about the SRI characteristics of a financial product before making their choice.

Educational in nature, SRI Week was made a reality through organisation of more than 60 events aimed at raising awareness of the issues around SRI. They were undertaken by a variety of actors, such as non-financial ratings agencies, associations, asset managers, higher education institutions, professional organisations, public authorities, banking and insurance networks, etc.

In light of the success of this first staging, it will be repeated in autumn 2011.

Type of measure

Awareness-raising

Targeted by measure

General public, institutional investors, professionals (asset managers, consultants, distribution networks, etc.)

[148] More information is available at the following address: www.semaine-isr.fr

Indicators for monitoring implementation

Number of events organised during the Week

Public costs

In 2010 the Ministry of Sustainable Development allocated a subsidy of €20 500 to the Forum for Socially Responsible Investment to organise SRI Week.

Sectors concerned

Banking sector

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

Ministry of Sustainable Development

Available evaluations

62 events, with 37 organisers, were held throughout France. More than half of them directly targeted the general public, while others were aimed at forming banking and insurance networks for this type of investment.

Depending on the target and the nature of the organiser, events took a variety of forms: stand at the Paris Investment Forum, conference, Internet training module, video animation, commercial operation concerning SRI UCITS, documentary film, White Paper.

9. Carbon assessment training (Measure S.9)

Reference texts

ADEME initiative

Date of entry into force

2004

Description

ADEME offers carbon assessment training, designed for both professionals and teachers:

- For professionals: design and dissemination of a mechanism for training in the *Bilan Carbone*® (carbon assessment) method. It comprises three training modules: acquiring the basic principles of the method (2 days), mastering the method (2 days) and specialising in the method applied to territories (1 day).
- For teachers: design and dissemination of a module for training in the *Bilan Carbone*® method for teachers. It includes a section covering development of a tutored project with students (such as implementation of the establishment's *Bilan Carbone*®).

Type of measure

Training

Targeted by measure

- Professionals: businesses, territorial authorities, research bureaus
- Teachers: secondary and higher education teachers

Indicators for monitoring implementation

Number of trainees trained; number of teachers trained.

Public costs

Professionals: on average since 2009, an annual budget of around €800 000, including taxes (contract awarded to a group of trainers)

Teachers: budget of €190 000, including taxes, over two years (contract awarded to a group of trainers)

Sectors concerned

All professional sectors; secondary and higher education

Cross-effects

Reduced greenhouse gas emissions

Authorities in charge of implementation, monitoring and evaluation of results

ADEME

Available evaluations

Professionals:

In 2010:
- 1 326 trainees trained in acquiring the basic principles of the method
- 745 trainees trained in mastering the method
- 151 trainees trained in specialising in the method applied to territories

In 2009:
- 1 300 trainees trained in acquiring the basic principles of the method
- 450 trainees trained in mastering the method
- 60 trainees trained in specialising in the method applied to territories

To note: under the old training mechanism, which only included one module, 1 472 trainees trained between 2004 and 2008

Teachers:

In 2010:
- 80 teachers trained

In 2009:
- 78 teachers trained

To note: 75 teachers trained between 2006 and 2008

ANNEX 4.

Report under Article 14(4) of Directive 2010/31/EU of 19 May 2010 on the energy performance of buildings

Article 14(4) of Directive 2010/31/EU requires Member States that opt to take measures to ensure the provision of advice to users concerning the replacement of boilers, other modifications to the heating system and alternative solutions to assess the efficiency and appropriate size of the boiler, as an alternative to the measures referred to in Article 14(1), (2) and (3) (regular inspection), to submit to the Commission, by 30 June 2011 at the latest, a report on the equivalence of those measures to measures referred to in Article 14(1), (2) and (3). As Article 14 allows, France has opted to include this report in its Energy Efficiency Action Plan. Such is the purpose of this Annex.

1. Presentation of regulations

1.1 Requirement for annual maintenance of boilers (between 4 and 400 kW)

The new Regulations[149] on boiler maintenance apply from 31 October 2009 (publication of the Order in the OJ). They concern all boilers (gas, domestic fuel oil, biomass and multifuel) of an output of between 4 and 400 kW. Maintenance must, as previously, be carried out every year. A maintenance certificate must be given to the client no later than 15 days after the visit and kept for two years by the client to produce in the event of a check. This certificate is new and informs the client about the state of his or her boiler and central heating system. Maintenance must be carried out by a qualified professional.

The operations to be performed during maintenance have been specified and considerably strengthened:

- Checking of the boiler and, if necessary, cleaning and adjustment
- Measurement of CO levels
- Evaluation of boiler energy and environmental performance
- Evaluation of boiler performance compared with the best-performing boilers currently on the market
- Evaluation of boiler air pollutant emissions compared with those of the best-performing boilers currently on the market (NO_x for gas and domestic fuel oil boilers, VOC and dust for biomass boilers)
- Advice: proper usage, improvement of the boiler and system installed and possible benefit from replacing the installation

Thus, it should be noted that these new regulations **integrate environmental, energy and public health issues at the same time.**

Maintenance certificate: a regular and customised awareness-raising and information tool

The certificate includes the list of operations performed during maintenance, the result of measurement of CO level, the result of evaluation of energy and environmental performance and the advice provided. It must be given to the client, who must sign it. This provides confirmation that he or she has indeed received the certificate. Handover of the certificate should also be the time for discussion of heating system performance and the advice offered.

Publicity regarding annual boiler maintenance: two guides and an Internet site

[149] Decree No 2009-649 of 9 June 2009 on annual maintenance of boilers of a rated output of between 4 and 400 kilowatts and Order of 15 September 2009 on annual maintenance of boilers of a rated output of between 4 and 400 kilowatts

In order to explain the new regulations to the general public, a guide aimed at private individuals, produced jointly by MEDDTL and ADEME, was published in December 2009. This guide is ordered by the Energy Info Sites and is received by private individuals in showrooms: thus, more than 50 000 guides were distributed in the first half of 2010. It is also available for download, free of charge, on the ADEME and MEDDTL websites: www.ademe.fr or www.developpement-durable.gouv.fr.

In addition, sector professionals have come together to produce a data sheet guide for professionals, in order to ensure early correct application of the new regulations.

Lastly, the MEDDTL website (www.developpement-durable.gouv.fr) sets out the provisions of the new regulations and contains questions and answers to assist understanding of the new provisions.

1.2 Regular checking of boilers (> 400 kW)

Boilers of an output of between 400 kW and 20 MW are subject to minimum energy performances[150]. The operator is also required to install equipment:
- to check and measure performance,
- and to assess combustion quality.

In addition, they undergo a mandatory check[151], at least once every two years, to ensure that they meet minimum regulatory performance standards and that operators are undertaking the control and adjustment measures required of them.

2. Equivalence between measures put in place under Article 14(4) and those referred to Article 14(1) to 14(3) of Directive 2010/31/EU on the energy performance of buildings

Article 14 'Inspection of heating systems' of Directive 2010/31/EU on the energy performance of buildings requires Member States to establish regular inspection of the accessible parts of systems used for heating buildings (paragraphs 1 to 3) or to put in place measures with equivalent overall impact (paragraph 4).

France has opted to transpose Article 14 of the Directive on the energy performance of buildings in line with paragraph 4.

To that end, Article L. 224-1 of the Environment Code makes provision, depending on the output of the equipment concerned, for regular checking or inspection of boilers.

France has elected to provide customised advice to users in two ways:
- firstly, **customised advice to users** during regular boiler visits;
- secondly, provision of **advice at national level** on the most efficient heating systems, on improving the energy performance of buildings and on financial support.

[150] Articles R. 224-20 to R. 224-30 of the Environment Code.
[151] Decree No 2009-648 of 9 June 2009 on inspection of boilers of a rated output of more than 400 kilowatts and fewer than 20 megawatts; Articles R. 224-31 to R. 224-41-3 of the Environment Code.

2.1 Customised advice provided during regular visits

For boilers of between 4 and 400 kilowatts, advice is given to the user on proper usage of the boiler, its replacement, other possible modifications to the heating system and alternative solutions (use of a renewable energy system, for example) during the annual maintenance procedure.

At the same time, the energy, environmental and public health aspects of this procedure have been strengthened. This has required wider consultation with the Ministries responsible for energy, environment, construction, industry and health.

A maintenance certificate, providing customised advice, has been created: this certificate will be requested in the event of an inspection by State officials and may be requested by insurance companies or landlords.

To support implementation of these new regulations, the Ministry of Ecology, Energy, Sustainable Development and the Sea and the Environment and Energy Management Agency (ADEME) have produced a **practical guide** to annual boiler maintenance, **aimed at private individuals**.

In addition, the associations of maintenance professionals have drawn up a **data sheet guide** concerning maintenance, **aimed at professionals**.

For boilers of between 400 kilowatts and 20 megawatts, the procedure for regular checking has also been strengthened (increased frequency of regular checks (two years), measurement of air pollutant emissions, etc.) and advice is given by ADEME regarding energy savings.

2.2 Provision of advice at national level on the most efficient heating systems, on improving the energy performance of buildings and on financial support

The following are a few examples of other actions carried out to improve and replace heating systems. The detail of these measures, as well as other measures aimed at improving and replacing heating systems, is available in the Residential-Service and Awareness-raising sections of the National Energy Efficiency Action Plan.

Financial support: since 2005 Sustainable Development Tax Credit has made it possible to finance efficient heating systems. Since 2006 Energy Efficiency Certificates have also enabled them to be given value. Since 2009 zero-rated eco-loans have enabled financing of work to improve the overall energy performance of buildings and, in particular, improve heating systems.

ADEME and Ministry publicity campaigns: they have been conducted in relation to the most efficient heating systems and to financial support for replacement. Campaigns have also covered improving the energy performance of a building as a whole and possible financial or tax support (Sustainable Development Tax Credit, zero-rated eco-loans, etc.).

‘Energy Info Sites’: these involve **a national network to inform and advise private individuals**. Since 2001 the purpose of these information centres, organised by ADEME and local authorities, has been to give advice on energy efficiency and renewable energy sources at local level. There are 230 centres, with around 400 advisers.