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RÉPUBLIQUE FRANÇAISE

NOTE FROM THE FRENCH AUTHORITIES

SUBJECT: Energy efficiency action plan for France

The French authorities are pleased to send the European Commission the 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 and repealing Council Directive 93/76/EEC.

Energy Efficiency Action Plan for France

Contents

FRANCE'S ENVIRONMENT ROUND TABLE

1. The Environment Round Table: A democratic process (presentation of the phases)

On 21 May 2007, the President of the Republic launched an original approach, the "Environment Round Table": the Environment Round Table brought together for the first time the State, the regional authorities and civil society representatives in order to define a roadmap for ecology and sustainable development. Its aim, in particular, is to draw up an action plan of concrete, quantifiable measures with as much agreement as possible from the participants. This plan, the measures of which will be assessed beforehand and afterwards, will be a starting point for mobilising French society to develop in a sustainable manner.

The Environment Round Table aims to create favourable conditions for the emergence of this new French order for the environment.

1.1. Phase 1: workshops from 15 July to end of September 2007

The first phase, from 15 July to the end of September 2007, was dedicated to dialogue and proposal development within workgroups. Six workgroups were organised for this phase:

- a group on "combating climate change and controlling demand for energy"
- a group on "protecting biodiversity and natural resources"
- a group on "imposing an environment which respects human health"
- a group on "adopting sustainable forms of production and consumption"
- a group on "constructing ecological democracy"
- a group on "promoting ecological forms of development which are favourable to competitiveness and employment"

The workgroups have 40 members divided into 5 panels. The purpose of these panels is to represent the stakeholders in sustainable development: the State, local authorities, NGOs, employers and employees.

350 people were involved in this first phase, through 50 meetings, or more than 400 workgroup hours.

1.2. Phase 2: consultations from end of September to mid-October 2007

The workgroup reflections and proposals were the subject of very wide public debate during phase 2, the scope of which can be demonstrated by way of some figures:

- 19 cities, or almost 400 hours of meetings.
- 14 000 online contributions and 350 000 visits.
- 31 bodies: scientific, institutional, etc.
- consultation of the two parliamentary assemblies.

1.3. Phase 3: round table discussions at the end of October 2007

For phase 3, 4 half-day round tables were held on 24 and 25 October 2007, as well as an extension into the morning of 26 October, on the following themes:

- Combating climate change.
- Protecting and managing biodiversity and natural environments.
- Protecting health and the environment whilst stimulating the economy.
- Establishing ecological democracy.

The conclusions of these round tables were returned by the President of the Republic.

All the documentary resources (workgroup reports, summary of proposed measures, documentary resources, list of workgroup members, etc.) are available online at www.legrenelle-environnement.fr.

2. "Combating climate change and controlling energy": Summary of Workgroup 1

The summary is given below of the actions resulting from the Environment Round Table regarding the combat against climate change and control of energy.

2.1. Objectives arising from the Round Table:

The objectives arising from Workgroup 1 "Combating climate change and controlling energy" are:

- Make an ambitious and determined contribution to the European "3x20 by 2020" objective
- Include France in the "factor 4" group – fourfold reduction of our emissions by 2050
- "+20 Mtoe by 2020": increase our renewable energy production by 20 million tonnes of oil equivalent by 2020 and reach, or even exceed, a 20% proportion of renewable energy in energy end-use
- Energy savings and reduction of greenhouse gas emissions: opening of sector-specific projects and introduction of immediate operational and/or structural measures;
  - *Construction*: reduce energy consumption by approximately 20% in service-sector construction and 12% in residential construction within 5 years, and by more than a third by 2020
  - *transportation/mobility*: lower greenhouse gas emissions by 20% in the next 12 years

2.2. "Energy efficiency and carbon" programme

- Programme to promote renewable energy > hydraulic, wind, biomass, geothermal, photovoltaic cells and solar energy.
- Consumption of 30% to 50% renewable energy in the French overseas departments and territories by 2020.
- Research into second-generation biofuels.
- R&D programme for geological capture and storage of CO_2.
- Plan for very energy-efficient low-input farming.
- Carbon balance assessments of administrative departments and a 20% improvement in their energy efficiency.
- Inclusion of environmental clauses in the public procurement code.
- Study of the introduction of a climate-energy tax.

2.3. "Modernising buildings and cities" programme

- Building new energy-efficient housing from 2010, widespread use of Green Buildings by 2012, and passive or positive-energy buildings from 2020.
- Building office space, buildings and public facilities that comply with low-consumption or positive energy standards from 2010.
- Ban on incandescent light bulbs and single glazing from 2010.
- Thermal renovation of public buildings within the next 5 years.
- Financial incentives for thermal renovation of privately-owned buildings.
- Carbon balance and energy-efficient assessments of all organisations of more than 50 people.

2.4. "Urban planning and national/regional governance" programme

- Revitalising city centres in decline.
- Developing "eco-quarters".
- Widespread implementation of national/regional climate-energy plans by the end of 2012 in built-up and urban communities, complying with the objective of a 20% reduction in greenhouse gas emissions by 2020.
- Fighting urban sprawl and the destruction of the countryside.
- Environmental impact study for new urban development zones, integrating transport and the use of agricultural and natural land, with a view to protection.

2.5. "Mobility and transportation" programme

- Priority given to public transport: construction of more than 1 500 km of bus lanes, tramways and cycle lanes.
- Rail: construction of 2 000 km of high-speed lines by 2020.
- Increasing the share of rail freight to 25% by 2012.
- Upgrading the conventional rail network.
- Developing rolling motorways.
- Developing sea motorways and inland waterways transport.
- Huge reduction of air transport emissions.
- 50% reduction of noise related to air transport by 2020.
- New private vehicles: introduction of eco-tags.
- Developing clean vehicles.
- Ecotax based on mileage for trucks using the non-concessionary road network.

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33 "operational committees", each dedicated to a different project, were formed in order to define, implement and monitor the action plan resulting from the Environment Round Table. Their work makes up phase 4 of the Environment Round Table, the operational phase.

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3. Tables showing energy end-use in France

3.1. Energy end-use by economic sector (adjusted according to the climate)

In millions of toe	1990	1995	2000	2002	2003	2004	2005
Iron and steel industry	6.96	6.14	6.18	6.02	5.82	5.79	5.46
Industry	31.54	31.77	33.20	33.57	33.10	33.51	33.62
Of which climate corrections	*0.24*	*0.12*	*0.09*	*0.11*	*0.02*	*0.00*	*0.00*
Residential and service sector	59.28	61.98	67.02	69.12	67.36	67.86	68.24
Of which climate corrections	*4.34*	*2.70*	*4.48*	*6.16*	*1.15*	*0.26*	*0.20*
Agriculture	3.09	3.01	3.00	3.03	2.88	3.00	2.92
Transport	41.72	45.42	49.42	50.89	50.44	50.81	50.38
Total	**142.59**	**148.32**	**158.82**	**162.63**	**159.60**	**160.97**	**160.62**
Of which climate corrections	*4.58*	*2.82*	*4.57*	*6.27*	*1.17*	*0.26*	*0.20*

Source: DGEMP - Energy Observatory (Energy balances)

3.2. Energy end-use by type of energy (adjusted according to the climate)

In millions of toe	1990	1995	2000	2002	2003	2004	2005
Solid mineral fuels	10.27	8.23	7.43	6.57	6.35	6.33	6.12
Petroleum products	71.26	72.68	73.52	74.38	72.89	73.14	72.15
Natural gas	23.34	26.33	32.80	36.07	34.37	34.90	35.44
Electricity	26.50	29.94	33.73	34.52	35.36	36.19	36.44
Thermal/renewable energy	11.22	11.14	11.34	11.09	10.63	10.41	10.47
Total	**142.59**	**148.32**	**158.82**	**162.63**	**159.60**	**160.97**	**160.62**

Source: DGEMP - Energy Observatory (Energy balances)

3.3. Some economic indicators

Indicators	1990	1995	2000	2002	2003	2004	2005
Gross domestic product (1)	1 171.0	1 249.9	1 441.4	1 488.9	1 500.8	1 535.6	1 557.0
Unadjusted index of industrial production excluding construction (2)	87.3	87.4	100.0	99.8	99.3	101.6	101.6
Private consumption (1)	842.5	893.5	1 009.6	1 064.8	1 082.8	1 105.6	1 126.6
Public (3)	56 709	57 844	59 013	59 778	60 155	60 521	60 873
Number of households (3)	21 633	22 906	24 260	24 914	25 249	25 555	25 831

(1) in billions of French francs 2000
(2) base 100 in 2000
(3) in thousands, mainland France

Source: INSEE

3.4. Trend of initial and final energy intensities in 2006

Source: DGEMP - Energy Observatory

The reduction in initial[1] and final[2] energy intensities, which had been particularly pronounced in 2005, continues, but in great contrast with –2.3% and –1.3% respectively. These developments are better than the trends seen since 1990 (–0.7% and –1.1% respectively). The difference between the two, which did not exist in 2004 and which was inverted in 2005, is due to the fact that less primary energy is needed to meet final demand in 2006. In other words, the 'energy' branch (electricity production, uranium enrichment, refineries, etc.) consumes noticeably less energy in 2006.

With regard to final consumption, the economic situation and the increase in energy prices lead to more economical behaviour in all sectors, particularly in industry.
Consumption of primary energy per inhabitant declines by -0.8%, to 4.50 toe, while that of final energy rises by 0.2% to 2.64 toe. Their trends since 1990 are each slightly up, from +0.7% and 0.3% per year.

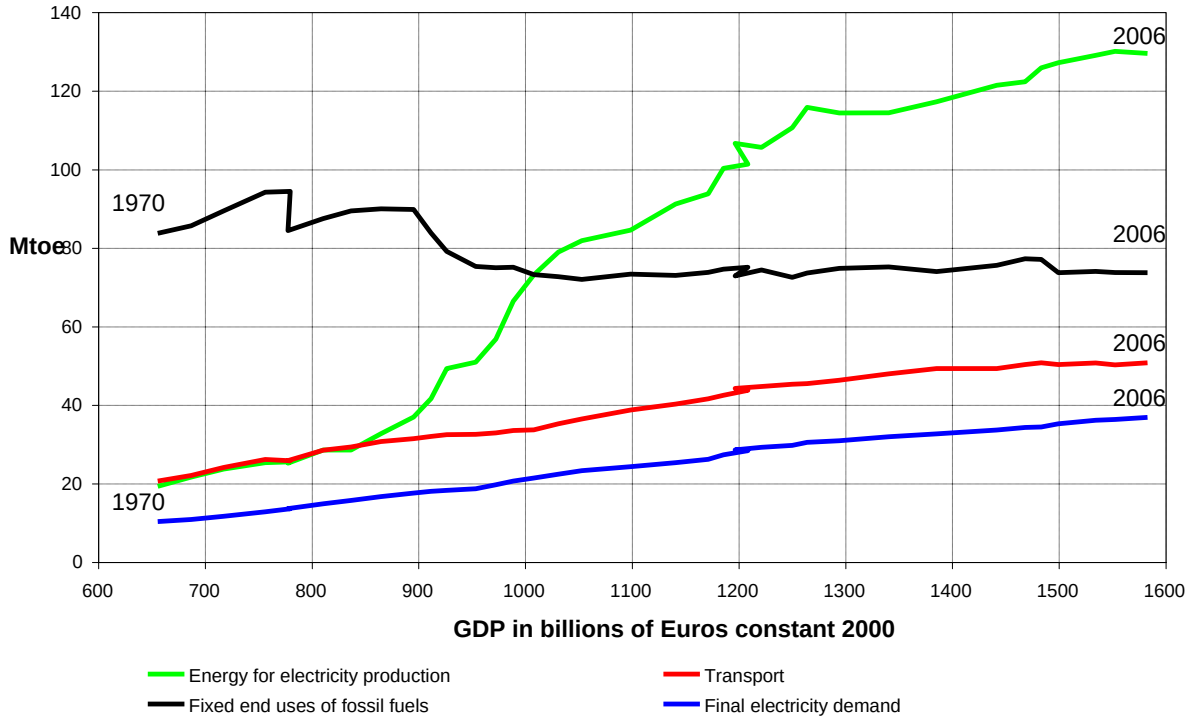


Figure 11: Correlation between energy consumption and GDP from 1970 to 2006.

[1] Relationship between initial energy consumption, corrected according to the climate, and the GDP expressed in volume.
[2] Relationship between final energy consumption, corrected according to the climate, and the GDP expressed in volume.

4. Energy trend scenario from the Directorate-General for Energy and Raw Materials (DGEMP) (Energy Observatory - 2000 version)

DGEMP's trend scenario was developed, from May to December 1999, with the cooperation of the CERNA, the company Enerdata - who supplied the MEDEE-ME (energy change) model already used in 1998 by the "Energy 2010-2020" Group of the economic advisory committee, EDF and the French Petroleum Institute (IFP).

In this section the trends of the 2000 version of the energy trend scenario are presented. A new version of this trend scenario has been started and should be carried out in the course of 2008, which will take into account the measures adopted by the Environment Round Table.

One of the objectives of this work is to respond to a request from the International Energy Agency with a view to having for each Member State a "situation where energy demand changes in the future in line with past trends and where no new policies are adopted".

This trend scenario must be distinguished from other long-term exercises, both French and international. Thus, the rate of increase of the GDP, set in this scenario at 2.3% until 2020, has a strong bearing on these results[3]. The scenario is based on as detailed an analysis as possible of energy intensity factors. In addition, in order to properly reflect a "spontaneous tendency", it is based on modelling and hypotheses excluding the majority of policies and measures that are yet to be decided or that are not yet in force on the date of creation of the scenario. Through construction, such a scenario will not be created, but it does allow measurement of the issues and identification of the actions for the efforts to accomplish.

4.1. Basic hypothesis of the 2000 version

1. Key macro-economic hypotheses

The key macro-economic hypotheses are as follows, for 2010-2020

- economic growth of +2.3% per annum
- slowing demographic growth: +0.3% for 2010-2015 and +0.18% for 2015-2020;
- dollar exchange rate of 6.00 French francs;
- Brent price of $25 per barrel (dollar constant from 1999);
- international natural gas price of $3.3/MBtu ('indexing' of the gross price);
- international coal price between $40 and $50/t.

Several other technical-economic hypotheses were necessary, on a sector-by-sector basis. Some examples given below give a more concrete idea of the meaning of the scenario.

2. Technical-economic hypotheses for the service sector

The service sector is characterised by the thermal efficiency of buildings and the use-specific consumption. Although there is some debate on this issue amongst experts, it has been agreed to retain for the whole period the link seen for several years between productivity of the use and use-specific electricity consumption, with a 0.5% increase in energy efficiency every year.

[3] The most recent forecasts of INSEE updated in June 2006 cite an annual average growth of GDP of +2.1% by 2015, then +1.8% between 2015 and 2030 and +1.9% between 2030 and 2050.

3. Technical-economic hypotheses for the residential sector

For the residential sector, the total number of dwellings is assumed, between 1997 and 2020, to go from 23.4 to 27.1 million main occupied residences. New construction increases, from 2010-2020, by 220 000 dwellings per year. Due to this low renewal rate, the energy saving measures planned mainly relate to old buildings. Still for 2010-2020, the energy efficiency of all dwellings falls very slightly (-1.3%), due to the reduction of budgetary energy coefficients for households and within the wake of the relaxation observed over the last ten or so years.
Remember that these values correspond to a "spontaneous tendency" and that the Environment Round Table set a target of 38% energy savings within the next 12 years and defined the new measures for achieving this result.

4. Technical-economic hypotheses for the transport sector

As for the residential sector, the following information outlines the values of the trend scenario, without considering the effect of demand-side management measures. In the field of transport, the Environment Round Table set a target of reducing greenhouse gas emissions by 20% to bring them back down to 1990 levels and drew up a corresponding action plan.

Transportation is the preferred target of energy management measures which would involve technology (in particular engines), location and lifestyle organisation and infrastructure choice, although the 2010-2020 timeframe is often too short for the planned measures to have a noticeable effect.

The unit consumption of new vehicles is assumed to drop by an average of -0.5% per annum, which is the trend pace of technical advancement development. An initial determining hypothesis involves considering that the voluntary agreement of automotive manufacturers will only have a limited impact: the reduction of CO_2 emissions from new cars announced in this agreement (140 g of CO_2 per km on average for new registrations in 2008, for all types of vehicle) is only recognised for half in the trend scenario hypotheses.

The "Air Law" (Law No 96-1236 of 31/12/96) and urban travel plans were taken into account, with fuel taxation for private vehicles increasing in accordance with government decisions in 1998: +7 centimes per annum per litre from 1999-2005 for gasoil, then stability at constant prices, and stability for the whole period at constant prices for premium grade fuel.

4.2. Demand forecasts: Final energy consumption by sector

The tables below indicate the rates of increase by 2010 and 2020, as well as those of the three reference periods: 1973-1982, the period in which the effect of the first two oil shocks was most felt, 1986-1998, after the "oil countershock", and 1973-1998, i.e. 25 years that can be seen to reflect the remaining period up to 2020.

Total final energy consumption increases on average, from 1998-2020, by +1.4% per annum. The increase in transport consumption emerges as the largest of the sectors looked at, ahead of residential-service sector and industry.

In industry, consumption increases by +1.2% per annum, which is considerably less than the increase in GDP, by +2.3% per annum defined hypothetically for 2010-2020. This uncoupling can be seen in each of the historical reference periods, 1973-1982, 1986-1998 and 1973-1998, which saw annual average growth of GDP in the region of 2.3%. However, things have deteriorated in the last few years, with potential energy savings and restructuring potential (relocation of large energy-consuming industries (IGCEs), tertiarisation of the economy) becoming less evident. The trend scenario (not

taking into account demand-side energy management measures) therefore seems relatively optimistic for this sector.

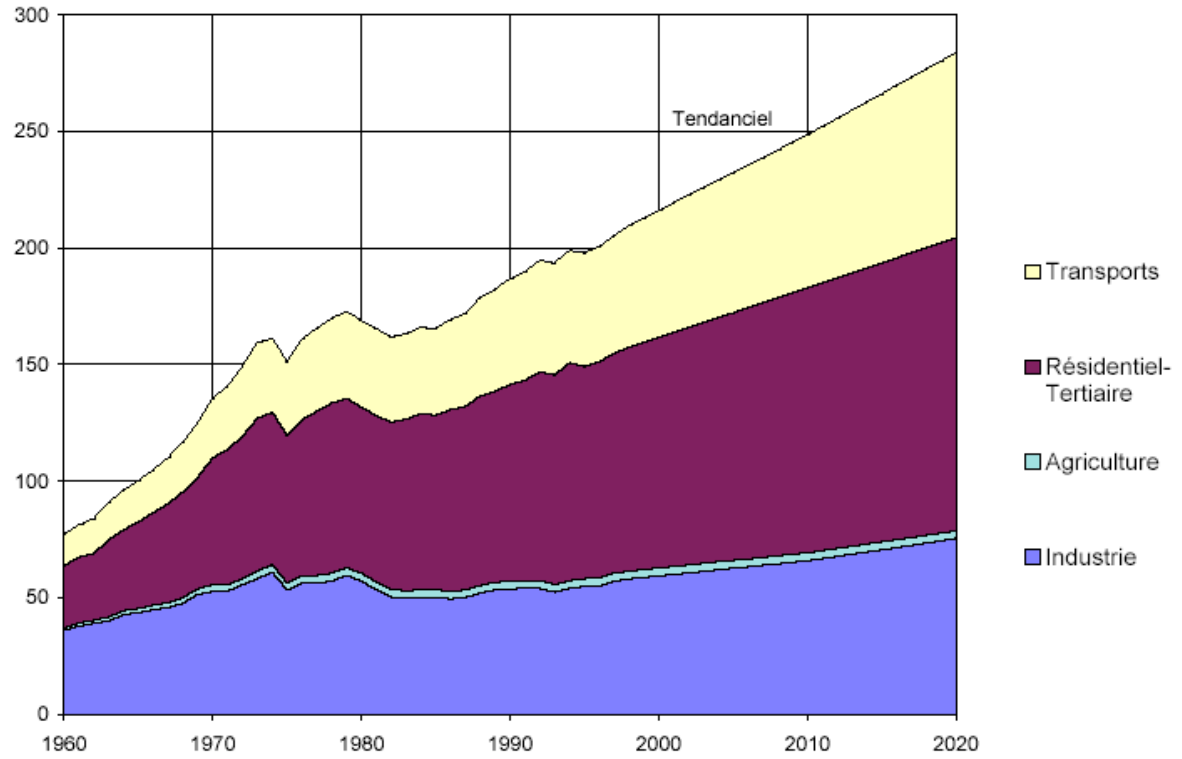
The residential-service sector increases exactly like industry, by 1.2% per annum on average for 1998-2020, compared with +1.5% for 1973-1998 and +1.7% for 1986-1998. This slowdown mainly relates to the residential sector in which consumption only increases by +0.6% per annum for 2010-2020.

Transport is the sector with the highest increase, with +1.9% per annum, which is exactly the growth rate observed since 1973, but significantly down on the period 1986-1998 (+2.5% per annum).

Final energy consumption

Mtoe	1998	2010	2020	AAGR 1973-1982	AAGR 1986-1998	AAGR 1973-1998	AAGR 1998-2010	AAGR 1998-2020
Industry	58.0	65.8	75.3	-1.6%	+1.3%	-	+1.1%	+1.2%
Residential-service	95.9	113.6	125.6	+1.0%	+1.7%	+1.5%	+1.4%	+1.2%
Agriculture	3.5	3.4	3.4	+0.5%	+0.6%	+0.4%	-0.1%	-0.1%
Transport	52.1	65.5	79.3	+1.3%	+2.5%	+1.9%	+1.9%	+1.9%
Energy total	209.5	248.4	283.7	+0.2%	+1.8%	+1.1%	+1.4%	+1.4%
Non-energy	17.0	18.8	21.1	-0.1%	+3.0%	+1.8%	+0.8%	+1.0%
Final energy total	226.5	267.2	304.8	+0.1%	+1.9%	+1.1%	+1.4%	+1.4%

Industry: including iron and steel industry, but excluding non-energy uses (raw material)
AAGR: annual average growth rate (in %)



Consommation finale énergétique par secteur (Mtep)

Tendanciel: Trend
Transports: Transport
Résidentiel-Tertiaire: Residential-Service Sector
Agriculture: Agriculture
Industrie: Industry
Final energy consumption by sector (Mtoe)

5. Calculation methods used to identify energy savings made

As regards the calculation methods used to identify energy savings made, France favours the "top-down" method; it recently used the "bottom-up" method for implementation of energy savings certificates.

5.1. "Top-down" calculation methods.

France gives priority to "top-down" methods. The Energy Observatory has developed a complete information system to provide a large number of basic statistics, based on relatively major and regular inquiries (consumption in industry, the service sector, the residential sector, transport, a sample group of motorists, etc.). These series allow consumption to be monitored in relation to various sectors and various uses. They can be combined with results indicators (kilometres travelled, quantities produced, etc.). It therefore becomes possible to correct developments caused by changes in the structure of consumption and to better approach energy efficiency with constant results.

The available results are presented in full in the book *Tableaux des consommations d'énergie en France* (*French Energy Consumption Tables*). (DGEMP/Energy Observatory, edition 2006). In particular, it includes a summary of the energy savings calculation made by ADEME of which the methodological principles are clarified below.

Energy savings –methodological principles

The method is used in particular for "technical-economic" effects. It involves, for each module (individual houses, flats, cars, lorries, cements, etc.), breaking down the variation in energy demand over a period by differentiating two main effects:

The quantity effect measures the impact of variation in the number of elements of a module (number of dwellings, tonnes of cement, etc.) on total consumption. Added to actual consumption in the base year, it is used to measure the virtual energy consumption level of a module in the current year, i.e. the consumption that would have been seen if unit consumption had remained constant.

The unit consumption effect measures the impact of variation in the unit consumption of an average element (dwelling, car, etc.) on the total consumption of the module. It is, by definition, that which is used to measure energy savings, i.e. the difference between the reality seen and the virtual situation calculated from the quantity effect, for the current year. If information allows, it can be broken down into:

a technological effect: measurement of savings made thanks to better energy efficiency of equipment and techniques used;

a substitution effect: measurement of energy savings made thanks to an improvement in the average return from energy use;

a behaviour-management effect: measurement of energy savings used thanks to more moderate or more economical behaviour, or due to better energy management.

As an initial approximation, and subject to an acceptable module homogeneity, the unit consumption effect (deduction eventually made from the substitution effect) directly measures energy savings made in the module.

France is deeply involved on a European level in work on this matter: participation in and coordination of work for the Odyssée programme (with results breakdown for France), involvement in Eurostat's Task Force on energy efficiency.

5.2. "Bottom-up" calculation methods

Programme law No 2005-781, of 31 July 2005, establishing energy policy guidelines, holds demand-side management as the first part of this policy and created a new market instrument to be used for this policy: White Certificates (CEE).

The CEE certificates system is dependent on:

- demand for certificates: energy savings obligations are imposed on energy sellers in the residential and service sectors (heating, insulation, hot water, lighting, etc.). They pay for this by returning an equivalent number of certificates;
- supply of certificates: energy-saving actions are rewarded with certificates.

Energy sellers will therefore rely on their commercial networks to sell energy and energy savings to their customers at the same time as asking for certificates in return for energy-saving actions carried out. However, they can also fulfil part of their obligations by buying certificates from other operators offering their certificates at an interesting price.

After the obligation period, energy sellers who have not succeeded in obtaining enough certificates to satisfy their obligation can be charged a discharge penalty of 2 centimes for every kWh of shortfall.

It is an obligation for these sellers to achieve a result in terms of the amount of energy saved, with the choice of actions carried out being open both for the energy source and for the target population.

To facilitate implementation of the system, standardised operations have been defined and the energy savings they bring about throughout their life have been calculated in cumulative discounted kWh.

The standard energy-saving operations are approved by ministerial decree and published in the Official Journal of the French Republic: see decree of 19 June 2006 (*OJ, 07/07/2006*), decree of 19 December 2006 (*OJ, 31/12/2006*) and decree of 22 November 2007 (*OJ, 22/12/2007*) defining the standard energy-saving operations. The updated collection of the standard operation sheets is available on the ministerial energy website: www.industrie.gouv.fr/energie.

6. National energy savings target

In Programme Law No 2005-781, of 13 July 2005, establishing energy policy guidelines ("POPE Law"), France set a target in law for demand-side management, formulated as follows: achievement of a level of final energy intensity reduction of -2%/yr by 2015 and of -2.5%/yr by 2030 (Article 3 of the Law). The Environment Round Table revisited and reinforced the demand-side management targets (see pages 5 to 7), the new level of demand seeking to replace that set in 2005 since adoption of the next Grenelle Law.

Energy savings made, corresponding to the national indicative target within the meaning of Directive 2006/32/EC, are represented by the difference between the change in energy end-use in the energy trend scenario in its 2000 version and the change caused taking into account progresses in final energy intensity according to the objectives of Law No 2005-781 (subject to deduction of the final energy intensity of companies the activities of which fall within the categories listed in Annex I of Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance).

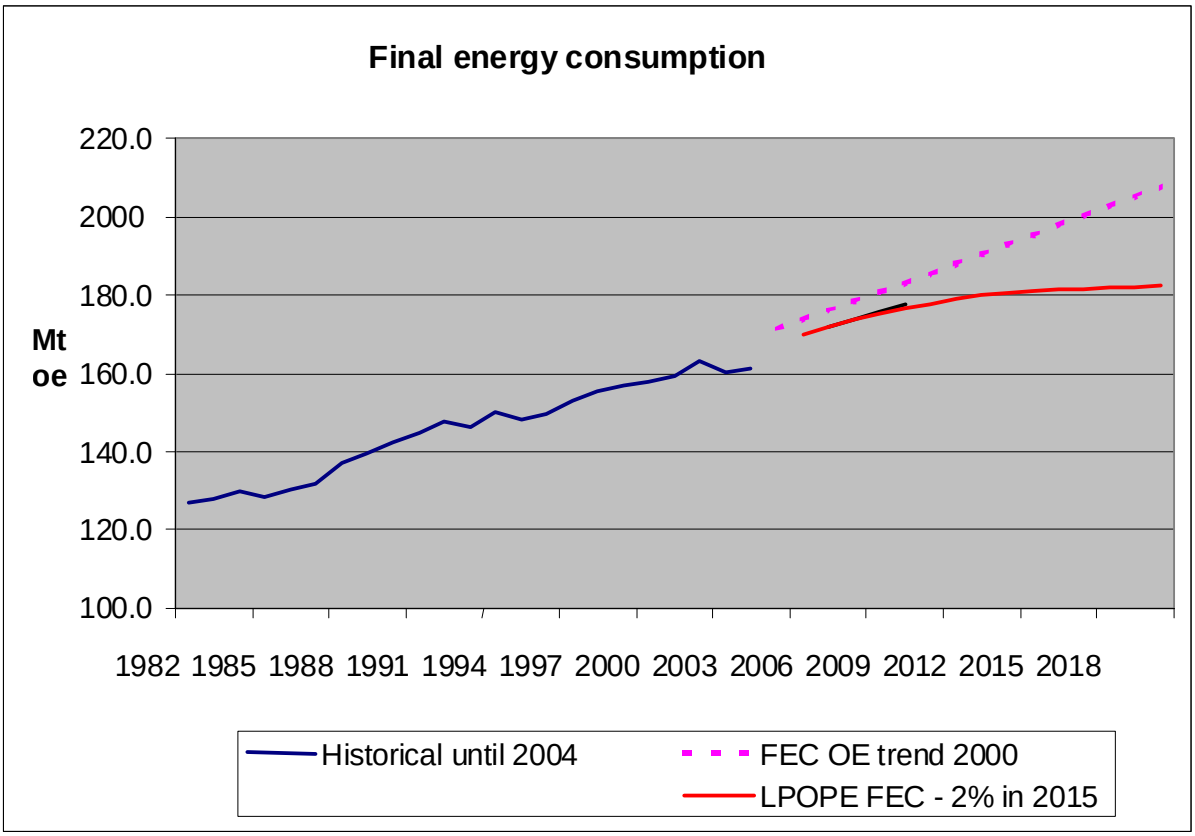
This development, detailed in the following paragraph, meets the general minimum target of 9% energy savings for the period 2008-2016 in relation to the reference annual average amount of consumption (approximately 12 Mtoe in 2016), as required by Article 4 of Directive 2006/32/EC.

In 2010, the target set by Law No 2005-781, of 13 July 2005 corresponding to an intermediate indicative energy savings target within the meaning of Directive 2006/32/EC slightly above 5 Mtoe.

6.1. Final energy intensity reduction targets set by Law No 2005-781, of 13 July 2005 ("POPE Law")

The ‘trend’ amount of final energy consumption of the 2004 DGEMP-OE scenario is used to calculate subsequent development in the LPOPE scenario, assuming that the final energy intensity is set at -1% in 2006 (1990 - 2004 average) and drops on a straight-line basis to -2% in 2015, all with a constant GDP growth rate of 2.3%/yr.

These developments allow, with the GDP growth hypothesis, the final energy consumption presented in the graph on the next page to be determined for the 3 scenarios studied.



Final energy consumption (Mtoe)	**2005**	**2010**	**2015**	**2020**
2000 OE	*171.5*	*183.0*	*195.4*	*207.7*
POPE Law	167.6	176.6	180.9	182.3

6.2. Specific energy savings target within the context of White Certificates

Part of the demand-side management target will be realised using the White Certificates system, the evaluation of which responds to the bottom-up calculation methods shown above.

The system of energy savings certificates ("white certificates" within the meaning of Directive 2006/32/EC) is set up by Articles 14 and 17 of the POPE Law and it is accompanied by a specific target for energy savings obligations which apply to energy suppliers[4], obligations that are set in line with energy sales, according to the types of energy, considering the physical quantity of sales (in kWh) and their estimated monetary value.

[4] According to the terms of Article 4 of the POPE Law No 2005-781, the following are subject to energy savings obligations: “legal entities who sell electricity, gas, heat or cold to end consumers and the annual sales of which exceed a threshold, as well as natural persons or legal entities who sell domestic fuel to end consumers.”

- Distribution by energy of 2004 sales to households and to service sector companies

The total sales, for 2004, to households and service sector companies is split between different energies as follows:

2004 residential and service sector sales	**In kWh of final energy**
Electricity	265 529 752 553
Natural gas	239 278 534 054
Domestic fuel	109 300 491 059
LPG	16 476 489 403
Heat/cold	10 329 290 670
Total	**640 914 557 739**

- Distribution by energy of the energy savings target within the context of white certificates for the 1st three-year period:

The energy savings target to be met through the white certificates system goes up to 54 TWh for the first period, from 1 July 2006 to 30 July 2009. Its energy distribution is as follows:

Energy	**Breakdown in kWh of final discounted energy**
Electricity	30 997 466 117
Natural gas	13 939 395 360
Domestic fuel	6 842 301 575
Liquefied petroleum gas	1 531 130 288
Heat and cold	689 706 660
Total	**54 000 000 000**

- Note on the concept of cumulative discounted kWh

The energy savings target in the previous table is expressed in "cumulative discounted kWh", defined in Article 3 of Decree 2006-603, of 23 May 2006, on energy savings certificates (*OJ, 27/05/2006*), reproduced hereinafter:

"*The value of energy savings certificates attributed to an operation corresponds to the sum of annual energy savings made for the life of the product or the duration of the service contract. This amount is expressed in kilowatt-hours of final energy. The energy savings made over the years following the first year of the life of the product or service contract are calculated using the decreasing weighting factors set by the Minister for Energy.*"

The weighting factor is set at 1.04 (discount rate of 4%) by Article 3 of the Decree of 30 May 2006 on the conditions for application of the energy savings certificates system (*OJ, 01/06/2006*).

6.3. Projected trends arising from the Environment Round Table

Within the context of the Environment Round Table, energy savings certificates are an important tool in meeting targets in the residential and service sectors at the least cost, namely to reduce energy consumption by approximately 20% in service-sector buildings and 12% in residential buildings within 5 years, and by more than a third by 2020.

The operational committees (COM-OPs) in question look into how far a target substantially increased in the second period, starting in July 2009, could contribute to the objectives of the Environment Round Table.

DEMAND-SIDE MANAGEMENT

7. Demand-side management policy within the context of the national energy strategy

7.1. The four major objectives of French energy policy

The Environment Round Table reasserted the major objectives of French energy policy laid down in Programme Law No 2005-781, of 13 July 2005, establishing energy policy guidelines.

The law establishes the four major objectives of French energy policy and the methods to be adopted to meet them:

- ✓ To contribute to national energy independence and guarantee security of supply;
- ✓ To ensure competitive energy prices;
- ✓ To protect human health and the environment, in particular by fighting against climate change;
- ✓ To guarantee social and territorial cohesion by ensuring access to energy for all.

These are long-term objectives, which set a cap for energy policy action for the next 30 years, even though the economic trend for high energy prices that we are experiencing today makes them particularly relevant. 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.

7.2. Energy efficiency objectives

1. Energy efficiency targets of the national energy strategy

To fit the actions to be carried out into the context of the national energy strategy, the Programme Law of 13 July 2005 sets ambitious performance targets and defines a certain number of incentive programmes for energy savings and development of renewable energies.

On the subject of energy efficiency, the law sets the following targets:

- ✓ Support for an international objective of halving the world's greenhouse gas emissions by 2050, which means dividing the emissions of developed countries by 4 or 5; the fight against climate change is a priority of the energy policy, which aims to reduce France's greenhouse gas emissions by 3% on average per annum. As a consequence, the State draws up a "climate plan", which is updated every two years, presenting all the national actions implemented to combat climate change

- ✓ The reduction in final energy intensity by 2% per year by 2015 (relationship between energy consumption and economic growth) and by 2.5% by 2030.

2. Objectives arising from the Round Table:

The objectives arising from Workgroup 1 "Combating climate change and controlling energy" are:

- Make an ambitious and determined contribution to the European "3x20 by 2020" objective
- Include France in the "factor 4" group – fourfold reduction of our emissions by 2050
- "+20 Mtoe by 2020": increase our renewable energy production by 20 million tonnes of oil equivalent by 2020 and reach, or even exceed, a 20% proportion of renewable energy in energy end-use
- Energy savings and reduction of greenhouse gas emissions: opening of sector-specific sites and introduction of immediate operational and/or structural measures;
  - *Construction*: reduce energy consumption by approximately 20% in service-sector construction and 12% in residential construction within 5 years, and by more than a third by 2020
  - *transportation/mobility*: lower greenhouse gas emissions by 20% in the next 12 years

7.3. Adaptation of demand-side management policy to the specificities of each sector

The annex to the Programme Law of 13 July 2005 presents energy policy guidelines, of which the elements relating to energy efficiency are summarised below:

1. Sectoral energy policy guidelines for the residential and service sectors

For new buildings, the State regularly lowers the minimum general energy efficiency thresholds, with an improvement target of 40% by 2020. Furthermore, it encourages construction of a significant proportion of dwellings in which more energy is produced than consumed.

Taking into account a building renewal rate of less than 1% per year, the priority lies in improving the energy efficiency of old buildings in order to divide CO_2 emissions by four before 2050. For these buildings, the level of requirement evolves jointly with thermal regulations for new buildings. Initially, it is, in terms of overall requirement, as close as possible to regulations that apply to new buildings in 2005.

Moreover, the State is increasing renewal actions for subsidised low-cost housing, which leads to a reduction in the energy bills of lower-income households. Landlords are encouraged to carry out energy-saving work by sharing the costs incurred fairly with tenants.

Finally, in terms of public property, partnerships between the public and private sector are used to promote energy-saving actions and actions for developing renewable energies by the State and local and regional authorities.

The Environment Round Table has strengthened these guidelines, in particular by deciding on the "Modernising buildings and cities" programme, the key points of which are as follows:

- Building new energy-efficient housing from 2010, Green Buildings from 2012, and passive or positive-energy buildings from 2020.
- Building office space, buildings and public facilities that comply with low-consumption or positive energy standards from 2010.

- Ban on incandescent light bulbs and single glazing from 2010.
- Thermal renovation of public buildings within the next 5 years.
- Financial incentives for thermal renovation of privately-owned buildings.
- Carbon balance and energy-efficiency assessments of all organisations of more than 50 people.

2. Sector energy policy guidelines for transport

As the transport sector is the main source of air pollution and greenhouse gas emissions, the State seeks to reduce as far as possible all polluting emissions from vehicles and to emphasise urban planning to limit the need for travel. For this purpose, it encourages:

- within a European context, and on the basis of agreements with the industrialists in question, a reduction of average individual carbon dioxide emissions from new vehicles to 120 grams of carbon dioxide emitted per kilometre travelled by 2012, as well as the definition of an emissions reduction target for light goods vehicles, heavy goods vehicles and two- (or three-) wheeled motorised vehicles;

- adoption of a Community regulation for minimising consumption associated with the use of air conditioning and other auxiliary equipment in vehicles;

- sale of the most energy-efficient and least-polluting vehicles, in particular through better information for consumers, by maintaining tax credits for the purchase of electric, LPG or natural gas vehicles and by introduction of a bonus-malus system in line with the vehicle's CO_2 emissions;

- development of voluntary speed limiters for new cars and light goods vehicles while aiming, for its own fleet, to acquire as systematically as possible vehicles fitted with this device;

- improvement of driver behaviour, in particular reduction of speed;

- improvement of the governance of and connection between the different authorities of the urban development and transport policies to prevent uncontrolled urban sprawl;

- continued development of the high-speed trains network which has contained the development of domestic air transport;

- improvement of the energy efficiency of companies' logistics chains, in particular in relation to transport of goods, and optimisation of employee journeys between home and the workplace;

- within a European and international context, the reduction of greenhouse gas emissions from aeroplanes.

Following the debate on transport policy in the Rhone valley and the Languedoc Arc, the government decided to implement a national "transport, urban development, greenhouse effect" plan which is to be finalised within the context of the operational committees of the Environment Round Table. The aim of this plan is to set an intermediate 2020-2025 target for reduction of greenhouse gas emissions and the measures to meet it.

The Environment Round Table has strengthened these guidelines, in particular by deciding on the "Mobility and transportation" programme, the key points of which are as follows:

- Priority given to public transport: construction of 1 500 km of bus lanes and tramways.
- Rail: construction of 2 000 km of high-speed lines by 2020.
- Increasing the share of rail freight to 25% by 2012.
- Upgrading the conventional rail network.
- Developing rolling motorways.

- Developing sea motorways and inland waterways transport.
- Huge reduction of air transport emissions.
- 50% reduction of noise related to air transport by 2020.
- New private vehicles: introduction of eco-tags.
- Developing clean vehicles.
- Ecotax based on mileage for trucks using the non-concessionary road network.

3. Sectoral energy policy guidelines for industry.

In this sector, the State backs the efforts already undertaken to improve the energy efficiency of production processes and encourage use of processes that do not emit greenhouse gases, in particular with the development of a system for trading emissions allowances within the European Union.

Furthermore, France proposes the introduction, within the Community context, of maximum consumption limits for electrical appliances on standby, tending towards a power demand below 1 watt per appliance in the general case of widely used electrical equipment. The State ensures, furthermore, that the consumptions of appliances on standby are taken into account for display of their energy performances.

The Environment Round Table has strengthened these guidelines, in particular by deciding on the "Energy efficiency and carbon" programme, the key points of which are as follows:

- Programme to promote renewable energy > hydraulic, wind, biomass, geothermal, photovoltaic cells and solar energy.
- Consumption of 30% to 50% renewable energy in the French overseas departments and territories by 2020.
- Research into second-generation biofuels.
- R&D programme for geological capture and storage of CO_2.
- Plan for very energy-efficient low-input farming.
- Carbon balance assessments of administrative departments and a 20% improvement in their energy efficiency.
- Inclusion of environmental clauses in the public procurement code.
- Study of the introduction of a climate-energy tax.

7.4. Measures implemented

The Programme Law on energy policy guidelines also contains various practical measures to initiate fulfilment of the objectives set. The Environment Round Table has decided to strengthen the measures and to introduce new measures, the creation of which is underway within the operation committees (COM-OP).

Measures put in place by the Programme Law of 13 July 2005:

- the transposition of the legislative provisions of Directive 2002/91/EC, of 16 December 2002, on the energy performance of buildings:
    - studies should be conducted prior to construction of certain buildings to examine the different possible energy supply sources (heating network, cogeneration, renewable energies, etc.);
    - during major renovation work on certain existing buildings, thermal characteristics can be imposed;
    - regular inspections for heating and air conditioning systems are organised, as well as, in certain cases, audits and consultancies with a view to optimising the energy efficiency of the pool of boilers.

- the implementation of an energy performance assessment to be carried out on construction, sale or lease of buildings, as well as the duty to display this assessment in certain categories of public building.

- in addition to the transposition of Directive 2002/91/EC, of 16 December 2002, on the energy performance of buildings:
  - studies should be conducted prior to refurbishment of certain buildings to examine the different possible energy supply sources (heating network, cogeneration, renewable energies, etc.);
  - for all energy renovation work on existing buildings not included within the scope of the requirements for major renovations of certain buildings, transposing Directive 2002/91/EC (see above), minimum thermal characteristics for the products or equipment implemented are imposed; (in addition to the transposition of the requirements of Directive 2002/92/EC, these measures are very important in terms of energy savings as 66% of existing dwellings were built before 1974, and therefore before any thermal regulation, and much of the work carried out is fragmented).

- the reassertion of the role of local authorities who see their ability to intervene in the field of extended energy management. Consistent with the State's action, the regional and local authorities, in a prime position to revive an active demand-side management policy, due to their knowledge of the territory and their proximity to residents, are amongst the intermediaries that are the most popular with citizens. They are therefore seen as the best way to raise awareness, provide information on the issues of energy management and encourage new behaviour. They should also set an example by reducing their own energy consumption.

- the importance given to consumer information. The law provides for improving information for consumers. In addition, companies selling energy or energy services should introduce promotion of energy savings into their marketing communication. Public awareness and education of the French population are encouraged by the implementation of ongoing information campaigns and the introduction of energy issues into the school curriculum. The law provides for the total cost (purchase and energy consumption), in euros, of goods for sale to be displayed.

- for renewable energy, a guarantee of origin system is set up. For the development of hydroelectricity, the main source of renewable energy in France, besides measures to simplify administration, the law encourages the introduction of hydroelectric equipment designed to turbine the minimum flow of water that any operator must leave downstream of its storage facilities by applying purchase obligation to the electricity thus produced. The law allows for the use of water to be dedicated to the development of renewable energy production, and for the inclusion in water management policy of consideration of the issues related to security of electricity supply. Regulations to encourage the controlled development of wind energy are put in place. Wind energy development zones will be defined on suggestion from the authorities in question taking into account local characteristics (electricity networks, protection of sites and the countryside, wind potential). Last but not least, a multiannual investment programme should be introduced for renewable heat.

Finally, the law provides that all the provisions relating to the right to energy will be grouped together in an energy code, which will make it considerably easier for all our fellow citizens to apply and appropriate them.

7.5. The role of regional and local authorities in demand-side management

On the issue of public service quality, the competent authorities, contracting authorities for electricity, gas and heat distribution, contribute, along with the operators, to improving the distribution networks and can impose energy-saving actions on electricity, gas and heat delegates and on concessionaires if they avoid network extensions or improvements.

On the subject of promoting demand-side management, besides actions aimed at reducing the energy consumption of their departments, the competent authorities define urban development policies, which aim, through urban planning documents or the local taxation system, to install dwellings and activities relatively densely near to public transport and to avoid uncontrolled urban sprawl.

Also responsible for transport organisation, they incorporate into their transport policy, particularly in urban transport plans, the need to reduce energy consumption associated with transport. Finally, they develop, either directly or through environmental agencies, and in particular in partnership with ADEME (the French Environment and Energy Management Agency) within the context of State and regional contracts, policies to encourage energy savings.

8. Regulations implemented to improve energy efficiency

8.1. Residential and service sector

The construction industry represents 46% of final energy in France, ahead of the transport sector and industry. It is in the existing buildings sector that the most energy savings potential has been identified. Until now, only new constructions were subject to regulatory requirements. This year, work on existing buildings will be regulated.

1. *Energy performance assessments of new and existing buildings.*

In order to raise awareness amongst consumers of energy consumption, the obligation to provide an energy performance assessment on purchase, lease or construction of a building or part of a building has been introduced by the following texts:

- Decree No 2006-1147 of 14 September 2006,
- the Decree of 15 September on buildings offered for sale (in force since 1 November 2006)
- the Decree of 3 May 2007 on buildings offered for lease (in force since 1 July 2007)
- the Decree of 21 September 2007 on new buildings (applicable to buildings with a building permit issued after 1 July 2007)

This assessment consists of a label stating the building's estimated energy consumption and CO_2 emissions, as well as recommendations relating to both energy use and energy saving work that could be carried out.

2. *The 2005 thermal regulation for new constructions (RT 2005).*

The new thermal regulation RT 2005, published in the Official Journal of 25 May 2006 (Decree No 2006-592 of 24 May 2006 and ruling of 24 May 2006), applies to new buildings. The new thermal regulation improves the energy performance of new buildings by at least 15% compared to the RT 2000. It also evaluates the bioclimatic design of buildings to reduce their heating requirements and give better comfort in summer thus limiting the need to use air conditioning.

It best takes into account renewable energies. For example, solar power is at the forefront as a reference system for producing domestic hot water for the dwellings. Consumption associated with cooling is incorporated into the calculation methods and subjected to specific requirements.

3. *The High Energy Performance label for new constructions.*

A voluntary "high energy performance" (HPE) label (decree of 8 May 2007) consisting of 5 energy performance levels adds to the above-mentioned 2005 thermal regulation. These labels are given to constructions with energy consumption appreciably lower than the regulatory reference consumptions and which use renewable energy and heat pumps. They will therefore enable solutions that should be included in the future 2010 thermal regulation to be tested.

- The "HPE 2005" label corresponding to a conventional energy consumption at least 10% lower than the conventional reference consumption; to obtain this label, the residential buildings in question should also demonstrate a conventional consumption at least 10% lower than the maximum primary energy factor (max CEP).

- The "THPE 2005" label corresponding to a conventional energy consumption at least 20% lower than the conventional reference consumption; to obtain this label, the residential buildings in question should also demonstrate a conventional consumption at least 20% lower than the maximum CEP.

- The "HPE 2005 ENR" label, where the portion of conventional consumption used for heating via a generator using biomass is greater than 50% and where the heating system is connected to a heating network powered by more than 60% renewable energies.

- The "THPE 2005 ENR and heat pumps" label corresponding to a conventional energy consumption at least 30% lower than the conventional reference consumption; to obtain this label, the residential buildings in question should also demonstrate a conventional consumption at least 30% lower than the maximum CEP. Furthermore, the building has a minimum of renewable energies or a high-performance heat pump.

- The "BBC 2005" label, where the conventional primary energy consumption (heating, cooling, ventilation, domestic hot water and lighting) of a residential buildings is on average 50 kWh/m²/yr or less. This value depends on the altitude and the climate region.

4. *The decree relating to the performance criteria and equipment taken into account for exceeding the ground occupation coefficient (COS).*

For the purposes of Article R 111-20 of the French Building and Housing Code, and in accordance with the ruling of 3 May 2007 (*OJ, 15/05/2007*) on the conditions to be met to benefit from exceeding the ground occupation coefficient (COS) if a construction project complies with the energy performance requirements, overshoot of the COS may be authorised up to 20% for constructions that meet certain criteria corresponding to the "Very high energy performance Renewable energies and heat pumps, THPE ENR 2005" label or the "Green Building, BBC 2005" label.

Similarly, the ruling defines equivalent energy performance criteria to give authorisation to exceed the COS for extending a building.

5. *Requirements for the renovation of existing buildings where the most energy savings potential has been identified.*

Published on 21 March last year, Decree No 2007-363, of 19 March 2007, adopts two regulatory approaches for existing buildings:

- A general performance (like the approach adopted in the RT for new buildings), applicable for major renovation work (more than 25% of the value of the building) on buildings with a surface area over 1 000 m² applicable on 1 April 2008 (decree to follow).

- a so-called elemental approach (by equipment) for buildings of less than 1 000 m² and for minor renovations (for window replacement, for example, they must be replaced by windows demonstrating a minimum energy performance) (decree of 3 May 2007 relating to thermal characteristics and energy performance of existing buildings applicable from 1 November 2007).

6. *Feasibility study for new and existing buildings with a surface area over 1 000 m²*

The decree of 18 December 2007 is applicable from 01/01/2008 for new buildings and from 01/04/08 for existing buildings.
As of 1 January 2008, before submitting the building permit, contracting authorities should carry out a technical and economic feasibility study of the construction's various energy supply solutions (Article L.111-9 of the French Building and Housing code introduced by the law of 13 July 2005). This measure is designed to encourage the use of renewable energies and the most efficient systems. The contracting authority will be free to choose the building's energy source(s), guided by the conclusions of this study which aims, in particular, to work out total costs by showing the consumption benefits against any additional investment.

7. *Work of the operational committees of the Environment Round Table*

Several operational committees (COM-OPs) have been assigned for preparing the implementation of and for monitoring the measures adopted within the framework of the Environment Round Table.

Where the residential and service sectors are concerned, the main COM-OPs are:

- COM-OP No 1 "*New public and private buildings*", coordinated by Mr Alain Maugard, Chairman of the CSTB (Scientific and Technical Building Centre);
- COM-OP No 2 "*Low-cost housing and urban renewal*", coordinated by Mr Philippe van de Maele, Managing Director of ANRU (the National Urban Regeneration Agency);
- COM-OP No 3 "*Existing buildings*", coordinated by Mr Philippe Pelletier, Chairman of the National Agency for Housing (ANAH);

8.2. Transport sector

The September 2003 clean vehicle plan adopted by the Government promotes the purchase of alternative, low CO_2 emitting vehicles and develops research to make technological advances.
A new consumption and CO_2 emissions label for new private cars has been compulsory since 10 May 2006. The display of vehicles' consumptions, in force since October 2003 in accordance with Directive 1999/94/EC, is now brought into line with the model of the energy label for home appliances, the effectiveness of which is proven. It has seven CO_2 categories (less than 100 g/km for category A up to more than 250 g/km for category G), colour coded from green for the most efficient to red for the vehicles that emit the most CO_2.

Several operational committees (COM-OPs) have been assigned for preparing the implementation of and for monitoring the measures adopted within the framework of the Environment Round Table.

Where the transport sector is concerned, the main COM-OPs are:

- COM-OP No 5 "Multimodal transportation of goods", coordinated by Mr Jean-Louis Borloo, Minister of State, Minister for Ecology and Sustainable Development and Mr Dominique Bussereau, Secretary of State for Transport, with Jean Bergougnoux, Honorary Chairman of the SNCF;
- COM-OP No 6 "High-speed lines, conventional network", coordinated by Mr Jean-Louis Borloo, Minister of State, Minister for Ecology and Sustainable Development and Mr Dominique Bussereau, Secretary of State for Transport;
- COM-OP No 7 "Urban and suburban transport", coordinated by Mr Jean-Louis Borloo, Minister of State, Minister for Ecology and Sustainable Development, Mr Dominique Bussereau, Secretary of State for Transport, and Mr Michel Destot, Chairman of the French Transport Authorities Organisation (GART);
- COM-OP No 8 "Industrial development of efficient vehicles", coordinated by Dominique Clement, Chairman of the Interministerial Commission for Clean and Energy-Efficient Vehicles (CIVEPE);
- COM-OP No 9 "Urban development", coordinated by Mr Jean-Paul Alduy, Senator, and Mr Michel Piron, Deputy.

8.3. Energy sector and industry

1. *Minimum boiler efficiency and periodic combustion plant inspections.*

Low-wattage boilers (4kW to 400 kW) must comply with minimum efficiency levels when they leave the factory, before they are put on the market. These boilers must bear the EC marking and come with an EC Certificate of Conformity (see Decree of 9 May 1994 setting a minimum efficiency level for boilers with wattage between 4kW and 400 kW).

For boilers from 400 kW to 50 MW, Articles R. 224-20 to R. 224-30 of the French Environmental Code set the minimum energy efficiency levels. In addition, they require the operator to put in place control devices for measurement of the typical efficiency of these boilers as well as the evaluation of the combustion quality.

The purpose of Articles R. 224-31 to R.224.41 of the French Environment Code is to bring about, through approved technical bodies, periodic inspections of thermal plants with a power greater than 1 MW. They are designed to ensure that boilers comply with the minimum regulatory efficiency levels and that operators carry out the inspection and adjustment operations required of them.

2. *Standardisation in the field of industry*

Standardisation is an instrument favoured by the energy management policy for industry. On the initiative of the Minister for Energy, an "energy management" coordination group has been set up within the French Standardisation Organisation (AFNOR). The mission of this group is the nationwide coordination of standardisation projects relating to energy management. It has also worked on the foundation of a European think tank, presided over by France, the objective of which is to propose a strategy, in the field of standardisation, to improve energy efficiency in the European Union.

This group has, in particular, organised a normative project on energy assessments in industry combining, from 2004, the services of the Ministry for Energy, ADEME, industrialists, consultancy firms and energy efficiency service companies. The reference system for good energy assessment practices in industry was published by AFNOR in March 2006 under reference BP X30-120.

This reference system describes a method for performance of an assessment assignment and defines the conditions of a quality inspection. It is aimed at energy-consuming companies, inspection and/or engineering and advisory companies, energy suppliers, as well as at operators and energy efficiency service companies. The method proposed by the reference system favours regular dialogue between the assessor and the industrialist during the assessment phases, which are an inventory of the company's overall energy situation, quantification of energy savings potential and definition of the actions needed for these energy savings. This method, approved by experts and accompanied by a conversion table and equipment lists, also saves time for all parties involved.

France will soon present this reference system on a European scale with a view to examining the possibilities of standardisation in this field.

8.4. Horizontal measures: promoting efficient use of energy

Pursuant to Decree No 2006-1464, of 28 November 2006 (*OJ, 29/11/2006*), any publicity by a company that sells energy or energy services must include a message promoting efficient use of energy and encouraging energy savings. This message is: "*Energy is our future, don't waste it!*" in accordance with the decree of 28 November 2006 relating to publicity in the field of energy (*OJ, 30/11/2006*).

Work of the operational committees of the Environment Round Table

The work of operational committee No 23 "*Consumption, ecological price and competitive advantage*" will strengthen the horizontal approach on the subject of promoting efficient use of energy.

9. Tax measures to improve energy efficiency and encourage energy savings

9.1. Residential and service sector

1. *A tax measure with particular incentive: the tax credit.*

The government has committed to improving the tax credit for main residence equipment expenses aimed at saving energy and developing renewable energies. This tax incentive guides individuals towards investing in equipment eligible for tax credit, satisfying the high performance criteria.

From 1 January 2005, a tax credit was introduced for expenses for the main residence for the most energy-efficient equipment and equipment using renewable energy (Article 200(c) of the French General Tax Code).

Through the 2006 Finance Law, the Government wanted to improve this provision, by significantly increasing tax credit amounts. For equipment improving energy efficiency, these rates are at present:

- 40% to 50% for heat pumps, the principal end use of which is production of heat;
- 25% to 40% for condensation boilers and insulation materials on the dual condition that these are installed in a dwelling completed before 1 January 1977 and under certain conditions.

The Environment Round Table has decided on the principle of a renewal of the tax credit within the framework of the "Modernising buildings and cities" programme, the definition of which must be examined within the context of the work of the operational committees (COM-OPs), in particular the "*Existing buildings*" COM-OP. The most important objective of such a reform would be to continue strengthening the system to continuously ensure that the tax advantage benefits the most efficient equipment on the market in terms of energy and CO_2 emissions saved.

2. *Reduced VAT rate for heating networks.*

Provisions aimed at promoting heating networks: in accordance with the European VAT Directive agreement in February 2006, Law No 2006-872 of 13 July 2006 on national housing commitment establishes, in Article 76 thereof, a reduced rate of VAT at 5.5% on heating network subscriptions. It also introduces a reduced rate of VAT on the supply of heat if this is produced from at least 60% biomass, geothermal energy from waste and recovered energy.

9.2. Transport sector

1. *Introduction of supplementary taxation for private cars with emissions over 200 g of CO_2/km*

In 2006, a supplementary tax on registration certificates of the most polluting vehicles, referred to as "CO_2 tax" in the log book and based on a marginal cost per gram of CO_2, was introduced for registration of private cars of natural persons, in addition to the tax on registration certificates, based on the taxable horse power.
This marginal cost is €2/g above 200 g of CO_2/km and €4/g above 250 g of CO_2/km. Revenue from this supplementary tax was approximately €15 million in 2006.

2. *Reform of company car tax (CCT)*

From 1 October 2006, in order to encourage use of economical vehicles, company car tax, provided for by Article 1010 of the French General Tax Code, is no longer, for vehicles put into circulation after 1 June 2004, based on the taxable horse power but is instead dependent on CO_2 emissions according to the following scale (for vehicles produced before 2004, CCT is based on the taxable horse power):

category	**CO_2 discharges (g/km)**	**Cost per g of CO_2 emitted**	**CCT in € per year**
A	< 100	€2	None
B	101 to 120	€4	€404 to €480
C	121 to 140	€5	€605 to €700
D	141 to 160	€10	€1 410 to €1 600
E	161 to 200	€15	€2 145 to €3 000
F	201 to 250	€17	€3 417 to €4 250
G	> 250	€19	> 4 769 €

Companies are liable to CCT for vehicles owned or used by the companies or by their employees or directors.

Vehicles that run exclusively or otherwise on electrical energy, NGV, LPG or superethanol E-85 are exempt from CCT. By way of exception from these provisions, vehicles that can alternatively run on superfuels and LPG are exempt from half of the amount of tax laid down in Article 1010 of the French General Tax Code.

For vehicles subject to CCT, this is calculated in line with CO_2 emissions for vehicles produced after 1 June 2004 (for others, it is dependent on the taxable horse power).

3. *Tax credit for electric, NGV or liquefied petroleum gas (LPG) vehicles.*

- new vehicles than run exclusively or otherwise on LPG, NGV or are electrically powered emitting less than 140 g of CO_2/km

Taxpayers with residency for tax purposes in France may benefit from a €2 000 tax credit for expenses paid between 1 January 2006 and 31 December 2009 for acquisition in mint condition or first subscription of a hire purchase contract or hire for a minimum duration of two years of a land-based automotive motorised vehicle for which a driving licence is required to drive it, referred to in Article 233-1 of the highway code and which runs solely or otherwise on LPG, NGV or electrical energy, as long as this vehicle emits less than 140 grams of carbon dioxide per kilometre for vehicles acquired after 1 January 2008. For acquisitions in 2006, the level of CO_2 emissions is set at 200 g/km and at 160 g/km for acquisitions in 2007.

- 50% increase of the tax credit

The tax credit is increased to €3 000 (50% increase) when the purchase or first subscription to a hire-purchase contract for the vehicle is accompanied by the destruction of a private vehicle registered before 1 January 1997 acquired at least twelve months prior to its destruction and still on the road on that same date. The taxpayer must provide evidence of the destruction of the vehicle by a body authorised by legislation on installations listed for the purpose of environmental protection.

- Conversion of vehicles to LPG

The tax credit applies to the costs involved with converting petrol vehicles under three years old and emitting, before conversion, less than 200 g/km of CO_2 in 2006, 180 g/km in 2007 and 160 g/km from 1 January 2008 to run on LPG (costs paid between 1 January 2006 and 31 December 2009).

4. *Changes adopted at the end of December 2007*

The Environment Round Table highlighted the advantages of an ecological tax on the most polluting new vehicles, the revenue of which would finance the withdrawal of the oldest vehicles, which are, on average, more polluting. It involves rewarding the purchase of an environmentally responsible car and funding this incentive by penalising those who buy vehicles with the highest CO_2 emissions. This incentive system would not mean any additional general taxation of households or companies.

This device is the first concrete application of the "price signal" proposed by the Environment Round Table. It comprises three sections:

- The first involves allocating a "bonus" for any purchase of a new low CO_2 emitting car, i.e. one which would have emissions below 130 g/km of CO_2 for 2008 and 2009, or 31% of annual sales in 2006. For subsequent years, the bonus would apply to vehicles with CO_2 emissions lower than 125 g/km for 2010 and 2011 and lower than 120 g for 2012. The conditions are defined by Decree No 2007-1873, of 26 December 2007 (*Official Journal, 30/12/07*), establishing aid for purchase of clean vehicles.
- The second part, also laid down by Decree No 2007-1873, involves adding to this bonus a "superbonus" (or "scrapping bonus") if the acquisition of the clean vehicle is accompanied by the scrapping of an old vehicle over 15 years old.
- Finally, the third part, established by Article 63 of the amending Finance Law, Law No 2007-1824, of 25 December 2007, (*Official Journal, 28/12/2007*), provides for a malus on the purchase of the new cars with the highest CO_2 emissions. According to the scale defined by the 2007 amending Finance Law, the vehicles subject to this tax are those of which the CO_2 emissions exceed 160 g/km for 2008 and 2009, 155 g for 2010 and 2011 and 150 g in 2012.

5. *Work of the operational committees of the Environment Round Table*

The work is carried out within the operational committees of the Environment Round Table to implement the "*Mobility and transportation*" programme, with a view to reducing greenhouse gas emissions in this sector by 20% in 12 years.

10. Other market-based instruments and State Aid

10.1. White Certificates

The White Certificates system will encourage those involved in the energy sector towards energy savings; over and above the existing instruments (regulation, taxation, etc.), the system is based on the implementation of a market.

The demand for certificates comes from energy savings obligations imposed on energy sellers. The supply of certificates comes from companies or public authorities who will undertake actions, beyond their usual activity, aimed at saving energy.

The market will ensure that all those potentially involved are mobilised, to identify the full potential for the least costly energy savings. The applicable texts of the Programme Law of 13 July 2005 were published in the Official Journal of the French Republic (decrees of 23 May 2006 and related rulings).

This system, which will impose the saving of 54 TWh over the period from 1 July 2006 to 30 June 2009, is a strong indication for energy management. Already, the main energy sellers have adapted the commercial services they offer their customers by incorporating an incentive to invest in more efficient equipment. An initial series of more than 90 standardised operations relating to the main

equipment or processes leading to energy savings has been provided to operators to make it easier for them to assemble actions for which they can request white certificates to be issued by the Regional Directorates for Industry, Research and the Environment (DRIRE).

The first certificates were awarded in November 2006 to Electricité de Strasbourg. The system is fully operational in 2007 and many applications are being processed.

Work of the operational committees of the Environment Round Table

The white certificates system is to be strengthened during the second period starting in July 2009 in order to contribute to the implementation of ambitious objectives set by the Environment Round Table. Reflections on the objective of the white certificates and the other implementation conditions are underway within the relevant operational committees of the Environment Round Table.

10.2. The innovative system of domestic projects for reduction in greenhouse gas emissions

Through the decree of 2 March 2007[5], France established an innovative system to encourage the reduction of greenhouse gas emissions, *particularly through a reduction in the use of fossil energy*: domestic initiatives. The idea is to come up with a price indication for CO_2 in sectors not covered by the quotas market (transport, construction, agriculture and forestry, waste). Any project that saves carbon compared with a predefined trend scenario (*reduction of energy consumption, alternative fuel, etc.*) may benefit, under government control, from State-issued carbon credits (emissions reduction units). After a preliminary phase of methodological adjustment, the first projects will be able to start, some in partnership with local authorities (thermal renovation of residential buildings, replacement of fuel for municipal bus fleets by biomethane, etc.).

10.3. The sustainable development account

In its desire to use savings for sustainable development and energy-saving work in housing, the Government created a sustainable development account which took effect from 1 January 2007 (Article 30 of the 2006 amending Finance Law, Decree No 2007-161 of 6 February 2007 and ruling of 6 February 2007).

The sustainable development account adds to and replaces the Codévi (account for industrial development). Its maximum deposit amount has been increased to €6 000, with a 2.75% interest rate and the interest is tax free.

Independently of the funding of SME development which will be continued, the deposits collected under the sustainable development account will allow loans to be granted for carrying out energy-saving work in dwellings built over two years ago. Private individuals, co-owners and natural persons with professional activity of an industrial, commercial, non-industrial, or non-commercial nature or who work in agriculture can benefit from these loans.

Work of the operational committees of the Environment Round Table

The operational committees are to propose, for the sector with which they are involved, the most relevant financial instruments to achieve the ambitious targets set by the Environment Round Table: the proposals that are made from this work will strengthen and add to the aforementioned systems.

[5] Decree of 2 March 2007 adopted for the implementation of Articles 3 to 5 of Decree No 2006-622 of 29 May 2006 and on the approval of project activities under Articles 6 and 12 of the Kyoto Protocol.

Of particular note amongst the work underway in the COM-OPs to implement the measures adopted by the Environment Round Table are the reflections on establishing a "renewable heat fund" designed to stimulate the range of projects developing the use of renewable thermal energies, in such a way as to meet the 2020 objectives of increasing France’s renewable energy production by 20 Mtoe.

10.4. State Aid and aid from local and regional authorities

In accordance with the energy policy guidelines established by the law of 13 July 2005, local and regional authorities develop, either directly or through environmental agencies, and in particular in partnership with ADEME (the French Environment and Energy Management Agency) within the context of State and regional contracts, policies to encourage energy savings.

Framework agreements in the field of energy management and renewable energy development policy of the State and regional project contracts for the period 2007-2013 are being finalised.

For 2007, the provisional budget from ADEME sets aside €137m of intervention credits in the field of energy (other than horizontal actions such as the prospective studies, data collection, etc.), split into €83m for regional projects, €27.5m to support R&D and €26m for other national support operations. ADEME resources, the budget of which is as much as €333m for all its assignments (waste, contaminated ground, energy, air and noise), are for the most part supplied, besides the budget credits delegated by the Environment and Energy Ministries, by the revenue of various taxes: Domestic natural gas consumption tax (TICGN) for approximately €170m net in 2006, CO_2 tax on registration of the most polluting vehicles (approximately €15m in 2006) and, from 2007, carbon tax and a portion of the general tax on polluting activities (TGAP).

11. Measures intended to make the public service exemplary in energy efficiency

11.1. Circular dated 28 September 2005 on the exemplary role of the State in energy savings

Prime Minister's Circular No 5.102/SG, dated 28 September 2005, on the exemplary role of the State in energy savings, is the reference defining the State's action principles on this issue.
It is available at the following address:
www.industrie.gouv.fr/energie/developp/econo/pdf/circulaire-28-09-05.pdf

It issues a reminder that the State is obliged to contribute to this change in behaviour and to set an example within the context of public control. The measures recommended by the circular will allow for a significant reduction in the State's energy consumption, which will also have a positive impact on the budgetary plan.
Amongst the guidelines set, the obligation to renew the State's car pool with fuel-efficient vehicles that emit less than 140 g/km of CO_2 stands out in particular. Requirements are also defined in terms of energy performance on renovation or construction of public buildings, as well as for optimisation of heating consumption. Any office equipment purchased should also be energy-efficient.

11.2. National action plan for sustainable public procurement

The regulation of public contracts has been adapted on the basis of Community Directives 2004/17/EC and 2004/18/EC, of 13 March 2004, in the form of Decree No 2004-15 of 7 January 2004 on the public procurement code. Requirements relating to the environment may be integrated by public buyers, in particular in the classification and contract award criteria. The public procurement code has meanwhile been amended by Decree No 2006-975 of 1 August 2006 on the public procurement code and the circular dated 3 August 2006 on the public procurement code application manual (*OJ, 04/08/2006*).

On these bases, and within the context of the national sustainable development strategy (SNDD), a national action plan for sustainable public procurement (PNAAPD) has been drawn up, subject to electronic public consultation, from 14 December 2006 to 25 January 2007, and sent to the European Commission.

The Plan sets ambitious targets in terms of sustainable public orders for the period 2007-2009, in the wake of the SNDD, particular in terms of State buildings and vehicle fleets. The PNAAPD is available online at www.ecoresponsabilite.ecologie.gouv.fr.

11.3. Guides aimed at public buyers.

In order to encourage public buyers to manage energy savings and foster sustainable development, guides have been written, in particular:

- the guide for writing technical clauses of public contracts for operation of heating with or without major equipment maintenance and with an obligation to achieve a result (May 2007)
- the guide to environmentally-responsible public procurement – Energy efficiency in contracts for operation of heating and air conditioning for the existing real estate pool.

11.4. Mobility and transportation

Decree No 2006-1663, of 22 December 2006 (*OJ, 23/12/2006*) establishes a partial bearing of the cost of subscription bonds relating to travel between their usual place of residence and their place of work by State employees and employees of the State's public administration establishments working outside the Ile-de-France region. It involves the extension throughout France of a measure in existence previously in Ile-de-France constituting an incentive to use public transport.

The same decree No 2006-1663, in Article 6 thereof, lays down the obligation for all authorities in a built-up area with more than 100 000 inhabitants to draw up a mobility plan (Authority Transport Plan) within two years. These plans relate to work-related journeys and commuting between home and work. They should encourage local modal shift initiatives.

Furthermore, on renewal of their vehicle fleets, the State and certain public persons (public establishments, public operators, national undertakings, local and regional authorities and their grouping) are obliged to acquire or use a minimum proportion of 20% electric, NGV or LPG vehicles under 3.5 tonnes, if they run a fleet of more than 20 vehicles, pursuant to Article 24-III of the law on air and efficient use of energy codified in Article L8B of the highway code and its application decree of 17 August 1998 (*OJ, 18/08/1998*). Where State departments are concerned, the aforementioned Prime Minister's Circular No 5.102/SG, dated 28 September 2005, requires State departments to renew their car pool with fuel-efficient vehicles that emit less than 140 g/km of CO_2.

Work of the operational committees of the Environment Round Table

Several operational committees (COM-OPs) have been assigned for preparing the implementation of and for monitoring the measures adopted within the framework of the Environment Round Table.

Where the exemplary status of the public sector is concerned, the main COM-OPs are:

- COM-OP No 4 "*Exemplary State*", coordinated by Mrs Hélène Gisserot, former Deputy Chairwoman of the Audit Office and Mr Claude Martinand, Deputy Chairman of the National Roads Authority;
- COM-OP No 28 "*Exemplary authorities*", chaired by Mr Philippe Richeret, Chairman of the Bas-Rhin General Council, Daniel Percheron, Chairman of the Nord-Pas de Calais Regional Council and Marc Censi, Chairman of the Assembly of French Local Authorities.

The contributions of other COM-OPs are also involved in this approach, in particular the aforementioned COM-OP No 1 "*New public and private buildings*".

12. Support for research and innovation

Programme Law No 2005-781 of 13 July 2005, establishing energy policy guidelines reserves a specific place for research and development activities for new energy technologies. A national research strategy is published by the Government and reviewed every 5 years.

The Government will report to Parliament every year on the implementation of its renewable energy and energy savings measures. For implementation of its research and innovation strategies, France has the use of two additional agencies, the National Research Agency (*Agence nationale de la recherche*) and the Industrial Innovation Agency (*Agence de l'innovation industrielle*). From this year, the first will dedicate €350 million to research, with a substantial amount on energy, the second will also dedicate €1 billion this year to development of an ambitious policy of major industrial projects, many of which are linked to new energy technologies and energy management, in particular HOMES on

energy-efficient construction, VHD relating to the diesel hybrid vehicle or NeoVal on the automatic modular transport system on tyres.

Within this context of reform involving the organisation of research in France, Article 95 of the law of 13 July 2005 modernises the status of the IFP, which becomes a national public establishment of industrial and commercial nature.

Within the framework of budget programme No 188: "Research in the field of energy", for the "new energy technologies" activity, ADEME supports research activities on renewable energy and efficient use of energy. These activities are intended, through technological development, to bring these sources, in the short and mid-term, up to a level where they will start to be competitive compared to other more mature energy sources. ADEME also finances exploratory activities to bring to light new concepts which will be applicable in the longer term.

In accordance with its objectives contract 2007-2013, ADEME has defined strategic guidelines around 10 key programmes:

- Seven programmes dominated by "technological and organisational solutions":
  1. Clean, efficient transport
  2. Efficient buildings
  3. Capture and storage of CO_2
  4. Production of electricity from renewable sources (photovoltaic, etc.)
  5. Bioenergies and bioproducts
  6. Intelligent systems and storage of energy
  7. Ecotechnologies and efficient, clean processes in the field of air, waste and ground
- Three programmes dominated by "improvement of awareness of pollution and its impact", including a "Perspective and socio-economy" programme and two programmes dedicated to pollution.

Work of the operational committees of the Environment Round Table

Research and innovation activities on the subject of energy efficiency are to be accentuated in accordance with the Round Table's conclusions and the decisions announced by the President of the Republic in his speech on Thursday 25 October 2007.

The application of these decisions is led by operational committee No 30 "Research", coordinated by Mrs Marion Gillou, Chairwoman of the National Institute of Agronomic Research (INRA).

The setting up of a fund dedicated to the funding of demonstrators in the field of energy efficiency and new energy technologies is one of the issues in particular that is studied.

13. Raising public awareness

Within the framework of the Climate Plan, in 2003 the Government launched an awareness campaign on climate change called "*Economies d'énergie: Faisons vite ça chauffe!*" ("*Energy savings: Let's act now, the heat is on!*") conducted by ADEME. The campaign is broken down into a number of activities: television, radio and online advertising campaigns and activities in the field.

ADEME is also cofinancing, with local authorities, the running of energy information sites dedicated to giving information and advice on energy to individuals.

In 2006, the Government decided to double the number of energy information sites, the list of which is available on www.ademe.fr, and to strengthen the "Faisons vite, ça chauffe!" campaign for the next three years.

Work of the operational committees of the Environment Round Table

Issues relating to educating children and citizens on sustainable development, raising public awareness and consumer information are deepened, for each sector, within the framework of the relevant sector operational committees, but also, more generally, by cross-sector operational committees, in particular:

- COM-OP No 26 "*Education*", coordinated by Mr Jacques Bregeon, Director of the College for Higher Environmental and Sustainable Development Studies.
- COM-OP No 23 "*Consumption, ecological price and competitive advantage*", coordinated by Mr Yves Bur, deputy, and Mr Christian Barbusiaux, chairman of the first chamber of the Audit Office.