

The new European Energy Efficiency Directive: France is on track

On October 4th 2012, the European Union adopted a new Directive in order to help reach the common target of a 20% improvement in energy efficiency in 2020. At a time when a major national debate on energy transition is set to take place in France, this new directive will need to be taken into account when defining future energy policy. The measures specified in the European Directive, which focus on buildings and energy suppliers, will enable part of France's goal to be met. The transposition of the Directive into French law will result in the setting of a national target for 2020, and will primarily reinforce an existing requirement that applies to energy suppliers, as well as adding measures aimed at informing energy consumers.

Background: Energy efficiency, a French perspective

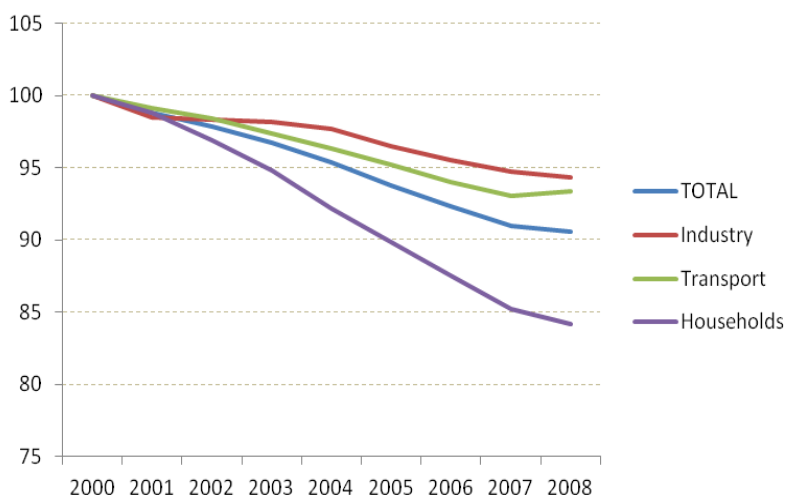
Improving energy efficiency is defined as reducing the energy consumed for the provision of the same good or service. The other main source of energy savings comes from using energy more sparingly, which, conversely, results from limiting or stopping activities that consume energy.

Since 2000, an ongoing improvement in energy efficiency in France

End-use energy efficiency has been improving in France at an average rate of 1.2% per year between 2000 and 2008 (see Figure 1). The residential sector has made the greatest improvement in terms of energy efficiency (+1.7% per year), followed by the transport sector (+0.7% per year) and the industrial sector (+0.6% per year). End-use energy efficiency improvements in the residential sector have gathered speed over the last decade, primarily through the increasing percentage of new homes. The industrial sector has made little progress, after improving significantly over the previous decade (Enerdata, 2011). In the transport sector, the energy efficiency of private vehicles has improved at a faster rate than freight vehicles. It should be noted that the economic downturn appears to have slowed the pace of energy efficiency improvements. In fact, France's¹ final energy intensity, which is used as a proxy to assess energy efficiency, stabilised in 2008, before falling back again in 2009 and 2010 (MEDDTL, 2011).

¹ Relationship between end consumption of energy and GDP in constant prices (ktoe per € at 2000 prices)

Figure 1 – Energy efficiency indices for different sectors in France (100 = 2000)



Source: ODEX Index, and ODYSSEE-MURE database (Enerdata).

National targets focus primarily on the building sector

France's energy efficiency targets are the result of both its domestic legislation and European legislations and are based on different measurement units:

- The Pope Law² has set the target of reducing final energy intensity by 2% per year up until 2015.
- The 2006 European Directive on Energy End-Use Efficiency and Energy Services³, requires that European States set themselves a target of at least 9% reflects energy savings in 2016 compared with 2008 in terms of final energy consumption.
- The 2008 European "Climate & Energy" package has set a non-binding target of improving energy efficiency by 20%⁴ at the European level by 2020.

Domestic energy efficiency measures are primarily the result of the Grenelle Environment Round Table. They primarily focus on the construction sector: according to the assessment provided in the French Energy Efficiency Action Plan (MEDDTL, 2011), 88% of the energy savings must come from this sector, compared with 10% from the transport sector, and less than 1% from the industrial sector (outside the scope of the EU ETS).

Quantified targets have been drawn up for the construction sector. The Grenelle I Law set a target aimed at reducing the energy consumption of existing buildings by 38% by 2020. Furthermore, the renovation of 400,000 homes every year is also included in the Grenelle I Law. Where new buildings are concerned, "BBC-low energy" labelled-ones will become the standard in 2013, before the widespread introduction of "positive energy" buildings as from 2020. According to the scenario drawn up in the French Energy Efficiency Action Plan, this corresponds to a reduction in the end-consumption of energy by the residential and commercial sector of 15.9 Mtoe in 2016 and of 24.9 Mtoe in 2020, i.e. reductions of 21% and 31% respectively compared with the business-as-usual scenario (MEDDTL, 2011) or a return to the sector's level of consumption in the early 1970s.

² The planning Energy Act N° 2005-781 of July 13th 2005 setting out energy policy guidelines.

³ Directive 2006/32/EC.

⁴ This target is not comparable with that of the Energy Services Directive. It is defined in terms of primary and non-end energy use, and compared with a "business as usual" scenario, while the 2016 target is more demanding, as it is defined compared with total consumption in the concerned year.

⁵ Low-energy building certification that complies with the 2005 insulation regulations

Policies providing sector-specific energy efficiency incentives

France takes largely a sector-based approach to energy efficiency policies, as the specific features of the various sectors usually require the use of highly specialised policy or economic instruments. These instruments primarily differ due to the fragmented nature of energy consumption in these sectors. They may be characterised either as economic incentive, regulatory/standards requirement, or as information and awareness-raising initiatives (see Appendix 1).

News: energy efficiency on the domestic and European agenda

The Energy Efficiency Directive was formally adopted by the European Council on 4 October 2012, following a vote in the European Parliament on 12 September. The ongoing energy debate in France, which will be used to draw up a forthcoming planning energy law during 2013, provides an opportunity to include this legislation at the domestic level within a more global framework.

This European Directive establishes a common framework for promoting energy efficiency in the 27 Member States, and specifically replaces the Directives on the Promotion of Co-generation (2004/08/EC) and the Directive on Energy End-Use Efficiency and Energy Services (2006/32/EC). The Directive includes compulsory measures that must be implemented by States in order to reach the European target of a 20% improvement in energy efficiency by 2020. According to the European Commission's research, these new measures should enable to reach a 15 to 17% improvement in energy efficiency, i.e. a supplementary reduction in energy consumption amounting to between 111 and 147 Mteo compared with the EU-27 base-case scenario⁶. The States will specifically be required to establish an indicative national target, to adopt a plan for the building sector, and to implement a system of energy savings obligation for energy suppliers.

Table 1 – Comparison of the European Directive and existing French measures for improving energy efficiency

	European Directive	Existing measures in France
Construction	<ul style="list-style-type: none"> ▪ Obligation to renovate 3% of central government buildings ever year 	▲ Obligation to carry out an energy audit for public buildings before 2010, and to renovate them before 2020 (Grenelle I Law)
	<ul style="list-style-type: none"> ▪ Strategic plan aimed at attracting financing for the private construction sector 	▼ To be implemented
Energy	<ul style="list-style-type: none"> ▪ Compulsory system for energy suppliers and/or resellers 	► Energy savings certificate scheme (Pope Law)
	<ul style="list-style-type: none"> ▪ Compulsory co-generation cost-benefit analysis 	▼ To be implemented
Information	<ul style="list-style-type: none"> ▪ Minimum information criteria to be supplied to consumers by intelligent meters 	► Option to make information on consumption compulsory, in order to reduce consumption (Grenelle II Law)
Industry	<ul style="list-style-type: none"> ▪ Compulsory energy audit for large companies 	▼ To be implemented

▲ Already equivalent or more ambitious ► To be completed or strengthened ▼ To be implemented

Source: CDC Climat Research analysis, based on the Directive and on MEDDTL (2011)

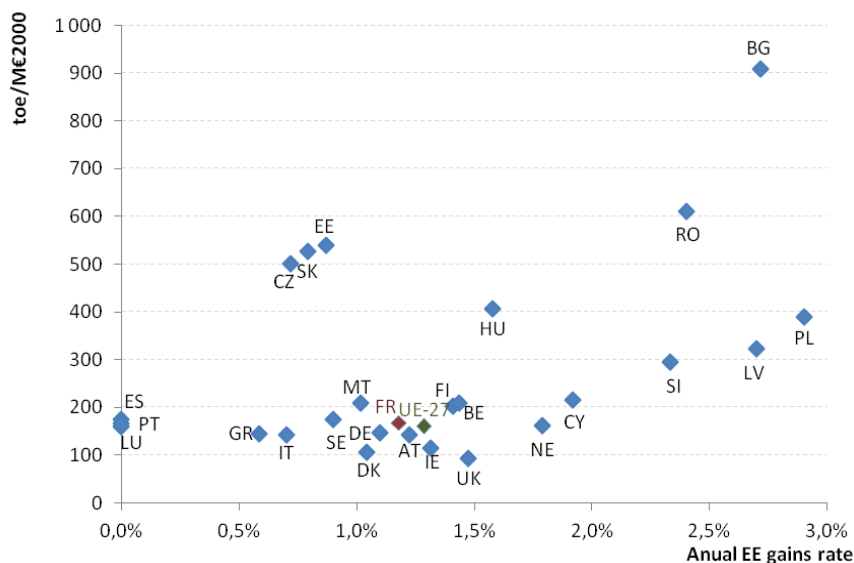
⁶ The base case scenario is forecasting consumption of 1,676 Mteo at the European level in 2020.

Which national target for 2020?

Like all Member States, France will need to set a national indicative energy efficiency target for 2020. The Directive leaves Member States a great deal of flexibility for defining their targets. They can define it in terms of primary or end-consumption of energy, or of energy intensity. This point has given rise to lengthy discussions between States, as the process for transporting primary energy and turning it into end-use energy is not the same for every kind of energy. The end-use energy definition favours electricity-based uses which can be replaced by the consumption of other energies. It excludes from the energy savings requirement calculation the electricity upstream transformation process, from which is usually very energy-intensive: on average, three primary energy units are required to produce one unit of electric energy.

The European Commission will then need to add up the targets of the various Member States, and check their compatibility with the common target of 20%. As it is the case for the effort-sharing regarding non-ETS CO₂ emissions, Member States will set different targets due to the diversity of their energy consumption levels, and the rate at which their energy efficiency is improving. France was within the European average in terms of energy intensity and annual improvements in energy efficiency between 2000 and 2008 (see Figure 2). The countries that are improving their energy efficiency at the fastest rate are the Eastern European countries, led by Poland, at a rate of up to over 2.5% per year. These countries are usually characterised by high levels of energy intensity, due to their winter climate and/or to their obsolete industrial plants. Conversely, Mediterranean countries like Spain, Portugal and Greece are those that show the lowest improvement in their energy intensity, which is nonetheless comparatively low.

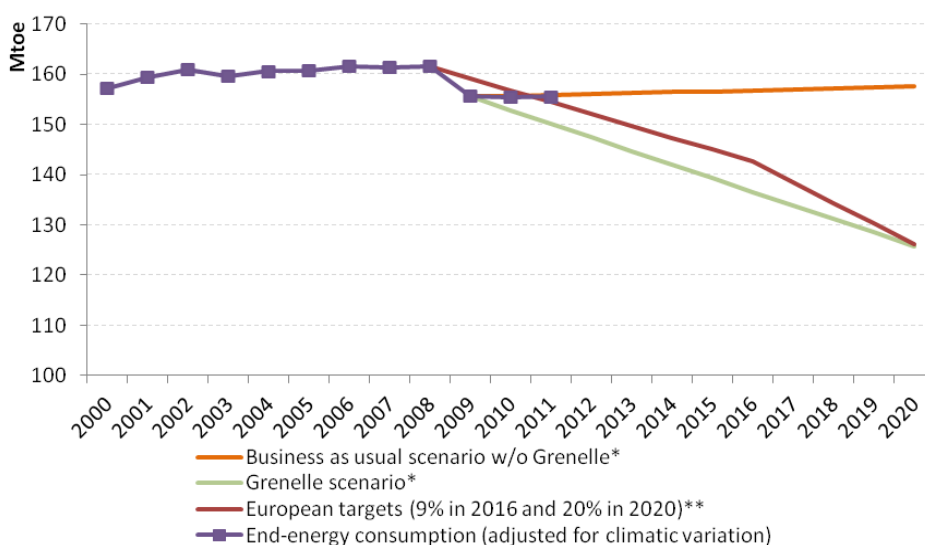
Figure 2 – Annual improvement in energy efficiency for each Member State between 2000 and 2008 compared with their 2008 energy intensity levels



Source: CDC Climat Research based on the ODEX Index, and on the ODYSSEE-MURE database (Enerdata).

To set its target, France will be able to rely on the impact studies included in its domestic energy efficiency programme. The “post-Grenelle” scenario shows that the selected measures are expected to reduce the end-consumption of energy in France by slightly more than 20%, compared with business as usual, which is in line with the European 2020 target for primary consumption. However, the trend for end-consumption of energy in France hardly fell at all in 2010 and 2011, and is rather in line with the business as usual scenario, even though economic growth has been lower than that forecasted at this time. It would therefore be coherent for France to set a target that is in line with the European goal, i.e. a 20% saving in end-use or primary energy.

Figure 3 – Grenelle measures and European targets



*As the forecasts in the national energy efficiency programme excluded the energy consumed in the ETS sectors, we have included the readjusted forecasts, by estimating the future consumption of the ETS sectors based on the data for 2009. **The European 2020 target is defined in terms of gross energy consumption, while the Grenelle forecasts are based on end-consumption of energy.

Source: Chiffres clés de l'énergie (2011) and MEDDTL (2011)

Prioritising building renovation: the Grenelle I is more ambitious

The European Directive requires 3% of buildings with a floor space of over 500 m² owned by central governments to be renovated every year -over 250 m² from 2015- and is asking Member States to encourage local authorities to do likewise. In France, article 5 of the Grenelle I Law⁷ requires carrying out an energy audit for all buildings owned by the Government and its administrative authorities before 2010, in the aim of beginning to renovate them by 2012. In addition, and contrary to the European Directive, minimum requirements have been set, including reducing energy consumption by at least 40%, and greenhouse gas emissions by 50% within an eight-year timeframe. The Grenelle commitments, which also include an overriding target of reducing the energy consumption of existing buildings by 38%, *inter alia*, are therefore much more ambitious than those proposed by the Directive.

Energy suppliers are being asked to save almost three times as much energy via an obligation scheme...

Another flagship measure in the Directive, which is included in Article 7, relates to the implementation by Member States of a compulsory energy saving scheme for sales to consumers, which applies to all energy suppliers and/or distributors.

The energy savings target will be equivalent to an annual 1.5% reduction in sales to consumers over the period between 2014 and 2020, which corresponds to a saving of 14.9 Mteo in terms of end-use energy. However, the inclusion of a large number of exemptions, and the option of transferring 25% of the effort on to other measures, could reduce the net effort down to 1.1%.

The exemptions set out in the Directive are as follows:

- Member States have the option to smooth the target by setting it at 1% for 2014 and 2015, at 1.25% for 2016 and 2017, and at 1.5% as from 2018.

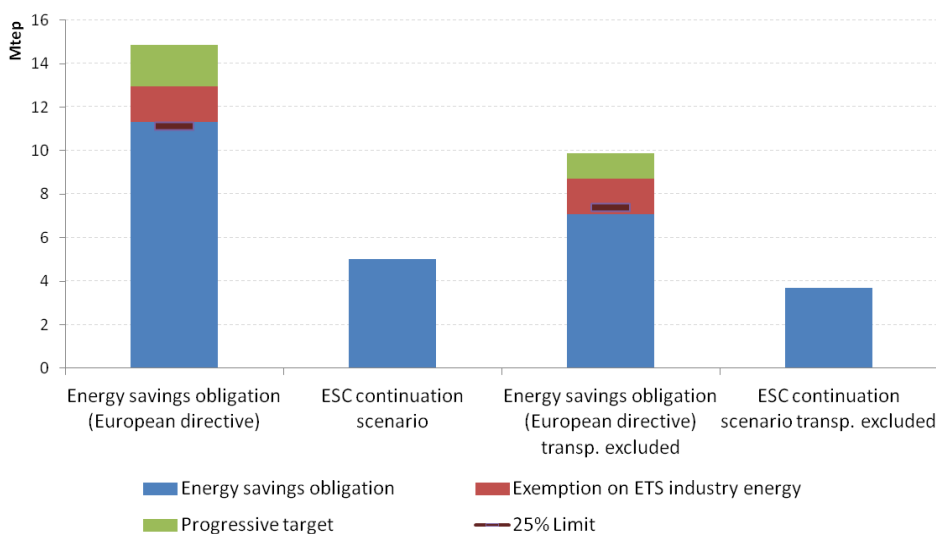
⁷<http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000020949548>

- The energy sold to industrial companies that are subject to the EU ETS may also be exempt.
- Voluntary energy savings taken by the States as from 2008, and which are the results of even earlier domestic policies, may be taken into account.
- Savings made at source during the energy transformation process, before it is supplied to customers, may also be taken into account.

For France, excluding the energy sold to ETS industries and smoothing the target over the period between 2014 and 2018 are enough to achieve the maximum authorised reduction in the ambition of the target, namely 25%. A choice will therefore have to be made among the four different exemptions that are possible within the timeframe determined by the Directive.

A French compulsory mechanism for energy suppliers already exists, namely the energy savings certificate system established by the Pope Law in 2005⁸. This national measure makes energy savings mandatory for gas, electricity, heating, refrigeration and domestic heating oil suppliers, whose sales exceed a certain level, depending on the energy sold, and has been extended to motor vehicle fuel since 2011. The mandatory annual 1.5% reduction would correspond to increasing the effort currently required from French energy suppliers by a factor of three (see Figure 4). The use of exemptions, just like excluding the calculation for the energy consumed by the transport sector, could mitigate this difference, although it would not erase it. This means that the Directive does indeed require an increase in the mandatory energy savings made by suppliers.

Figure 4 – 2020 energy savings targets for energy suppliers: the European Directive’s requirement compared with the ESC scheme in France



Note: the calculation for the ongoing ESC scenario assumes that the system is extended, with a target level that is equivalent to that of Phase II (2011-2013), namely 345 TWh cumac (including 90 TWh for the transport sector) over three years, with an equivalent period for the energy savings from the initiatives.

Source: CDC Climat Research based on the data from *Chiffres clés de l'énergie (2011)* and on the assessment of energy savings certificates in MEDDTL (2011).

... whose design is at Member States' discretion

The design of these mandatory schemes is mostly left up to Member States. In the foreword section, the European Directive mentions that the option of introducing a market for so-called “white” certificates on a European scale has been reviewed. This option was rejected due to the risk of high administrative costs, and of the concentration of energy savings in some

⁸ Articles 14 to 17 of Act N° 2005-781 of 13 July 2005.

geographical areas. The Directive sets out the use of other policies as an alternative, as long as the reduction in the end-consumption of energy complies with the target and Member States monitor the energy savings achieved on an annual basis. Among the alternatives, the option of introducing a national energy efficiency fund financed by energy suppliers has been mentioned. Such a fund would have the advantage of targeting various incentives at energy efficiency initiatives (subsidies, and subsidised loans, etc.) while keeping the financial effort on suppliers, and therefore remaining compliant with the Directive. Other alternatives that were mentioned included the use of energy or CO₂ emission taxes, as well as the setting of standards, or product certification schemes that went beyond the Community requirements in terms of energy consumption.

In the French case, there are reasons to question the ESC scheme's ability to absorb a threefold increase in the target. Limitations of the system in terms of financial attractiveness and of the capacity of the energy savings sector were already obvious during discussions on the Phase II (2011-2013) target for energy savings certificates (Coe-Rexecode 2009). For instance, the certificate price, which is around €0.42 per kwh cumac on the Emmy Registry⁹ is usually below the average cost of the certificates, which limits the attractiveness of the system for players who are not required to participate. It will therefore be needed to choose between amending the system or/and supplementing it through other measures.

Energy audits, promotion of co-generation and smart-metering: additional information measures to be introduced or supplemented in France

The other compulsory measures set out in the Directive relate to the introduction of information standards for the end-consumer.

All major companies will from now on have to submit an energy audit within a period of three years following the entry into force of the Directive, and every four years thereafter. These audits are not yet compulsory in France; however there is an audit requirement for jointly-owned properties and for public buildings, and a less demanding energy performance assessment (EPA) requirement for private buildings. These requirements may be transposed to industry.

Where co-generation, which was already the subject of a Directive, is concerned, the incentives policy will be boosted by the requirement to carry out a cost-benefit analysis for any thermal power plant with a capacity of over 20 MW¹⁰.

Lastly, the Directive also includes measures that lay the foundations for the distribution of intelligent metering for the consumption of electricity, gas, heating, and air conditioning supplied by networks. It sets out minimum information levels for the new intelligent meters, among other things. This means that detailed daily, monthly, and annual consumption data will need to remain available for two years. In France, ERDF is currently rolling out "Linky" networked meters, and is expected to install them in 35 million households by 2020. The company will need to meet the requirements of this Directive, while the Grenelle II Law has made the requirement for regular access to the information possible that can enable consumers to gain a better understanding of their consumption.

⁹ Registry for pooling transactions in energy savings certificates: <https://www.emmy.fr/front/cotations.jsf>

¹⁰ Except for power stations planned for energy peaks (operating for less than 1,500 hours per year), nuclear power stations, and power stations where there is a plan to fit them out with carbon capturing equipment.

Next steps

At the national level, the major forthcoming steps for the implementation of the measures set out in this Directive are:

- **Late 2012:** Discussions that are currently being held by the French Ministry for the Environment, Sustainable Development, and Energy regarding the third period for energy savings certificates, which are expected to reach a conclusion by the end of the year, in order to define the third phase for the energy saving certificate system (2014-2016).
- **Late 2012 – early 2013:** National debate on energy transition, of which a summary is expected to be published in May 2013.
- **June 2013:** Draft energy programme law.
- **Before April 2014:** Enactment of the Energy Efficiency Directive, and publication of the long-term strategy for financing renovations in the private construction sector.

To find out more...

- Coe-Rexecode (2009), *Evaluation socio-économique de différents programmes de certificats d'économie d'énergie, quel objectif pour la prochaine période ?* (Socio-economic assessment of various energy saving certificate programmes. What is the aim for the next period?), Working Document N°11
<http://www.coe-rexecode.fr/Analyses-et-previsions/Documents-de-travail/Evaluation-socio-economique-de-differents-programmes-de-certificats-d-economies-d-energie>
- European Commission (2011) "Impact Assessment of the draft Energy Efficiency Directive":
http://ec.europa.eu/energy/efficiency/eed/doc/2011_directive/sec_2011_0779_impact_assessment.pdf
- Chiffres clés de l'Énergie (2011)
http://www.developpement-durable.gouv.fr/IMG/pdf/Reperes_Rep-Chiffres_cles_Energie.pdf
- Enerdata (2011), *L'efficacité énergétique en France* (Energy efficiency in France), May 2011
http://www.odyssee-indicators.org/publications/country_profiles_PDF/fra_nl.pdf
- MEDDTL (2011), *Plan d'action de la France en matière d'efficacité énergétique* (France's energy efficiency action plan):
http://www.developpement-durable.gouv.fr/IMG/pdf/110619_PNAEE.pdf
- European Parliament (2012), Resolution on the Energy Efficiency Directive.
<http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P7-TA-2012-0306+0+DOC+XML+V0//FR#BKMD-5>

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Appendix 1 – The main incentive policies for energy efficiency in France

	Economic incentives	Regulation	Information and Training /R&D
Commercial & residential buildings	<ul style="list-style-type: none"> ▪ Sustainable development tax credit (CUIDD) ▪ Zero-interest eco-loans. ▪ Subsidised loans from Sustainable Development Savings Accounts. ▪ Zero-interest loans for first-time buyers of a home subject to a home energy performance assessment, <i>inter alia</i>. ▪ Home renovation subsidies (“<i>Habiter mieux</i> (Better Homes)” fund managed by the ANAH¹). ▪ Possible property tax exemption for “BBC-low energy” buildings. 	<ul style="list-style-type: none"> ▪ Primary energy consumption and energy performance standards for some uses for new buildings and renovations (RT, 2005). ▪ Energy audits for public buildings, and mandatory works before 2020. ▪ Energy certification for buildings (e.g. “HPE-high energy performance”, or “BBC-low energy” buildings, for example). ▪ Regular maintenance requirement, and standards for boilers and air-conditioning systems. ▪ Energy certification for buildings (e.g. “HPE-high energy performance”, or “BBC-low energy” buildings, for example). 	<ul style="list-style-type: none"> ▪ Energy performance assessment (EPA), when selling or letting a building ▪ Labelling of household products ▪ Energy Information Points. ▪ Skill-recognition initiatives for professionals in the construction sector (ECO craftsman certification, etc.). ▪ Various training initiatives (PRAXIBAT from the ADEME, etc.) ▪ Energy in buildings research and experimentation programme (PREBAT) ▪ Linky networked meters
Transport	<ul style="list-style-type: none"> ▪ The per kilometre eco-tax on heavy goods vehicles ▪ Environmental “bonus-malus” system 	<ul style="list-style-type: none"> ▪ CO₂ labelling of private vehicles 	<ul style="list-style-type: none"> ▪ Requirement to display the CO₂ content for services involving the transportation of goods and people ▪ “Shared car” certification, and encouraging car-pooling ▪ R&D programmes (PREDIT and INNOFRET, etc.)
Industry	<ul style="list-style-type: none"> ▪ Community CO₂ allowance trading scheme ▪ “Green loans” scheme managed by Oséo. ▪ ADEME investment support system (“Assistance with decision-making”, and “Rational energy use”). 	<ul style="list-style-type: none"> ▪ Standards for boilers ▪ Standards for energy performance assessments. ▪ Requirement for a GHG emission report from companies with over 500 employees every three years. 	
Energy Cross-divisional	<ul style="list-style-type: none"> ▪ The energy savings certificates system ▪ Support for the development of Energy Performance Agreements 	<ul style="list-style-type: none"> ▪ Eco-design standards for products that consume energy 	<ul style="list-style-type: none"> ▪ Programmes dedicated to the investments of the future

Source: France's energy efficiency action plan, (2011)