

2015 annual report pursuant to Article 24 of the Energy Efficiency Directive (EED)

In accordance with Directive 2012/27/EU on energy efficiency (Article 24 and Annex XIV), this report is intended to present an overview of the main energy efficiency measures adopted in 2014 and the principal key figures linked to energy consumption, and to evaluate the implementation of Articles 5 and 7 of the Directive. It follows on from the first annual report that France submitted in April 2013 and from the French energy efficiency action plan updated in 2014.

- Measures implemented in 2014

The following are the main measures implemented in 2014, particularly as part of the transposition of the EED (detailed references to the various regulatory texts are given in the annex):

- Publication of regulatory texts allowing for the entry into force of the third period of white certificates on 1 January 2015, with a target for energy savings of 700 TWh (cumulative and discounted) over the period 2015–2017, which is twice as ambitious as the second period;
- Energy audit made compulsory for large enterprises, pursuant to Article 8 of the EED: publication of the final regulatory texts necessary for this measure to be implemented;
- Cost-benefit analysis for facilities generating waste heat made compulsory, pursuant to Article 14 of the EED, in order to assess the advisability of utilising this waste heat in a district heating or cooling system;
- Development of demand response on the energy markets (cf Article 15 of the EED);
- Reinforcement of tax credits for energy transitions (CITE), which entered into force on 1 September 2014, with a single tax reduction rate of 30 %;
- Development of zero-rate loans for energy efficiency improvements: responsibility for certifying that the residential improvement work qualifies for the zero-rate loan is transferred to the company carrying out the work; the supporting documents submitted by the borrower must make clear what work has been carried out; changes to the system of administrative penalties for companies that fail to fulfil their obligations;
- Cross-compliance: from 1 January 2015, it is necessary to use a tradesperson holding environmental certification (RGE) in order to benefit from CITE and zero-rate loans.
- Changes to environmental bonuses and penalties: the system of bonuses and penalties aims to reward with a bonus those who purchase a new car with low CO₂ emissions, and to impose a penalty on those who opt for the most highly polluting models. The new bonus scale applies from 1 January 2015; the penalty scale, on the other hand, has

not been altered for the year 2015. A bonus for the conversion of diesel vehicles older than 14 years is being implemented from 1 April 2015.

Furthermore, energy savings are among the Government's priorities for 2015. The draft law on energy transition for green growth, adopted by the National Assembly on 14 October 2014 sets the goal of reducing final energy consumption by 50 % by 2050 compared with 2012, with an intermediate target of 20 % by 2030, and of raising the proportion of renewable energy to 23 % of final gross consumption by 2020 and to 32 % by 2030.

The Senate voted on the draft law on 3 March 2015. The joint committee, which met on 10 March 2015, did not reach agreement, and the draft law will therefore be reviewed by the National Assembly and the Senate before being adopted definitively, probably in summer 2015.

- **Statistical data linked to energy consumption**

The tables below summarise the statistical data to be provided for the year 2013 pursuant to Article 24 of Directive 2012/27/EU.

Statistical data on energy consumption (in Mtoe):

	2013	2012	2011
Gross primary energy consumption (excluding non-energy consumption)	250.40	248.04	246.79
Gross final energy consumption	156.25	153.47	148.67
<u>Final energy consumption by sector*:</u>			
– Final energy consumption (industry*)	31.8	32.5	32.3
– Final energy consumption (transport*)	48.7	49.1	49.3
– Final energy consumption (residential*)	46.9	46.7	46.2
– Final energy consumption (tertiary*)	22.1	22.4	22.9
– Final energy consumption (agriculture*)	4.6	4.5	4.5
<i>Total final energy consumption by sector*</i>	<i>154.1</i>	<i>155.1</i>	<i>155.2</i>

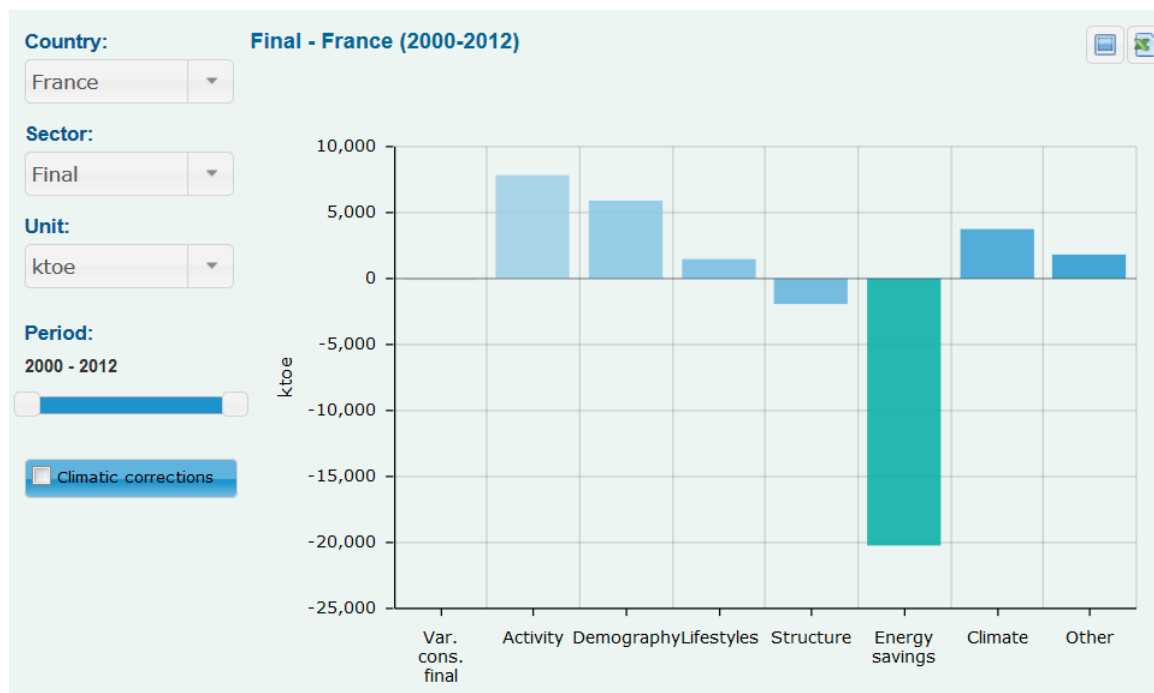
* Seasonally adjusted

In 2013 gross final and primary energy consumption rose on 2012; however, adjusted for climate variations, they appear to be falling.

For two years, primary consumption, adjusted for climate variations, has hovered around 260 Mtoe¹. Since the sharp drop in 2009, primary consumption appears to have declined sustainably from its peak of over 270 Mtoe reached before the global financial crisis.

Final energy consumption fell by 5 Mtoe between 2008 and 2009, to 155 Mtoe. It has remained around this level for five consecutive years, this year reaching its lowest level yet, at just over 154 Mtoe². It fell by 0.7% from 2012 to 2013, as a result of falling consumption in the industrial, tertiary and, to a lesser extent, the transport sectors. Final energy consumption no longer seems to be increasing except in the residential sector. In the transport, tertiary and particularly the industrial sectors, the downward trend appears to be well established. Final energy intensity also continued to fall, and more strongly than in 2012: it decreased by 1 % in 2013.

The graph below, produced by the Odyssee-Mure project³, breaks down the changes in final energy consumption in France between 2000 and 2012, and shows that the significant volumes of energy savings achieved through energy efficiency policies have offset the effects of population increase and increase in GDP:



As regards the different sectors, final energy consumption is increasing in the residential and agricultural sectors.

¹ Including non-energy usage.

² Adjusted for climate variations.

³ Source: <http://www.indicators.odyssee-mure.eu/decomposition.html>

- **Residential:** consumption in the residential sector saw a slight increase of 0.4 % (compared with an increase in the number of households of 0.9 %), after an increase of 1 % in 2012. Final consumption of oil products continued to fall in 2013 in the residential sector (-2.1 %), as did consumption of gas (-2.9 %). By contrast, consumption of electricity increased by 3.1 % on 2013. This rise is partly explained by the increasing use of electricity in the home: the proportion of main residences with electric heating increased from 29.6 % in 2006 to 32.0 % in 2010. The prevalence of electronic equipment also contributed: for example, between 2005 and 2012, the proportion of households with a personal computer increased from 49.6 % to 75.2 %.
- **Agriculture:** in 2013, final energy consumption in agriculture and fisheries was 4.62 Mtoe, an increase of 3.6 % on 2012. The increase was mostly attributable to oil products (+4.2 %), which still represent three quarters of energy consumption in the sector. Consumption of electricity and gas also increased (+2.4 % and +1.6 % respectively). Nevertheless, these increases are smaller than in 2012.

Other indicators required by the Directive:

	2013	2012	2011
Gross value added (industry) ⁴ , in 2010 inflation-adjusted euros (in EUR billion) ⁵	251.7	252.6	250.5
Gross value added (services, including transport), in 2010 inflation-adjusted euros (in EUR billion) ⁶	1 470	1 461	1 448
Disposable household income (in EUR billion) ⁷	1 326.3	1 318.1	1 311.4
Number of households (in thousands) ⁸	28 724	28 461	28 207
Gross domestic product, in 2010 inflation-adjusted euros (in EUR billion) ⁹	2 052.7	2 046.9	2 040.0
Gross electricity generation from thermal power plants ¹⁰	34.7 TWh	34.1 TWh	36.2 TWh
Gross electricity generation from combined heat and power plants ¹¹	16.7 TWh	22.6 TWh	18.3 TWh
Heat generation from thermal power plants ¹²	Not available	Not available	Not available

⁴ Manufacturing industry, mining and quarrying, others.

⁵ http://www.insee.fr/fr/themes/comptes-nationaux/tableau.asp?sous_theme=5.2.2&xml=t_6202

⁶ http://www.insee.fr/fr/themes/comptes-nationaux/tableau.asp?sous_theme=5.2.2&xml=t_6202

⁷ http://www.insee.fr/fr/themes/comptes-nationaux/tableau.asp?sous_theme=2.1&xml=t_2101

⁸ http://www.insee.fr/fr/themes/theme.asp?theme=16&sous_theme=2.3

⁹ http://www.insee.fr/fr/themes/comptes-nationaux/tableau.asp?sous_theme=1&xml=t_1102

¹⁰ Gross electricity generation from power plants (including private generators).

¹¹ Gross electricity generation from combined heat and power plants (including private generators).

Gross heat generation from combined heat and power plants, including industrial waste heat	64.6 PJ	73.8 PJ	Not available ¹³
Fuel consumption by thermal power plants ¹⁴	363.2 PJ	349.3 PJ	407.8 PJ
Number of passenger kilometres (in billions of pkm)	988.8	984.9	984.1
Number of ton kilometres (in billions of tkm), excluding oil pipelines	328.6	323.7	342.3
Population (in thousands) ¹⁵	65 525	65 241	64 933
Fuel consumption by combined heat and power plants ¹⁶	196.5 PJ	259.7 PJ	323.0 PJ
Losses in the transmission and distribution of energy ¹⁷	79.77 Mtoe	77.19 Mtoe	81.43 Mtoe

¹² Waste heat produced by thermal power plants is not included in international statistics (AIE and EUROSTAT questionnaires). The main source is nuclear power plants, which represent around two thirds of the heat energy produced, as opposed to only one third for conventional power plants. As this steam is not marketed in France (it is entirely released into the atmosphere and rivers, unlike in some Member States where it feeds district heating systems), it has not been included in the AIE and EUROSTAT figures. Moreover, any attempt to measure this heat would present methodological difficulties with regard to the technical coefficients required to calculate an approximation. For conventional thermal power plants (combustion), the heat released is less significant, but it still cannot be measured and it is not included in statistics for the same reasons.

¹³ In accordance with the AIE's instructions, only heat sold from private generators is included as from 2012; the heat produced and consumed by private generators as part of their industrial activities is no longer taken into account. Hence the interruption in the data series, as it has not yet been possible to perform the retroactive calculation for 2011 (145.8 PJ using the previous methodology).

¹⁴ Fuel consumption by power plants (excluding combined heat and power), including private electricity generators.

¹⁵ http://www.insee.fr/fr/themes/document.asp?reg_id=0&ref_id=ip1532

¹⁶ Including private generators.

¹⁷ This figure is an upper limit and corresponds to 'losses and adjustments' from energy output: this item includes losses from the grid (electricity) and 'statistical adjustments' corresponding to the difference between total energy usage and total availability.

Heat production from district heating plants ¹⁸	107.7 PJ	101.8 PJ	94.0 PJ
of which heat delivered ¹⁹	89.6 PJ	84.3 PJ	78.4 PJ
Fuel consumption by district heating plants ²⁰	100.3 PJ	100.1 PJ	90.7 PJ
of which fuel consumption in district heating plants for heat generation	80.5 PJ	76.3 PJ	66.4 PJ

- Energy savings achieved in 2014 pursuant to Article 7 of the EED

In accordance with the notification of December 2013 concerning Article 7 of the EED, France has set itself an annual target in accordance with that Article of 1.092 Mtoe of energy savings, achieved through the implementation of white certificates and alternative measures.

For the year 2014, the white certificates alone delivered 88 % of this target. The additional savings made as a result of alternative measures will enable France to reach its goal.

White certificates

In 2014 the white certificates distributed corresponded to savings of 149.8 TWh cumulative and discounted (cumac)²¹, or, based on an average lifespan of implemented initiatives of 13.4 years²², 11.2 TWh a year, or around 0.96 Mtoe.

This result is higher than the target that France set itself for 2014 in its notification of December 2013 (97 TWh cumac). Moreover, the scheme is expected to grow further with the start of the third period of certificates, starting on 1 January 2015 (target of 171 TWh cumac notified for 2015).

The graphs below describe the distribution across the sectors of energy savings achieved in 2014 through standardised operations (represents 138 TWh cumac of savings):

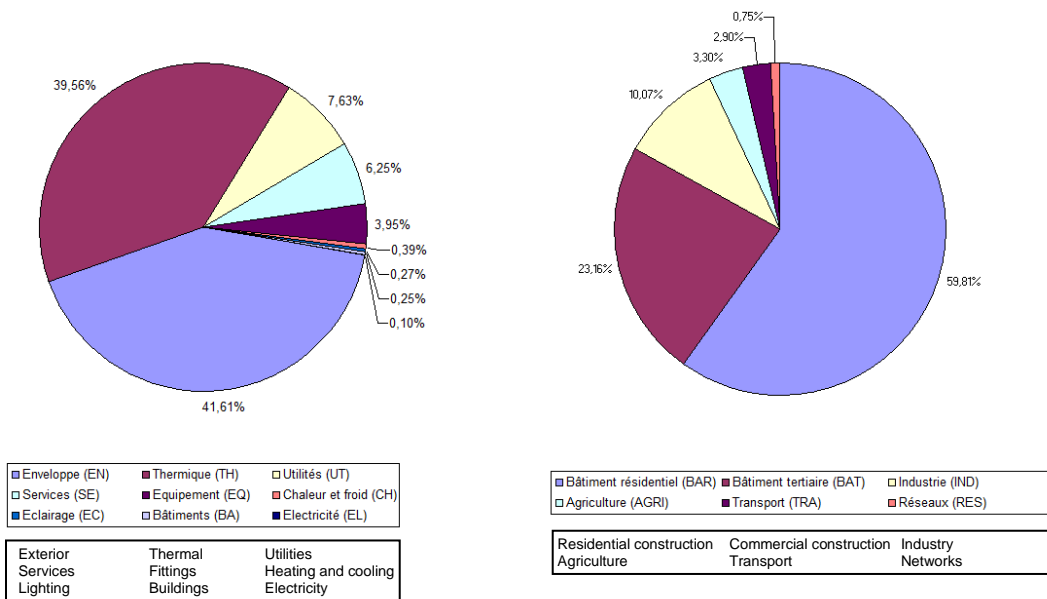
¹⁸ Estimated heat production from all sources of energy (within or outside the network), which explains why heat production is higher than fuel consumption in district heating plants themselves.

¹⁹ Heat delivered to substations, declared by heating networks (not estimated).

²⁰ Consumption of coal, natural gas, fuel oil, LPG and solid biomass (excluding municipal waste) by district heating systems for the production of heat and electricity (combined heat and power generation).

²¹ Source: National white certificates register (www.emmy.fr).

²² Average duration observed during the second period of the white certificates scheme, in accordance with the notification of December 2013 on Article 7.



Alternative measures

In accordance with the notification of December 2013, France also uses alternative measures to the white certificates scheme in order to achieve its target under Article 7.

Among these measures, tax credits for energy transition (CITE) and zero-rate loans have encouraged energy efficiency improvement work. However, it is not possible at this stage to quantify the energy savings that have been brought about by these schemes and have not already been taken into account. Nevertheless, it is possible to say that the tax expenditure for CITE amounted to EUR 620 million in 2014 (from 2013 revenue). According to the latest available figures on the equipment that has been funded, it is estimated in particular that 145 000 condensing boilers eligible for tax credit were sold in 2009, as well as 14 349 geothermal heat pumps. The number of instances of thermal insulation carried out in 2012 within the scope of the tax credits is estimated at 185 032 for roofs and 11 960 for walls.

The definitive number of zero-rate loans granted for energy efficiency measures in 2014 is not yet available, but it can already be reported that 24 010 loans were granted in the first three quarters of 2014²³.

The carbon base set as part of the domestic consumption tax on energy products (TICPE) is another source of energy savings: from 2014, the rate of taxation on three excisable products (natural gas, heavy fuel oil and coal) – comparatively the least taxed in relation to their carbon content – rose by EUR 7/tCO₂.

In addition, as stated in the first part of the report, a decree of July 2014 provided for the payment of a bonus to demand-response operators.

The energy passports and the guarantee fund for energy efficiency improvements had not yet entered into force fully in 2014: these measures are provided for in the law on energy transition for green growth which is due to be adopted in summer 2015.

²³ Source SGFGAS: https://www2.sfggas.fr/presentation/Stats/EPZ/EPZ_Emissions.pdf

The environmental tax on heavy goods vehicles was abandoned in its original intended format in October 2014. A supplementary tax of two euro cents per litre on diesel was introduced, in addition to the two cents per litre from the implementation of the carbon tax.

- **Energy savings achieved in 2015 pursuant to Article 5**

In its transposition notification for Article 5 at the end of 2013 (choice of alternative approach), France emphasised the following three areas of action:

- Work on building exteriors and fittings
- Action linked to the management of facilities and to the occupants (behaviour)
- Reduction of surface area occupied by central government

As regards the building work carried out in 2014, the cross-cutting policy document 'combating climate change'²⁴ enables us to make an assessment of the Government's main budget headings for energy efficiency improvements or the construction of new energy-efficient buildings (see table below). To take an example, programme 309 on the maintenance of government buildings includes costs connected with carrying out audits, maintenance operations and heavy maintenance work.

Budget programme	Payment appropriations 2014 (EUR)
National Gendarmerie (152)	4 879 500
Civil safety (161)	265 500
Judicial system (166)	12 239 603
National police (176)	15 321 000
Support for defence policy (212)	27 000 000
Support for national education policy (214)	2 467 500
Territorial administration (307)	4 420 800
Maintenance of government buildings (309)	30 627 817
Total	97 221 720

In the absence of a specific distribution key for each programme, it is difficult to differentiate from a given budget how much of each appropriation is allocated to new construction (proportion of expenditure linked to the energy performance of the buildings) and how much is earmarked for energy efficiency improvements.

Nevertheless, the aforementioned total figure of around EUR 97 million (based on the expenditure of the Government's main building programmes) is just higher than the range of EUR 50 to 80 million a year referred to in the notification at the end of 2013, and shows that France is honouring the targets that it set itself for energy efficiency improvements to government buildings, corresponding to annual energy savings in the region of 413.5 GWh of primary energy a year as indicated in the notification.

²⁴ http://www.performance-publique.budget.gouv.fr/sites/performance_publique/files/farandole/ressources/2015/pap/pdf/dpt/DPT2015_climat.pdf

With regard to behaviour, it is not possible to produce an exhaustive overview of initiatives undertaken, but several examples can be given of projects completed in 2014. For instance, the Ministry of Ecology, Sustainable Development and Energy and the Ministry of Housing and Territorial Equality published a joint environmental awareness brochure in summer 2014 to encourage their staff to adopt good habits to save water and energy, avoid food waste and even consider changing their mode of transport. Since 2013 all the departments of these ministries have been equipped with videoconferencing facilities (205 in total).

New instructions on the exemplary role of the State were signed by the Prime Minister on 17 February 2015: in particular, all ministries are instructed to draw up a 'ministerial plan on exemplary administration' for the period 2015–2020 by 30 June 2015.

Finally, with regard to the reduction of the surface area occupied by central government, the data on surface area vacated in 2014 will not be available within the timescale required by the Directive.

Annex: details of regulatory texts adopted in 2014

- Publication of regulatory texts allowing for the third period of white certificates to come into force on 1 January 2015, with a target for energy savings of 700 TWh cumac over the period 2015–2017, which is twice as ambitious as the second period:
 - Decree 2014-1557 of 22 December 2014, amending Decree 2010-1664 of 29 December 2010 setting the procedures for implementation of the white certificates scheme
 - Decree 2014-1668 of 29 December 2014 on obligations for the third period of the white certificates scheme
 - Order of 4 September 2014 laying down the different components of an application for white certificates and the documents to be filed by the applicant
 - Order of 11 December 2014 laying down the management costs for the national register of white certificates
 - Order of 22 December 2014 defining standardised energy-saving operations
 - Order of 29 December 2014 on implementation procedures for the third period of the white certificates scheme
- Energy audit made compulsory for large enterprises, pursuant to Article 8 of the EED: publication of the final regulatory texts necessary for this measure to be implemented:
 - Decree 2014-1393 of 24 November 2014 on implementation procedures for the energy audit provided for by Chapter III, Title III, Book II of the Energy Code
 - Order of 24 November 2014 on implementation procedures for the energy audit provided for by Chapter III, Title III, Book II of the Energy Code
- Cost-benefit analysis for facilities generating waste heat made compulsory, pursuant to Article 14 of the EED, in order to assess the advisability of utilising this waste heat in a district heating or cooling system:
 - Decree 2014-1363 of 14 November 2014, transposing Article 14(5) of Directive 2012/27/EU on the connection of facilities producing waste heat to heating or cooling systems.
 - Order of 9 December 2014 specifying the contents of the cost-benefit analyses to assess the advisability of utilising this waste heat in a district heating or cooling system, as well as the categories of facility concerned.
- Development of demand response on the energy markets (cf Article 15 of the EED):
 - Decree 2014-764 of 3 July 2014 on electricity demand response

- Reinforcement of tax credits for energy transitions (CITE), which entered into force on 1 September 2014, with a single tax reduction rate of 30 %:
 - Article 3 of Law 2014-1654 of 29 December 2014 on the 2015 budget
- Development of zero-rate loans for energy efficiency improvements: responsibility for certifying that the residential improvement work qualifies for the zero-rate loan is transferred to the company carrying out the work; the supporting documents submitted by the borrower must make clear what work has been carried out; changes to the system of administrative penalties for companies that fail to fulfil their obligations:
 - Decree 2014-1437 of 2 December 2014 on repayable zero-rate advances to finance work to improve the energy efficiency of older properties
 - Decree 2014-1438 of 2 December 2014 on repayable zero-rate advances to finance work to improve the energy efficiency of older properties
 - Order of 16 July 2014, amending the Order of 30 March 2009 on the conditions for applying the provisions on repayable zero-rate advances to finance work to improve the energy efficiency of older properties, and amending the Order of 25 May 2011 on overseas application of the provisions on repayable zero-rate advances to finance work to improve the energy efficiency of older properties
 - Order of 2 December 2014, amending the Order of 30 March 2009 on the conditions for applying the provisions on repayable zero-rate advances to finance work to improve the energy efficiency of older properties
 - Order of 2 December 2014, amending the Order of 25 May 2011 on overseas application of the provisions on repayable zero-rate advances to finance work to improve the energy efficiency of older properties
 - Order of 22 December 2014, amending the Order of 25 May 2011 on overseas application of the provisions on repayable zero-rate advances to finance work to improve the energy efficiency of older properties
- Cross-compliance: from 1 January 2015, it will be necessary to use a tradesperson holding environmental certification (RGE) in order to benefit from CITE and zero-rate loans:
 - Decree 2014-812 of 16 July 2014 on cross-compliance for government support for energy efficiency improvements
 - Order of 16 July 2014 on the qualification criteria for sustainability tax credits and repayable zero-rate advances to finance work to improve the energy efficiency of older properties

- Order of 19 December 2014 defining the requirements for training on energy efficiency and the installation of equipment for energy production from sustainable energy sources
- Changes to environmental bonuses and penalties: the system of bonuses and penalties aims to reward those who purchase a new car with low CO₂ emissions using a bonus, and to penalise those who opt for the most highly polluting models using a penalty. The new bonus scale applies from 1 January 2015; the penalty scale, on the other hand, has not been altered for the year 2015:
 - Decree 2014-723 of 27 June 2014, amending Decree 2007-1873 of 26 December 2007 instituting support for the purchase of clean vehicles
 - Decree 2014-1672 of 30 December 2014 instituting support for the purchase and rental of low-emission vehicles
 - Order of 30 December 2014 on procedures for managing support for the purchase and rental of low-emission vehicles