

NOTE FROM THE FRENCH AUTHORITIES

Subject: Implementation of Directive 2012/27/EU on energy efficiency – Communication from the French authorities of their Annual Report (Article 24 of the Directive)

1) Setting the 2020 target

In terms of energy efficiency, Programme Law No 2005-781 of 13 July 2004 establishing the overall objectives of French energy policy, known as the POPE law, set the ambitious targets involving a reduction of 2% per year in final energy intensity by 2015 and a reduction of 2.5% per year between 2015 and 2013.

In 2007, energy efficiency policy was reinforced by Programme Law No 2009-967 of 3 August 2009 on the implementation of the Grenelle Environment Forum. Measures stemming from that law allowed France to set an energy efficiency target involving a reduction of 17% of its final energy consumption by 2020 compared to baseline levels. The calculation methodology is set out in the National Energy Efficiency Action Plan (PNAEE) sent to the European Commission in June 2011.

Moreover, France has committed to complying with the terms of the **energy-climate package concluded in 2008 and to providing for an improvement in energy efficiency by 20%** in the European Union by 2020.

Beyond that, energy transition requires everyone to be involved in the design of a motivating societal project based on a new economic model and new ways of life which are simpler and more energy efficient. **The French Government has therefore decided to hold a national debate to prepare the draft law on energy transition (DNTE).** This debate will help to make energy transition a means to construct a new growth model which is green, sustainable and fair.

The Annual Report which France is submitting refers to the period preceding that debate and includes public policies agreed upon in the past. Structurally speaking the Report includes policy scenarios which do not necessarily take account of all of the guidelines which will be laid down when the DNTE is finalised. **That is notably the case for the estimate of France's overall energy consumption by 2020.**

Our energy efficiency target will be updated after the debate and sent to the Commission at the latest by April 2014, by the time of the submission of the next National Energy Efficiency Action Plan.

Currently, **the updated policy scenarios, which do not include decisions to be taken following the national debate on energy transition,** lead to an estimated final energy consumption of **131.4 Mtoe in 2020**, and a primary energy consumption of **236.3 Mtoe in 2020**:

	Target
Final energy consumption in 2020 (in Mtoe)	131.4
Primary energy consumption in 2020 (in Mtoe)	236.3

The main macroeconomic assumptions underpinning those targets are set out in the annex to this document.

France uses a conversion factor for primary/final energy of 2.58 for electricity.

2) 2011 statistics

The tables below summarise the 2011 figures to be provided to the Commission.

Energy consumption:

	2011	% 2010
Gross primary energy consumption	247.3 Mtoe	-3.8%
Gross final energy consumption	149 Mtoe	-7%
<u>Final energy consumption by sector*:</u>		
- Final energy consumption (industry*)	32.8 Mtoe	-3.4%
- Final energy consumption (transport*)	50.0 Mtoe	+1.5%
- Final energy consumption (domestic*)	50.2 Mtoe	+0.6%
- Final energy consumption (tertiary*)	18.4 Mtoe	+1.6%
- Final energy consumption (agriculture*)	4.2 Mtoe	-1.1%

* Seasonally adjusted

In the **transport** sector, the increase in consumption in 2011 is break from the decreases of past years (-1.1% in 2009, -0.8% in 2008). 2011 consumption is at the same level as in 2002. The increase stems in particular from the recovery of rail freight: + 13.9%, then – 6.7% in 2010. That is partly explained by the strikes and the snowfall at the end of 2010, leading to recovery in early 2011.

In the **domestic and tertiary sectors**, energy consumption has increased whereas in 2010 there were decreases of 1% and 2.5% respectively.

That increase is largely explained by a particularly sharp increase in the consumption of petroleum products (4.8% in the domestic sector and 7.1% in the tertiary sector), due to the fact that the consumption of storable energies (fuel, coal, LPG) are measured in terms of energy output by the number of purchases, without taking account of variations in stocks between the beginning and the end of the period. It seems that economic operators, especially households, reacted to the 2010 increase in domestic fuel prices by stocking up as late as possible, which in 2010 led to a collapse of 14.5% in the consumption of petroleum products in those sectors. In 2011, despite further price increases, certain people were obliged to stock up. The 2011 increase, which was purely linked to the economic climate at the time, does not affect the structural reduction in fuel consumption.

Other 2011 indicators:

Gross added value by industry*, in constant 2005 Euros	EUR 224 billion
Gross added value for services (including transport), in constant 2005 Euros	EUR 1 284.60 billion
Disposable income of households	EUR 1 323.5 billion
Number of households	28 243 000
Gross Domestic Product (in constant 2005 Euros)	EUR 1 801.6 billion
Electricity generation from thermal power generation	54.9 TWh
Electricity generation from cogeneration	18.6 TWh
Heat generation from thermal power generation	153.3 PJ
Heat generation from cogeneration plants, including industrial waste heat	146.7 PJ
Fuel consumption from thermal power generation	700.0 PJ
Number of passenger-kilometres (pkm)	EUR 986.0 billion
Number of tonne-kilometres (tkm), excluding oil pipelines	EUR 354.2 billion
Population (in thousands of persons)	63 294

* Manufacturing industry, mining and quarrying, others

Annex: Methodology for French policy projection scenarios

Introduction

In 2012 the Ministry of Ecology, Sustainable Development and Energy started an exercise entitled '*Prospective scenarios*', piloted by the Directorate General of Climate Energy (DGEC), the General Commission of Sustainable Development (CGDD) and the French Environment and Energy Management Agency (ADEME).

Subsequently, the government launched the National Debate on Energy Transition, aiming to involve as many people as possible in order to design a motivating societal project on the theme of energy transition.

The 2012 update of the French prospective scenarios came before the Debate and was purely a technical exercise. They do not in any way foreshadow the guidelines to be set following the Debate.

1. Macro-economic framework

The macro-economic framework was analysed to a large extent with the help of the ENERDATA and ERASME teams on the basis of a report produced by the ERASME team for the Centre for Strategic Analysis (CAS): 'New growth sectors'. The calculation assumptions underpinning the various scenarios are summarised below.

- **International context**

The assumptions used for the international macro-economic framework (outside of Europe) are the results from the last OECD publication (Economic Outlook, last updated in June 2012). Since those data were also used by the SEURECO/ERASME team to draw up the 'New growth sectors' scenarios for the CAS, they are consistent with the calculation assumptions used by France.

- **French economic growth path**

The reference scenario from the DGEC study uses the growth figures of the 'constrained' scenario, projecting an average annual growth rate of 1.9% for 2010-2020. It should be noted that this figure, which is higher than those found in other studies, is explained by the fact that both pension reform and INSEE's new demographic scenario (higher projections for the active population) were taken into account.

Table: Economic growth forecast for France (CAS 'constrained' scenario)

	2010	2011	2012	2013	2014	2015	2015- 2020	2020-2025
France	1.5	1.7	1.0	1.9	2.1	1.7	2.1	1

- **Demography**

During the previous exercise, INSEE's 'high fertility' scenario, updated in 2006, was used. Indeed the last population figures indicated that the 2010 point of the central scenario for population growth had already been reached in 2008.

For this exercise, the last update of the INSEE scenarios was used ('central' scenario). In addition, data for overseas departments and territories are available.

Table: Demographic forecast (INSEE 2010, 'central' scenario)

Per thousand inhabitants	2000	2010	2020
Mainland France	58858	62881	65962
Réunion	716	824	918
Martinique	384	403	415
Guadeloupe	388	404	409
French Guiana	162	238	330
New Caledonia	211	249	287
Other overseas territories	406	492	607

According to these figures, the population in mainland France will rise to around 66 million inhabitants by 2020.

– **Growth by sector**

The SEURECO/ERASME team provided data on associated growth by sector, which are consistent with the national GDP path.

Table: Growth of added value sectors (CAS 'constrained' scenario)

	2010-2015	2015-2020
Agriculture	0.8 %	1.3 %
Industry	2.6 %	1.3 %
Construction	2.1 %	2.5 %
Services	1.6 %	2.2 %

– **Energy prices**

The projected calculations for fuel prices are based on the estimates made by the International Energy Agency (IEA) in the World Energy Outlook 2011 under the 'Current Policy' scenario.

Table: Projected energy prices (IEA, WEO 2011)

		2010	2015	2020
Oil	Current Policies	EUR 65 10/barrel	89	98
Gas (European market)	Current Policies	EUR 10 6 /MBtu	8	9
Coal	Current Policies	EUR 83 10/tonne	87	91

○ **Carbon prices**

Projections for carbon prices have been differentiated between potential measures to be taken, on one hand, and ETS and non-ETS sectors on the other hand. For sectors covered by the ETS, the figure used comes from the 2011 World Energy Outlook (WEO), published by the IEA, so as to be consistent with the projections for fossil fuel prices. For non-ETS sectors, no carbon prices have been projected for any of the scenarios.

Table: Summary of projected carbon prices

EUR	2020
10/tonne	
ETS	25
Non-ETS	0

- **Dollar/Euro exchange rate**

Given that exchange rates are assumed to converge in the very long-term towards their purchasing power parity (PPP) level, the Euro-Dollar exchange rate was set at **EUR 1 = US\$ 1.2**, thereby simulating an underlying return towards parity between the two currencies.

2. Reference energy scenarios

- **Enerdata, MedPro, POLES: general functioning**

The energy scenarios were drawn up bringing together the Med-Pro technical and economic model developed by ENERDATA and the POLES model.

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

In addition, POLES is a simulation model of the global energy system by 2050. It is a recursive simulation model: it works on the basis of progressive adjustments of the supply and demand variables and of prices, starting from an initial point and continuing over a given number of years.

It was necessary to use the POLES model in order to:

- ⤴ Draw up complete prospective energy assessments for France, including both the supply and demand of energy;
- ⤴ Take into account the influence of European and global energy trends, notably using international prices and environmental constraints to assess projected performances by France.