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## France

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### France's Strategy to Implement Renewable Energy Directive

**Report Categories:**

Bio-Fuels

Climate Change

Agriculture in the Economy

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**Report Highlights:**

France is the European Union's second largest producer and consumer of renewable energies, that represented 12 percent of France's total energy production in 2009, mainly including wood, water, biofuels, and urban waste. As part of the European Energy Renewable Energy Directive adopted in 2009, France's objectives is to increase its renewable energy share to 23 percent by 2020. France is expected to transpose the Directive into national law in January 2011. The French biofuels industry submitted a voluntary certification scheme, validated by a French certification agency, to the European Commission in order to get certification and be eligible for counting towards the target and for receiving public support. In France's National Action Plan recently delivered to European Authorities, biofuels represent the bulk of renewable energies in transportation until 2020 (primarily consisting of biodiesel), while biomass is expected to be the largest source of renewable energy in heat production by 2020 (mainly including wood, cogeneration heat and electricity, industrial and household waste, and biogas). In 2009, total biofuels consumption represented 6.04 percent of transportation fuels. France's

national target in 2010 is 7 percent, and generally considered realistic by the industry and research centers.

## **Executive Summary:**

France is the European Union's second largest producer and consumer of renewable energies, favored by its ample natural resources in forest and water. In 2009, renewable energies represented 12 percent of France's total energy production and amounted to 20 million metric tons (MT) oil equivalent (toe), including mainly wood, water, biofuels, and urban waste. The development of this segment of the industry reduces France's trade deficit in energy (France is highly dependent on imports for natural gas and oil), and addresses climate change, in line with France's environmental strategies set by the 2009 and 2010 environmental laws, Grenelle 1 and Grenelle 2.

As a European Member State, France will implement the European Renewable Energy Directive (2009/28/CE) in 2011. Its National Action Plan, which forecasts the share and distribution of renewable energies by 2020 was transmitted to European authorities in mid-2010. The role of biomass is key in this forecast, especially in transportation, in order to meet the 23 percent target consumption of renewable energies by 2020 set by the Directive.

As for renewable energies, France is the EU's second largest producer and consumer of biofuels (primarily biodiesel made from rapeseed and bioethanol processed from wheat and sugarbeet), mainly due to European and national incentives. In 2009, French consumption of biofuels accounted for 6.04 percent of total transportation fuel consumption, slightly below the national objective of 6.25 percent.

## **General Information:**

### **France's Perspectives to Develop Renewable Energies**

France's environmental forum, Grenelle for the Environment were voted on as law in 2009 and 2010 (known as Grenelle 1 and Grenelle 2). They included over 200 commitments to address a number of issues identified as priorities by many other countries, including the United States: addressing climate change, assuring the conservation of natural biodiversity, and conserving health and environment while stimulating the economy. Developing renewable energies is favored in the Grenelle's commitments, as a tool to address climate change.

In France, production and consumption of renewable energies has been facilitated by the presence of major natural resources like vast forests and widely available-water. The share of renewable energy production has increased significantly in the past few years, to 12 percent of total French primary energy production in 2009, up from 10.7 percent in 2008 and 8.2 percent in 2002. In 2009, 20 million toe of renewable energies produced in France included mainly energy wood were based on wood (45 percent), water (25 percent), biofuels (11.4 percent), and urban waste (6.2 percent).

In line with production, the share of renewable energies in total final consumption of energy has increased in the past few years to 12.4 percent in 2009, up from 9.7 percent in 2005. As part of the European Renewable Energy Directive (RED) adopted in 2009, France's objective is to increase its share to 23 percent by 2020. France is expected to transpose the Directive into national law in January 2011. Renewable energies will have to comply with sustainability criteria listed in the RED to be eligible for financial supports and count towards the target (for more details, see the 2010 annual EU-27 biofuels consolidated report: [Biofuels Annual The Hague EU-27 6-11-](#)

[2010](#)). The application of sustainability criteria is likely to represent an additional burden to operators who wish to sell biofuels on the EU market, including U.S. exporters.

French farmers are facing uncertainty on the implementation of the sustainability criteria for the eligibility of biofuels to national support in 2011, i.e., the first year of implementation of the Directive. This results from the fact that biofuels marketed in 2011 will be processed from crops grown prior to the definition of sustainability criteria, and that some specifics are still pending. The French biodiesel and bioethanol sectors, including farmers, elevators and processors) submitted a voluntary scheme to the European Commission in July 2010, validated by a certifying agency, Bureau Veritas, detailing the actions they are willing to take to implement the sustainability criteria on France's biofuels production, whether processing domestically-grown or imported crops. The voluntary scheme is currently reviewed by the European Commission, and the French industry hopes it will be validated by the end of the year.

France's strategy to meet this objective is detailed in its [National Action Plan](#) (NAP), which was recently delivered to European authorities. It mainly consists in (1) limiting energy consumption, principally in buildings, where a 38 percent reduction in energy consumption is targeted by 2020, and (2) increasing renewable energy production by 20 million tons of oil equivalent (toe) in 2020 relative to 2006, i.e., doubling this production.

France's NAP forecasted and quantified the main renewable energy sources for electricity, heat and transportation until 2020:

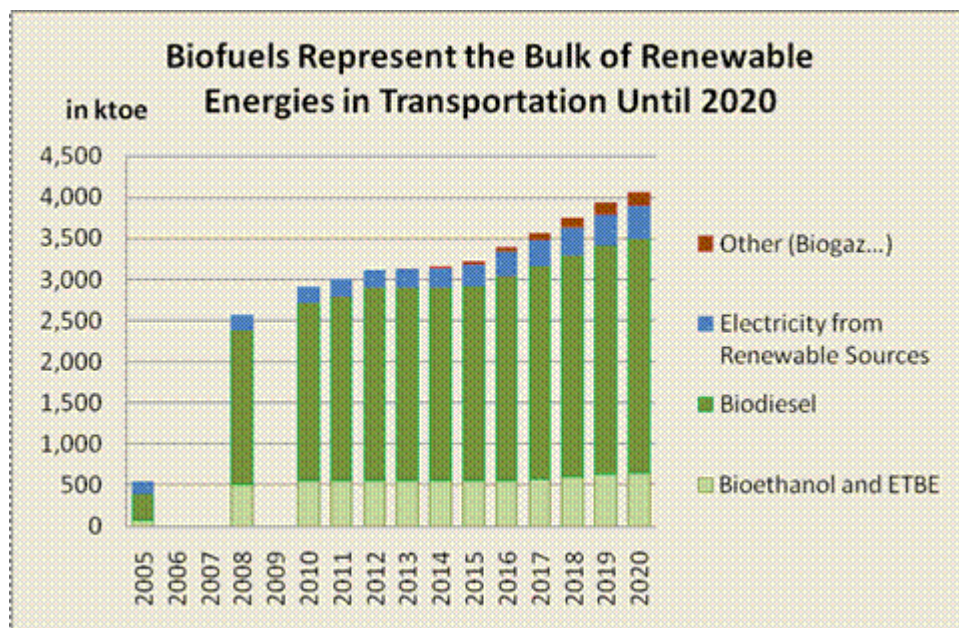
	<b>Main Renewable Sources</b>	<b>2005</b>	<b>2010</b>	<b>2010</b>
<b>Electricity</b> Total: 155,000 GWh	<ul style="list-style-type: none"> <li>• Water</li> <li>• Wind</li> <li>• <b>Biomass</b></li> <li>• Solar Energy</li> </ul>	<ul style="list-style-type: none"> <li>• 70,000</li> <li>• 1,000</li> <li>• <b>4,000</b></li> <li>• 0</li> </ul>	<ul style="list-style-type: none"> <li>• 69,000</li> <li>• 11,500</li> <li>• <b>5,500</b></li> <li>• 500</li> </ul>	<ul style="list-style-type: none"> <li>• 72,000</li> <li>• 58,000</li> <li>• <b>17,000</b></li> <li>• 7,000</li> </ul>
<b>Heat</b> Total: 19,700 ktoe	<ul style="list-style-type: none"> <li>• <b>Biomass</b></li> <li>• Heat Pumps</li> <li>• Solar</li> <li>• Geothermal</li> </ul>	<ul style="list-style-type: none"> <li>• <b>9,000</b></li> <li>• 0</li> <li>• 0</li> <li>• 0</li> </ul>	<ul style="list-style-type: none"> <li>• <b>10,000</b></li> <li>• 1,000</li> <li>• 100</li> <li>• 100</li> </ul>	<ul style="list-style-type: none"> <li>• <b>16,500</b></li> <li>• 2,000</li> <li>• 1,000</li> <li>• 500</li> </ul>
<b>Transportation</b> Total: 4,000 ktoe	<ul style="list-style-type: none"> <li>• <b>Biofuels</b></li> <li>• Electricity</li> </ul>	<ul style="list-style-type: none"> <li>• <b>400</b></li> <li>• 100</li> </ul>	<ul style="list-style-type: none"> <li>• <b>2,000</b></li> <li>• 200</li> </ul>	<ul style="list-style-type: none"> <li>• <b>3,500</b></li> <li>• 400</li> </ul>

Source: French Ministry of Ecology and Sustainable Development

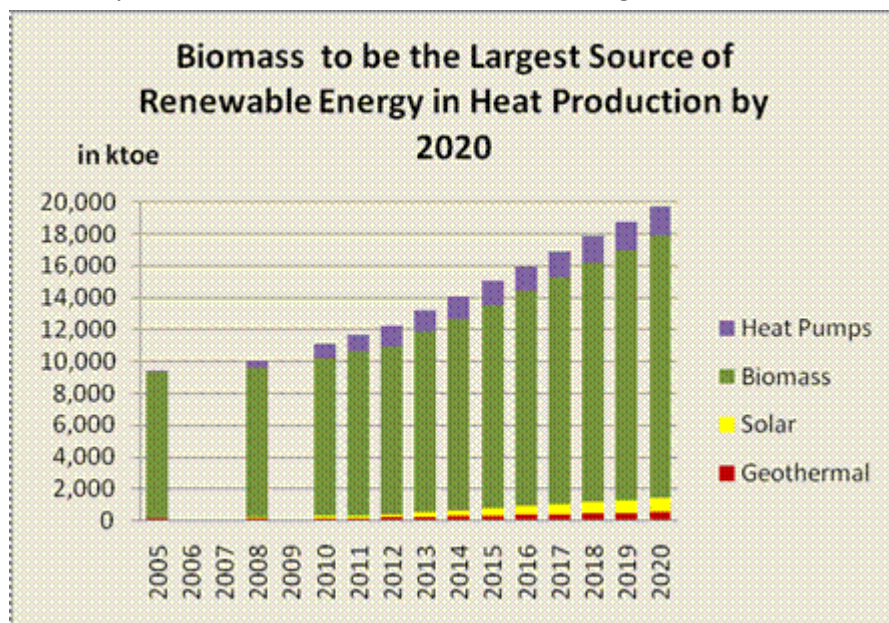
Notes: (1) GWh: giga watt/hr; (2) ktoe: thousand tons oil equivalent.

Biomass and biofuels appear as a major source of renewable energy for France by 2020. Biofuels represent the

bulk of renewable energy sources in transportation identified by the French government in its NAP.

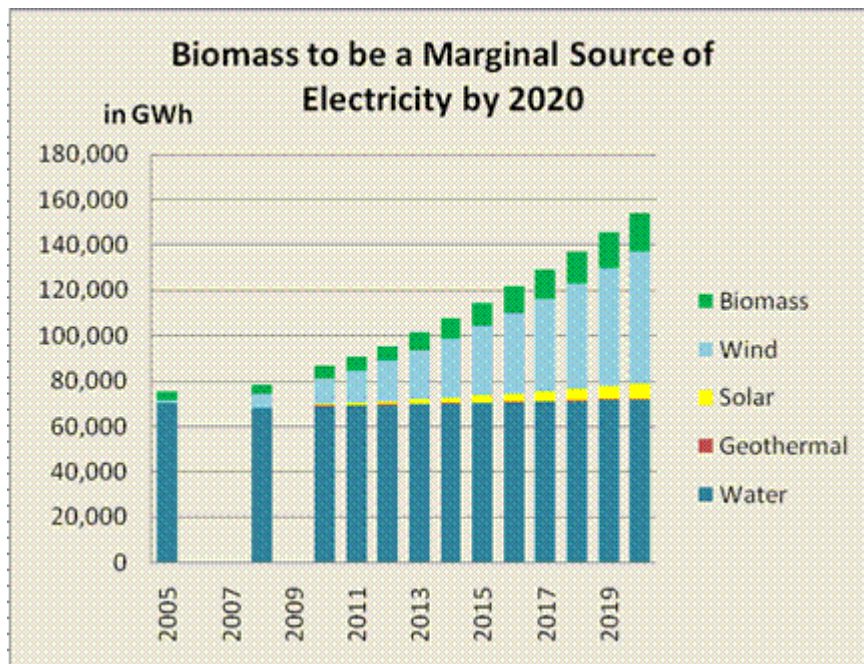


The graph below indicates France expects biomass to be the largest source of renewable energy to produce heat by 2020. In the case of heat production, biomass includes mainly wood, cogeneration of heat and electricity, industrial and household waste, and biogas.



Finally, electricity production is the sector to which biomass is expected to contribute the least, compared to other renewable sources like water and wind energy, as indicated in the graph below.





## Biofuel Production and Consumption Policy and Economics

France is the European Union's second largest producer and consumer of biofuels after Germany, as a result of the combination of European (including the European Directive 2003/30 and the industrial set-aside premium, replaced by the energy crop subsidy), and national incentives implemented in the past years.

### National Incentives to Consumption and Production

Total French biofuels consumption significantly increased in the past few years, as a result of various national incentives: (1) national targets fixed annually of blending rate of biofuels into fossil fuels; (2) an environmental tax (TGAP) is imposed on blenders not implementing the national blending target; and (3) a rebate for biofuels on the general tax for oil products (TIC) for some limited quantities of biofuels (set annually by tender by the French government) when marketed in France, to implement the 2003/30/CE European Directive.

The tax (TIC) cut biofuels benefited from at the consumer end declined over the past years, due to budget constraints and as the biofuels industry consolidated:

Tax Cut (in €/hectoliter)	2007	2008	2009	2010	2011
Fatty Acid Methyl Esters (Biodiesel)	25	22	15	11	8
Bioethanol and ETBE	33	27	21	18	14
Plant Oil Ethyl Ester (Biodiesel)	30	27	21	18	14
Synthetic Biodiesel	25	22	15	11	8

Source: France's 2010 annual report implementing the 2003/30 Directive

In France, most of the consumption of fuels for transportation consists of diesel, and the share of diesel has regularly increased over the past decades. In 2009, total transportation fuels consumed amounted to 50 million

m<sup>3</sup>, including 40 million m<sup>3</sup> diesel and 10 million m<sup>3</sup> gasoline, up from 20 and 25 million m<sup>3</sup> in 1990, respectively.

The quantities of biofuels approved annually by national authorities to benefit from these tax cuts (but less was produced) were, in 1,000 MT:

Year	2007	2008	2009
Fatty Acid Methyl Esters (Biodiesel)	1,347	2,487	2,647
ETBE	222	225	224
Bioethanol	333	717	867

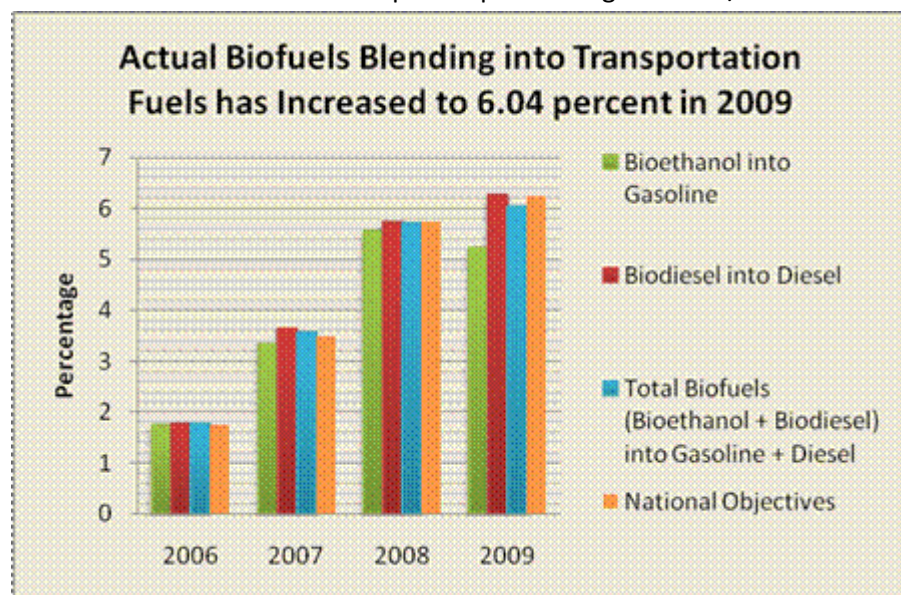
Source: France's 2010 annual report implementing the 2003/30 Directive

Also, high percentage blendings are approved for E10 (gasoline containing 10 percent of bioethanol) and B30 (Diesel with 30 percent biodiesel).

French consumption of biofuels has increased in line with the national targets since 2006 (in percentage). Various studies published in 2008 by the Office of Statistics of the French Ministry of Agriculture (SCEES), the crop board (ONIGC) and the Technical Institute for Animal Production (Institut de l'Elevage) concluded the 7 percent target set for 2010 was realistic under certain conditions: planting former set-aside land with biofuels crops, processing biodiesel with rapeseed and sunflower seed formerly exported to non-EU countries, stopping seed and oil shipments to EU member states for industrial purposes, and increasing oil and recycled oil imports (see report [FR8012](#), published in July 2008).

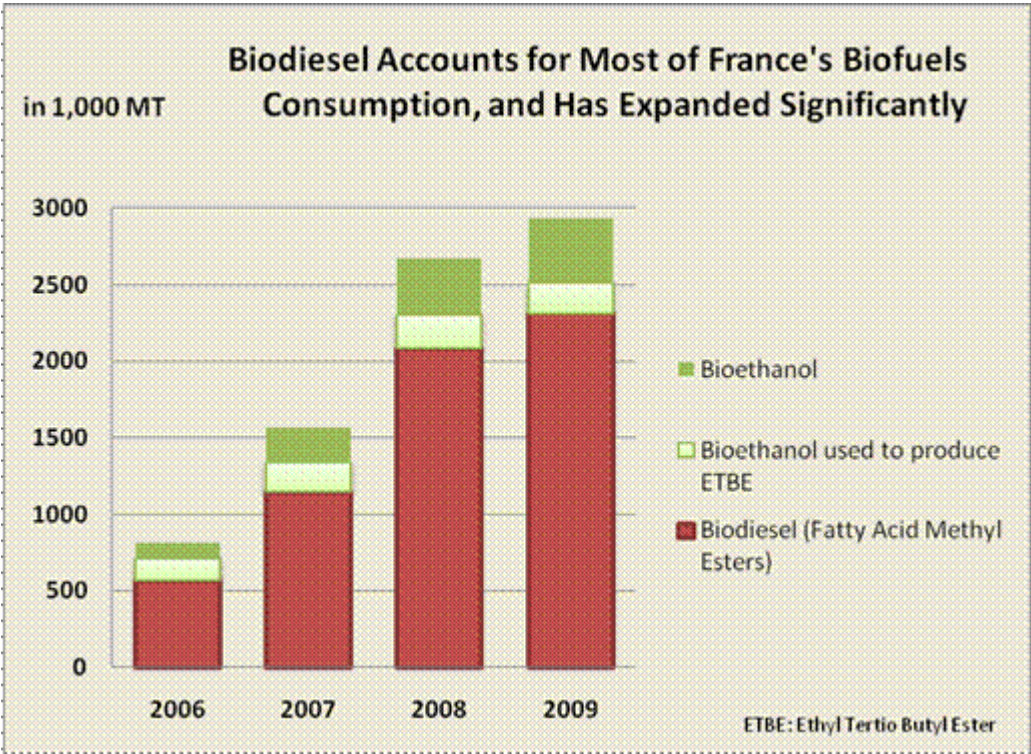
Year	2006	2007	2008	2009	2010
France's Biofuel Blending Target	1.75	3.5	5.75	6.25	7
Total Biofuels Consumption	1.77	3.57	5.71	6.04	
Biodiesel Consumption	1.77	3.63	5.75	6.27	
Bioethanol Consumption	1.75	3.35	5.55	5.24	

Source: France's 2010 annual report implementing the 2003/30 Directive



Although blending percentages are close for bioethanol into gasoline and for biodiesel into diesel, the volumes differ greatly. In 2009, biodiesel represented 77 percent of the volumes consumed, while bioethanol, whether incorporated directly or after processing into ETBE, accounted for 33 percent. This reflects the larger share of

diesel than that of gasoline in fuel transportation in France



Related Reports

Report Title	Date Released
Transposition of the RED into National Legislation	11/29/2010
EU Annual Biofuels Report	6/11/2010
First Generation Biofuels Gain Credibility – Next Generation Projects	5/21/2010