



USDA Foreign Agricultural Service

GAIN Report

Global Agriculture Information Network

Template Version 2.09

Voluntary Report - Public distribution

Date: 7/18/2008

GAIN Report Number: FR8012

France

Bio-Fuels

Biofuels Update

2008

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Report Highlights:

France remains the second largest European producer, and consumer, of biofuels, encouraging production and utilization with tax rebates and penalties. In 2007, biofuels reached the targeted incorporation rate of 3.5 percent of total fuel consumption in France.

However, growing political concern in France over the perceived link between biofuels negative impact on food prices is resulting in a reorientation of France's biofuel policy priorities.

Includes PSD Changes: No
Includes Trade Matrix: No
Annual Report
Paris [FR1]
[FR]

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Executive Summary

Biofuels resource demands are increasingly blamed in France as the primary cause of rising food prices, with little attention paid to other factors, such as reduced supply following short harvests, high demand from emerging markets, speculation, and high energy prices. In light of the public and political concern over the environmental and economic benefits of biofuels in the context of high world food prices, the government will likely withdraw its 10 percent incorporation rate target for 2015 and will not introduce any new production incentives.

Nevertheless, the French biofuel industry is advancing, spurred by financial incentives to reach targeted objectives of 7 percent biofuel incorporation by 2010 with production quotas set at 3.18 million MT biodiesel and 1.1 million MT bioethanol.

In 2007, 1.15 million MT of biodiesel and 420,000 MT of bioethanol were consumed in France, representing 3.5 percent of French fuel consumption, in line with national objectives.

I. French Policy: Objectives, Tax Incentives, Tax Penalties

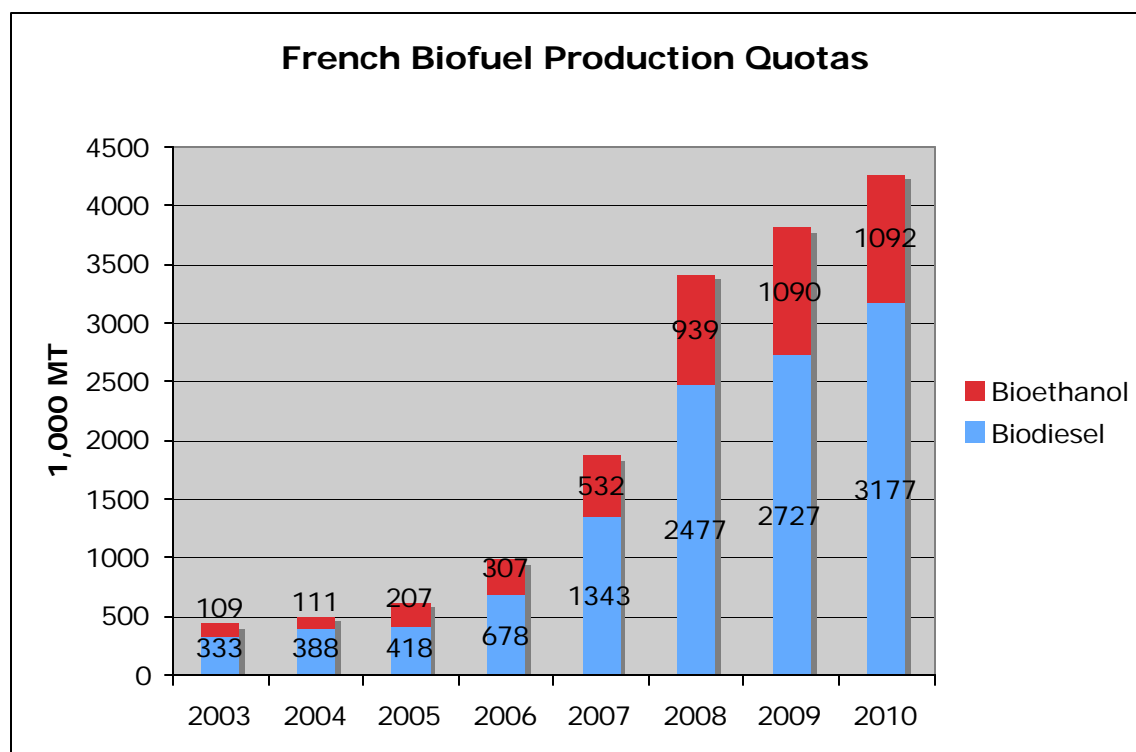
The French government (GOF) has set targeted levels of biofuels incorporation in transportation fuel, in energy value. Their correspondence in volume of biodiesel and bioethanol, since 2005, is as follows:

Year		2005	2006	2007	2008	2009	2010
Objectives in energy value (net calorific value) (%)		1.2	1.75	3.5	5.75	6.25	7
Biodiesel	% in volume of diesel (%)	1.3	1.9	3.8	6.3	6.8	7.6
	Equivalency in volume of biodiesel (in 1,000 MT)				2,154	2,387	2,724
Bioethanol	% in volume of gasoline	1.9	2.7	5.3	8.8	9.5	10.7
	Equivalency in volume of bioethanol (in 1,000 MT)				756	772	814

Note: The former French government proposed a 10 percent rate, in net calorific value, by 2015.

To motivate fuel blending companies to reach these objectives, for fuel sold in France, each company receives favorable tax treatment on a limited quantity of biofuel blended at the targeted incorporation rate. Companies must pay an environmental tax for failure to reach the targeted incorporation rate.

Biofuel production eligible for favorable tax rates as follows until 2010:



The tax preference rate is revised annually. Only plants officially approved by the GOF through a bidding process qualify, thereby limiting import potential. However, biofuel plants located outside of France can qualify for tax cuts on products marketed in France, and some plants close to its borders (Germany, Spain, Italy, and Belgium) did qualify (see Annex I).

Tax cuts in euros per hectoliter:

Year	Biodiesel	Bioethanol
2005	33	38
2006	25	33
2007	25	33
2008	22	27

II. Production and Consumption Forecasts

1. Production

Biodiesel:

In France, Diester Industrie, a farmer-owned coop, (see Annex I), produces most of the biodiesel in 8 plants capable of producing 1.7 million MT (expected to increase to 2.15 million MT by 2010). Ineos (200,000 MT production capacity) entered the market in 2007; Biocar (200,000 MT), Centre Ouest Cereales (120,000 MT), and SICA Atlantique (50,000 MT) will have approved production facilities in 2008 and 2009. Approximately 70 percent of the total biodiesel production is integrated with crushing plants.

French biodiesel production is based primarily on vegetable oil (70-80 percent rapeseed oil, blended with sunflowerseed oil, soybean oil and palm oil). However, in 2008, some plants received beneficial tax benefits for a specified quota of biodiesel produced from animal fats

(Saria, Daudruy, SCA Petrole et derives) and recycled oils (Sarp industries). This production is expected to remain marginal compared to vegetable-oil based production.

Pure Vegetable Oil:

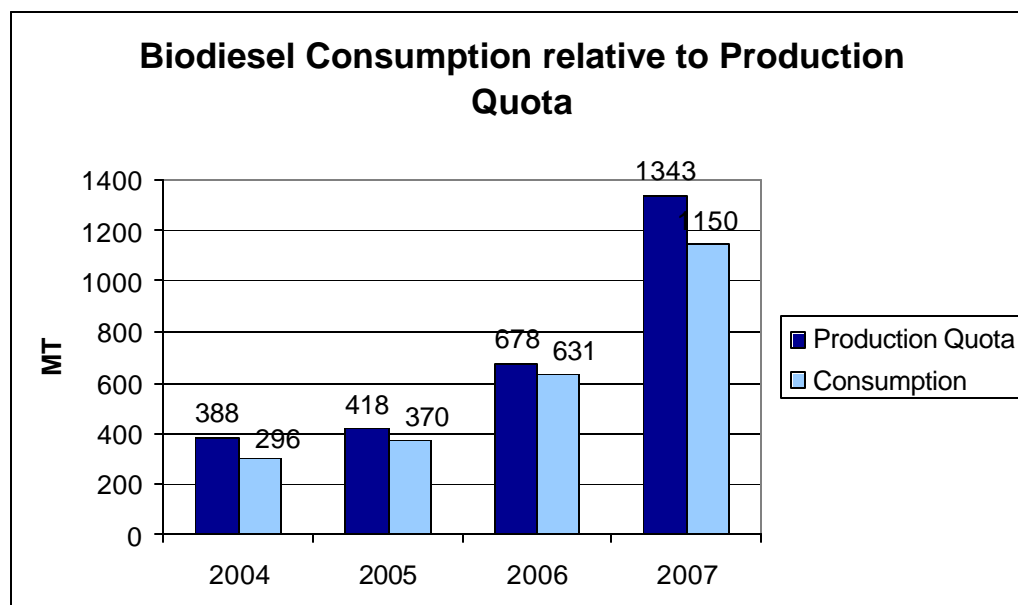
Rapeseed farmers produce approximately 10,000 MT of pure rapeseed oil for their own consumption, and use the rapeseed meal for animal feed. In addition, soybean oil and palm oil are blended by fuel companies at the rate of about 5% each into diesel.

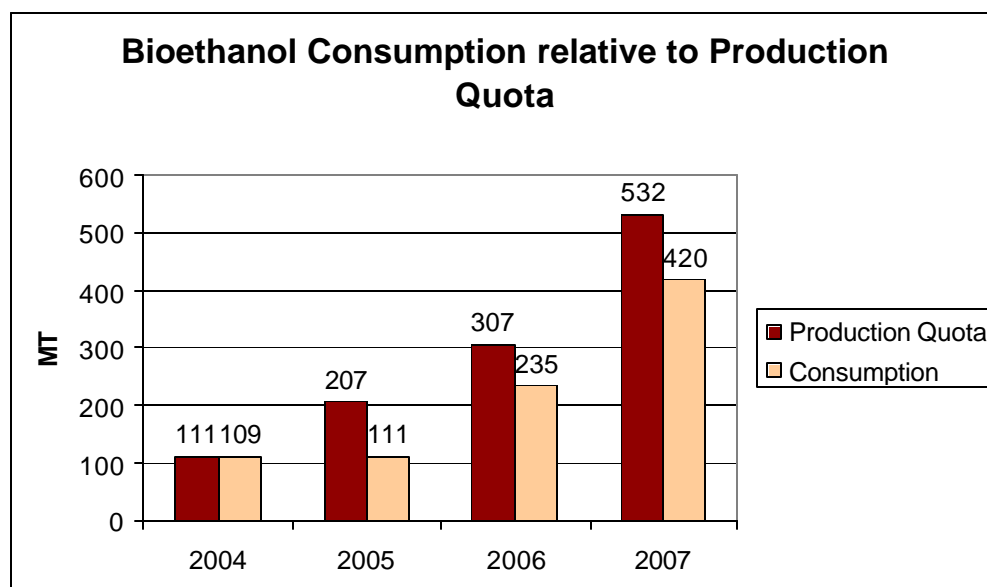
Bioethanol:

Due to a strong French preference for diesel based transportation, the demand for bioethanol is significantly less than for biodiesel. In 2007, approximately 80 percent of ethanol production was derived from sugarbeets and 20 percent from cereals. Five companies produce bioethanol in France: Tereos, Cristanol, Roquette, Abengoa and Soufflet (see Annex II).

2. Consumption

Biofuel production is difficult to evaluate due to industrial confidentiality; consumption data, however, is available because fuel distributors declare their blending rates to the GOF to qualify for the favorable tax rate. As shown below, biofuel consumption in France has been below the production quota each year. French biofuel consumption accounted for 1.75 percent in 2006 and 3.5 percent in 2007 of total fuel consumption, in compliance with national objectives.

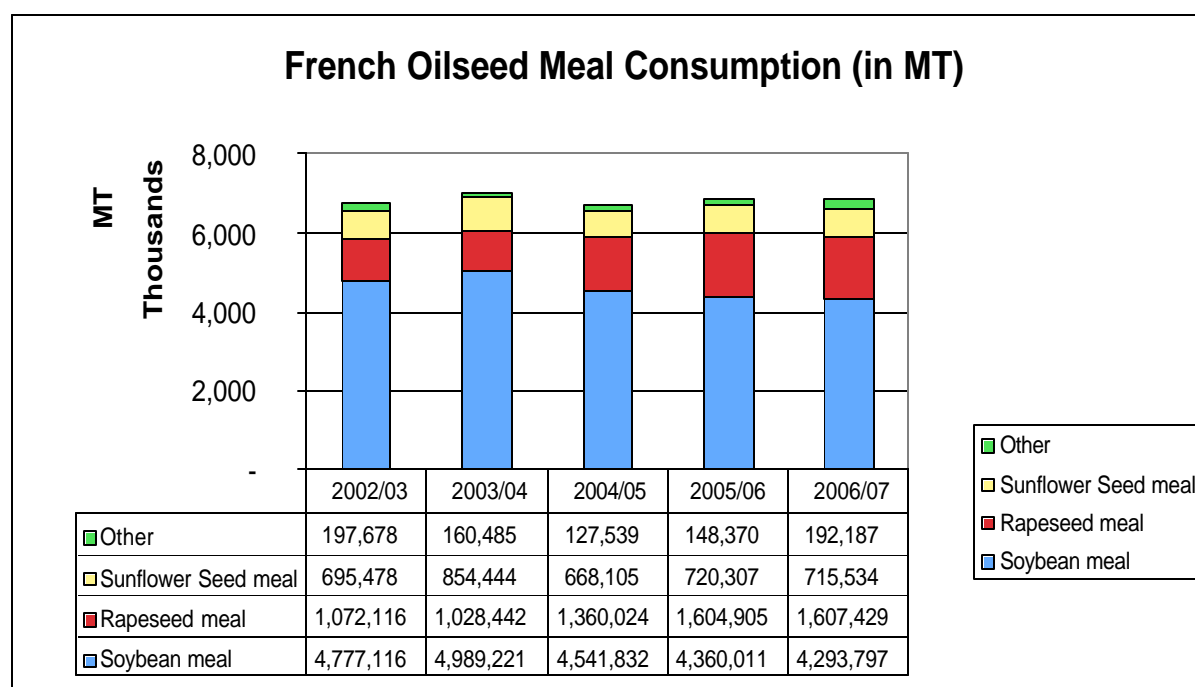




3. By-Products

The production of biodiesel to meet the 7 percent incorporation rate established by France will generate approximately 2 million MT of rapeseed meal, 550,000 MT of sunflowerseed meal, 470,000 MT of wheat distillers grains, and 112,000 MT of corn distillers grains as by-products (Source: The French Crop Board (ONIGC)). This growth in domestic by-products has caused a shift in animal feed composition. Rapeseed meal has begun to replace soybean meal in dairy and pork rations.

The graph below indicates that rapeseed meal has partially offset soybean meal in animal feed rations. From MY 2002/03 to MY 2006/07, soybean meal declined from 71 percent to 63 percent of total vegetable meal consumption, while rapeseed meal increased from 16 percent to 24 percent.



Glycerin, another by-product from biodiesel production, is used in animal feed when its price is low, and in the oleo-chemical industry when its price is high. Glycerin prices are currently significantly higher than a year ago.

III. Controversies about First-Generation Biofuels

1. General Criticism

The French press has attacked first-generation biofuels as being counter to its initial goal of providing more energy independence. The attacks link first-generation biofuels to the current high world food prices, to deforestation in developing countries, and as a marginal tool to address climate change. Growing biofuel related crops on former set-aside land has also been disparaged as reducing biodiversity and increasing the chemical pollution of soil and water resources. The calculation of the energy balance of biofuels has also been widely questioned.

2. Recent GOF Reluctance to Favor Biofuels Development

The current French administration is significantly less supportive of biofuels than its predecessor (see [FR6005](#) and [FR7001](#)). In the fall of 2007, the French Environment Agency, ADEME, was tasked to review the energy and ecological balance of biofuels. Its findings have yet to be released. The French Minister of Environment recently retreated from an ambitious 10% biofuels incorporation target by 2015 but supported second-generation biofuels.

The French government has proposed legislation which supports a biofuels certification system which would require economic, social and environmental impacts, and encourages research on second-generation biofuels.

3. Feasibility Studies Question GOF Incorporation Objectives

Three major studies on biofuels (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-IE) recently found that the 7 percent incorporation rate objective set for 2010 was realistic under certain conditions, including: 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. Also, using by-products of biofuels production (rapeseed meal, distillers grains) in animal feed is considered to be one of the most positive impacts of biofuels, reducing the demand for other raw materials in animal feed (such as imported soybean meal, which can be replaced with domestically-produced rapeseed meal as a by-product of biodiesel).

However, the SCEES and IE studies found that the 10 percent by 2015 objective was not realistic as it would require additional imports of biofuels and/or biofuel resources.

IV. Research Programs on Second-Generation Biofuels

In France, there are two main second-generation programs currently underway. First, the "Futuro" pilot project explores enzymatic hydrolysis on cellulosic biomass (mainly straw and wood products). It is based in the Champagne region in the "Industrie Agro Ressources" (IAR) technological cluster (<http://www.iar-pole.com/index02.php>), and is co-funded by local authorities, public research centers, and financial organizations. Futuro's total budget is 80 million euros.

Second, a consortium is currently being formed which will focus its research on thermo-conversion, transforming biomass (mainly wood products) into gas by high-temperature gasification, then reducing the gas into gas oil by the "Fischer-Tropsch" process (biomass-to-liquid process). More details on the co-funding of this program is expected to be public in the near future.

These programs are based on two major research programs previously conducted by:

- the French Agency for Environment (Agence pour le Developpement de l'Energie – ADEME) since 1994 (http://www.ademe.fr/partenaires/agrice/htdocs_gb/research01.asp),
- and the ADEME and National Research Agency (Agence Nationale pour la Recherche - ANR) co-funded National Research Program on Bioenergies (Programme National pour la Recherche sur les Bioenergies – PNRB) since 2005: <http://www.pnrb.net/servlet/KBaseShow?cid=13733&catid=13735>.

Annex I: French Biodiesel Plants production capacities

(in 1,000 metric tons)

Company categories	Plant locations	2007	2008	2009	2010
Diester Industrie (Rape and sun methyl ester)	Rouen	250	500	500	500
	Le Meriot	250	250	250	250
	Compiègne	200	200	200	200
	Sete	200	200	200	200
	Boussens	40	250	250	250
	Coudekerque	0	250	250	250
	Montoire	250	250	250	250
	Bordeaux	0	250	250	250
	TOTAL	1,190	2,150	2,150	2,150
Other companies (vegetable oil methyl ester)	Ineos (Baleycourt)	120	200	200	200
	Biocar (Fos sur mer)	0	0	200	200
	Centre Ouest Cereales (Chalanday)	0	120	120	120
	SICA Atlantique (La Rochelle)	0	50	50	50
Animal fat based biodiesel (animal oil methyl ester)	Saria (Montoir)	0	0	0	30
	Saria Bionerval (Lisieux)	0	40	40	40
	Daudruy (Dunkerque)	0	150	150	150
	SCA Petrole et Derives (Cornille)	0	0	0	100
Recycled used frying oil	SARP industrie (Limay)	0	80	80	80
PRODUCTION CAPACITY IN FRANCE		1,310	2,790	2,990	2,990
Plants outside of France approved for reduced tax benefits	Country	Plants			
	Germany	ADM (Mainz)	n/a		
		Cargill (Frankfurt)	n/a		
		Mannheim Biofuel (Mannheim)	n/a		
		RVM Eco Motion (Sternberg)	n/a		

	Spain	Bionet Europa (Tarragona)	n/a
	Italy	DP lubrifiants (Aprilia)	n/a
		Fox Petroli (Vasto)	n/a
		Novaol (Livorno)	n/a
	Belgium	Oleon NV (Ertvelde)	n/a
		Neochim (Feluy)	n/a

Annex II: French Bioethanol Plants production capacities

(in million hectoliters)

	2007	2008	2009	2010
Tereos (Origny)	3	3	3	3
Cristanol (Bazancourt)	1.5	3.5	3.5	3.5
Tereos (Lillebonne)	3	3	3	3
Roquette (Beinheim)	0	2	2	2
Abengoa (Lacq)	0	2.5	2.5	2.5
Soufflet (Le Meriot)	0	0	2	2
TOTAL	7.5 (600 KMT)	14 (1,112 KMT)	16 (1,27 KT)	16 (1,27 KMT)

Note : 1 hectoliter = 79.4 Kg
1 MT = 12.6 hectoliter