



Netherlands Enterprise Agency

# Sustainable- able

## Biomass market opportunities

# France

1. General country information
2. Economic indicators
3. Biomass availability
4. Energy profile
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6. Funding opportunities
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# Bio- mass

>> Sustainable. Agricultural. Innovative.  
International.

## Colophon

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This study was carried out in the framework of the Netherlands Programmes Sustainable Biomass by

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*Although this report has been put together with the greatest possible care, NL Enterprise Agency does not accept liability for possible errors.*

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## This document

This document is part of a series of 16, providing information on biomass markets in:

Europe:	Germany, France, United Kingdom, Spain and Finland
EU/Asia:	Russia and Latvia
Asia:	China, India and Thailand
North- and South-America	United States of America, Canada and Brazil
Africa:	South-Africa and Ghana
Australia	Australia

The selection of countries is done in close cooperation with NL Enterprise Agency. The objectives of the country documents are:

- To provide companies a first impression of doing businesses in a country;
- To provide sources and contacts for more detailed information;
- To sketch opportunities how companies can be further supported when doing business in a country.

France is an important player for Europe in the Biobased Economy, due to the abundance of biomass resources and highly developed chemical sector. France is the largest producer in the EU of cereals, sugar, protein and oil crops, potatoes, flax and hemp and has a large forestry area (4th place in EU). An intensive cooperation between The Netherlands, France and Germany has been established in developing a European strategy for the biobased economy.

## 1. GENERAL COUNTRY INFORMATION

- Country profiles at RVO: <http://www.rvo.nl/onderwerpen/internationaal-ondernemen/landenoverzicht/frankrijk>
- Descriptions of business sectors, key market players and business trends via Business Monitor International: <http://www.rvo.nl/onderwerpen/internationaal-ondernemen/landenoverzicht/marktvergelijkingen/bmi>
- The Economist Intelligence Unit provides you with articles and short reports about Country Analysis, Risk Analysis and Industry Analysis: <http://www.rvo.nl/onderwerpen/internationaal-ondernemen/landenoverzicht/marktvergelijkingen/eiu>
- Im- and export figures can be found at the International Trade Centre Databank: <http://www.rvo.nl/onderwerpen/internationaal-ondernemen/landenoverzicht/marktvergelijkingen/trademap>
- Information U.S. Energy Information Administration: <http://www.eia.gov/countries/country-data.cfm?fips=FR&trk=m>

## 2. ECONOMIC INDICATORS

France	2009	2010	2011	2012
GDP (current billion US\$)	2.619	2.548	2.779	2.612
GDP growth (annual %)	-3	2	2	0
GDP per capita (current US\$)	40,488	39,186	42,522	39,772
Population (Total, million)	64.702	65.031	65.372	65.697

Source: <http://data.worldbank.org/country/france> <http://data.worldbank.org/indicator/NY.GDP.MKTP.CD>

FIGURE 1: GDP PER CAPITA FOR 2011

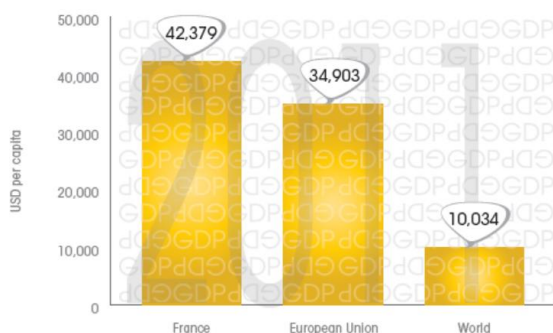


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



Source: IRENA Renewable Energy Country Profiles 2013:

<http://www.irena.org/menu/index.aspx?mnu=Subcat&PriMenuID=36&CatID=141&SubcatID=336>

## 3. BIOMASS AVAILABILITY

### Biomass Resources

France is rich in biomass resources. France is the largest producer in the EU of cereals, sugar, protein and oil crops, potatoes, flax and hemp. It accounts for 16% of the European agricultural land. About 50% of the French territory is agricultural land, while 30% is covered with forests. Its large forestry area is the 4th place in the EU. Animal production accounts for 43 % of the French total agricultural products. That is 25.7 billion euro, mainly in milk (8.9 billion), beef (8 billion), pork (3.2 billion) and poultry (3.4 billion) sectors.

Biomass production for energy and biobased products are presented in the following table, based on 2010 data. For some products an estimation of the demand in 2020 is added.

### Biomass Production for Energy and Biobased Products

Energy: wood straw	9.6 million ton-oil eq/y
Energy: Biofuels	2.3 million (based on the current blending of 5.5%)
Energy: biobased waste	1.5 million ton-oil eq/y
Biobased products: organic fertilizer	340 million tons / year
Biobased products: wood fibers	40 million tons / year; Demand 2020: 50 million tons / year
Biobased products: chemicals, fibers and biomaterials	600,000 ha (not exclusive to non-food); Demand 2020: 1 to 2 million ha.

Source: French Ministry of Agriculture / CGAAER

### Land Use Parameters

Country	Land area (km <sup>2</sup> )	Agricultural area (km <sup>2</sup> )	Arable land (km <sup>2</sup> )	Permanent crops (km <sup>2</sup> )	Forestry area (km <sup>2</sup> )
France	547,660	290,807	18,358	1,020	159,917
per 1000 capita	0.008	0.004	0.003	0.000	0.002

Source 2012: <http://data.worldbank.org/indicator/AG.LND.TOTL.K2> - <http://en.worldstat.info/Europe/Land>

### Agricultural and Forest Production

Country	Forest production (m <sup>3</sup> ) 2012	Agricultural production (1000 kg) 2012
France	66,590,708	119,225,632

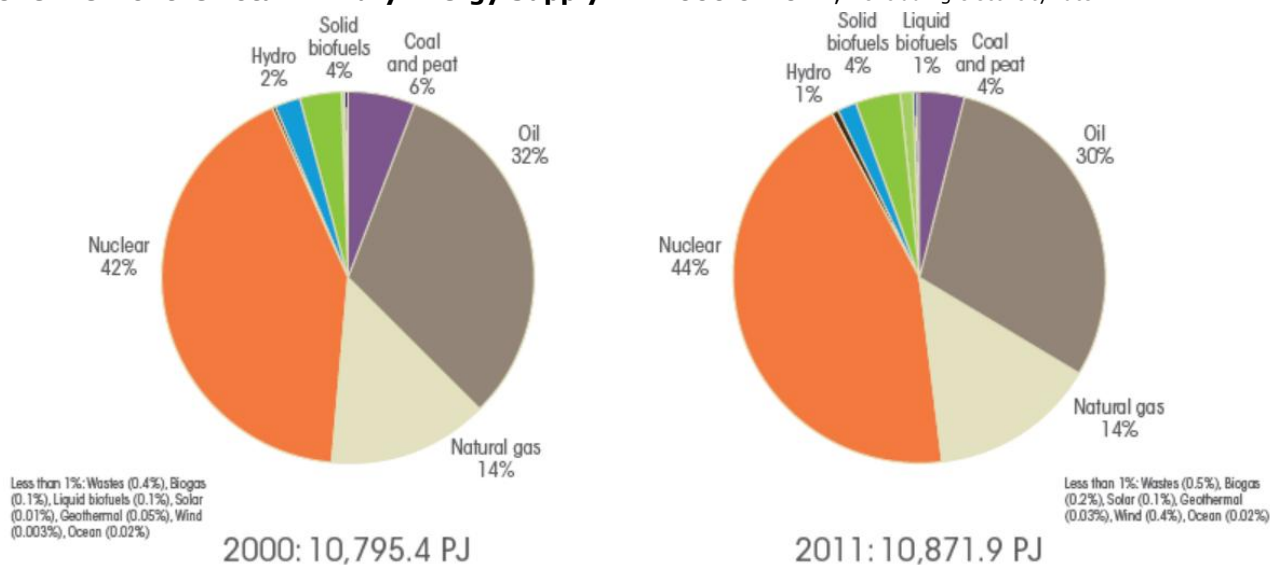
Data on population: <http://en.worldstat.info/Europe/France> National Statistical Office: <http://www.insee.fr/en/>

## 4. ENERGY PROFILE

### National Energy Profile 2011 (source Irena)

- Total Primary Energy Supply: 10,668.8 PJ - Of which renewables: 765.0 PJ (7.2%)
- Energy self-sufficiency: 53.6%
- Fuel imports: 114.4 billion USD (16.0% of total imports)
- Electricity generation: 556.9 TWh - Of which renewables: 64.8 TWh (11.6%)
- Electricity use per capita: 7,283 kWh
- Electrical capacity: 131.4 GW - Of which renewables: 29.5 GW (22.5%)
- Electricity access rate: 99.9%
- Share of population using solid fuels: < 5% (2010)

### Overview of the Total Primary Energy Supply\* in 2000 & 2011, \*excluding electricity rate.



Source: [Irena Renewable Energy Country Profiles European Union](http://irena-renewable-energy-country-profiles-european-union)

**RES Share in 2011 (%)** Source: Eurostat, April 2013

	Overall RES	%biomass/Tot Final Energy	2020 RES Target	RES-electricity	RES transport	RES heating/cooling
EU 27	13.00	8.39%	20.00	21.70	3.80	15.10
France	11.50	12.32%	23.00	16.70	16.50	0.50

Forecast per country (EU): [http://ec.europa.eu/energy/renewables/action\\_plan\\_en.htm](http://ec.europa.eu/energy/renewables/action_plan_en.htm)

**Estimation of Total Contribution Expected from Bioenergy in 2020 (ktoe)**

	Total	Bioelectricity	Biomass for heat and bioheat	Biofuels
EU 27	138,312	19,697	89,756	28,859
France	9,311	1,476	16,455	3,500

Forecast per country (EU): [http://ec.europa.eu/energy/renewables/action\\_plan\\_en.htm](http://ec.europa.eu/energy/renewables/action_plan_en.htm)  
 More information: [AEBIOM report, European Bioenergy Outlook 2013](#)

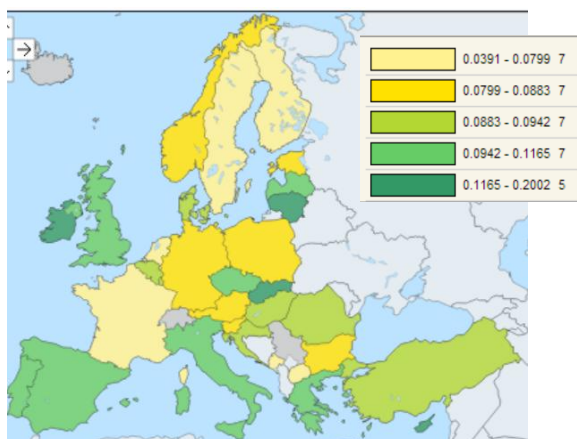
**Prices**

**Energy Prices charged to Final Consumers: Industry and Households (EUR per kWh)**

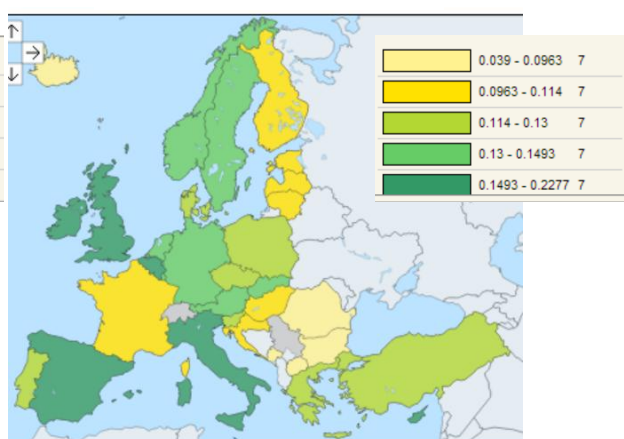
Consumer		Electricity 2011	(€/kWh) 2012	2013
Industry	EU 28	0.0928	0.0958	0.0943
	France	0.0722	0.0809	0.0771
Households	EU 28	0.1277	0.1339	0.1373
	France	0.0994	0.0986	0.1007

Source: [http://epp.eurostat.ec.europa.eu/portal/page/portal/energy/data/main\\_tables](http://epp.eurostat.ec.europa.eu/portal/page/portal/energy/data/main_tables)

Electricity prices for industrial consumers euro/kWh



Electricity prices for households euro/kWh



<http://epp.eurostat.ec.europa.eu/tgm/mapToolClosed.do?tab=map&init=1&plugin=1&language=en&pcode=ten00114&toolbox=types>

**Bio Energy Projects Reported in the BNEF Database:**

- 522 MW and 159 MWth of biomass-fired capacity addition announced (51 projects)
- 240 million liters of biodiesel per year capacity addition announced (4 projects)

**More Information:**

AEBIOM: December 2013 Statistical report

<http://www.aebiom.org/>

Market observatory & Statistics; Energy figures by country

[http://ec.europa.eu/energy/observatory/countries/countries\\_en.htm](http://ec.europa.eu/energy/observatory/countries/countries_en.htm)

National renewable energy action plans: information on policies, targets, resources and use

[http://ec.europa.eu/energy/renewables/action\\_plan\\_en.htm](http://ec.europa.eu/energy/renewables/action_plan_en.htm)

**5. ENERGY & BIOMASS POLICIES**

France has a large production capacity for first generation biofuels and is number 1 producer in the world of ethanol from sugar beet. For sustainability reasons they are shifting their focus from first generation to second generation biofuels, by increasing investments in R&D.

Biomass is the leading source of renewable energy consumed in France (52% of renewable consumption, second in Europe after Germany). Although the country is near-total independence in the generation of electricity (mainly nuclear), France remains heavily dependent on fossil fuel imports for heating and transportation. France has the intention to increase its energy independency and secure the supply. The development of bio-kerosene is a top priority of the French aviation industry, in order to reduce the environmental impact of the sector. A strong increase is expected in the coming years. Within the Research programme **ProBio3**, a consortium is developing second generation bio kerosene.

To stimulate sustainable heat, France funded a national fund in 2009, **Le Fonds Chaleur**, (1,2 billion euro for 5 years). The **French National Renewable Energy Action Plan** was published in 2010, which shows how France expects to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the RED (2009/28/EC).

The Renewable energy progress report of France can be found at:

[http://ec.europa.eu/energy/renewables/reports/doc/com\\_2013\\_0175\\_res\\_en.pdf](http://ec.europa.eu/energy/renewables/reports/doc/com_2013_0175_res_en.pdf)

In France, electricity from renewable sources is promoted through a feed-in tariff and tax benefits. For renewable heat several energy subsidies, tax regulation mechanisms are in place as well as a zero percent-interest loan. For renewable energy in the transport sector a quota system is the main support scheme and biofuels are supported through fiscal regulation. Support mechanisms:

- Feed-in tariff (Tarif d'achat)
- Tax regulation mechanisms I (Crédit d'impôt)
- Tax regulation mechanisms II (value-added tax reduction)
- Tenders (Appels d'offres)
- Financial support program: "Energy Autonomy Methanisation Azote" (EMAA) for investments in biogas plants; 1.000 biogas installations at farms in de period 2013 – 2020, and valorisation of digestate. [http://agriculture.gouv.fr/IMG/pdf/plan\\_EMAA\\_VF\\_cle0ded2a.pdf](http://agriculture.gouv.fr/IMG/pdf/plan_EMAA_VF_cle0ded2a.pdf)

**Feed-in Tariffs for Renewables (€/kWh) in 2010**

Biomass	Wind onshore	Wind offshore	Hydro	PV
0.125	0.082	0.31 - 0.58	0.06	n/a

**Feed-in Tariffs Specified for Bio-energy**

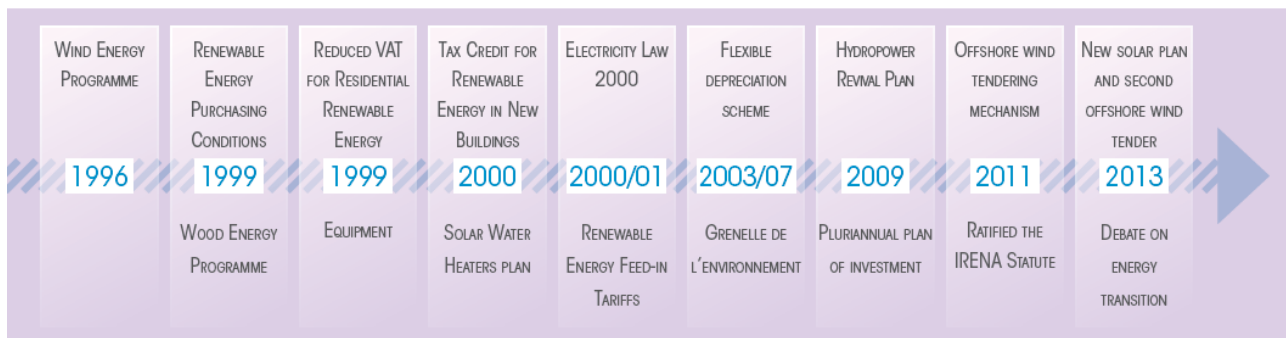
Biogas plants with a capacity ≤ 150 kW:	<b>€ct 9.745 per kWh</b>	(Arrêté du 19 mai 2011)
Biogas plants with a capacity ≥ 2 MW:	<b>€ct 8.121 per kWh</b>	(Arrêté du 19 mai 2011)
Bonus of <b>€ct 4</b> for biogas plants with energetic performance ≥ 70%		
Biomass <b>€ct 4.34 per kWh</b> + premium of at least <b>€ct 7.71 per kWh</b>	(Arrêté du jan. '11 biomasse)	

For more information on: support schemes: <http://www.res-legal.eu/search-by-country/france/>

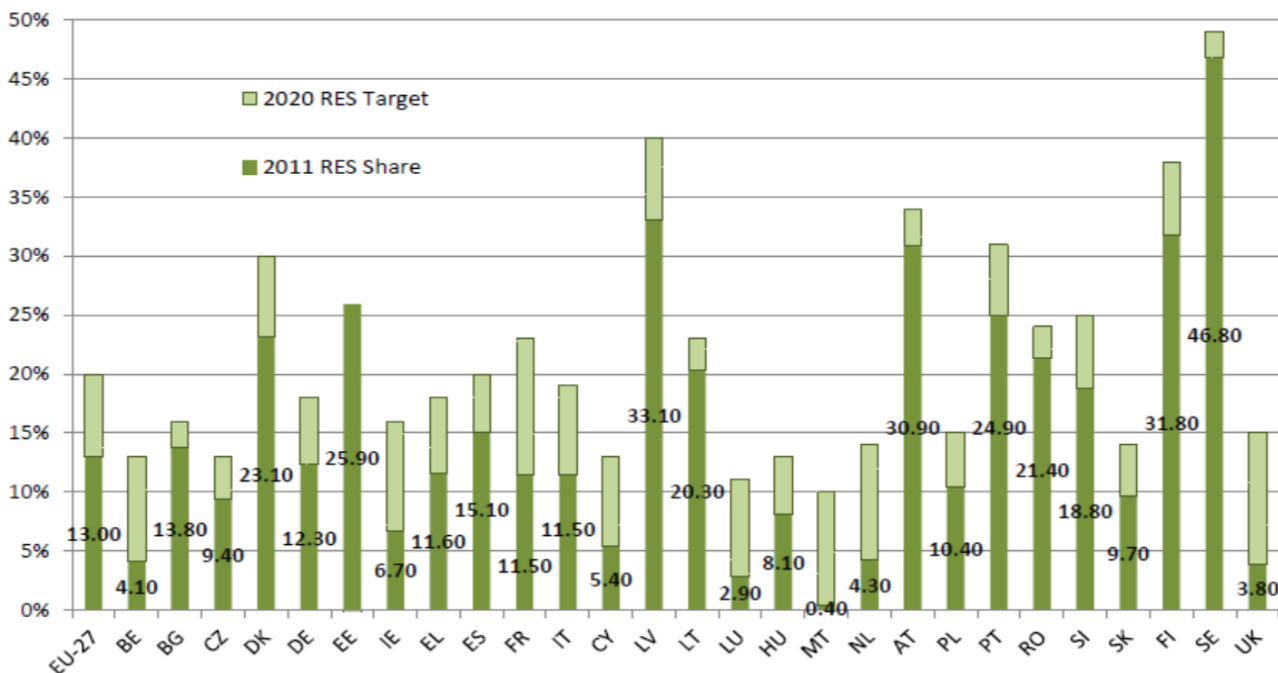
**Targets:**

- 23% of final energy from renewables by 2020
- 27% of electricity generation from renewables by 2020
- 10.5% of transport energy from renewables by 2020
- 25 GW of wind capacity, including 6 GW of offshore wind, by 2020
- 32% of energy consumption for heating and cooling from renewables by 2020

|||| POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)



Source: Eurostat, April 2013

[RES LEGAL Europe](#): for more information on:

- support schemes
- grid issues and
- policies per country

For: Electricity, Heating and cooling, Transport

## 6. FUNDING OPPORTUNITIES

### EU Funding Schemes

#### Horizon 2020 – the new EU Framework programme for RTD

Horizon 2020 is the successor of the 7th Framework Programme for Research and Technological Development (FP7). Budget € 77.6 billion for research and innovation in Europe for 2014 – 2020. Topics include: energy efficiency, use of renewables as flexible feedstock for chemical and energy applications.

#### LIFE+ - EU funding programme for the Environment

Calls are expected May/June 2014, Budget €3.4 billion for 2014 - 2020. Topics include: Climate change - Energy, Industry & production, waste.

NER300 is one of the world's largest funding programmes for innovative low-carbon energy demonstration projects, like CCS and innovative renewable energy (RES) technologies on a commercial scale within the European Union.

ELENA: European Local ENergy Assistance, sustainable energy projects in cities and regions.

### National Funding Biobased

France is an important player for Europe in the Biobased Economy, due to the abundance of biomass resources and highly developed chemical sector. Therefore an intensive cooperation between The Netherlands, France and Germany is established in developing a European strategy for the biobased economy (also cooperation between knowledge institutes like: Wageningen-UR and INRA). France has defined 4 key-biobased molecules: 1) ethanol (éthanol), 2) succinic acid (acide succinique), 3) acrylic acid (acide acrylique) and 4) linalool (linalol)

A thorough overview of the development of the Biobased Economy in France provided by the Dutch Embassy is available at:

[http://frankrijk.nlambassade.org/binaries/content/assets/postenweb/f/frankrijk/nederlandse-ambassade-in-parijs/import/overzicht-biobased-economy-in-frankrijk\\_versie-28-11-2013.pdf](http://frankrijk.nlambassade.org/binaries/content/assets/postenweb/f/frankrijk/nederlandse-ambassade-in-parijs/import/overzicht-biobased-economy-in-frankrijk_versie-28-11-2013.pdf)

### Important Financiers of BBE-Projects:

- ADEME, Agence Nationale de la Recherche (ANR) about 70%.
- BPI (Banque Publique d'Investissements)
- Caisse Nationale des Dépôts et des Consignations
- FUI (Fonds Unique Interministériel) is financing projects from the "*Pôles de compétitivité*" (regional innovation clusters)

### Financing Programs and Expected Calls in 2014:

PIA (Programme d'Investissements d'Avenir), 35 billion Euro of which 22 billion for research and innovation for a period of 10 years. Overview of calls per branche:

<http://www.redressement-productif.gouv.fr/programme-investissements-davenir>

BIP (Bioressources, Industries & Performance): calls every 18 months. Information on the last call: <http://www2.ademe.fr/servlet/getDoc?cid=96&m=3&id=87567&p1=1>

BCIAT (Biomasse Chaleur, Industrie, Agriculture et Tertiaire). Call until end of January 2014:

<http://www2.ademe.fr/servlet/getDoc?cid=96&m=3&id=89112&p1=1>

Chimie verte et énergies décarbonées (Green chemistry and carbon-low energy)

<http://www2.ademe.fr/servlet/getDoc?cid=96&m=3&id=77005&p1=1>

CIR (Crédit Impôt-Recherche) is a fiscal tool for companies that invest in R&D, similar to WBSO and RDA in The Netherlands. Also applicable for outsourcing for example to Dutch research institutions (only when accreditation is obtained).



## 7. BUSINESS CLIMATE

### Ease of Doing Business in France:

France is ranked **38<sup>th</sup>** out of 189 countries in the World Bank Ease of Doing Business index. In comparison, the Netherlands is ranked **28** (2014). On the website\* information about necessary permits, administration time, specific laws et cetera is present.

Topic	DOING BUSINESS 2014	DOING BUSINESS 2013
<b>Total rating</b>	<b>38</b>	<b>35</b>
<a href="#">Starting a Business</a>	41	29
<a href="#">Dealing with Construction Permits</a>	92	74
<a href="#">Getting Electricity</a>	42	41
<a href="#">Registering Property</a>	149	150
<a href="#">Getting Credit</a>	55	52
<a href="#">Protecting Investors</a>	80	80
<a href="#">Paying Taxes</a>	52	54
<a href="#">Trading Across Borders</a>	36	37
<a href="#">Enforcing Contracts</a>	7	7
<a href="#">Resolving Insolvency</a>	46	44

\*Source: <http://www.doingbusiness.org>

## 8. IMPORTANT CONTACTS

### Embassy + Consulates:

<http://www.rijksoverheid.nl/onderwerpen/ambassades-consulaten-en-overige-vertegenwoordigingen/frankrijk>

**Embassy of the Kingdom of the Netherlands in Paris:** Recommended are the blogs; constantly identifying new business opportunities, showing constant recent information on market developments in France, developments in the field of agro-food and innovation, technology and research. You can subscribe to this free of charge. The Economic Cluster care specialist, Dutch blogs on:

- **Markets:** <http://exporteren-naar-frankrijk.org/>
- **Agrofood:** <http://agrofoodhandelsinformatiefrankrijk.wordpress.com/>
- **Innovation:** <http://nost-france.org/>

[Agrobiobase](#), an international database for biobased products (EN, FR).

**NBSO's (Netherlands Business Support Offices):** NBSOs have extensive networks in promising regions for dutch entrepreneurs and can support them with:

- Finding business partners;
- Market information;
- Information on laws and regulations in your market.

NBSO for France is situated in **Lyon** and **Lille**.

The Netherlands Office for Science and Technology (**NOST**) Network (Innovatie Attaché Network, part of NL embassy or consulate), are also stationed in France (Paris), and offers Dutch companies a free subscription on the IA Newsletter and IA Special, with information on international technology developments. (contact [paris@ianetwerk.nl](mailto:paris@ianetwerk.nl)).

The Economic Cluster (Trade, Agriculture and Innovation departments) of the Embassy in Paris provides support to companies to identify possible opportunities.

**Economic Cluster** par-trade@minbuza.nl +33 (0)1 40 62 33 94

The French Chamber of Commerce, located in Amsterdam: [website](#) of <http://www.cfc.nl/nl/>

Existing agreements can be found at site [MinBuZa](#)

### BioBased Organisations in France:

- **Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME)** – Environment and Energy Management Agency, +33 241 204 120, [ADEME website](#)
- **ACDV** (Association de Chimie du Végétal) represents ADEMA in the ERRMA (European Renewable Resources and Materials Association), <http://www.chimieduvegetal.com/>
- **FranceAgriMer** (ministry of agriculture) : report: [Monitoring of biomass resources 2012](#)
- **Ministere lécologie, du developement durable et de l'energie**. On the site Statistics and information on: sustainable development and renewable energy: [website](#)
- **Office franco-allemand pour les énergies renouvelables** – French-German Office for Renewable Energy, **Mélanie Persem**, +49 30 18 305 46 76, [website](#)
- **Electricité Réseau Distribution France (ERDF)** – distribution grid operator, +33 247 802 572, [ERDF website](#)
- **France Biomass Energy** SER FBE is the representative of the biomass sector, part of the Syndicat des Energies Renouvelables (SER). This organization represents the sector and promote its activities. FBE works closely with the government regarding the achievement of the objectives of the policy. [SER website](#), +33 148 780 560, The work program of the biomass sector: [http://www.enr.fr/docs/2012133847\\_FBE4.pdf](http://www.enr.fr/docs/2012133847_FBE4.pdf)
- **INRA**, international research institute for agriculture; Program BFF (Biomass for Future).
- Research institute **IFMAS** for bioplastics from agromaterials, granted with €30 billion.
- France has 71 innovation clusters: (**Pôle de Compétitivité**). For the biobased economy:
  - MAUD (Matériaux et Applications pour une utilisation Durable)
  - IAR (Industries & Agro Ressources), <http://www.iar-pole.com/>
  - ARD (Agro-Industrie Recherches et Développements), [www.a-r-d.fr](http://www.a-r-d.fr)
  - AXELERA (CHIMIE et ENVIRONNEMENT)





Foto: John Veerkamp

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NL Enterprise Agency is an agency of the Dutch ministry of Economic Affairs responsible for the implementation of sustainability, innovation and economic development programmes for various governmental bodies. NL Enterprise Agency is a department of the Dutch Ministry of Economic Affairs that implements government policy for sustainability, innovation, and international business and cooperation. It is the contact point for business, educational institutions and government bodies for information and advice, financing, networking and regulatory matters.