GREEN ECONOMY

COLLECTION

The green economy encompasses businesses that enhance human wellbeing and social equity while minimizing threats to the environment and preserving the world's natural resources.

13.6%
VACANCIES FILED

Green businesses account for 13.6% of all vacancies filed with the French national job center (Pôle Emploi). Fundraising for cleantech companies has soared 40% since last year (French Ecology Ministry).

+6.6%
YEAR-ON-YEAR

Annual renewable energy generated in France accounted for 20.1% of the country's total consumption in Q3 2016 - up 6.6% year-on-year.

90%
GREEN BUSINESSES

According to the French Ecology Ministry's 'Data Lab', 90% of French green businesses are SMEs or micro-businesses, and two thirds provide innovative goods and services. France has 30% of Europe's wind power potential, with total potential offshore wind power capacity of 30,000 MW.

THE FRENCH ENERGY TRANSITION ACT 2015 AIMS TO:
- **Lower greenhouse gas emissions by 40%** by 2030.
- **Reduce fossil fuel-based energy consumption by 30%** by 2030.
- **Reduce share of nuclear power** to 50% of electricity production by 2025.
- **Increase share of renewable energies to 32%** of energy consumption by 2030.
- **Half total energy consumption** by 2050.
- **Reduce volume of waste** du volume de déchets mis en décharge à l'horizon 2050.

— In June 2017, following Donald Trump's decision to withdraw the United States from the 2015 Paris climate agreement, Emmanuel Macron appealed to US scientists, students and business people looking to save the planet to come and work in France under the slogan "Make our planet great again!". The French president's initiative is supported by Business France, the agency responsible for assisting foreign investors in France, which is ideally placed to handle inquiries from US researchers and business people looking to join France's burgeoning anti-global warming movement.

In 2010, the French government introduced its Programme d'Investissement d'Avenir (future investment program), an industrial policy scheme designed to bring about a new model for growth. The program encourages innovation as a driver for social and economic growth by funding businesses as they transition from innovation stage to market launch. The program is expected to create over 10,000 new jobs and generate €10 billion in revenues between now and 2020.

WATER TURBINES: AN INNOVATIVE SOLUTION

— Almost 1.3 billion people worldwide do not have access to electricity, and are often forced to resort to power generators. However, many of these people live close to running water that could provide a free, inexhaustible source of energy.

The MOULENDA project aims to provide access to energy services in Moulenda village (Republic of the Congo) using an innovative power generation system developed by EcoCinetic, a startup based in La Rochelle. EcoCinetic has developed a ground-breaking water turbine that harnesses energy from river or sea currents to generate electricity, providing a fully natural resource that has been largely overlooked up to now.

USING MICROORGANISMS TO REDUCE GREENHOUSE GAS EMISSIONS

— Over the past 50 years, agricultural soil has lost almost a third of its humus (the organic matter found in the soil's surface layer) due to excessive/intensive use of chemical products. Humidifying microorganisms can be used to reverse this phenomenon.

Marcel Mézy, a self-taught farmer based in Aveyron in southern France, has developed technology that increases the natural fertility of the soil by producing humus. His innovative system can reduce chemical use (fertilizers and pesticides) by 50%, thereby halving greenhouse gas emissions. Almost 10,000 farmers have been using the technology for the last 30 years – in France and worldwide - to fix carbon and nitrogen from the atmosphere in volumes ranging from 10 to 40 tC/ha – as much as a forest!

TRACKING THE SUN TO BOOST ELECTRICITY PRODUCTION

— Solar power is a fast-growing source of renewable energy. Innovative solar tracking technology for photovoltaic power stations boosts green energy yield and increases competitiveness.

Exosun designs and supplies solar tracking systems and support services. Its technologies can increase a solar power station's production by up to 25% in areas with strong sunlight. A pioneering French company, Exosun has become a global player and has already sold 270 MWp of its systems. Exosun is a "fabless" company, outsourcing the manufacturing of parts for its solar tracking systems to high-quality suppliers located close to power stations, thereby minimizing transportation costs and carbon footprint. The company's head office is in Bordeaux and it has subsidiaries in the US, South Africa and Brazil.

FLOATING WIND FARMS

— In France, the sea close to the coastline is very deep (over 30 meters), which hinders development of offshore wind farms built on foundations; such structures need to be built far from the shore. Floating wind turbines would solve this problem, particularly along the Mediterranean coast.

The Vertiwind wind turbine has a vertical axis and is a major innovation in the maritime energy sector. The turbine is a technological game-changer, generating power at costs comparable with nuclear power and 30% cheaper than its competitors. Its technology is more efficient, it generates over 5MW, and it can produce up to 15% more electricity. A 600kW trial turbine has been running onshore at Fos-sur-Mer since May 2014. The project will boost the offshore wind farm market and will help to develop this innovative industry and its potential for job creation.

SHIPS POWERED BY KITES

— Kite propulsion would reduce ships' fuel consumption by using the wind as a source of energy, while also prompting a proportional reduction in greenhouse gas emissions.

Beyond the Sea is aiming to develop an automatic system for managing a 200 sq. m. kite with launcher/retriever and autopilot functions.

Conceived by **Yves Parlier**, a world-famous skipper renowned for his results in some of the world's most prestigious ocean races, along with his team, the aim of the project is to develop kites measuring between 800 and 1600 sq. m., used to propel very large vessels, over the next two years. They will then be adapted to container ships for operational validation. This novel solution will turn a profit in the short term, reducing fuel costs by 20%.