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France and the Bioeconomy or Green Economy

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Report Highlights:

The Government, industry, and science research institutes in France are focusing on the bioeconomy as a strategy to address climate change and limited fossil resources. In the past few months, several conferences have been organized and reports published on the bioeconomy, with a particular emphasis on biomass-based energy under France's Energy Transition initiative, and public research institutes identifying biotechnology as the key technology of the bioeconomy. French policy makers and stakeholders have shown interest in the U.S. approach, and it appears essential to stay engaged in a dialogue and continue to explain the U.S. strategy adopted.

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1. France and International Focus on the Bioeconomy

In the context of climate change and limited fossil resources, stakeholders and policy makers have increasingly focused on the bioeconomy, also referred to as the bio-based economy or green economy. It is the case of the Paris-based Organization for Economic Co-operation and Development ([OECD](#)), and of the European Commission (EC). The EC adopted a [bioeconomy strategy](#) in February 2012 and has a specific [website on the bioeconomy](#), focusing on food, agriculture and forestry, fisheries and agriculture, and biotechnology. The website includes the conclusions of a conference held in February 2013 on the [achievements and directions for the future of the bioeconomy in Europe](#), where USDA’s Chief Scientist was a speaker.

At the national level, France is also focusing on the bioeconomy. The Ministry of Environment’s Directorate for Sustainable Development (in French, “Commissariat General au Developpement Durable,” or CGDD) provides a list of reference documents on the bioeconomy. The most recent [list dated June 2012](#) includes documents prepared by the OECD, the EC, the biotechnology industry, and also USG documents, including the Whitehouse’s National Bioeconomy Blueprint and USDA’s Office of the Chief Economist’s 2011 Biobased Economy Indicators-A Report to the Congress, among others.

Several conferences organized in the past few months in France illustrated the scope, definition, and strategies envisioned for a bio-based economy, according to national policy makers and stakeholders.

On December 12, 2012, the strategic committee of the Ministry of Agriculture organized a conference named [Green Economy at the Service of Growth](#), where speakers were from the Government (Ministries of Agriculture, Ecology and Industry), the public environmental agency (ADEME), industry (biorefineries, agriculture and forestry processors and stakeholders), and academia (hard and soft science). The FAS/Paris Agricultural Attaché was also invited as a keynote speaker and presented USG’s perspectives.



Agricultural Attaché making her presentation at the December 12, 2012 conference

On March 1, 2013, the National Research Institute in Agriculture (INRA) organized a [seminar on the bioeconomy](#), involving INRA, France's Petroleum Institute for New Energies (IFPEN), and two private companies: Novamont and Deinove.

2. Scope and Definition of the Bioeconomy

During the December 2012 conference, bioeconomy was defined as (1) sourced from agriculture and forestry feedstocks, both renewable and sequestering carbon, (2) based on sobriety (i.e., reduced energy consumption from current levels), (3) source of jobs located across the nation, and (4) reducing France's energy dependence on imports. The conference illustrated the wide range of industries and stakeholders involved, and favored more holistic and multidisciplinary approach and less compartmented policy in the future.

For INRA, bioeconomy has become a key-concept for building sustainable development. The research institute defines bioeconomy as a science-, technology-, and economy-based strategy for transitioning from a fossil resources-based economy to a biomass-based economy (for products including food, bioenergy, chemicals, and materials), while respecting eco-systemic services.

In terms of technology, INRA considers that the key-element of the bioeconomy is biotechnology, with recent major knowledge and technical breakthroughs that widen life sciences' potential. INRA focuses on perspectives of research and innovation to "control and undertake the role of biotechnology in economic, social, and industrial models, that need to be reinvented."

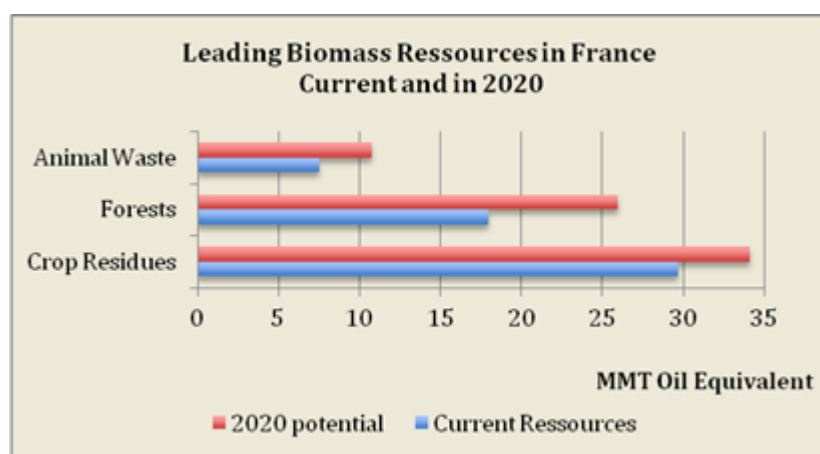
3. Energy Strategy

- *Renewable Energy Directive*

In the context of the 2009/28/CE European Energy Directive, France's 2010 action plan set an objective

of 23 percent renewable energy production by 2020, including 10 percent in transportation, 33 percent in heating, and 27 percent in electricity. The action plan identified biomass as the main source of renewable energy, especially in transportation and heating (see [GAIN report FR9052](#), dated 12/3/2010). France's objectives are to increase the current 17 million metric tons of oil equivalent (MMToe) of renewables used in France (out of 160 MMToe total) by 20 additional MMToe (including 10 biomass-based MMToe) by 2020.

A National Observatory for Biomass Resources was created under the Ministry of Agriculture's Franceagrimer agency, which published an [inventory](#) in October 2012. The document lists biomass quantities available in France sourced from agriculture, forestry, and food industry by-products, both currently and potentially in 2020. Three leading sources were identified: crop residues, forests, and animal waste.



Source: Franceagrimer

In December 2012, the Ministries of Ecology, Agriculture, and Industry released a report on the [Non-Food Uses of Biomass](#). This report underlines the importance of public support for transitioning to second-generation biofuels, as the Government of France expects to terminate public support to first-generation biofuels by 2015. In the report, measures favoring the development of advanced biofuels included changes in the automobile industry, increasing blending and emission reduction mandates, and balancing the diesel/gasoline ratio (currently at 70/30). More specifically, the report recommends the introduction of Indirect Land Use Change (ILUC) in sustainability criteria of biofuels, based on work conducted by an international research platform, to be created.

- *France's Energy Transition*

The Government of France is currently conducting a national discussion on [energy transition](#), defined as “the transition from a society based on abundant consumption of fossil energies to a more energy-efficient and more ecological society, including energy savings, production system optimization, and maximized use of renewable energies.” The President of France described energy transition as a “lever towards a new model of green, sustainable and inclusive growth.” An Energy Transition Bill is expected to be debated in France's Parliament in fall 2013.

- *Technology*

At the December 2012 conference, new technology (for example, biomass-based and advanced biofuels), new governance, and new individual behaviors (with reduced consumption) were listed as crucial strategies for a more sustainable energy pattern.

At the March 2013 seminar, INRA and IFPEN announced a [new alliance](#) to engage a new research dynamic on the bioeconomy in France. The new science and technology collaboration aims to identify the challenges of the bioeconomy and elaborate a joint research and innovation strategy, based on the complementary skills of both organizations in terms of biotechnology and on their priority to develop systemic approaches.

4. Comment

Both the United States and France are focusing on addressing climate change and have identified bioeconomy as one of the strategies to do so. France has shown interest in the U.S. approach, and it appears essential to stay engaged in a dialogue and continue to explain the U.S. strategy adopted to stakeholders and policy makers in France.