

Bio-Economy in Finland

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Sector Overview

The aim of bio-economy is to use renewable resources to produce food, energy, nutrients, products, and services in order to reduce dependence on fossil fuels. Forests, fish resources, water, food and agriculture are all key parts of bio-economy.

The Nordic Region is a major producer of primary biomass – approximately 30% of Europe’s forest production and more than 50% of the total marine harvest in Europe come from the Nordic Region. As such, the Nordic countries are highly dependent on the bio-economy.

New products such as bio-composites, paper mulches and biofuels have been launched in recent years. Wood cellulose, lignin, and bioactive components can offer new product opportunities for companies that are currently using other raw material sources, while also creating completely new business possibilities.

The true potential of new added-value wood-based products and applications is in the innovative use of the unique properties of wood and its components in combination with novel production and conversion technologies, product design and the Internet of Things.

Value of Finnish Bio-Economy Sector

In 2017 the aggregate output of the bio-economy sectors in Finland amounted to EUR 67.7 billion. Of the output, 62% was generated by the two main sectors in Finland's bio-economy: the forest sector and the food sector. The forest sector alone represented 38% of the total output.

Finland is Europe's most heavily forested country with 86% of its land area covered by forest of which 90% is PEFC-certified. Finland's forests grow by 100 million cubic metres annually and the growth potential for sustainable harvesting is currently 60%.

Government Initiatives

The Finnish government is committed to almost doubling the current turnover of the bio-economy sector by 2025. Finland invests heavily in bio-economy research and development. The government has earmarked funding for bio-industry development, including research, pilot projects and investment support.

Investment relations

[Invest in Finland](#) is the government agency promoting foreign investments in Finland. They help international companies to find business opportunities in Finland and provide all the relevant information and guidance required to establish a business in Finland.

Market Opportunities in Bio-economy

Business Finland estimates that the Finnish bio-economy sector offers huge growth potential with projects worth close to EUR 4 billion. Additional competence and resources are needed especially in the further refinement, product formulation, and production of high value added products, such as bio-chemicals and advanced biomaterials and their application such as flexible screens, sound systems, car parts, biodegradable packaging materials, adhesives, paints, cosmetics, medicines, and textiles.

[Business opportunities in Finland's bioeconomy sector](#)

Market Opportunities by Sub-Sector

Chemical Industry

Opportunities:

The use of bio and wood based transport fuels is increasing in Finland and globally. The development is led by major forest and energy companies, such as [UPM](#), [Neste Oil](#) and

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[St1](#). The biofuel infrastructure is supported by medium-sized companies and start-ups that focus on new, innovative technologies and solutions. There are also opportunities for international investors, for example, through setting up their own operations in existing bio-refineries or making equity investments in start-ups.

Events:

[ChemBio Finland](#); [World Bioeconomy Forum](#), [World Circular Economy Forum](#).

Players:

Globally operating Finnish chemical companies, such as [Neste Oil](#), [Kemira](#), [Forchem](#), and [ST1](#), focus strongly on bio-based raw materials and processes. Other major chemical producers operating in Finland include [Kraton](#), and [CP Kelco](#).

New start-ups, such as [Metgen](#), [Paptic](#), and [Spinnova](#), develop and commercialize technologies based on novel Finnish innovations.

Advice:

Finland's government and industry boost R&D efforts to develop and demonstrate a range of new biofuels technologies, including lingo-cellulosic feed-stocks, hydro-treated vegetal oil (HVO), co-processing of bio-feed-stocks in existing oil refineries, biomass-to-liquids (BTL) plants using gasification and Fischer-Tropsch (FT) process, and bioethanol from wood and straw.

Forest Industry

Opportunities:

The industrial exploitation of wood-based biomass is in transformation, creating compelling new business opportunities and possibilities. Wood is now used as a raw material for diverse value-added products and biomaterial innovations.

Modern Finnish pulp mills are versatile bio-refinery hubs that offer attractive ecosystems and investment opportunities for developing new products and technologies. Today's emerging bio-based forest industry is geared to producing biofuels and other value-added products based on wood. Moreover, demand for paper grade market pulp is expected to grow by 20 million tonnes during 2014-2030.

See also: [Biorefineries in Finland Attract Growing Interest from China](#)

Events:

[ForestValue Research Programme Kick-Off Seminar](#); [World Bioeconomy Forum](#); [World Circular Economy Forum](#).

Players:

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Globally operating forest industry companies, such as the Finnish [UPM](#) and [Metsä Group](#), the Finnish-Swedish [StoraEnso](#), the Swedish [SCA](#), and the South-African [Sappi](#) have major production facilities in Finland.

Today, there are 50 pulp and paper mills and over 240 wood product production sites in Finland. Several forerunner technology companies, such as [Andritz](#), [Outotec](#), and [Valmet](#) are based in Finland.

World leading forest machinery providers, such as [John Deere](#), [Logset](#), [Ponsse](#), and [Komatsu](#), operate in Finland.

Advice:

Finland invests heavily in bio-economy research and development providing laboratories and demonstration and piloting facilities in Finland for customers around the world.

Wood Construction

Opportunities:

Wood construction is growing in the Nordic countries and there is lots of momentum for industrial wood building in Finland at the moment. Wood solutions have a strong position in the construction sector and the use of wood as a building material is widely accepted. A strong wood building ecosystem makes Finland a good location for the wood building industry and element manufacturing.

There are opportunities for companies providing top-level knowledge and efficient industrial manufacturing capacity for solutions in wood frame construction and special structures. There is a potential to develop new building systems, whether independently or jointly with local company base that offer domestic networks and knowledge.

Events:

[World Bioeconomy Forum](#); [Forum Wood Building Nordic 2019](#); [World Circular Economy Forum](#).

Players:

New players, both domestic and international, have entered the market indicating new growth opportunities. Recent examples include Finnish company [Crosslam Kuhmo](#) – first CLT producer in Finland – and the Austrian company [Binderholz Group](#) which acquired Vapo Timber's sawmills in Nurmes and Lieksa. In addition, [Stora Enso](#) has started LVL production in Varkaus in 2016.

Advice: When operating in Finland, Canadian companies can benefit from high-quality workforce and the possibility for development and investment funding.

SWOT Analysis

<p style="text-align: center;">Strengths</p> <ul style="list-style-type: none">- Finland has accumulated expertise in forestry and the industrial manufacturing of forest products that is unique in Europe.- Finns know global business and are used to working in a multicultural environment across different time zones in English.- According to a 2016 study by European Commission, Finland is the most attractive EU country for FDI.	<p style="text-align: center;">Weaknesses</p> <ul style="list-style-type: none">- The entire bio-economy value chain is already in place in Finland making the sector crowded.
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none">- The industrial exploitation of wood-based biomass is in transformation, creating compelling new business opportunities and possibilities.- Wood construction is growing in the Nordic countries and there is lots of momentum for industrial wood building in Finland at the moment.- The use of bio and wood based transport biofuels is increasing.	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none">- The Chinese have already made a strong push to the Finnish bio-economy sector with e.g. the Kaidi biorefinery project in Kemi and Bo-real Bioref biorefinery in Kemijärvi.

Useful Resources

[Natural Resources Institute Finland \(Luke\)](#)

[CLIC Innovation](#)

[Advisory Board on Biotechnology](#)

[Finnish Water Forum](#)

[Food from Finland](#)

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[Agrotechnology from Finland](#)

[Wood Products](#)

[Wood from Finland](#)

[Forest Industries](#)

[Forest.fi](#)

[Wood-based bioeconomy solving global challenges](#)

[Business Guide to Companies Planning to Establish in Finland](#)

[Sustainable Growth from Bioeconomy](#)

[The Finnish Bioeconomy Strategy](#)

[Recommendations for the Finnish forest-based bio-economy R&D](#)

[Nordic Bioeconomy – 25 cases for sustainable change](#)

[Biobased Products and Technologies](#)

[The Making of Tomorrow](#)

[The Knowledge Centre for Bioeconomy](#)

[The Finnish Innovation Fund Sitra, Bioeconomy](#)

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