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Extract

Biomass to Energy

The World Market for BtE Plants 2025/2026

16th edition, 2025

ecoprog GmbH

Biomass to Energy 2025/2026

The leading standard reference for the global Biomass to Energy industry. The 16th edition includes:

- Analysis of more than 5,000 biomass plants and 700 projects worldwide
- Global market outlook 2025–2034, covering new installations, shutdowns and investment volumes based on over 500 cost examples
- Country-level analyses for 50 key biomass markets, including market factors, support schemes, existing plant assets and project pipelines
- Investment and operating costs, revenues, and exemplary project calculations
- Overview of key operators and technology providers, including market shares

In addition, the study includes 1-year access to **ecoprog's waste & bio Data** (BtE module). The database contains details on all plants and projects, including capacity, status, start of operation, technology and more. This also includes the weekly updated BtE Project Tracker and a list of active plants.

The study is available from **3,400.- €** (net).

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Read more on ecoprog.com


waste & bio Data, trial version


Order form with pricing information

Contents

Japan

Update: 10-2025

Key figures			
Population 2023 [million]	124.37	Number of BtE plants	**[…]**
Target: biomass electricity generation (2030) [TWh]	47	Installed biomass power capacity [MW_{el}]	**[…]**
Electricity from biomass 2024 [GWh]	38,276	Biomass share in electricity generation 2024 [%]	3.90
Forecast 2025-2034 Total market investment [million EUR]	**[…]**	*Forecast 2025-2034* Added capacity [MW_{el}]	**[…]**

Management summary

Japan remains one of the most dynamic BtE markets worldwide. A large project pipeline will continue to cause strong development in the coming years. However, the rate of development will slow down beyond 2030 due to **[…]**

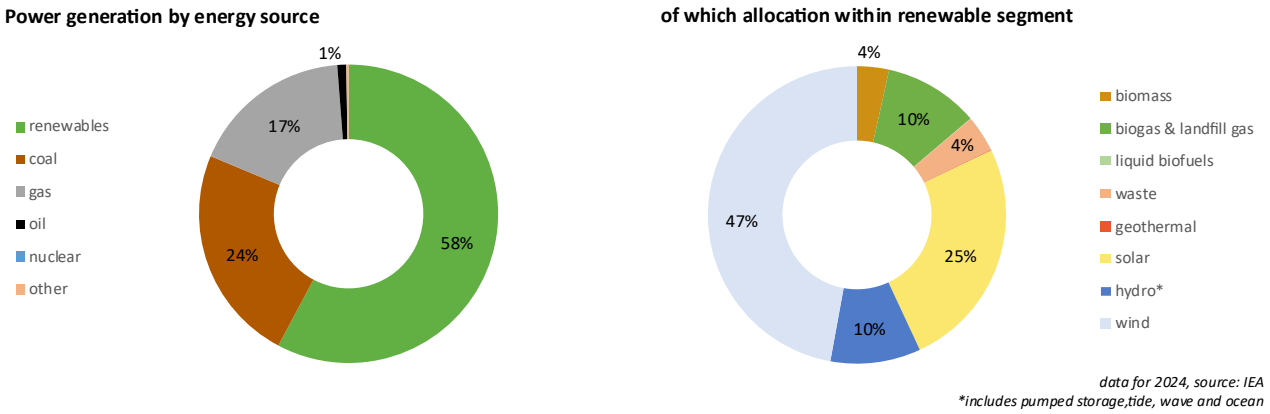
Background, market factors, legal framework

Japan remains reliant upon imported fossil fuels, mainly coal and gas. Renewables accounted for 27% of electricity production in 2024, with solar and large hydro making up the biggest shares. Biomass contributed around 4% of total power production in 2024.

Japan aims to become carbon neutral by 2050. In its 6th Strategic Energy Plan, renewables are projected to account for about 37% of power production by 2030, and biomass specifically about 5% of production, equivalent to 47 TWh or 8 GW from about 33.7 TWh in 2022.

[…]

Figure 1: Electricity generation in Germany



data for 2024, source: IEA
**includes pumped storage,tide, wave and ocean*

Germany has considerable biomass resource potential, which has supported a strong bioenergy industry. Agricultural residues are mostly used in the country's large biogas sector. Residues from forestry are widely used in BtE plants. Industrial residues, mostly from the pulp & paper industry, and recycled waste wood also represent important fuels for BtE.

[…]

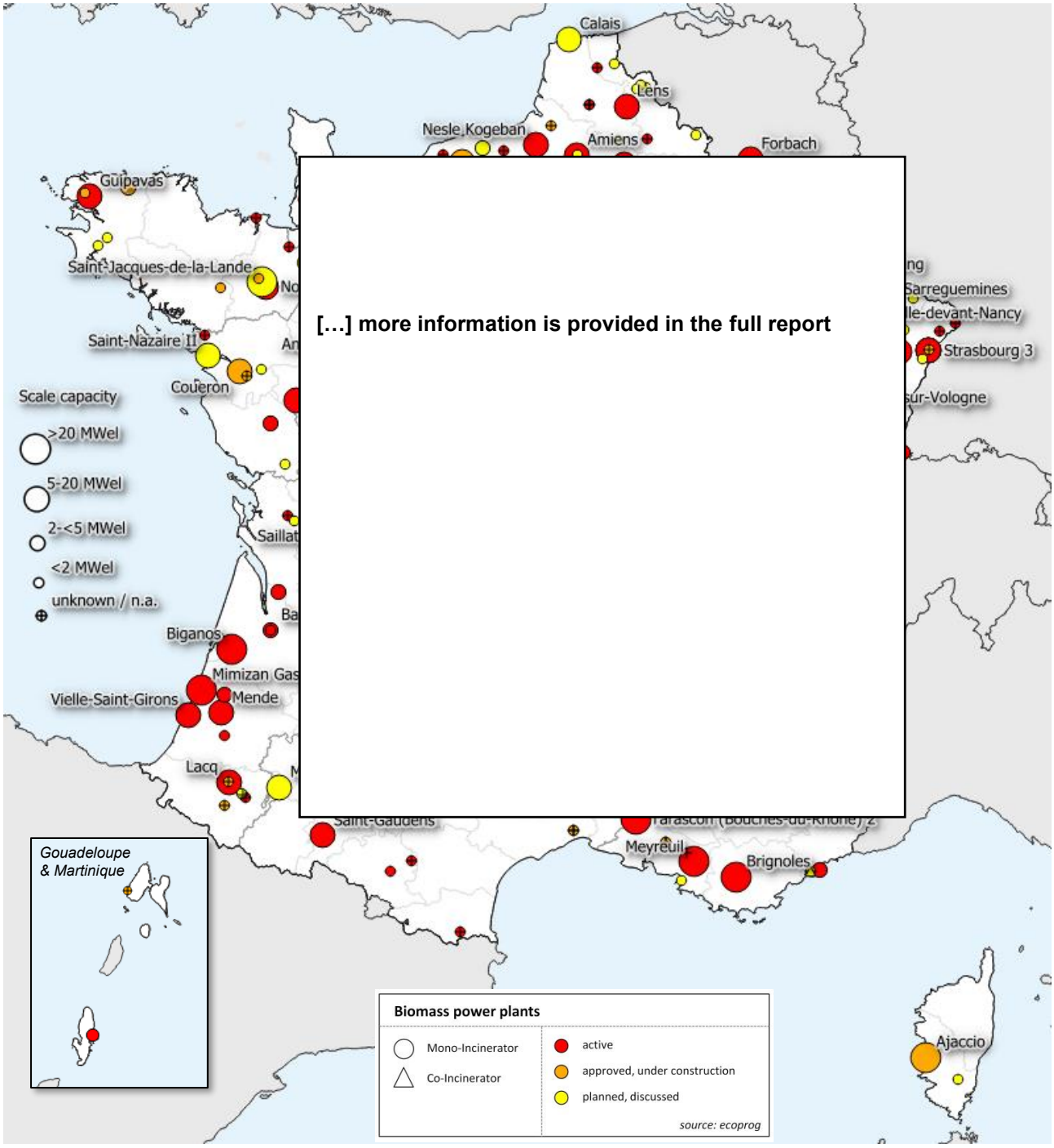
Germany's main support scheme for renewables is the EEG (Renewable Energy Act). The EEG formerly used FITs but has shifted towards competitive auctions as its main support mechanism. Auctions are technology-specific and there is a basket for biomass and biogas, with both existing plants and new projects eligible. Plants that run on recycled waste wood are gradually being excluded from EEG support. Recent EEG reforms have **[…]**

Biomass is also eligible for separate CHP tenders, but the generally lower tariff (7-12 EURct/kWh) has not been attractive to developers. In the heat segment, subsidies are available under **[…]**

Plant asset

We currently list a plant asset of **X** installed BtE plants in France, with a combined electricity generation capacity of at least **X** MW_{el}. The French fleet of BtE plants is relatively young and large in average size compared to other European countries. Almost all plants use wood residues as fuel. Some plants are located at pulp & paper sites. Many plants are either heat-only or operate in CHP mode and deliver heat to industry and residents.

Figure 2: Map of plants and projects in France



[…] more information is provided in the full report

For better visibility, only projects/plants ≥5 MW_{el} are labelled

Market development

In our database we currently list a total of **X** BtE projects and **X** GW capacity, thereof **X** projects and **X** GW under construction. Around half of the capacity is planned to be fuelled by agro-industrial residues (mostly sugarcane bagasse), while the other half is planned to be fuelled by black liquor or woody biomass. The project pipeline includes **[…]**

Figure 3: Project outlook Brazil

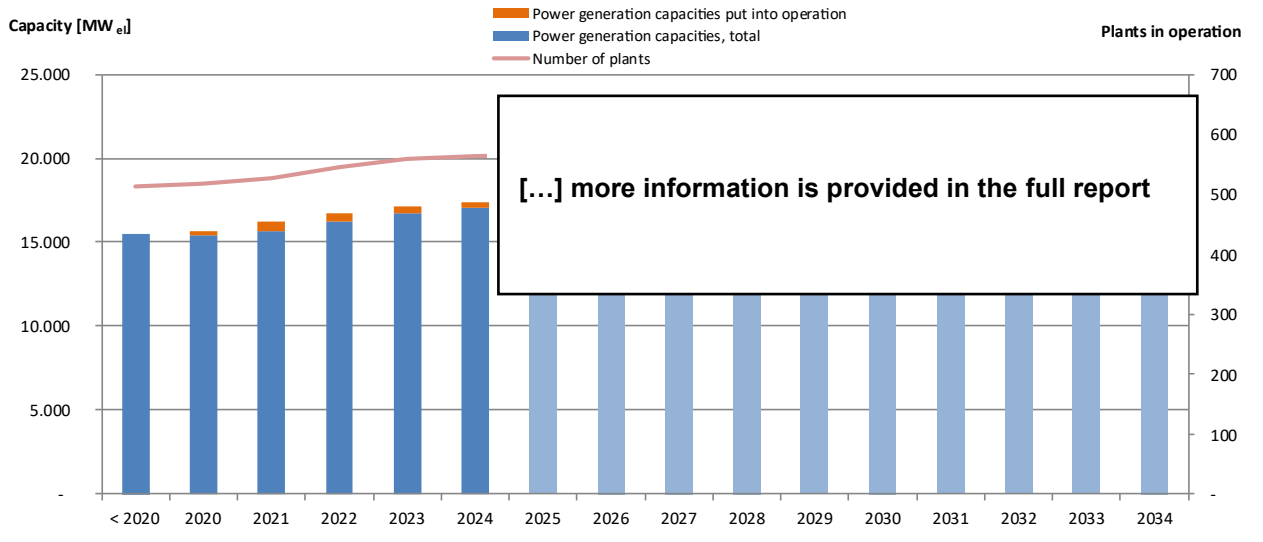
Name	Type	Project units	Capacity [MW_{el}]	Capacity [MW_{th}]	Start	Status
Açailândia 4	mono-incinerator	1	10.8	n/a	n/a	under construction
Adamantina	mono-incinerator	1	15	n/a	n/a	under construction
Mococa 2	mono-incinerator	1	25	n/a	n/a	under construction
[…]						
Canápolis 3	mono-incinerator	1	40	n/a	2029	approved
Charqueada	mono-incinerator	1	5	n/a	n/a	approved

[…] more information is provided in the full report

As of December 2025. Further information on all projects is provided in our online database to which you have access.

For Brazil we expect continuous market development during the coming decade, triggered by the country's sugar and ethanol and pulp and paper industries. Large-scale CHP projects in these industries will drive development. **[…]**

Figure 4: Market forecast Brazil



Data estimated up until 2024 and forecasted from 2025 onwards, source: ecoprog

Competition

Most operators on Brazil's BtE market come from the sugar and ethanol industry. This includes, for example, Usina Caeté S.A./Carlos Lyra Group, Raizen and Biosev SA, and more recently Copersucar. Another large group of operators is from the pulp and paper industry, including e.g. Klabin Cellulose and Suzano S.A. Foreign utility companies are active as well, including French multinationals Veolia and Engie (through its subsidiary Engie Brasil Energia).

In the manufacturing segment, there is an established domestic supply chain. **[…]**

Active Plants

As of December 2025. You can find further information on all plants, such as specifications on technical equipment, manufacturer, or fuel, for 12 months at https://ecoprog.com/plants/overview?type=biomas. This database is updated every week. Please use your login credentials to access the database.

Name	Type	Active units	Operator	Capacity [MW_{el}]	Capacity [MW_{th}]	Start
Ajax 1	mono-incinerator	1	Energy+2000 Ltd.	0.7	n/a	2012
Ajax 2	mono-incinerator	1	n/a	25	n/a	2015
Armstrong 1	mono-incinerator	1	Tolko Industries Ltd.	20	n/a	2000
Atholville	co-incinerator	1	AV Cell	17	50	1985

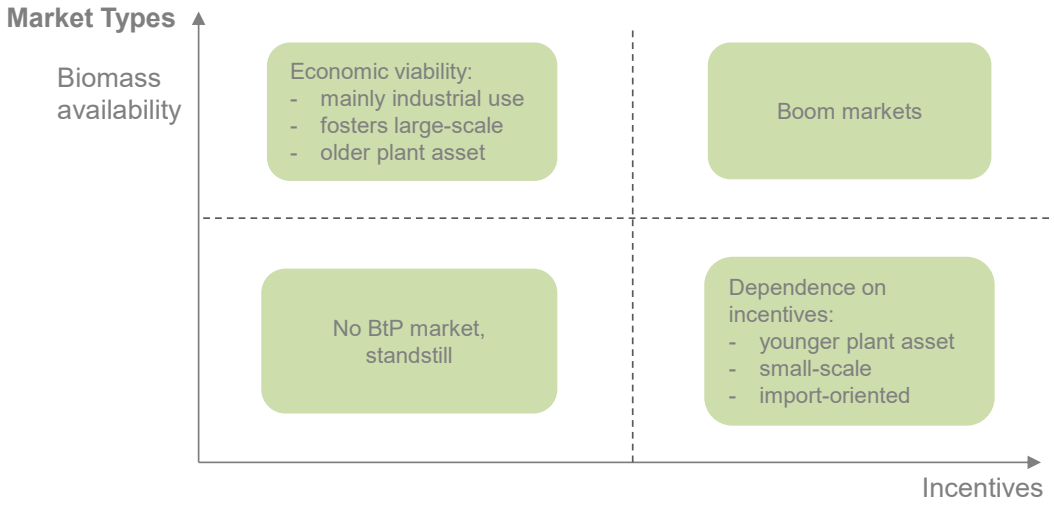
[…] more information is provided in the report

8 Framework and market drivers

8.1 Economic viability and biomass potential

The two most important factors for the economic viability of a BtE plant are the availability of 1) biomass fuels and 2) subsidies. Based on these two factors, markets can be categorized into four types, examples for which can be found in the country chapters of this report.

Figure 5: BtE market types



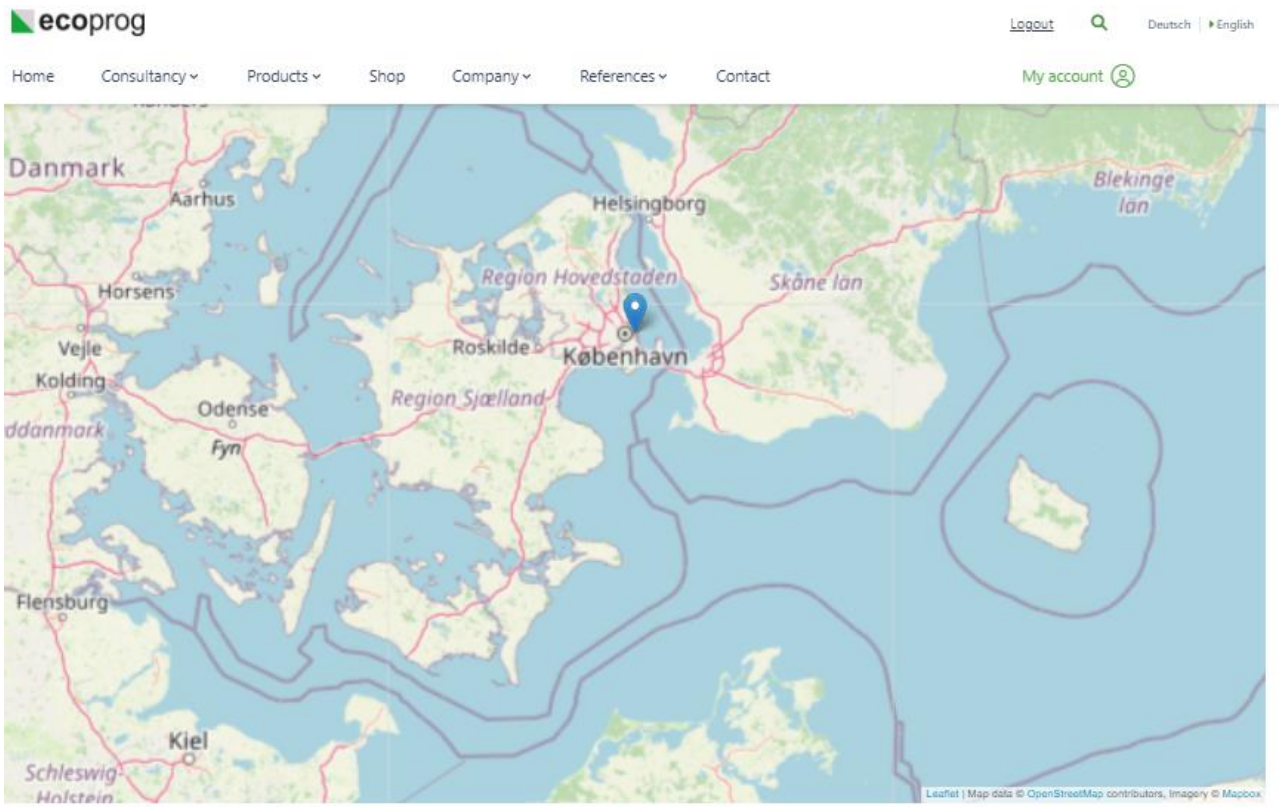
Source: ecoprog

[…]

Biomass fuels generally have lower calorific value than fossil fuels. Disregarding emissions, it is often more profitable to incinerate coal or natural gas than biomass. Due to their lower calorific values, transporting biomass fuels is usually not economically viable and local availability is thus important.

Several preconditions have to be met for BtE to be economically viable without financial incentives. 1) The availability of larger biomass fuel amounts, without valuable alternative uses that compete for the biomass locally. 2) A high local energy demand, ideally for both heat and electricity. This energy demand is even more important if there are few alternative energy sources, e.g. at rural/remote sites.

Many pulp & paper sites provide these factors. They are located in rural areas close to where the wood is produced. At the same time, large amounts of black liquor are produced during pulp production, which has little alternative uses. Furthermore, large amounts of heat and electricity are needed for producing pulp and paper. Similar favourable conditions apply to other industries, e.g. the sugarcane bagasse and ethanol industry.



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Category

1 Waste-to-Energy
2 MBT plants
3 Sorting Plants
- 3.1 Dry Recyclables
- 3.2 Packaging
- 3.3 Plastics
- 3.4 Metal
- 3.5 Paper
- 3.6 Glass
- 3.7 Bulky Waste
- 3.8 Batteries
- 3.9 E-Scrap
- 3.10 Construction & Demolition
- 3.11 Other Sorting Plants

4 Recycling plants
- 4.1 Plastics, material
- 4.2 Plastics, chemical
- 4.3 Paper
- 4.4 Other Recycling Plants

5 Biomass-to-Power
6 Anaerobic digestion
7 Hazardous waste

Plant

Name	Amagervaerket
Country	Denmark
Type	Biomass to Energy
Province/Region	Hovedstaden
Status	active
Investments	EUR 150 million (new unit)
Start of operation	2010
Heat use category	district heating CHP
Input, capacity [t/a]	n/a
Input real	n/a
Input real (year of data)	n/a
Power generation capacity [MW]	219.00
Heat production capacity [MW]	251.00
Gross heat production [MW]	n/a
Mono-/Co-Incineration	mono-incinerator

Remarks: The Amagervaerket went operational in 1971 as coal power plant with 4 units. One unit (unit 2) is operating on wood pellets. Another unit (unit 3) became operational in April 2020, after several delays of the start of operation and runs on wood chips.
As of August 2020, Danish utility Hofor A/S is tendering the procurement of an outdoor woodchip storage for its AMV4 biomass CHP unit.

Unit 1

Status	shut down
Start of operation	1972
End of operation	n/a
Unit fuel	straw pellets, oil
Fuel category	agricultural biomass
Technology	n/a
Mono-/Co-Incineration	co-incinerator

Search

Search

Country

Search

Downloads

BtP Project Tracker
BtP, List Of Active Plants

ecoprog's waste & bio Data. Please find a trial version here.