

**Biomass Gasification Market - Global Industry Size, Share, Trends, Opportunity, and Forecast Segmented, By Source (Solid Biomass, Liquid Biomass, Biogas, Municipal Waste, Others), By Application (Chemical, Liquid Fuel, Gaseous Fuel, and Power), By Region, By Competition, 2020-2030F**

Market Report | 2025-11-24 | 180 pages | TechSci Research

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**Report description:**

**Market Overview**

The Global Biomass Gasification Market, valued at USD 90.75 Billion in 2024, is projected to experience a CAGR of 8.22% to reach USD 145.78 Billion by 2030. Biomass gasification is a thermochemical conversion process that transforms organic materials, such as agricultural residues and forestry waste, into a combustible synthetic gas known as syngas, utilized for energy generation and chemical production. The market's expansion is fundamentally driven by global efforts to reduce carbon emissions through stringent regulations, the abundant availability of diverse biomass feedstocks, and increasing demand for energy security.

**Key Market Drivers**

Stringent environmental regulations and ambitious decarbonization goals represent a primary catalyst for the Global Biomass Gasification Market. Governments worldwide are implementing policies designed to drastically reduce greenhouse gas emissions and transition towards cleaner energy sources. For instance, according to Directive (EU) 2023/2413 of the European Parliament and of the Council, published in October 2023, the European Union established a binding target of at least 42.5% for renewable energy in its gross final consumption by 2030, replacing the prior 32% objective. This regulatory push directly incentivizes the adoption of biomass gasification as a viable technology for generating low-carbon energy and contributing to national and international environmental commitments.

**Key Market Challenges**

The substantial initial capital investment required for the construction and maintenance of biomass gasification facilities presents a significant impediment to market growth. This high financial outlay directly impacts the market by deterring potential investors who perceive elevated financial risks and extended payback periods. Consequently, it limits the scalability of new projects and

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restricts broader market penetration, particularly in regions where access to large-scale financing is challenging. According to the International Renewable Energy Agency, total installed costs for bioenergy increased by 16% between 2023 and 2024, exacerbating this investment hurdle.

#### Key Market Trends

Technological advancements in gasifier efficiency and cost reduction represent a significant trend enhancing the economic competitiveness of biomass gasification. These innovations improve design, materials, and operational controls to optimize syngas yield and reduce both capital and operational expenditures. Research published in the MDPI journal in May 2023 indicated that specific investments in liquid biofuel production plants employing gasification technologies demonstrated the highest decreasing trend over time. This directly mitigates the challenge of high initial investment. Illustrating this commitment, Valmet Corporation announced a EUR 45 million investment in November 2024 for advanced gasification technology development, targeting improved tar reduction and enhanced synthetic gas quality for chemical synthesis applications. This investment underscores the industry's drive for performance optimization and reduced processing costs.

#### Key Market Players

- [ ] Bellwether Recuperative Gasification Ltd.
- [ ] Shell plc
- [ ] Infinite Energy Pvt. Ltd.
- [ ] Ankur Scientific Energy Technologies Pvt. Ltd.
- [ ] Enersol Biopower Pvt.Ltd
- [ ] Thyssenkrupp AG
- [ ] Bio Energy Netherlands BV
- [ ] Yosemite Clean Energy

#### Report Scope:

In this report, the Global Biomass Gasification Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

##### - [ ] Biomass Gasification Market, By Source:

- o Solid Biomass
- o Liquid Biomass
- o Biogas
- o Municipal Waste
- o Others

##### - [ ] Biomass Gasification Market, By Application:

- o Chemical
- o Liquid Fuel
- o Gaseous Fuel
- o Power

##### - [ ] Biomass Gasification Market, By Region:

- o North America
  - [ ] United States
  - [ ] Canada
  - [ ] Mexico
- o Europe
  - [ ] France
  - [ ] United Kingdom
  - [ ] Italy
  - [ ] Germany
  - [ ] Spain
- o South America

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- Colombia
- o Middle East & Africa
- South Africa
- Saudi Arabia
- UAE
- o Asia Pacific
- China
- India
- Japan
- Australia
- South Korea

#### Competitive Landscape

Company Profiles: Detailed analysis of the major companies presents in the Global Biomass Gasification Market.

#### Available Customizations:

Global Biomass Gasification Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

#### Company Information

-□ Detailed analysis and profiling of additional market players (up to five).

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