



Biorenewable Insights: Municipal Solid Waste as a Sustainable Feedstock

Municipal Solid Waste as a Sustainable Feedstock is one in a series of reports published as part of NexantECA's 2021 Biorenewable Insights program.

Overview

While focus is increasing on low carbon feedstocks and sustainable technologies, one feedstock has gained particular interest, as it is available basically ubiquitously in large volumes. This feedstock is municipal solid waste (MSW). MSW is increasingly being looked at as a low carbon intensity feedstock for energy, chemicals, and fuels – and while not strictly biobased, it is considered renewable due to the frequency of generation. MSW also benefits from a unique characteristic of the market—it comes with a tipping fee, or price paid to take it, making it also a very low cost (negative, in fact) feedstock. MSW is the lowest costs, most widely available, lowest CI feedstock around—its main drawback is in its difficulty in processing. To unlock this feedstock beyond energy applications, high CAPEX technologies, such as gasification are required.

Waste management methods consist of collection, transfer, separation, recycling, composting and anaerobic digestion, and waste-to-energy. Municipal solid waste can be separated in a Material Recovery Facility (MRF) through mechanical solutions and sorting technologies such as optical sorting, electromagnetic separation, and eddy currents.

The main drivers for the use of MSW as a sustainable feedstock include:

- Environmental
- Economic
- Policy

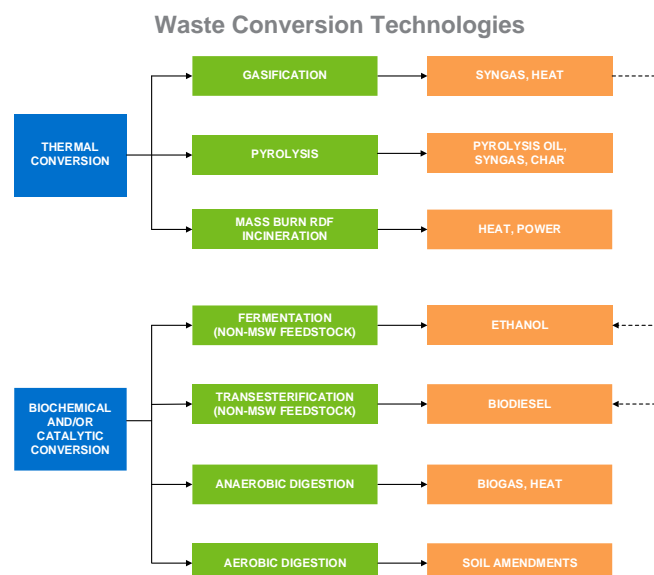
This report aims to answer the following strategic questions:

- What are the major existing technologies for converting MSW into fuels or chemicals? Who are the main technology developers?
- Where are the WTE plants located in the US, Europe, and Asia Pacific?
- How much MSW is generated in main regions? What is the MSW generation per capita in key countries worldwide?

Technologies

This report analyzes developments in technologies that convert municipal solid waste (MSW) such as:

- Gasification
- Pyrolysis
- Mass Burn RDF Incineration
- Anaerobic Digestion
- Aerobic Digestion



Process Economics

Estimates of overall competitiveness for various leading technologies are presented for four locations (US, Brazil, Western Europe, China). Regional pricing is set on a 2021 basis.

Commercial Overview

Regional market analyses of waste generation and composition in the US, Europe, and Asia Pacific regions are also offered.

Biorenewable Insights: Municipal Solid Waste as a Sustainable Feedstock



Subscribe to BI

The BI program (sister program to the world renowned TECH program, formerly known as PERP) is globally recognized as the industry standard source of process evaluations of existing, new and emerging of interest to the renewable energy and chemical industries.

BI's comprehensive studies include detailed technology analyses, process economics, as well as capacity analysis and impacts on conventional industry. Reports typically cover:

- Trends in technology
- Strategic/business overviews and/or developer profiles
- Process Technology:
- Chemistry
- Process flow diagrams and descriptions of established/conventional, new and emerging processes
- Process economics – comparative costs of production estimates for different technologies across various geographic regions
- Capacity tables of plants and analysis of announced capacities
- Regulatory and environmental issues where relevant

Subscription Options

A subscription to BI comprises:

- PDF reports including detailed technology analyses, process economics, as well as commercial overviews and industry trends
- Cost of production tables in spreadsheet format (as requested)
- Consultation time with the project team

An annual subscription to BI includes 10 reports published in a given program year. Reports can also be purchased on an individual basis, including reports from previous program years.

For more information, please contact
Technology@NexantECA.com or www.NexantECA.com



NexantECA Subscriptions & Reports provide clients with comprehensive analytics, forecasts and insights for the chemicals, polymers, energy and cleantech industries. Using a combination of business and technical expertise, with deep and broad understanding of markets, technologies and economics, NexantECA provides solutions that our clients have relied upon for over 50 years.

Technology and Costs comprises the Technoeconomics – Energy & Chemicals (TECH) program, the Biorenewable Insights program (BI), and the new Cost Curve Analysis. These programs provide comparative economics of different process routes and technologies in various geographic regions.

NexantECA serves its clients from over 10 offices located throughout the Americas, Europe, the Middle East, Africa, and Asia.

Americas

Tel: +1 914 609 0300
44 S Broadway,
5th Floor White Plains
NY 10601-4425
USA

Europe, Middle East & Africa

Tel: +44 20 7950 1600
110 Cannon Street
London EC4N 6EU
United Kingdom

Asia Pacific

Tel: +662 793 4600
22nd Floor, Rasa Tower I
555 Phahonyothin Road
Kwaeng Chatuchak
Khet Chatuchak
Bangkok 10900
Thailand

For more information. please contact
Technology@NexantECA.com or www.NexantECA.com