

The Global White Biotechnology Market 2025-2035

<https://marketpublishers.com/r/G10FC6161561EN.html>

Date: May 2025

Pages: 531

Price: US\$ 1,500.00 (Single User License)

ID: G10FC6161561EN

Abstracts

The global white (industrial) biotechnology market is experiencing significant growth, driven by increasing demand for sustainable alternatives to traditional petroleum-based products. White biotechnology leverages biological systems, enzymes, and microorganisms to produce chemicals, materials, and energy through environmentally friendly processes. With rising environmental concerns, government regulations supporting bio-based products, and technological advancements in synthetic biology, the sector is poised for substantial expansion. The market is characterized by diverse applications across multiple industries including biofuels, bio-based chemicals, bioplastics, pharmaceuticals, food ingredients, textiles, and construction materials. Major growth drivers include carbon taxation policies, increasing consumer preference for sustainable products, and corporate sustainability commitments. The transition toward circular economy principles is further accelerating adoption as white biotechnology enables the valorization of various waste streams including agricultural residues, forestry waste, municipal solid waste, and industrial by-products.

Technological innovations in synthetic biology, metabolic engineering, and the emerging field of generative biology are dramatically improving production efficiencies and expanding the range of possible bio-manufactured molecules. Advanced fermentation processes, cell-free systems, and the development of novel microbial chassis organisms are contributing to increased commercial viability of white biotechnology products.

Report Contents include :

Market Analysis and Forecasts 2025-2035

Global market revenues by molecule type

Market segmentation by application sector

Regional market analysis and growth projections

Competitive landscape and key player positioning

Technology Landscape Assessment

Production hosts (bacteria, yeast, fungi, marine organisms)

Biomanufacturing processes and optimization techniques

Synthetic biology advancements and applications

Generative biology approaches and impact

Feedstock analysis and alternative resource utilization

Application Sector Analysis

Biofuels (bioethanol, biodiesel, biogas, biojet fuel)

Bio-based chemicals (organic acids, alcohols, monomers)

Bioplastics and biopolymers (PLA, PHAs, bio-PET)

Food and nutraceutical ingredients

Agricultural biotechnology

Textile applications

Pharmaceuticals and cosmetics

Construction materials

Sustainability and Circular Economy Integration

White biotechnology for waste valorization

Carbon capture utilization

Industrial symbiosis opportunities

Environmental impact assessment

Strategic Insights and Opportunities

Technology adoption trends

Regulatory landscape analysis

Investment patterns and funding environment

Strategic recommendations for market participants

Comprehensive Company Profiles

Detailed analysis of 395+ market participants

Technology platforms and proprietary processes

Commercial deployments and capacity expansions

Partnership and collaboration networks

The report provides comprehensive profiles of over 395 companies operating across the industrial biotechnology value chain. These include established industry leaders like Novozymes, Braskem, LanzaTech, and Corbion, alongside innovative startups developing novel technologies and applications. The diverse ecosystem encompasses specialized synthetic biology platforms (Ginkgo Bioworks, Arzeda), biofuel producers (Aemetis, Gevo), bioplastics manufacturers (NatureWorks, Total Energies Corbion, Danimer Scientific), bio-based chemical developers (Avantium, METEX), cell-free system innovators (EnginZyme, Solugen), and companies focused on emerging applications like biocement (Biomason) and bio-textiles (Bolt Threads, Modern Meadow, Spiber). The landscape also includes AI-driven biotechnology platforms (Asimov, Zymergen) and specialized waste-to-value companies (Celtic Renewables, Full Cycle

Bioplastics). This comprehensive company analysis provides unparalleled insights into the competitive dynamics, technological capabilities, and strategic positioning of key market participants across the global industrial biotechnology ecosystem.

Contents

1 EXECUTIVE SUMMARY

- 1.1 Biotechnology 'colours'
- 1.2 Definition
- 1.3 Comparison with conventional processes
- 1.4 Markets and applications
- 1.5 Advantages
- 1.6 Sustainability
- 1.7 White Biotechnology for the Circular Economy
 - 1.7.1 Agricultural Waste
 - 1.7.2 Forestry and Paper Waste
 - 1.7.3 Gas Fermentation
 - 1.7.4 Plastics Upcycling
 - 1.7.5 Wastewater Valorization

2 TECHNOLOGY ANALYSIS

- 2.1 Production hosts
 - 2.1.1 Bacteria
 - 2.1.2 Yeast
 - 2.1.3 Fungi
 - 2.1.4 Marine
 - 2.1.5 Enzymes
 - 2.1.6 Photosynthetic organisms
- 2.2 Biomanufacturing processes
 - 2.2.1 Batch biomanufacturing
 - 2.2.2 Continuous biomanufacturing
 - 2.2.3 Cell factories for biomanufacturing
 - 2.2.4 Machine learning
 - 2.2.5 Downstream processing
 - 2.2.6 Process intensification and high-cell-density fermentation
- 2.3 Synthetic Biology
 - 2.3.1 Technology Overview
 - 2.3.2 Synthetic biology applied to white biotechnology
 - 2.3.3 Metabolic engineering
 - 2.3.3.1 DNA synthesis
 - 2.3.3.2 CRISPR

- 2.3.3.2.1 CRISPR/Cas9-modified biosynthetic pathways
- 2.3.4 Protein/Enzyme Engineering
- 2.3.5 Strain construction and optimization
- 2.3.6 Synthetic biology and metabolic engineering
- 2.3.7 Smart bioprocessing
- 2.3.8 Cell-free systems
- 2.3.9 Chassis organisms
- 2.3.10 Biomimetics
- 2.3.11 Sustainable materials
- 2.3.12 Robotics and automation
 - 2.3.12.1 Robotic cloud laboratories
 - 2.3.12.2 Automating organism design
 - 2.3.12.3 Artificial intelligence and machine learning
- 2.3.13 Fermentation Processes
- 2.4 Generative Biology
 - 2.4.1 Generative Models
 - 2.4.2 Generative Adversarial Networks (GANs)
 - 2.4.2.1 Variational Autoencoders (VAEs)
 - 2.4.2.2 Normalizing Flows
 - 2.4.2.3 Autoregressive Models
 - 2.4.2.4 Evolutionary Generative Models
 - 2.4.3 Design Optimization
 - 2.4.3.1 Evolutionary Algorithms (e.g., Genetic Algorithms, Evolutionary Strategies)
 - 2.4.3.1.1 Genetic Algorithms (GAs)
 - 2.4.3.1.2 Evolutionary Strategies (ES)
 - 2.4.3.2 Reinforcement Learning
 - 2.4.3.3 Multi-Objective Optimization
 - 2.4.3.4 Bayesian Optimization
 - 2.4.4 Computational Biology
 - 2.4.4.1 Molecular Dynamics Simulations
 - 2.4.4.2 Quantum Mechanical Calculations
 - 2.4.4.3 Systems Biology Modeling
 - 2.4.4.4 Metabolic Engineering Modeling
 - 2.4.5 Data-Driven Approaches
 - 2.4.5.1 Machine Learning
 - 2.4.5.2 Graph Neural Networks
 - 2.4.5.3 Unsupervised Learning
 - 2.4.5.4 Active Learning and Bayesian Optimization
 - 2.4.6 Agent-Based Modeling

2.4.7 Hybrid Approaches

2.5 Feedstocks

2.5.1 C1 feedstocks

2.5.1.1 Advantages

2.5.1.2 Pathways

2.5.1.3 Challenges

2.5.1.4 Non-methane C1 feedstocks

2.5.1.5 Gas fermentation

2.5.2 C2 feedstocks

2.5.3 Biological conversion of CO₂

2.5.4 Food processing wastes

2.5.5 Lignocellulosic biomass

2.5.6 Methane

2.5.7 Municipal solid wastes

2.5.8 Plastic wastes

2.5.9 Plant oils

2.5.10 Starch

2.5.11 Sugars

2.5.12 Used cooking oils

2.5.13 Carbon capture

2.5.14 Green hydrogen production

2.5.15 Blue hydrogen production

2.6 Blue biotechnology (Marine biotechnology)

2.6.1 Cyanobacteria

2.6.2 Macroalgae

2.6.3 Companies

3 MARKET ANALYSIS

3.1 Market trends

3.1.1 Demand for biobased products

3.1.2 Government regulation

3.1.3 Costs

3.1.4 Carbon taxes

3.2 Industry challenges and constraints

3.2.1 Technical challenges

3.2.2 Costs

3.3 White biotechnology in the bioeconomy

3.4 SWOT analysis

3.5 Market map

3.6 Key market players and competitive landscape

3.7 Regulations

3.7.1 United States

3.7.2 European Union

3.7.3 International

3.7.4 Specific Regulations and Guidelines

3.8 Main end-use markets

3.8.1 Biofuels

3.8.1.1 Market supply chain

3.8.1.2 Solid Biofuels

3.8.1.3 Liquid Biofuels

3.8.1.4 Gaseous Biofuels

3.8.1.5 Conventional Biofuels

3.8.1.6 Next-generation Biofuels

3.8.1.7 Feedstocks

3.8.1.7.1 First-generation (1-G)

3.8.1.7.2 Second-generation (2-G)

3.8.1.7.2.1 Lignocellulosic wastes and residues

3.8.1.7.2.2 Biorefinery lignin

3.8.1.7.3 Third-generation (3-G)

3.8.1.7.3.1 Algal biofuels

3.8.1.7.3.1.1 Properties

3.8.1.7.3.1.2 Advantages

3.8.1.7.4 Fourth-generation (4-G)

3.8.1.7.5 Energy crops

3.8.1.7.6 Agricultural residues

3.8.1.7.7 Manure, sewage sludge and organic waste

3.8.1.7.8 Forestry and wood waste

3.8.1.7.9 Feedstock costs

3.8.1.8 Bioethanol

3.8.1.8.1 Ethanol to jet fuel technology

3.8.1.8.2 Methanol from pulp & paper production

3.8.1.8.3 Sulfite spent liquor fermentation

3.8.1.8.4 Gasification

3.8.1.8.4.1 Biomass gasification and syngas fermentation

3.8.1.8.4.2 Biomass gasification and syngas thermochemical conversion

3.8.1.8.5 CO₂ capture and alcohol synthesis

3.8.1.8.6 Biomass hydrolysis and fermentation

- 3.8.1.8.7 Separate hydrolysis and fermentation
 - 3.8.1.8.7.1 Simultaneous saccharification and fermentation (SSF)
 - 3.8.1.8.7.2 Pre-hydrolysis and simultaneous saccharification and fermentation (PSSF)
 - 3.8.1.8.7.3 Simultaneous saccharification and co-fermentation (SSCF)
 - 3.8.1.8.7.4 Direct conversion (consolidated bioprocessing) (CBP)
- 3.8.1.9 Biodiesel
- 3.8.1.10 Biogas
 - 3.8.1.10.1 Biomethane
 - 3.8.1.10.2 Feedstocks
 - 3.8.1.10.3 Anaerobic digestion
- 3.8.1.11 Renewable diesel
- 3.8.1.12 Biojet fuel
- 3.8.1.13 Algal biofuels (blue biotech)
 - 3.8.1.13.1 Conversion pathways
 - 3.8.1.13.2 Market challenges
 - 3.8.1.13.3 Prices
 - 3.8.1.13.4 Producers
- 3.8.1.14 Biohydrogen
 - 3.8.1.14.1 Biological Conversion Routes
 - 3.8.1.14.1.1 Bio-photochemical Reaction
 - 3.8.1.14.1.2 Fermentation and Anaerobic Digestion
- 3.8.1.15 Biobutanol
- 3.8.1.16 Bio-based methanol
 - 3.8.1.16.1 Anaerobic digestion
 - 3.8.1.16.2 Biomass gasification
 - 3.8.1.16.3 Power to Methane
- 3.8.1.17 Bioisoprene
- 3.8.1.18 Fatty Acid Esters
- 3.8.2 Bio-based chemicals
 - 3.8.2.1 Market supply chain
 - 3.8.2.2 Acetic acid
 - 3.8.2.3 Adipic acid
 - 3.8.2.4 Aldehydes
 - 3.8.2.5 Acrylic acid
 - 3.8.2.6 Bacterial cellulose
 - 3.8.2.7 1,4-Butanediol (BDO)
 - 3.8.2.8 Bio-DME
 - 3.8.2.9 Dodecanedioic acid (DDDA)

- 3.8.2.10 Ethylene
- 3.8.2.11 3-Hydroxypropionic acid (3-HP)
- 3.8.2.12 1,3-Propanediol (1,3-PDO)
- 3.8.2.13 Itaconic acid
- 3.8.2.14 Lactic acid (D-LA)
- 3.8.2.15 1,5-diaminopentane (DA5)
- 3.8.2.16 Tetrahydrofuran (THF)
- 3.8.2.17 Malonic acid
- 3.8.2.18 Monoethylene glycol (MEG)
- 3.8.2.19 Propylene
- 3.8.2.20 Succinic acid (SA)
- 3.8.2.21 Triglycerides
- 3.8.2.22 Enzymes
- 3.8.2.23 Vitamins
- 3.8.2.24 Antibiotics
- 3.8.3 Bioplastics and Biopolymers
 - 3.8.3.1 Bioplastics via white biotechnology
 - 3.8.3.2 Biobased polymers from monosaccharides
 - 3.8.3.3 Market supply chain
 - 3.8.3.4 Polylactic acid (PLA)
 - 3.8.3.5 PHAs
 - 3.8.3.5.1 Types
 - 3.8.3.5.1.1 PHB
 - 3.8.3.5.1.2 PHBV
 - 3.8.3.5.2 Synthesis and production processes
 - 3.8.3.5.3 Commercially available PHAs
 - 3.8.3.6 Bio-PET
 - 3.8.3.7 Starch blends
 - 3.8.3.8 Protein-based bioplastics
- 3.8.4 Bioremediation
- 3.8.5 Biocatalysis
 - 3.8.5.1 Biotransformations
 - 3.8.5.2 Cascade biocatalysis
 - 3.8.5.3 Co-factor recycling
 - 3.8.5.4 Immobilization
- 3.8.6 Food and Nutraceutical Ingredients
 - 3.8.6.1 Market supply chain
 - 3.8.6.2 Alternative Proteins
 - 3.8.6.3 Natural Sweeteners

- 3.8.6.4 Natural Flavors and Fragrances
- 3.8.6.5 Texturants and Thickeners
- 3.8.6.6 Nutraceuticals and Supplements
- 3.8.7 Agricultural biotechnology
 - 3.8.7.1 Market supply chain
 - 3.8.7.2 Biofertilizers
 - 3.8.7.2.1 Overview
 - 3.8.7.2.2 Companies
 - 3.8.7.3 Biopesticides
 - 3.8.7.3.1 Overview
 - 3.8.7.3.2 Companies
 - 3.8.7.4 Biostimulants
 - 3.8.7.4.1 Overview
 - 3.8.7.4.2 Companies
 - 3.8.7.5 Crop Biotechnology
 - 3.8.7.5.1 Genetic engineering
 - 3.8.7.5.2 Genome editing
 - 3.8.7.5.3 Companies
- 3.8.8 Textiles
 - 3.8.8.1 Market supply chain
 - 3.8.8.2 Bio-Based Fibers
 - 3.8.8.2.1 Lyocell
 - 3.8.8.2.2 Bacterial cellulose
 - 3.8.8.2.3 Algae textiles
 - 3.8.8.3 Spider silk
 - 3.8.8.4 Collagen-derived textiles
 - 3.8.8.5 Recombinant Materials
 - 3.8.8.6 Sustainable Processing
- 3.8.9 Consumer goods
 - 3.8.9.1 Market supply chain
 - 3.8.9.2 White biotechnology in consumer goods
- 3.8.10 Biopharmaceuticals
 - 3.8.10.1 Market supply chain
 - 3.8.10.2 Market overview for white biotechnology
- 3.8.11 Cosmetics
 - 3.8.11.1 Market supply chain
 - 3.8.11.2 Market overview for white biotechnology
- 3.8.12 Surfactants and detergents
 - 3.8.12.1 Market supply chain

- 3.8.12.2 Market overview for white biotechnology
- 3.8.13 Construction materials
 - 3.8.13.1 Market supply chain
 - 3.8.13.2 Biocement
 - 3.8.13.3 Mycelium materials
- 3.9 Global market revenues 2018-2035
 - 3.9.1 By molecule
 - 3.9.2 By market
 - 3.9.3 By region
- 3.10 Future Market Outlook

4 COMPANY PROFILES 250 (397 COMPANY PROFILES)

5 APPENDIX

- 5.1 Research methodology
- 5.2 Acronyms
- 5.3 Glossary of Terms

6 REFERENCES

List Of Tables

LIST OF TABLES

Table 1. Biotechnology 'colours'.

Table 2. Differences between white biotechnology and conventional processes.

Table 3. Application areas for white biotechnology.

Table 4. Advantages of white biotechnology.

Table 5. Routes for carbon capture in white biotechnology.

Table 6. Molecules produced through industrial biomanufacturing.

Table 7. Commonly used bacterial hosts for white biotechnology production.

Table 8. Commonly used yeast hosts for white biotech production.

Table 9. Examples of fungal hosts used in white biotechnology processes.

Table 10. Examples of marine organisms as hosts for white biotechnology applications.

Table 11. Common microbial hosts used for enzyme production in white biotechnology.

Table 12. Photosynthetic microorganisms used as production hosts in white biotechnology

Table 13. Biomanufacturing processes utilized in white biotechnology.

Table 14. Continuous vs batch biomanufacturing

Table 15. Key fermentation parameters in batch vs continuous biomanufacturing processes.

Table 16. Major microbial cell factories used in industrial biomanufacturing.

Table 17. Core stages - Design, Build and Test.

Table 18. Products and applications enabled by synthetic biology.

Table 19. Engineered proteins in industrial applications.

Table 20. Cell-free versus cell-based systems

Table 21. Companies developing cell-free systems for white biotechnology.

Table 22. White biotechnology fermentation processes.

Table 23. Alternative feedstocks for white biotechnology

Table 24. Products from C1 feedstocks in white biotechnology.

Table 25. C2 Feedstock Products.

Table 26. CO₂ derived products via biological conversion-applications, advantages and disadvantages.

Table 27. Production capacities of biorefinery lignin producers.

Table 28. Common starch sources that can be used as feedstocks for producing biochemicals.

Table 29. Routes for carbon capture in white biotechnology.

Table 30. Biomass processes summary, process description and TRL.

Table 31. Pathways for hydrogen production from biomass.

Table 32. Overview of alginate-description, properties, application and market size.

Table 33. Blue biotechnology companies.

Table 34. Market trends and drivers in white biotechnology.

Table 35. Industry challenges and restraints in white biotechnology.

Table 36. White biotechnology key application sectors and products.

Table 37. Comparison of biofuels.

Table 38. Categories and examples of solid biofuel.

Table 39. Comparison of biofuels and e-fuels to fossil and electricity.

Table 40. Classification of biomass feedstock.

Table 41. Biorefinery feedstocks.

Table 42. Feedstock conversion pathways.

Table 43. First-Generation Feedstocks.

Table 44. Lignocellulosic ethanol plants and capacities.

Table 45. Comparison of pulping and biorefinery lignins.

Table 46. Commercial and pre-commercial biorefinery lignin production facilities and processes

Table 47. Operating and planned lignocellulosic biorefineries and industrial flue gas-to-ethanol.

Table 48. Properties of microalgae and macroalgae.

Table 49. Yield of algae and other biodiesel crops.

Table 50. ?Processes in bioethanol production.

Table 51. Microorganisms used in CBP for ethanol production from biomass lignocellulosic.

Table 52. Biodiesel by generation.

Table 53. Biodiesel production techniques.

Table 54. Biofuel production cost from the biomass pyrolysis process.

Table 55. Biogas feedstocks.

Table 56. Advantages and disadvantages of Bio-aviation fuel.

Table 57. Production pathways for Bio-aviation fuel.

Table 58. Current and announced Bio-aviation fuel facilities and capacities.

Table 59. Algae-derived biofuel producers.

Table 60. Markets and applications for biohydrogen.

Table 61. Comparison of different Bio-H₂ production pathways.

Table 62. Properties of petrol and biobutanol.

Table 63. Comparison of biogas, biomethane and natural gas.

Table 64. Applications of bio-based caprolactam.

Table 65. Applications of bio-based acrylic acid.

Table 66. Applications of bio-based 1,4-Butanediol (BDO).

Table 67. Applications of bio-based ethylene.

Table 68. Biobased feedstock sources for 3-HP.

Table 69. Applications of 3-HP.

Table 70. Applications of bio-based 1,3-Propanediol (1,3-PDO).

Table 71. Biobased feedstock sources for itaconic acid.

Table 72. Applications of bio-based itaconic acid.

Table 73. Biobased feedstocks that can be used to produce 1,5-diaminopentane (DA5).

Table 74. Applications of DN5.

Table 75. Applications of bio-based Tetrahydrofuran (THF).

Table 76. Markets and applications for malonic acid.

Table 77. Biobased feedstock sources for MEG.

Table 78. Applications of bio-based MEG.

Table 79. Applications of bio-based propylene.

Table 80. Biobased feedstock sources for Succinic acid.

Table 81. Applications of succinic acid.

Table 82. Bioplastics and polymer precursors synthesized via white biotechnology.

Table 83. Bioplastics and bioplastic precursors synthesized via white biotechnology processes .

Table 84. Polylactic acid (PLA) market analysis-manufacture, advantages, disadvantages and applications.

Table 85. PLA producers and production capacities.

Table 86. Types of PHAs and properties.

Table 87. Comparison of the physical properties of different PHAs with conventional petroleum-based polymers.

Table 88. Polyhydroxyalkanoate (PHA) extraction methods.

Table 89. Commercially available PHAs.

Table 90. Types of protein based-bioplastics, applications and companies.

Table 91. Applications of white biotechnology in bioremediation and environmental remediation.

Table 92. Companies developing fermentation-derived food.

Table 93. Biofertilizer companies.

Table 94. Biopesticides companies.

Table 95. Biostimulants companies.

Table 96. Crop biotechnology companies.

Table 97. White biotechnology applications in consumer goods.

Table 98. Pharmaceutical applications of white biotechnology.

Table 99. Applications of white biotechnology in the cosmetics industry.

Table 100. Sustainable biomanufacturing of surfactants and detergents.

Table 101. Global revenues for white biotechnology, by molecule, 2018-2035 (Billion USD).

Table 102. Global revenues for white biotechnology, by market, 2018-2035 (Billion USD).

Table 103. Global revenues for white biotechnology, by region, 2018-2035 (Billion USD).

Table 104. White biotechnology Glossary of Acronyms.

Table 105. White biotechnology Glossary of Terms.

List Of Figures

LIST OF FIGURES

- Figure 1. CRISPR/Cas9 & Targeted Genome Editing.
- Figure 2. Genetic Circuit-Assisted Smart Microbial Engineering.
- Figure 3. Cell-free and cell-based protein synthesis systems.
- Figure 4. Microbial Chassis Development for Natural Product Biosynthesis.
- Figure 5. The design-make-test-learn loop of generative biology.
- Figure 6. LanzaTech gas-fermentation process.
- Figure 7. Schematic of biological CO₂ conversion into e-fuels.
- Figure 8. Overview of biogas utilization.
- Figure 9. Biogas and biomethane pathways.
- Figure 10. Schematic overview of anaerobic digestion process for biomethane production.
- Figure 11. BLOOM masterbatch from Algix.
- Figure 12. SWOT analysis: white biotechnology.
- Figure 13. Market map: white biotechnology.
- Figure 14. Biofuels market supply chain.
- Figure 15. Schematic of a biorefinery for production of carriers and chemicals.
- Figure 16. Hydrolytic lignin powder.
- Figure 17. Range of biomass cost by feedstock type.
- Figure 18. Overview of biogas utilization.
- Figure 19. Biogas and biomethane pathways.
- Figure 20. Schematic overview of anaerobic digestion process for biomethane production.
- Figure 21. Algal biomass conversion process for biofuel production.
- Figure 22. Pathways for algal biomass conversion to biofuels.
- Figure 23. Biobutanol production route.
- Figure 24. Renewable Methanol Production Processes from Different Feedstocks.
- Figure 25. Production of biomethane through anaerobic digestion and upgrading.
- Figure 26. Production of biomethane through biomass gasification and methanation.
- Figure 27. Production of biomethane through the Power to methane process.
- Figure 28. Bio-based chemicals market supply chain.
- Figure 29. Overview of Toray process.
- Figure 30. Bacterial nanocellulose shapes
- Figure 31. Bioplastics and biopolymers market supply chain.
- Figure 32. PHA family.
- Figure 33. Food and Nutraceutical Ingredients market supply chain.

- Figure 34. Agricultural biotechnology market supply chain.
- Figure 35. Bio-textiles market supply chain.
- Figure 36. AlgiKicks sneaker, made with the Algiknit biopolymer gel.
- Figure 37. Biobased consumer goods market supply chain.
- Figure 38. Biopharmaceuticals market supply chain.
- Figure 39. Biobased cosmetics market supply chain.
- Figure 40. Surfactants and detergents market supply chain.
- Figure 41. Biobased construction materials market supply chain.
- Figure 42. BioMason cement.
- Figure 43. Microalgae based biocement masonry bloc.
- Figure 44. Typical structure of mycelium-based foam.
- Figure 45. Commercial mycelium composite construction materials.
- Figure 46. Global revenues for white biotechnology, by market, 2018-2035 (Billion USD).
- Figure 47. Global revenues for white biotechnology, by region, 2018-2035 (Billion USD).
- Figure 48. Algiknit yarn.
- Figure 49. ALGIECEL PhotoBioReactor.
- Figure 50. Jelly-like seaweed-based nanocellulose hydrogel.
- Figure 51. BIOLO e-commerce mailer bag made from PHA.
- Figure 52. Domsj? process.
- Figure 53. Mushroom leather.
- Figure 54. PHA production process.
- Figure 55. Light Bio Bioluminescent plants.
- Figure 56. Lignin gel.
- Figure 57. BioFlex process.
- Figure 58. TransLeather.
- Figure 59. Reishi.
- Figure 60. Compostable water pod.
- Figure 61. Precision Photosynthesis™ technology.
- Figure 62. Enfinity cellulosic ethanol technology process.
- Figure 63. Fabric consisting of 70 per cent wool and 30 per cent Qmilk.
- Figure 64. Lyocell process.
- Figure 65. Spider silk production.
- Figure 66. Corbion FDCA production process.
- Figure 67. UPM biorefinery process.
- Figure 68. The Proesa® Process.
- Figure 69. XtalPi's automated and robot-run workstations.

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