Business contribution to the Circular Bioeconomy

Forests and the circular economy session

Forêt 2019
WBCSD

A global, CEO-led organization of 200 forward thinking businesses working together to accelerate the transition to a sustainable world.

**Our mission** is to accelerate the transition to a sustainable world by making more sustainable business more successful.

**Our vision** is to create a world where more than nine billion people are all living well and within the boundaries of our planet, by 2050.

**GLOBAL**

Our 200 members span across the globe and all economic sectors.

We have 60+ Global Network partners who engage with sustainable business at a national level.

**UNIQUE BUSINESS PLATFORM**

Our members enjoy access to a diverse business community across sectors and a safe space to exchange ideas, know-how and information with peers. Together, we develop business solutions to global challenges that no single company can tackle alone.

**MARKET-DRIVEN**

We consider sustainable development as a strategic business opportunity. We strive to make more member companies more competitive.

**CEO-LED**

WBCSD is oriented towards collective action and led by our member company CEOs.
WBCSD MEMBERS 2019
WBCSD’s Targeted Solutions

**Programs**
- **Circular Economy**
  - Factor10
  - Circular Economy Hub
  - Plastics*
- **Cities & Mobility**
  - City Dialogues
  - Climate Action in Cities
  - SBT4buildings
  - Built Environment*
  - Simplifying Mobility
  - Transforming Urban Mobility
- **Climate & Energy**
  - Climate Action and Policy
  - RE:Scale
  - Transforming Heavy Transport
  - Natural Climate Solutions
  - New Energy Solutions
  - SBT4utilities
- **Food & Nature**
  - Food Reform for Sustainability and Health (FRReSH)
  - Climate Smart Agriculture
  - Soft Commodities Forum
  - Water Policy and Advocacy
  - Water Solutions
- **People**
  - Social Impact
  - Business and Human Rights
  - Future of Work
- **Redefining Value**
  - Business Decision-Making
  - Enterprise Risk Management
  - Governance & Internal Oversight
  - Measurement & Valuation
  - Integrated Performance Management
  - External Disclosure
  - Assurance & Internal Controls
  - Purpose-driven Disclosure
  - Reporting matters
  - The Reporting Exchange
  - TCFD Preparer Forums
  - Investor Decision-Making
  - Aligning Retirement Assets

**Sector Projects**
- **Tire Industry Project**
- **Forest Solutions Group**
- **Global Agribusiness Alliance**

**Enabling Functions**
- Global Network, Partners, Member Relations, Outreach, Support
Forest Solutions Group (FSG)
Strategic collaboration across the forest products value chain
We live in a resource-constrained world facing the adverse effects of climate change.

A key solution lies in the unique ability of the world’s forests and their products to capture and store carbon. They offer a renewable and sustainable alternative to fossil fuel-based materials.

To ensure the continuous supply of its products, forests must be managed sustainably for people and the planet.

For that, a recognized global platform is needed for business to lead on sustainable development along the forest products value chain.
FSG’s two work pillars:

**Working Forests & Bio-Economy**

- **Continuously supply renewable materials** for the bio-economy while providing multiple benefits for people and the planet – such as carbon sequestration, clean water, habitat, economic livelihoods.

- **Lead the transition to a low-carbon and circular economy** through the supply of renewable products from sustainable working forests to substitute fossil-based materials.
Our members
Forest Sector SDG Roadmap

The Roadmap articulates a joint vision and platform for action-focused collaboration to accelerate process, product and partnership innovation in the Forest Sector and to help achieving the SDGs.

It seeks to inform and influence decision-making and inspire and foster collaboration throughout the value chain and across sectors to catalyze impact by 2030 and beyond.

Assesses the current level of alignment

Identifies the sector’s most significant opportunities for impact

Outlines key tangible actions and means to track progress

Explore the Roadmap’s webpage to learn more about FSG’s commitment to drive SDG action.
Examples of recent work

Forest Products Sector Guide to the Natural Capital Protocol
Link to guide and case studies

Guide to social impact measurement in the sector
Link to guide

Sustainable procurement guide for wood and paper based products
Link to guide

Video promoting the use of sustainable forest products
Link to video

Role of forest & forest products in climate change mitigation
Link to roadmap

Certification Dialogue Series

Link to roadmap
Circular Bioeconomy

Background

- Factor10 and FSG have worked with BCG in detailing the landscape of organizations, initiatives and ambitions in the Bioeconomy and have proposed workstreams for members to consider.
- Development of the CEO Guide to the Circular Bioeconomy. The objective of this publication is to provide clear understanding of the concept of circular bioeconomy and highlight the business opportunities as well as positive environmental impact.

Companies
URGENT ENVIRONMENTAL PRIORITIES

- Food loss & waste
- Climate change
- Resource scarcity
- Biodiversity loss
- Land use change
The Circular Bioeconomy: One common solution
The circular bioeconomy the shift away from fossil fuels and capturing maximum value from biological resources. The circular bioeconomy should be sustainable and low-carbon while meeting society’s needs for food, products and energy.
Biomass, the foundation of the bioeconomy, flows from three primary sources into three end-uses.

Sources of biomass:
- Agriculture (~19B tons)
- Forestry (~4B tons)
- Aquatic (~0.38B tons)

Biomass processing and production:
- Food & feed (~17B tons)
- Byproducts & Waste (~4B tons)
- Byproducts & Waste (~2B tons)

Biomass re-use, re-composting and (organic) recycling:

Products:
- Food and beverages
- Animal feed
- Building materials
- Forest products
- Paper packaging and recyclable bioplastics
- Motor vehicles and components
- Machinery and equipment
- Electronics and electrics
- Pharmaceuticals

Energy:
- Bioenergy including biofuels

Source: Eurostat; Freedonia; OECD; WU Vienne; WBCSD; BCG analysis; Member companies.
A solution to today’s greatest environmental challenges

- Alleviates resource supply risks
- Minimizes waste generated
- Reduces fossil-based consumption, reuses biomass over multiple life-cycles
- Relieves pressure on land
- Produces and harvests biomass sustainably
The Circular Bioeconomy drives Innovation

**BIOETHANOL & ESSENTIAL OILS FROM RESIDUAL FOREST BIOMASS**

Enhanced valuation of forest biomass and wood yard residues processing with integrated business units that target synergies and costs optimization: production of both bioethanol (involving chemical free pre-treatments and enzymatic hydrolysis), to align with new EU legislation on advanced biofuels, and eucalyptus essential oils for fragrances, cosmetics, disinfectants and other pharmaceutical industries.

**LIGNIN FOR BATTERIES**

Processing of renewable wood-based lignin into hard carbon anode materials for lithium ion batteries with properties similar to graphite, while with countless current and potential uses in rapidly growing battery market with need for high-quality, attractively priced and sustainable materials.

**BIO-BASED FRAGRANCES**

Catalogue of over 1,500 renewable ingredients, derived from a variety of bio-based sources from natural oils to waste streams from the paper industry, enable IFF to continue to develop its innovative portfolio of circular scents. This also helps reduce the carbon footprint of its supply chain and insulate IFF from petrochemical supply disruptions.
The circular bioeconomy represents a **USD $8 trillion business opportunity** until 2030.

- New Markets
- Competitive advantage
- Risk mitigation
CURRENT BARRIERS TO SCALING THE CIRCULAR BIOECONOMY

When transitioning to a circular bioeconomy, companies face cost, technology, policy and perception challenges.

**BARRIERS TO SCALING THE BIOECONOMY**

1. **Costs**
   - Assess cost saving opportunities through redesign e.g., cheaper input cost through waste recycling, bacterial treatment of wastewater.

2. **Technology**
   - Incorporate principles of the circular bioeconomy into companies' innovation process to secure that new technological developments pave the way towards new products.

3. **Policy**
   - Identify government incentives for production of bio-based materials or reduced carbon footprint and collaborate with regulators, as well as with NGOs in supporting bio-based material use, procurement guides, carbon pricing, and waste management policies.

4. **Perception**
   - Educate customers to demonstrate the added value of bio-based materials as compared to fossil-based alternatives and capitalize on the attractiveness of the bioeconomy to bring new customers.
Four action points to get started

1. Identify entry point
   Set clear targets and identify processes and products which are suited for circular bioeconomy

2. Evaluate sustainability trade-offs
   Conduct assessments that support the evaluation of sustainability trade-offs (e.g., life cycle assessment)

3. Collaborate
   Collaborate and find partners to turn waste streams into value streams. Working with all value chain partners, from sourcing, to product design, to policy makers and consumers

4. Start small, then scale
   Start to develop new product innovations with clear business cases that pave the way for disruptive business models and bring your customers to the circular bioeconomy
The CEO Guide to the Circular Bioeconomy will be publicly available early November 2019

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For more information, please visit:  
[https://www.wbcsd.org/Sector-Projects/Forest-Solutions-Group](https://www.wbcsd.org/Sector-Projects/Forest-Solutions-Group)
Thank you