Performance Drivers in the Bio-Based Product Industry.

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Image: Tesla. 2013

Influencing a Bioeconomy

- Urbanization
- Climate Change
- Adverse Health Impacts
- Challenges to Feedstock
- Drive for Innovation
- Advancing R&D in New Sectors

Image: graphics20.com

Global Market

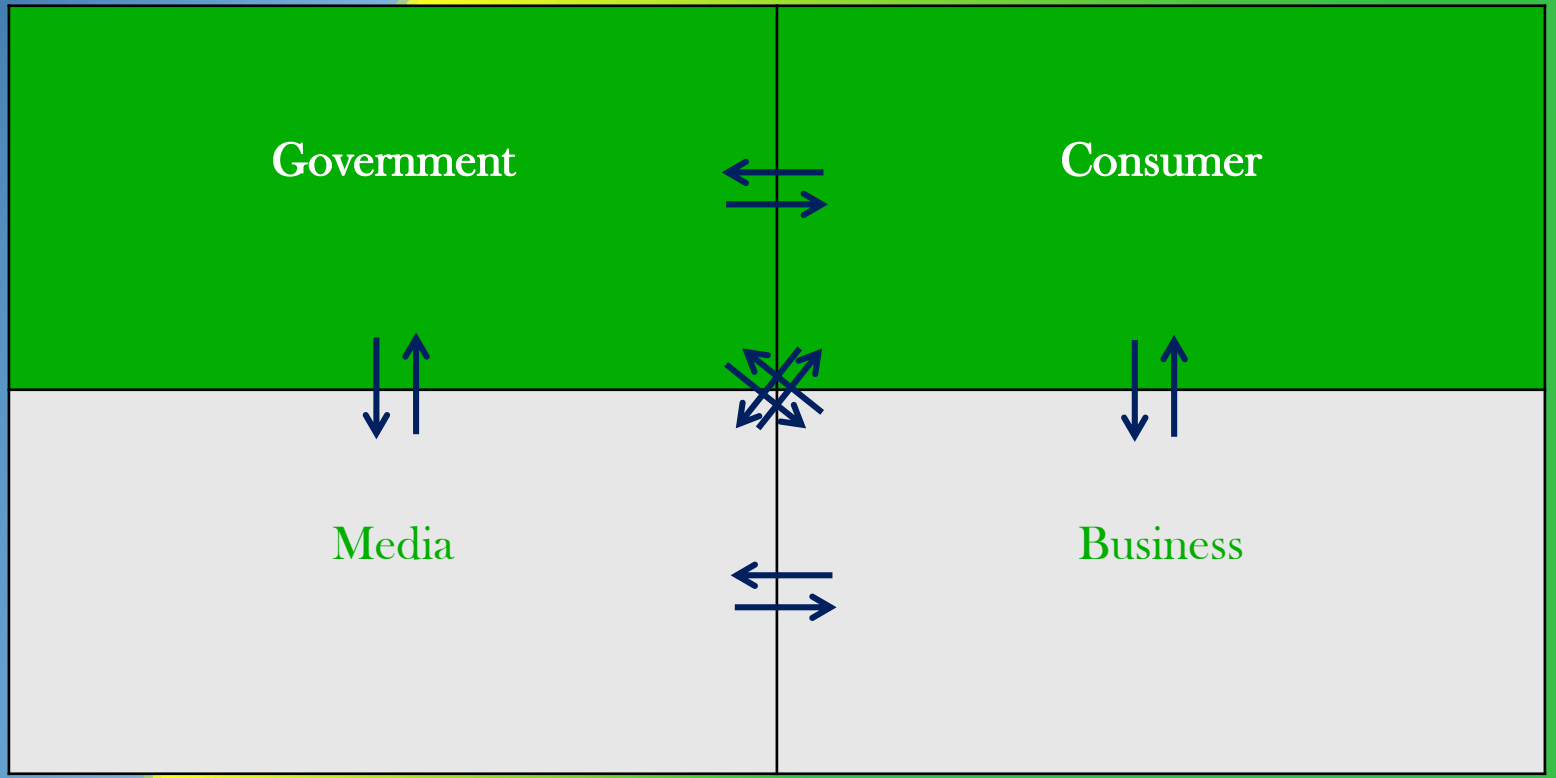
Forecasted growth of global Bio-based market to $273 billion by 2020. [1]

Anticipated total market development of 1 million jobs in rural areas of Europe alone. [2]

Global Biochemical market will grow 3-6% until 2025. [3]

1.) Biobased Industries Consortium. 2014
2.) *Next Generation Ethanol. 2010
3.) *U.S Biobased Products: Market Potential and Projections through 2025. USDA. 2008

The 4 Drivers of Performance



Industry/Business
Image: www.acca.com

Walmart

The Sustainability Consortium

- **Empowers 150** of the largest retailers, suppliers, and manufacturers worldwide **($2.4 Trillion represented**)
- **Purpose:** to amend supply chain to improve environmental friendliness of sold products
- Partnership with **Carbon Disclosure Project**
- **Goal to Eliminate 20 MTT of GHG** from Supply Chain. (**Eliminated 7.57 MMT by 2012**)

Sustainability Index Version 1.0 Supplier Questions

Energy and Climate *Reduce energy costs and greenhouse gas emissions*	1. Have you measured your corporate greenhouse gas emissions? (Y/N) 2. Have you opted to report your greenhouse gas emissions to the Carbon Disclosure Project (CDP)? (Y/N) 3. What are your total greenhouse gas emissions reported in your most recently completed report? (Enter total metric tons CO2e, e.g. CDP6 Questionnaire, Section 2b) 4. Have you set publicly available greenhouse gas reduction targets? If yes, what are those targets? (Enter % or # and target date; 2 fields or leave blank)
Material Efficiency *Reduce waste and enhance quality*	Scores will be automatically calculated based on your participation in the Packaging Scorecard, as well as number of products returned, damaged and/or recalled. 5. If measured, please report total amount of solid waste generated from the facilities that produce your product(s) for Wal-Mart Inc for the most recent year measured. (Enter total lbs or kilograms) 6. Have you set publicly available solid waste reduction targets? If yes, what are those targets? (Enter % or # and target date; 2 fields or leave blank) 7. If measured, please report total water use from the facilities that produce your product(s) for Wal-Mart Inc for the most recent year measured. (Enter total gallons or liters) 8. Have you set publically available water use reduction targets? If yes, what are those targets? (Enter % or # and target date; 2 fields or leave blank)
Natural Resources *High quality, responsibly sourced raw materials*	9. Do you know the country of origin for 100% of all of the materials or components that are purchased directly to make your final products? (Y/N) 10. Have you established publicly available sustainability purchasing guidelines for your direct suppliers that address issues such as environmental compliance, employment practices, and product/ingredient safety? (Y/N) 11. Have you obtained 3rd party certifications for any of the products that you sell to Walmart? If so, from the list of certifications below, please select those for which any of your products are, or utilize materials that are, currently certified.
People and Community *Responsible & ethical production*	12. Do you know the location of 100% of the facilities that produce your product(s)? (Y/N) 13. Before beginning a business relationship with a manufacturing facility, do you evaluate their quality of production and capacity for production? (Y/N) 14. Do you have a process for managing social compliance at the manufacturing level? (Y/N) 15. Do you work with your supply base to resolve issues found during social compliance evaluations and also document specific corrections and improvements? (Y/N) 16. Do you invest in community development activities in the markets you source from and/or operate within? (Y/N)

The Higg Index

- Indicator-based assessment tool.
- Spans entire life-cycle of apparel product.
- Eco-Index, Nike's Apparel Environmental Design, Global Social Compliance Program Tools, etc.
- Facility, Brand, & Product tools available to public

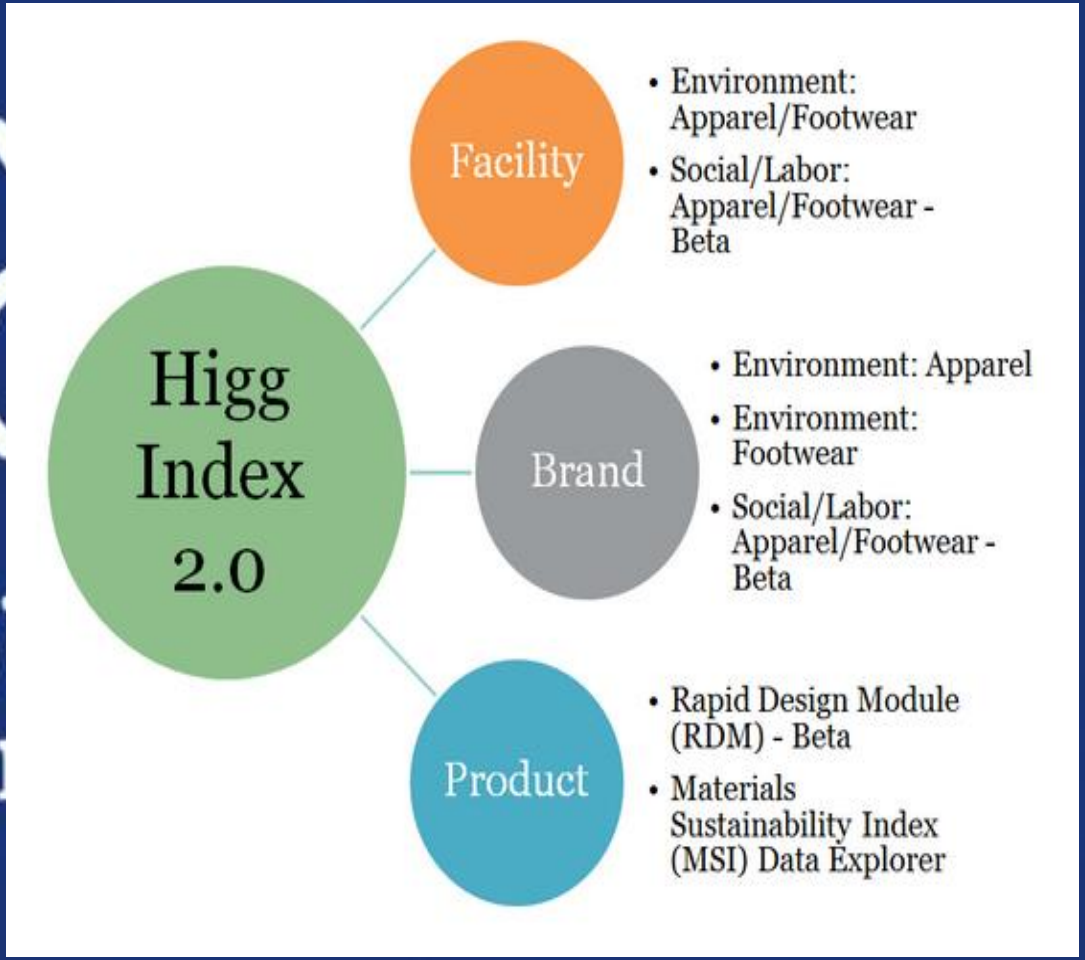
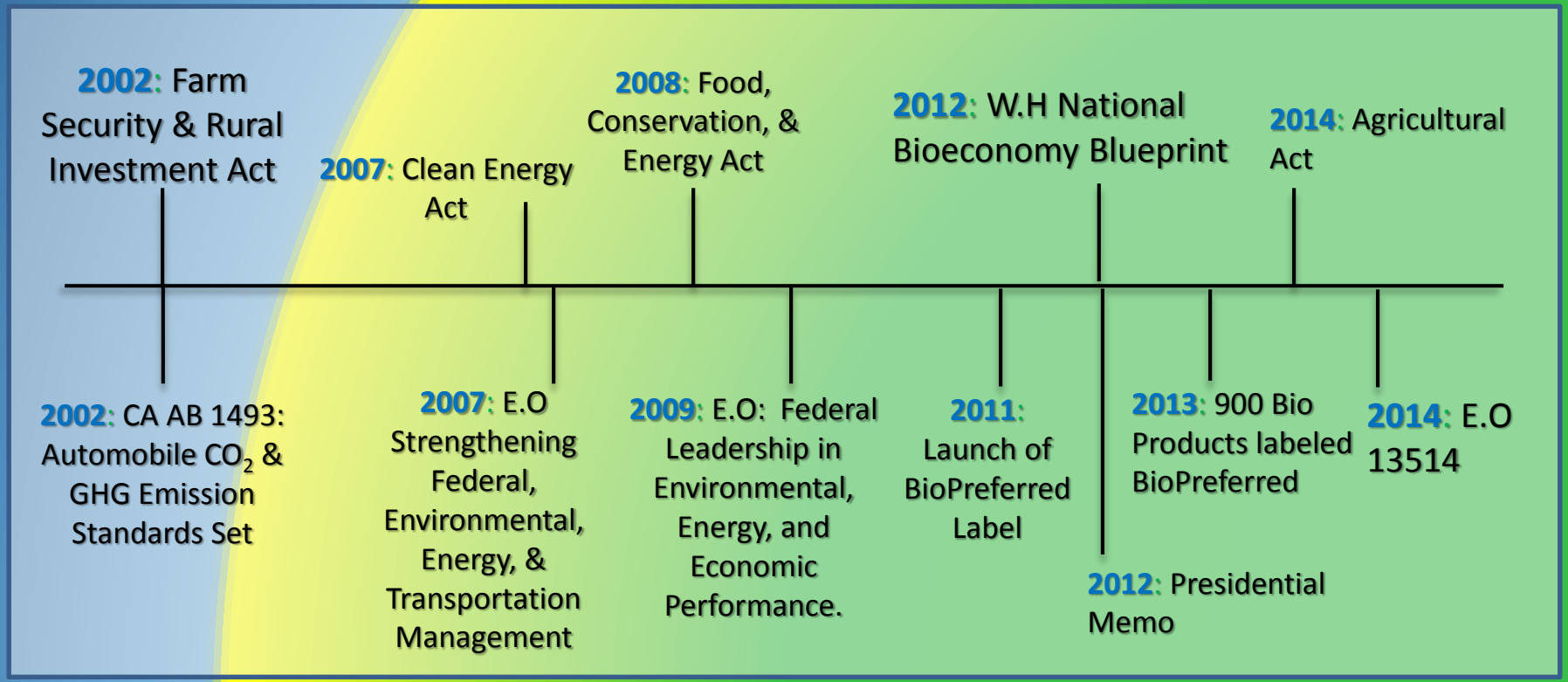


Image: SAC http://www.apparelcoalition.org

Government

Government: Bio-Based



Government

2002 Farm Bill

- Certified USDA Biobased Products
- Biobased products were to be designated for federal preferred procurement
- Through the BioPreferred Program, federal agencies are required to purchase biobased products
- Agencies required to tip their hat toward biobased for purchases > $10,000.

Government

2012 National Bioeconomy Blueprint

- Goal of the White House to "strengthen bioscience research as a major driver of American innovation & economic growth" by:

1. Increasing R&D
2. Pushing bio-inventions from research into market
3. Reduce regulations & cost in effort to protect environment & health
4. Update national & student training in Bioeconomy
5. Collaborate, Collaborate, Collaborate

Government

2014 Executive Order

- Section 2(h) of E.O 13514: Requires that 95% of new contract actions for products and services advance sustainable acquisition.
- Biobased products must be a part of agency procurement review and monitoring.
- Agencies must provide training on procurement of biobased products.

Media

Image: www.bothsidesofthetable.com

Media

- Opportunity exists for Bio-based in media.
- Of 30 national news organizations, only 1.2% of headlines were related to environmental issues.[1]
- Nearly 80% of Americans want to see more environmental issues covered in media.[2]
- Most distribution of environmental headlines is through local newspapers.

Consumer

Image: ecotakeouts.com

Consumer

- Greatest challenge is educating the consumer further on biobased
- Good News: 78% of consumers are purchasing green or sustainable products[1]
- 44% of Americans would pay more for green products[2]
- WTP is 10% more in addition to standard consumer product cost[3]

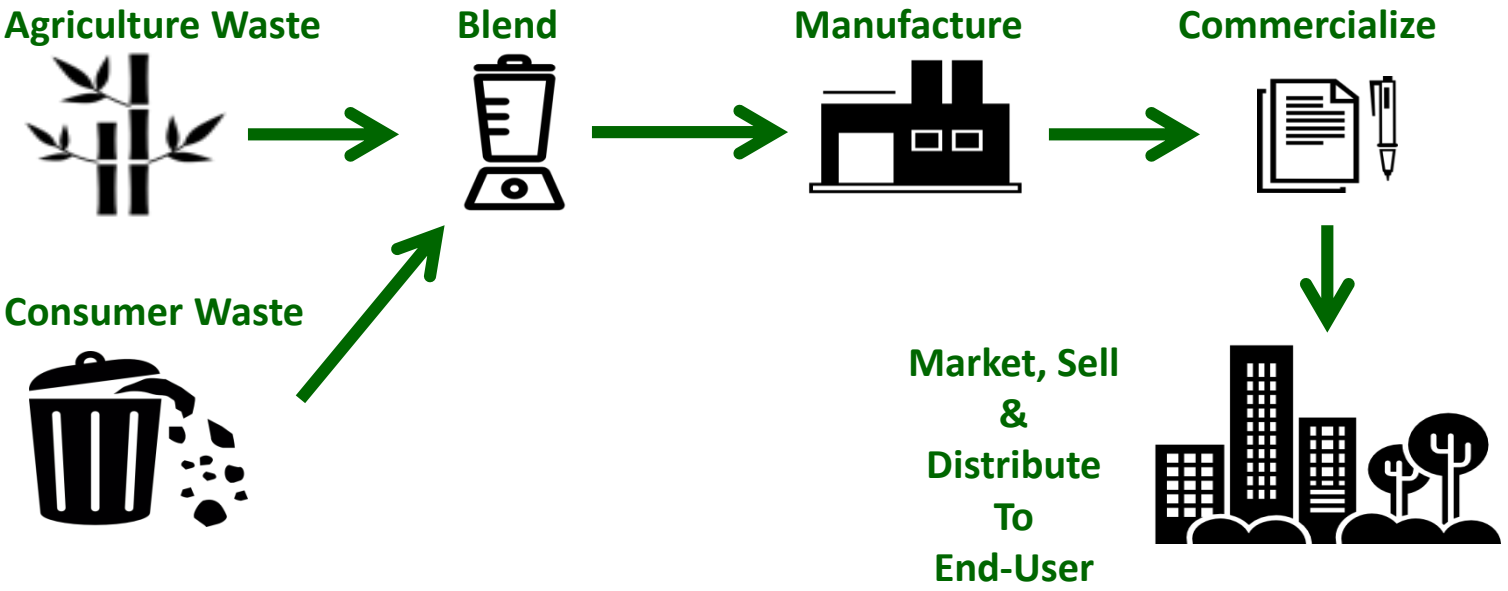
Image: Pepsi

*For references, see presentation notes.

BioFiber Solutions International

The Blend

- BioFiber Solutions International (BFSI) specializes in repurposing agricultural & post-consumer waste into 100% tree-free products.



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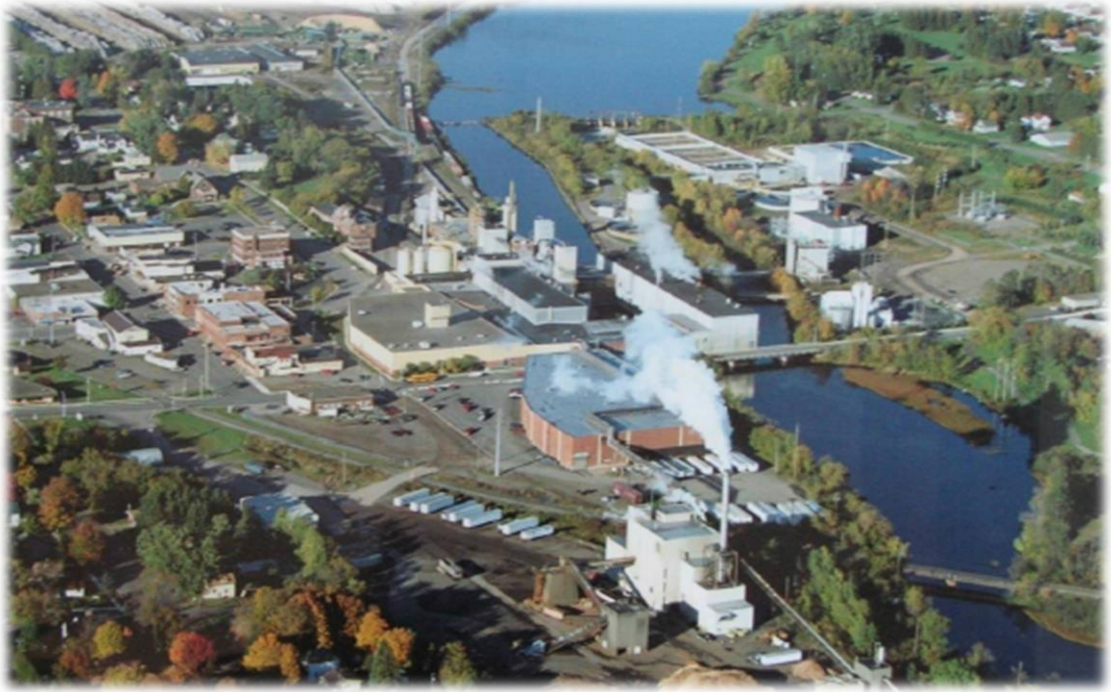
Flambeau River Papers

BioBlend

Bio-based, Tree-Free, USDA BioPreferred® Sustainable Copy

USDA CERTIFIED BIOBASED PRODUCT
PRODUCT 98%



- North America's most environmentally friendly Paper & Pulp Mill
- 100 Year Old Mill
- Provides 320 Jobs

MVPSA

- **M**argin
- **V**alue
- **P**erformance
- **S**ustainable
- Adaptable

It All Adds Up!

- **1 CASE =** 50 LBS = 16.65 LBS BIOFIBER
- **1 PALLET =** 2,000 LBS = 665 LBS BIOFIBER
-
- **1 TRUCK =** 44,000 LBS = 14,665 LBS BIOFIBER
- **USDA = 93,000 EMP**

  2,325 PALLETS = 105 TRUCK

- **105 TRUCKS =** 4,650,000 LBS = 1,550,000 LBS BIOFIBER

A Real Performance *Driver*

Questions?

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