FOREST-BASED TO BIO-BASED:
A New Sustainable Economy for Maine

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Eastern Maine Development Corporation Advisory Group Meeting
March 12, 2015
WHAT IS BIOBASED?

- Materials once made from oil are now being made from renewable feedstocks
- Biomass from forest, farm, sea
- Wood chips, agricultural waste, algae
- Biobased Chemicals + Cellulosics
- Advanced Materials
- Side-Stream/High-Value Products
- Bioplastics
- Advanced Biofuels

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Global Demand for Biobased Products

- Market for biobased materials and chemicals has reached $1B (a 28% annual increase).
- 2/3 of total chemicals worldwide can be produced from biobased material - over 50,000 products, a $1T annual global market.
- Global demand for biobased and biodegradable plastics will rise 19% per year to 950,000 metric tons in 2017.
- Majority of growth in specialty chemicals and polymers.
GLOBAL DRIVERS OF BIOBASED DEMAND

- Large companies and brand owners (P&G, DuPont, Coca-Cola) are investing in biobased.
- Consumer demand for safer, less toxic products.
- Corporate sustainability goals.
- Oil price volatility.
- Reducing climate risk.
U.S. Government Prioritizing Biobased

- USDA BioPreferred Program: to increase purchase/use of biobased products
- USDA Expands Investments in Next-Generation Bioenergy Development ($8.7M available for bioenergy research and education)
- USDA Biomass Research and Development Initiative (BDRI) now accepting applications
- U.S. Department of Energy recently funded $7M for biomass logistics projects in New York and Tennessee and $14M for Landscape Design for Sustainable Bioenergy Systems
- USDA recently awarded $5.6M to support advanced biofuels
- U.S. Forest Service nanocellulose prioritization - workshop in 2014
BIOBASED SUCCESS IN MAINE

Nanocellulose pilot plant at the University of Maine.

Technology break-through: wood chips to cellulosic sugars at former Old Town Fuel & Fiber.

Grow-Tech’s Biostrate Felt is made from corn and is compostable.

Photo credits: University of Maine, Bangor Daily News, grow-tech.com
HOW TO GROW MORE BIOBASED JOBS?

❖ We need to leverage Maine’s assets:

1. Abundant biomass
2. Workforce
3. World-class R&D
4. Industrial infrastructure

❖ And we need a long-term strategy that is sustainable.
Our Strategic Plan

❖ Short-term response to economic distress is needed...
❖ But a longer-term view is necessary to re-engineer our economy.

3-PART PROJECT (18-24 mos):
1. Road Map to Advance Biobased Manufacturing
2. Marketing Maine’s Assets Globally
3. Technical Assistance for Maine Companies
THERE ARE OBSTACLES

- Lack of coordinated, state-wide strategy for biobased manufacturing.
- Difficulties in securing private investment.
- High Biomass Costs in Maine compared with southern-grown crops like sugar cane and palm.
- Negative perceptions of new, "untested" technologies.
- Our strategy intends to overcome these hurdles to help attract new investment in Maine.

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THANK YOU.

❖ For more information:
❖ Biobased Maine website: www.mainebioplastics.org
❖ University of Maine’s Forest Bioproducts Research Institute: www.foresbioproducts.umaine.edu
❖ Grow-Tech LLC: www.grow-tech.com
❖ Environmental Health Strategy Center: www.ourhealthyfuture.org
❖ Southern Maine Community College Composites Engineering Research Laboratory (CERL): www.smccme.edu/business-a-community/business-resources/cerl.html