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Why Study the Forest-to-Gate Supply Chain for Wood Bioenergy?

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Houghton, Michigan

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Foundation

- Over 19 million acres of timberland
- Large persistent excess of growth after removals
- An established forest industry
- Forest biomass can be used to produce energy that can displace imported energy
- Forest based carbon is part of the natural atmospheric carbon cycle and can be recycled
- Forests provide a broad mix of functions and values which requires a sustainable management approach to meet the needs of the present without compromising future needs

History/Context

- Michigan State University (MSU) and Michigan Technological University (MTU) have been engaged with the Michigan Economic Development Corporation (MEDC), in promoting economic development in agricultural and forest-based bioeconomy areas.
- In November of 2007, MSU and MTU developed an Agreement to Collaborate that established a forest-based Renewable Fuels Working Group with the overall goal to support development of the forest-based renewable fuels industry within the State of Michigan.
- In February of 2008, the Working Group organized a summit of more than 50 individuals (representing industry, local governments, state agencies, and other organizations) and identified priority research and outreach activities to advance the forest-based bioeconomy in Michigan.
- Participants of the summit identified critical needs facing three broad segments of the forest-based bioeconomy: 1) feedstock production, 2) feedstock supply chains, and 3) feedstock conversion systems.

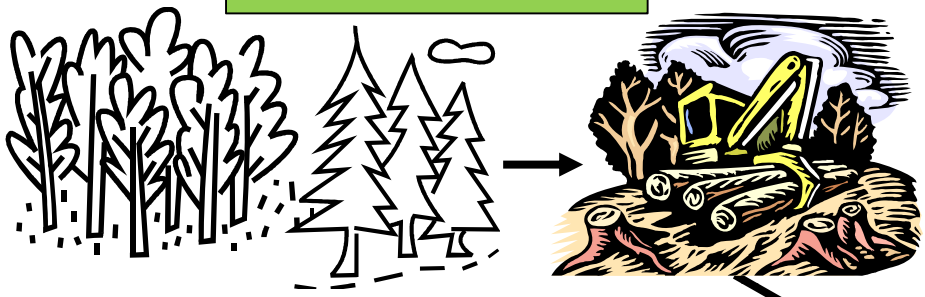
Summit – Research and Outreach Needs

- Comprehensive geospatial inventory reflecting current and future availability, productivity, ownership and environmental and social limitations
- Sustainability guidelines for management and use of forest-associated woody biomass based on sound scientific results
- Expanded technology and information transfer
- Development of a supply chain model to understand the effects of technological innovation on economics, biological and ecological factors throughout the system
- Technical innovation in woody feedstock production, harvesting, transportation, and conversion within the context of the supply chain model

Supply Chain

Forest-to-Gate

- Supply
- Harvest
- Transportation to mill



- Wood receiving and processing
- Manufacturing process
- Sales and distribution

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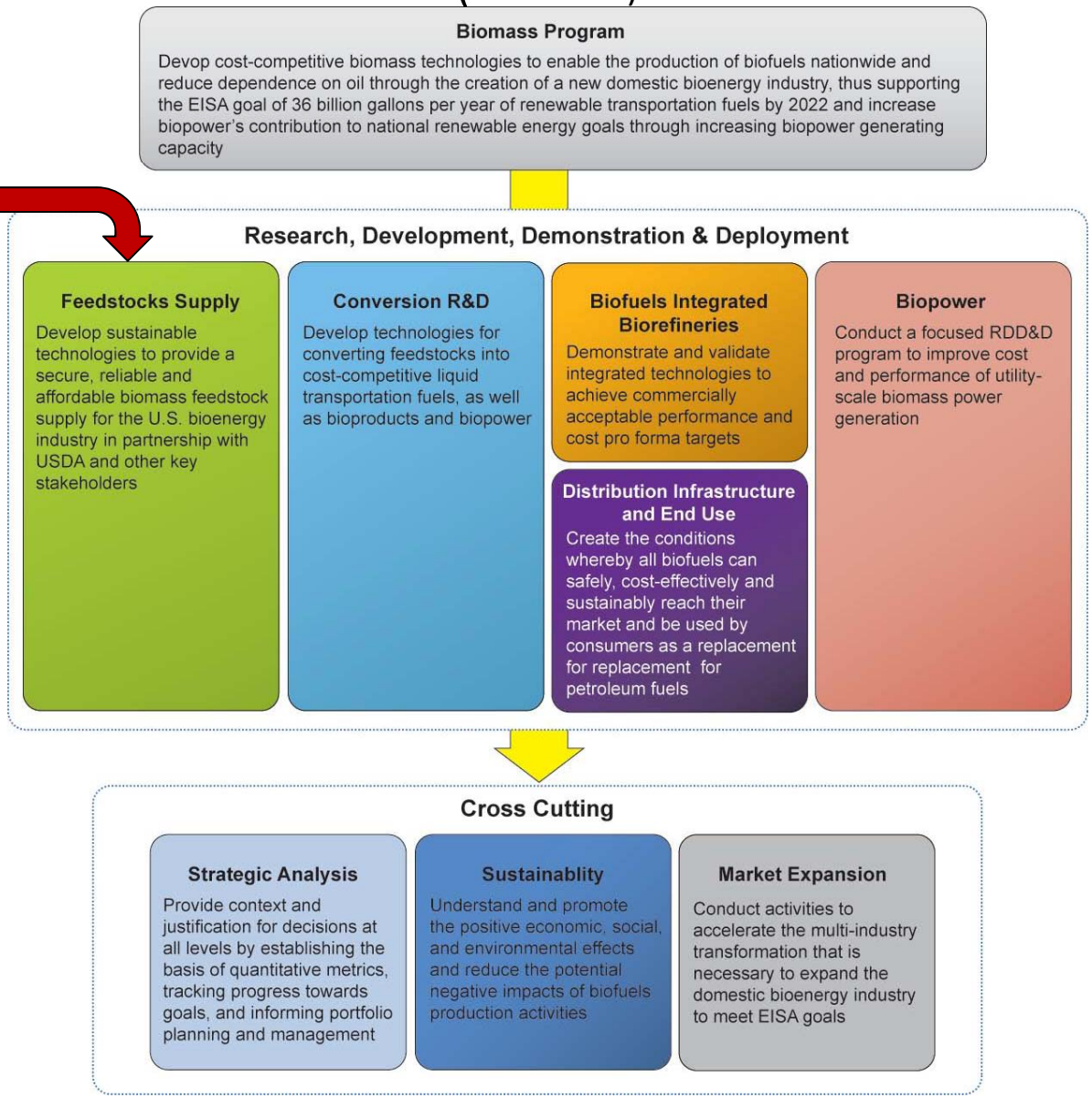
Goal Statement

Forestry Biofuel Statewide Collaboration Center (MI)

The overall goal is to improve the forest feedstock supply infrastructure to sustainably provide woody biomass for biofuel production in Michigan over the long-term.

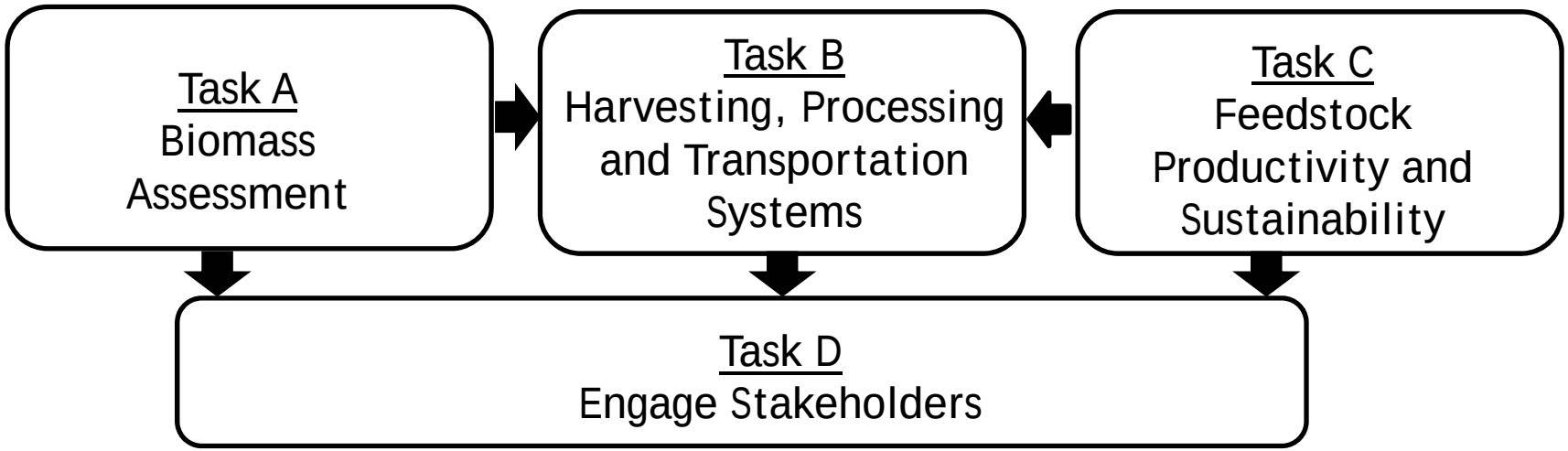
DOE EERE MYPP Biomass Program Strategic Goals (DOE 2010)



Objectives

- **Develop a Forest-Based Biomass Assessment for Michigan (Task A)** – Define forest-based feedstock inventory, availability, and the potential of forest-based feedstock to support state and federal renewable energy goals while maintaining current uses.
- **Improve Harvesting, Processing and Transportation Systems (Task B)** – Identify and develop cost, energy, and carbon efficient harvesting, processing and transportation systems.
- **Improve Forest Feedstock Productivity and Sustainability (Task C)** – Identify and develop sustainable feedstock production systems through the establishment and monitoring of a statewide network of field trials in forests and energy plantations.
- **Engage Stakeholders (Task D)** – Increase understanding of forest biomass production systems for biofuels by a broad range of stakeholders.

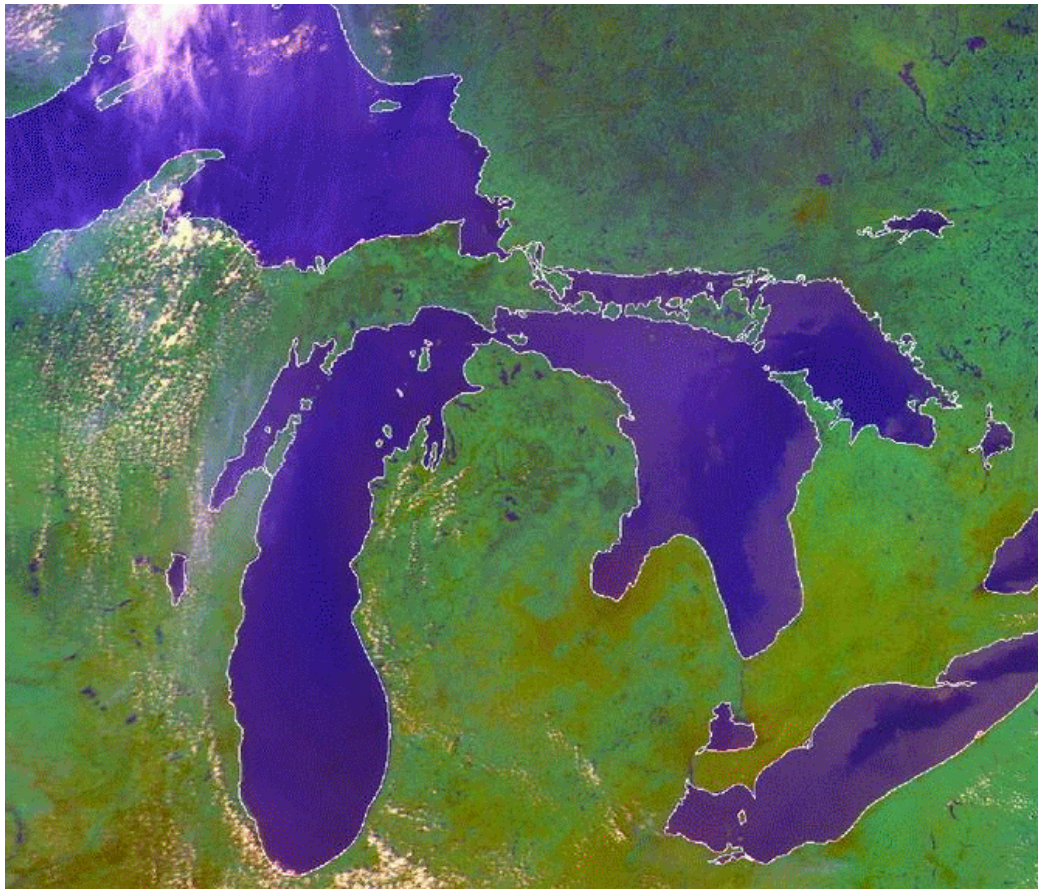
Approach



- Identify and improve feedstock supply chain efficiencies, reduce costs, and assure sustainability of the production, harvesting, processing, and transportation of woody biomass from Michigan's forests and energy plantations to support our developing biofuel industry.
- Establish an effective stakeholder collaboration structure to offer partners opportunities to participate in applied R&D projects designed to answer common challenges facing the biofuel industry.

Summary – Broaden the Foundation

- Applied research and development
- Forest-to-gate supply chain approach
- Promote sustainability
- Identify efficiencies
- Engage stakeholders



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For more information on Michigan's Forest Biofuel Statewide Collaboration Center visit:

michiganforestbiofuel.org

Thank you!

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