Wood Residual Use in Long-Lived Products to Enhance C Storage

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In-Person Participants
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Hannu Ilvesniemi - LUKE
Janne Jänis – UEF
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Karita Kinnunen - Fiberwood
Anuj Kumar - LUKE
Katariina Torvinen – VTT
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Online Participants
Brian Craig – MIFBI – Project Lead
Julie Manley – Guiding Green/MIFBI – Project Co-Lead
Duncan Mayes - Lignutech

Planning
Jim Malloy – Weyerhaeuser
David Kronberg – Innovate Marquette
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Process
The Residuals Workshop Team (RWT) began its process with two online meetings in April and May, prior to the Helsinki Workshop. From those initial conversations the Team developed a series of goals for the 26 May session.

Workshop Goals
- Identify needs, aspirations, and capacities of workshop participants while building social capital and trust.
- Learn from each other. What are possibilities? What kind of potential forest product residuals value chains may be discovered?
- Identify promising directions: specific commercial and research applications and opportunities for forest product residuals in products
- Set future actions - Identify and follow through on short- and long-term initiatives/collaborations/partnerships
- Disseminate process and findings

Questions the group worked to answer on 26 May

- What do we hope to gain both long term and short term?
- What are the known possible products and/or the best options for product development?
- How will engagement in the wood residual markets be activated with small companies?
  - Should there be a study of the companies and their challenges and opportunities with a circular economy business model?

Define "Residuals"

- Sawdust, bark, wood chips from sawmills
- Composite cut offs from furniture manufacturing: MDF, particle board.
- Components to understand and measure: characteristics of the tree components such as bark, needles, and branch material, etc.

Technologies

- Extraction methods: chemical, steam, physical, thermochemical
- Recovery of fibers from MDF – remove glues/adhesives – wood fiber insulator.

Plan and evaluate the value chain

There can be multiple C storage options from one residual source.

- High value options:
  - Organic solvents to replace chemical solvents
  - Create a map of high value options
- Long term C storage: furniture, building products, composites
- Intermediate C Storage: chemical building products; platform chemicals
- Short Term C Storage: fuel, cosmetics, food addititives

Report-out Slide Content

The work of the group was summarized on a single slide at the conclusion of the workshop.

Residuals Goal: Convert Industrial Biomass to Biochemicals, Biopolymers, and recycle to fibers.

Road map:

- *Industrial/manufacturing biomass*
  - *Composites (MDF, OSB, Particle Board), bark, sawdust, chips*
- *Co-Innovation projects for biomass properties characterization*
- *Map out enabling technologies and connection: circular bioeconomy and the business model*
  - *Collaboration points; compilation of information, current research: who is doing related research, focus, timelines*
  - *Leverage existing research, projects, and technologies*
- *Outreach to industry*

Next Steps and Planned Follow-up items

- Organize a virtual meeting to gather and recap this content and then begin to discuss next steps
- Plan and host an in-person workshop in 2024 in the USA to collaborate and continue the work.

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