

SWAC C&D Subcommittee Meeting
MassDEP – Bureau of Air & Waste – Solid Waste Management Division
Fall-2023 Webinar Series on C&D Materials Market Development (Wood, Shingles, Gypsum)
October 31, 2023; 9:00 AM to 12:00 PM (Virtual Meeting via Zoom webinar)

Meeting Notes: Recorded by Mike Elliott (MassDEP)

NOTE: Copies of the meeting notes and presentation slides are available on the MassDEP C&D Subcommittee webpage found at the following link: <https://www.mass.gov/service-details/massdep-construction-demolition-subcommittee>. Submit comments via email to michael.elliott@mass.gov.

Agenda for Webinar Series Meeting #1 of 3 re: C&D Wood Markets

- Welcome/Introductions
- MassDEP Waste Characterization Data and C&D Wood Production Trends
- Optimization of existing markets:
 - Tafisa Canada, Lac Mégantic, QC
- Development of potential future markets
 - Gasification to produce Sustainable Aviation Fuel
 - Gasification to produce Renewable Natural Gas
 - Export of C&D wood chip as biomass fuel for EU power plants
- Industry updates/discussion

Welcome/Introductions

MassDEP welcomed participants to the webinar.

- The number of participants varied over the course of the meeting, 79 registered but there were about 50 on the call most of the time.
- Participants reflected a cross-section of stakeholders representing: Large C&D Handling Facilities; Material Recycling Processors; Recycling/Re-use End-Markets; Construction Management Firms; Waste Haulers; Trade Association Representatives; Industry Consultants; State/Municipal Officials.

MassDEP Waste Characterization Data and C&D Wood Production Trends

A scanned PDF copy of the PowerPoint presentation that accompanied this portion of the meeting can be found at the MassDEP C&D webpage.

One of the objectives of the C&D data analysis presented at this meeting was to put into perspective the wood separation quantities reported in C&D annual reports compared to the total available wood that might potentially be recovered from the C&D and Bulky waste loads accepted by C&D processors across the State. The actual quantity of separated wood reused or recycled was taken directly from the C&D annual report data. The quantity of A-wood and B-wood potentially available was estimated using the waste characterization compositional analysis data from the 2022 Statewide Bulky Waste Characterization Study (<https://www.mass.gov/doc/statewide-bulky-waste-characterization-study-june-2022/download>), and applying it to the quantities of C&D waste and Bulky waste tonnages accepted as reported in the CY2022 C&D annual facility reports (<https://www.mass.gov/doc/2022-annual-cd-report-data-summary/download>).

The analysis estimated that in CY2022, there was the potential to recover approximately 220k tons of A-wood and approximately 225k tons of B-wood from the total C&D and Bulky waste streams. However,

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the CY2022 C&D annual report data only reports separating approximately 100k tons of A-wood for recycling/re-use, somewhat less than 50% of the quantity that is potentially available. And since there are very few end-markets available for B-wood (i.e., painted or treated) other than landfill-dependent uses, we have no definitive data of how much of that material is actually recovered, but probably not a significant fraction of the quantity available.

Optimization of existing markets – Tafisa, Canada

Tafisa-Canada (<https://tafisa.ca/en>). Mr. Sylvain Martel, Director of Wood Supply, narrated this update without slides. Tafisa is a large particle board manufacturing facility located in Lac Mégantic, QC.

- Tafisa consumes approximately 250k to 300k tons per year of recycled C&D wood.
- Approximately 45%-50% of C&D wood comes from Massachusetts and surrounding States.
- Massachusetts C&D processors do a good job controlling chemical contaminants (e.g., As, Pb, Cr, etc.).
- Surprisingly, the biggest quality problem is metal (both ferrous and non-ferrous) and bricks.
- Tafisa suspects this is from cross contamination during the final steps at the processor – during onsite storage and loading-out.
- Tafisa cannot accept or process contaminated loads, so this reduces the quantity of material recycled
- Looking to the future, Tafisa envisions modifying the Lac Mégantic facility over time to mirror the processes at its parent company in Europe.
- In Europe particle board is valued more for function than for appearance as compared to the US.
- This allows the EU to recycle more grades of wood.
- The US is expected to eventually adopt the EU approach.
- Tafisa is also looking to modify its adhesives to more natural glues that are easier to recycle.
- Sylvain concluded his remarks by emphasizing that the particle board products produced by Tafisa extend the carbon retention of the wood feedstock by 30 years. Sylvain offered technical assistance to organizations working on lifecycle assessment, environmental product declarations, or any other types of carbon cycle impact calculations.

Development of potential future markets – Gasification to produce Sustainable Aviation Fuel (SAF)

Dr. Jonanthan Parrott, Forestry Manager at Northern Tree, narrated this update without slides.

- Dr. Parrott started out with an overview of the expected increase in arboriculturally-derived wood waste (i.e., non-forest derived) with the expansion of power transmission lines and rights-of-way in support of the national and state greenhouse gas emissions reduction goals.
- SAF is a liquid fuel that is ideally suited for the aviation industry. Whereas other transportation sectors (e.g., automobiles, trucks, trains) can feasibly make the transition to electricity for motive power, it is much harder for aircraft to do the same.
- The SAF gasification process produces two main end-products: biochar and liquified fuel.
- The FAA recently released grant funding to optimize processes for refining, mixing, and storing SAF.
- Dr. Parrott is acting as a consultant for a developer that is planning to conduct a pilot project with funding from an FAA grant to produce “wood juice” (precursor to SAF) at an existing pyrolysis facility in Holyoke permitted to run 7 TPD of biomass fuel.

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- The purpose of the pilot is to determine optimal feedstock materials.
- Ideally, the process may prove the ability to process some fraction of waste power poles and other types of B-grade wood.
- Dr. Parrott emphasized that this is a “proof-of-concept” pilot project, not a complete process to produce SAF.

Development of potential future markets – Gasification to produce Renewable Natural Gas (RNG)

Mr. Mike Taranovich, consultant with experience designing and operating recycling facilities, narrated this update without slides.

- A developer is looking to site a gasification facility in Massachusetts to produce RNG, preferably for transportation markets, and to a lesser extent for the utilities market.
- The developer is planning to build similar facilities nationwide; the first plant in California is permitted and expected to be operational soon.
- Here in Massachusetts, the developer hopes to site a 1000 TPD facility in western Mass (perhaps near Holyoke) that would run on a feedstock of 80% MSW and 20% uncontaminated grade-A wood.
- The products of such a facility would be biochar and a syn-gas that can be refined and used for transportation or utility end-markets.
- Mike concluded that his objective is to get commitments from off-takers for the RNG by end of year 2023. Shortly thereafter, he would start the pre-permitting process with MassDEP regional staff.

Development of potential future markets – Export of C&D wood chip as biomass fuel for EU power plants

Mr. Lukas Klapp, key account manager for waste wood at The Bruening Group, headquartered in Bremen, Germany, delivered this presentation with a PowerPoint slide deck. A scanned PDF copy of the PowerPoint presentation can be found at the MassDEP C&D webpage.

- Mr. Klapp started his presentation with a brief history and overview of The Bruening Group, that, among other things, serves as a “full service” fuel and logistics broker for the German power generation sector.
- Waste wood (including C&D wood) is one of the feedstocks that The Bruening Group trades for recycling/reuse and as a biomass fuel.
- In Germany, waste wood is classified into 4 categories:
 - A1 (Int’l Classification = A): Untreated wood, pallets, transport boxes
 - A2 (Int’l Classification = B): painted, coated and treated wood (suitable for material use)
 - A3 (Int’l Classification = B): painted, coated, treated with PVC, halogen organic content, furniture, door panels (only suitable for incineration)
 - A4 (Int’l Classification = C): hazardous materials, treated with preservatives, contaminated wood, power poles, railroad ties (used at power plants for fuel)
- In 2023, German biomass power plants have a 1.7M tons deficit in wood feedstock. And by 2030, with more biomass power plants under construction or in planning, the deficit will only grow.

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- To make up the deficit, German biomass power plants will need to seek feedstock outside the EU and likely from North America and Asia.
- The situation in Germany may create an interesting opportunity for the North American C&D Industry, especially here in New England. It seems that what we call B-wood for which there are very few recycling/reuse end-markets in the US, can be imported as a fuel source into Germany with proper notifications and provided feedstock specifications are met.

Industry updates

Mr. Bill Turley, Special Projects Director at the national C&D Recycling Association (<https://www.cdrecycling.org/>), was expected to provide an update on some of the national issues that the CDRA is following, but the meeting went longer than expected, and Bill had to leave the call early. Bill offered to respond to member questions by way of email. Bill can be reached at turley@cdrecycling.org. Bill also promised to provide national updates at the next meeting.

Open Discussion

MassDEP shared the following announcement: **The Biden-Harris Administration Announces \$100 Million in Grants to Support Manufacturers of Cleaner Construction Materials as Part of Investing in America Agenda**

<https://www.epa.gov/newsreleases/biden-harris-administration-announces-100-million-grants-support-manufacturers-cleaner>.

- This [new grant program](#)—Reducing Embodied Greenhouse Gas Emissions for Construction Materials and Products—will **help businesses develop robust Environmental Product Declarations (EPDs)** which disclose environmental impacts across the life of a product. Embodied greenhouse gas (GHG) emissions—also called embodied carbon—refers to the amount of GHG emissions associated with the extraction, production, transport, and manufacturing stages of a product's life. EPDs facilitate the reliable tracking of emissions associated with construction materials and products to inform procurement decisions.
- EPA will **provide grants to businesses that manufacture, remanufacture, and refurbish construction materials** and products for developing and verifying EPDs, and to states, Tribes, and nonprofit organizations that will support such businesses. The EPDs generated through this grant program will make it easier for state and local governments—and other institutional buyers—to ensure the construction projects they fund are using low carbon construction materials.
- The deadline to apply to this grant competition is January 8, 2024. EPA requests the submittal of an optional Notice of Intent to apply by October 27, 2023, by sending an email to embodiedcarbon@epa.gov.
- Eligible entities include:
 - Businesses that manufacture, remanufacture, and refurbish construction materials and products, and
 - States, Tribes, and nonprofit organizations that will support such businesses.

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MassDEP announced that MassDEP is hiring!

- Consistent with a campaign pledge, the Healey-Driscoll Administration has allocated 1% of the state's operating budget for climate and the environment.
- This translates to close to 100 new vacancies at MassDEP across all programs
- Follow the MassCareers webpage if you are interested in starting a new career at MassDEP:
<https://massanf.taleo.net/careersection/ex/jobsearch.ftl>

Points of Contact

Mike Elliott's contact information is as follows:

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Speaker Contacts:

- Mr. Sylvain Martel, Tafisa Director of Wood Supply: smartel@tafisa.ca
- Dr. Jonanthan Parrott, Forestry Manager at Northern Tree: jparrott@northerntree.com
- Mr. Mike Taranovich, recycling process consultant: taranovich1@gmail.com
- Mr. Lukas Klapp, key account manager for waste wood at The Bruening Group:
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END of Meeting Notes.