



# Biochar / Biomass Carbon-Neutral Fuel

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# MP's Energy Supply and Outlook

- Long history of biomass operations at Hibbard, Rapids
- Healthy biomass supply in NE MN has resulted in evaluations for energy/CHP options across fleet
- Boswell 3 and 4 coal reduction drivers
  - From ~2023 onward, began evaluating numerous options for coal replacement at Boswell
  - Recently submitted Integrated Resource Plan
    - Does not currently include biomass
    - Additional studies and policy clarity needed

# Biomass's current regulatory/policy outlook...

- MN's CFS:
  - "Carbon-free" means emitting no carbon dioxide.
  - "eligible energy source" includes electricity from the following
    - biomass, which includes a system; the pre-treatment of by-products...
    - Renewable Energy
- USEPA: Section 1605(b)(2)(B)
  - No consideration of climate change impacts
  - Once in, always in



electricity without emitting carbon dioxide. This is a technology that generates electricity from sources other than fossil fuels. This can be done in anaerobic digesters that produce water effluent, sludge, or related products. The USEPA is considering changes to the CFS in 2030, and the agency is also considering rule changes to the CFS.

# MPUC docket: E-999/CI-24-352

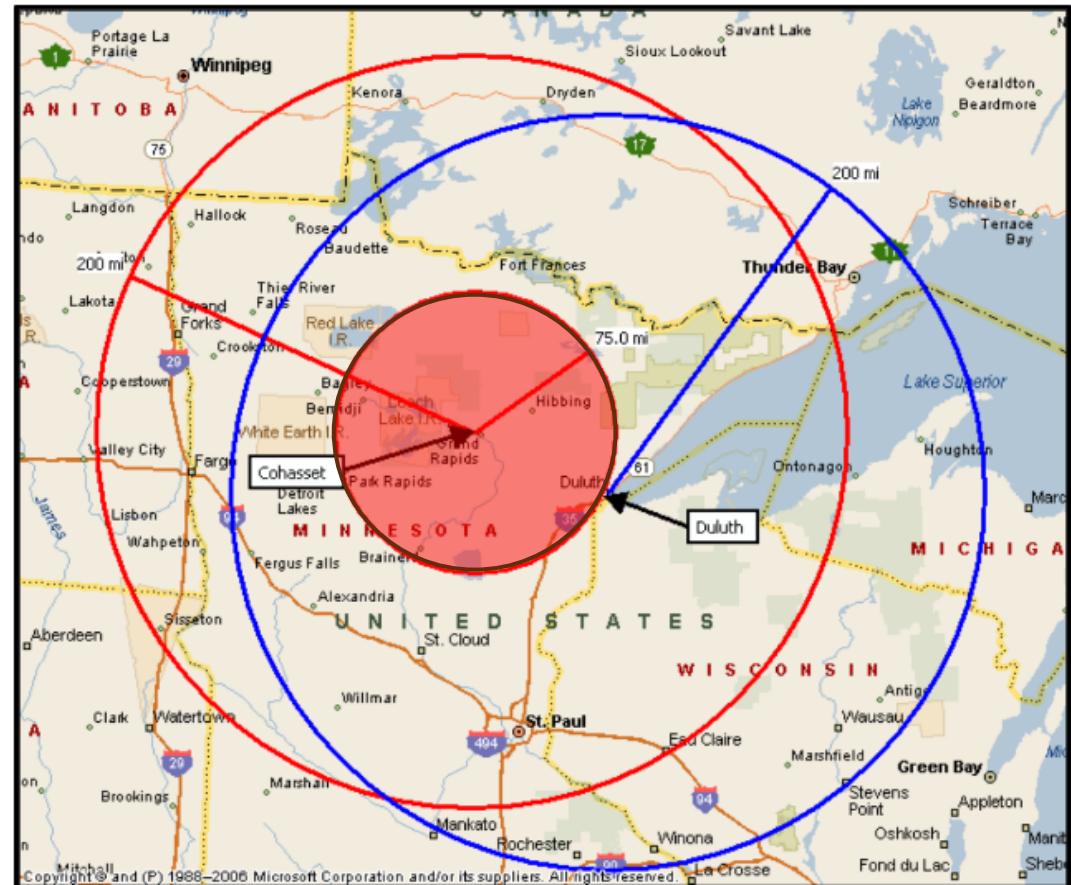


- ***Issue: What actions, if any, should the Commission take to establish the criteria and standards necessary for utilities to calculate partial compliance with the Carbon Free Standard?***
- Biomass Main Issues
  - Whether **biomass, renewable natural gas, and solid waste should be eligible as fully or partially carbon-free generation resources** based on a fuel life-cycle analysis.
  - Definitions of the **sources of and requirements for a life-cycle analysis** when interpreting the statutory definition of “carbon free” for combusted fuel generation resources without carbon capture that are considered carbon free or receiving partial credit consistent with the November 7, 2024 Order.
- Schedule
  - Initial comment period closes June 5, 2025
  - Reply comment period closes July 17, 2025
  - Supplemental comment period closes August 14, 2025

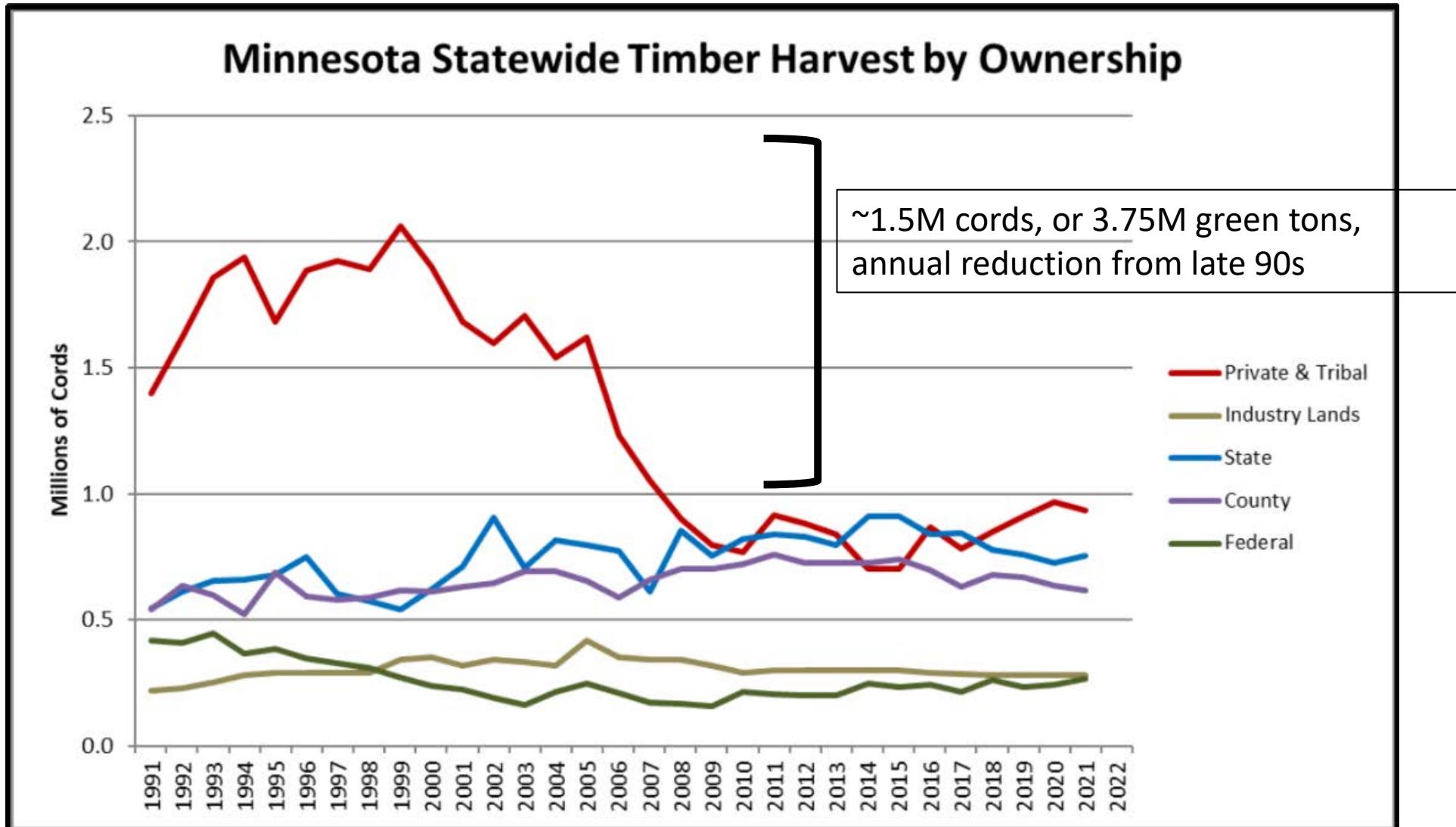
# Fiber Availability

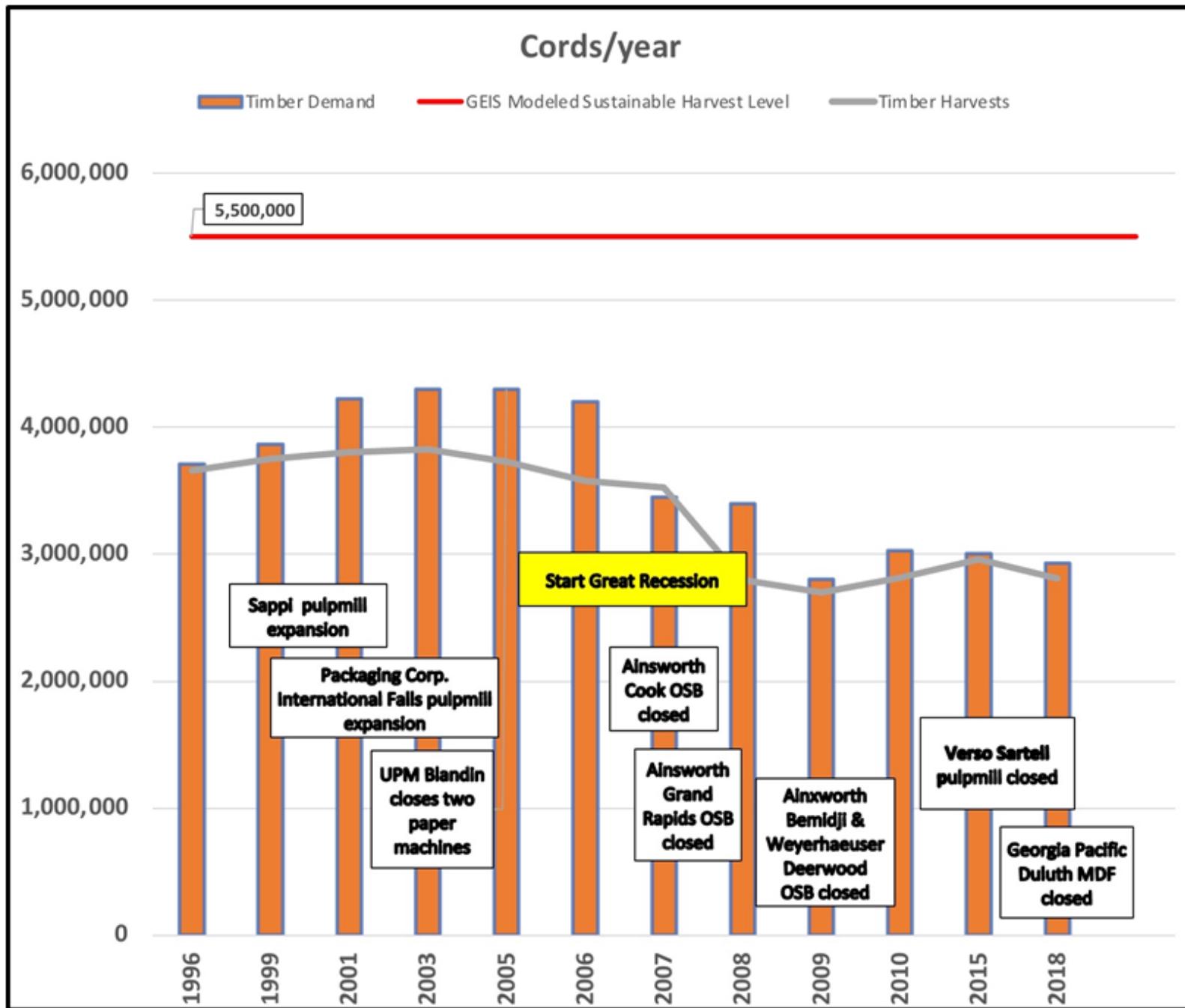
# Fiber Study Scope

- Timber Market Area (TMAs): 75-mile radius from Cohasset
- Focus on forestry residuals, unmerchantable roundwood, and sawmill residuals
- 75-mile analysis looked at total volumes available, less competition, to provide a “Economically Available” estimate



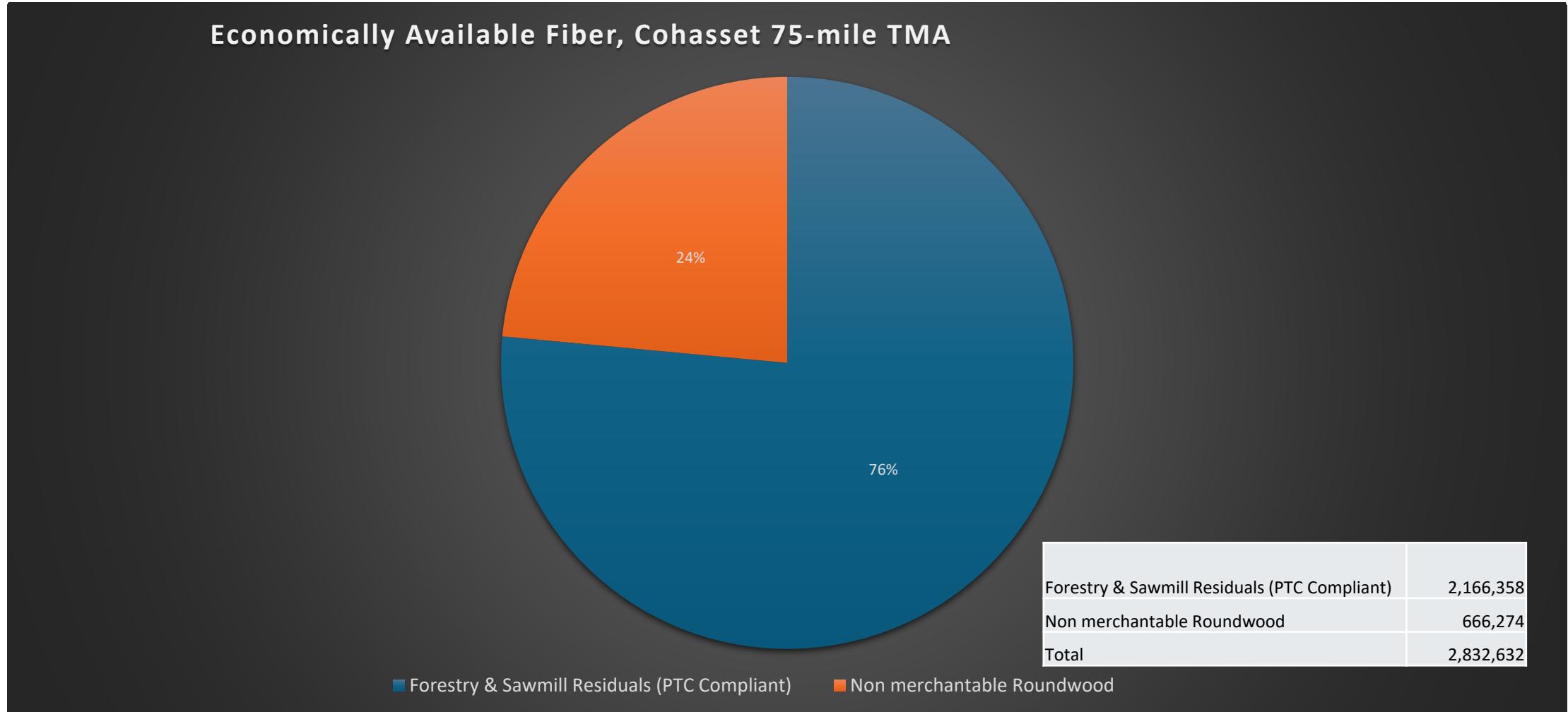
# Historical Trends





Verso – Duluth  
and Blandin not  
included in this  
graph.

# Cohasset 75-Mile Economically Available Breakdown



# Potential Biomass Energy Operation

- **Goal:** Solid fuel that:
  - Can be sourced locally,
  - Can be stored or produced onsite
  - Technical, operational, and environmental fit
  - Meets CFS and EPA requirements in desired timeframe
- White wood pellets can be added to existing solid fuel boiler(s) with certain modifications
- Pellet mill + boiler modifications = partial fuel replacement for dispatchable, renewable, local energy production

# Biochar

- Stable carbon product produced via pyrolysis
- Feedstock same as potential pellet mill fiber source
- Has numerous benefits
  - Pyrolysis produces fused carbon rings that are highly stable and prevent decomposition/carbon release
  - Significant agronomic benefit for some soils
    - Improved productivity
    - Decreased nutrient run-off
  - Also used as treatment for heavy metals, PFAS, other industrial contaminants
- Currently no option to use as offset for CFS

# Next Steps

- Provide comments on CFS/LCA docket
- Determine biomass carbon-status in state and with EPA
- Refine technical studies
- Continue outreach to interested parties and collect/utilize feedback