



# 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 no net carbon dioxide.
- "eligible energy" means electricity from the following sources:
  - biomass, which is produced in a closed-loop system; the pre- and post-consumption by-products...

- Renewable Energy

- USEPA: Section 101

- No consideration of the impact of the rule on the environment
- Once in, always in



electricity without emitting

technology that generates  
resources

in an anaerobic digester  
water effluent, sludge, or related

1, 2030

2029....or Rule changes...

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

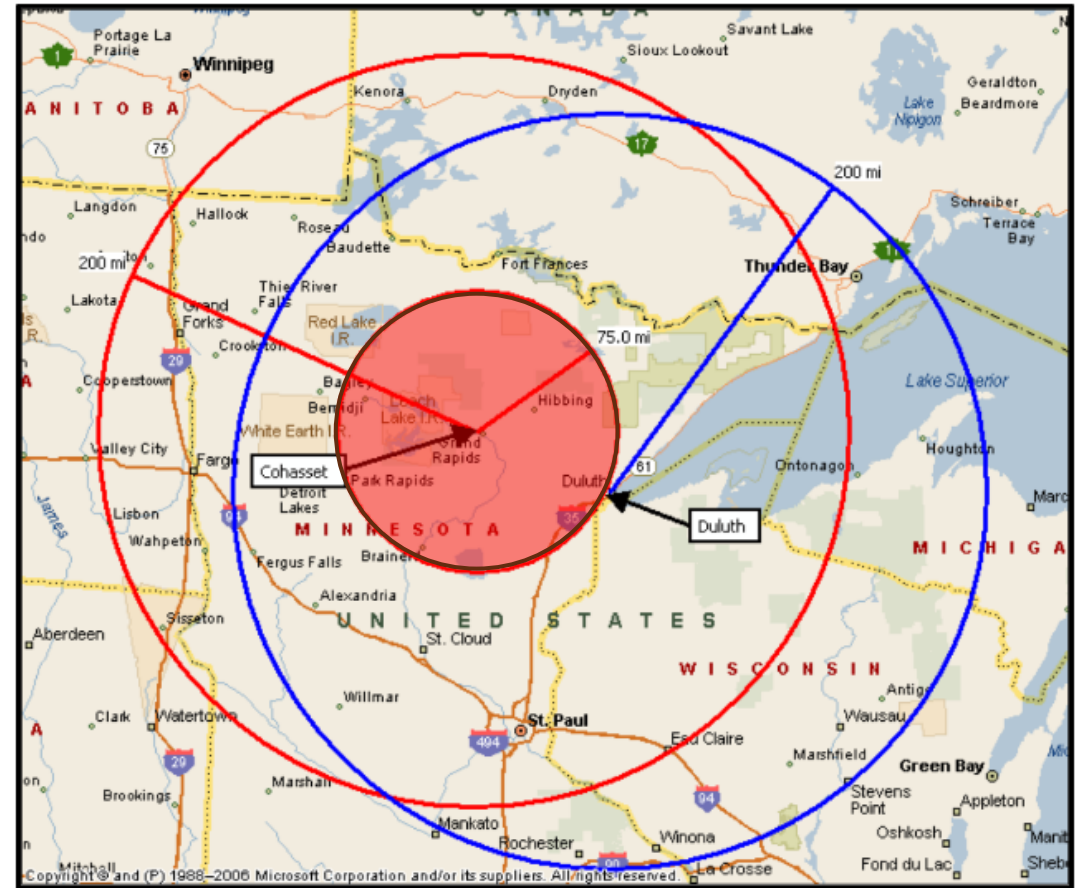


- ***Issue:** What actions, if any, should the Commission take to establish the criteria and standards necessary for utilities to calculate partial compliance with the Carbon Free Standard?*
- Biomass Main Issues
  - Whether **biomass**, renewable natural gas, and solid waste **should be eligible as 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

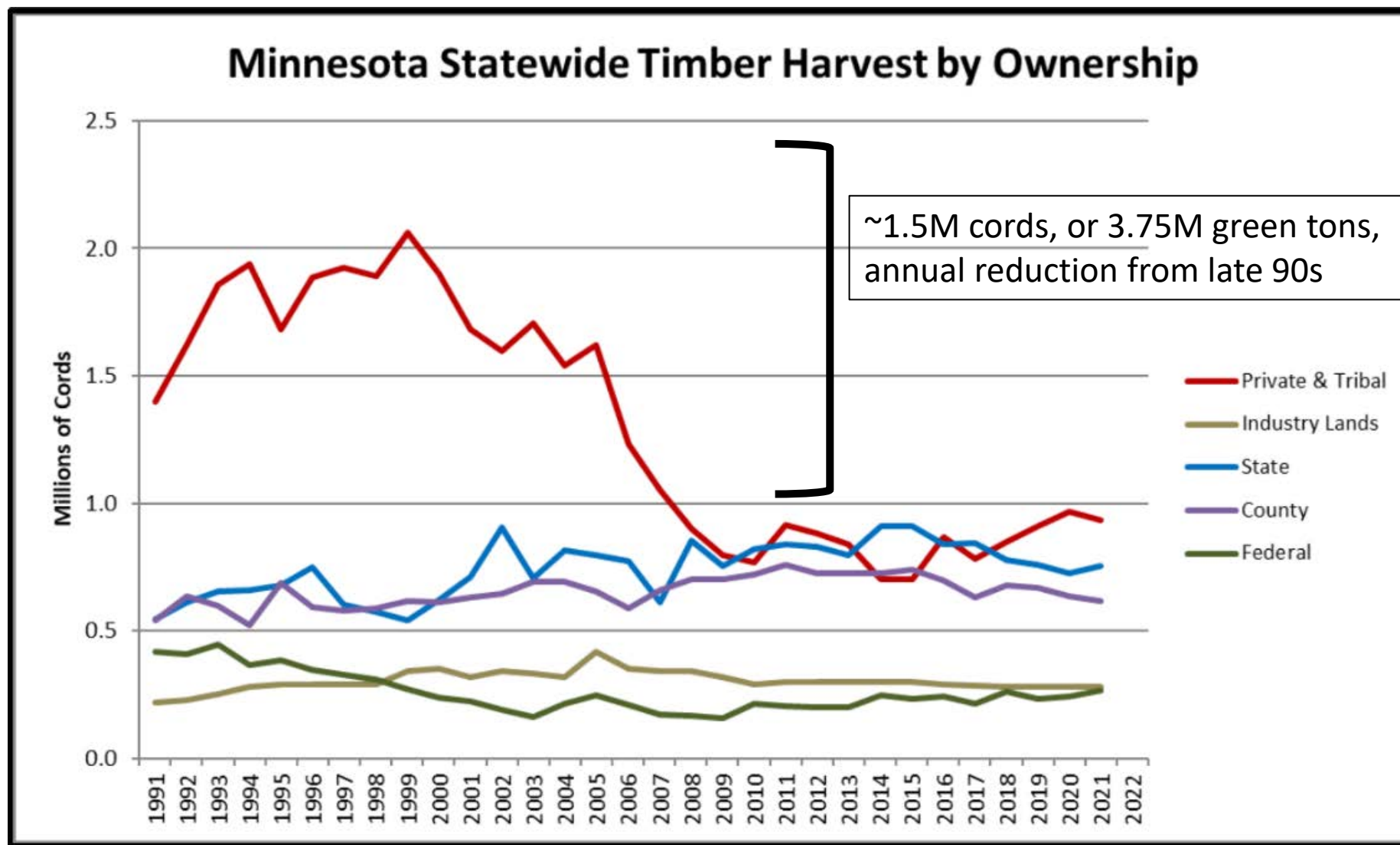
# Fiber Availability

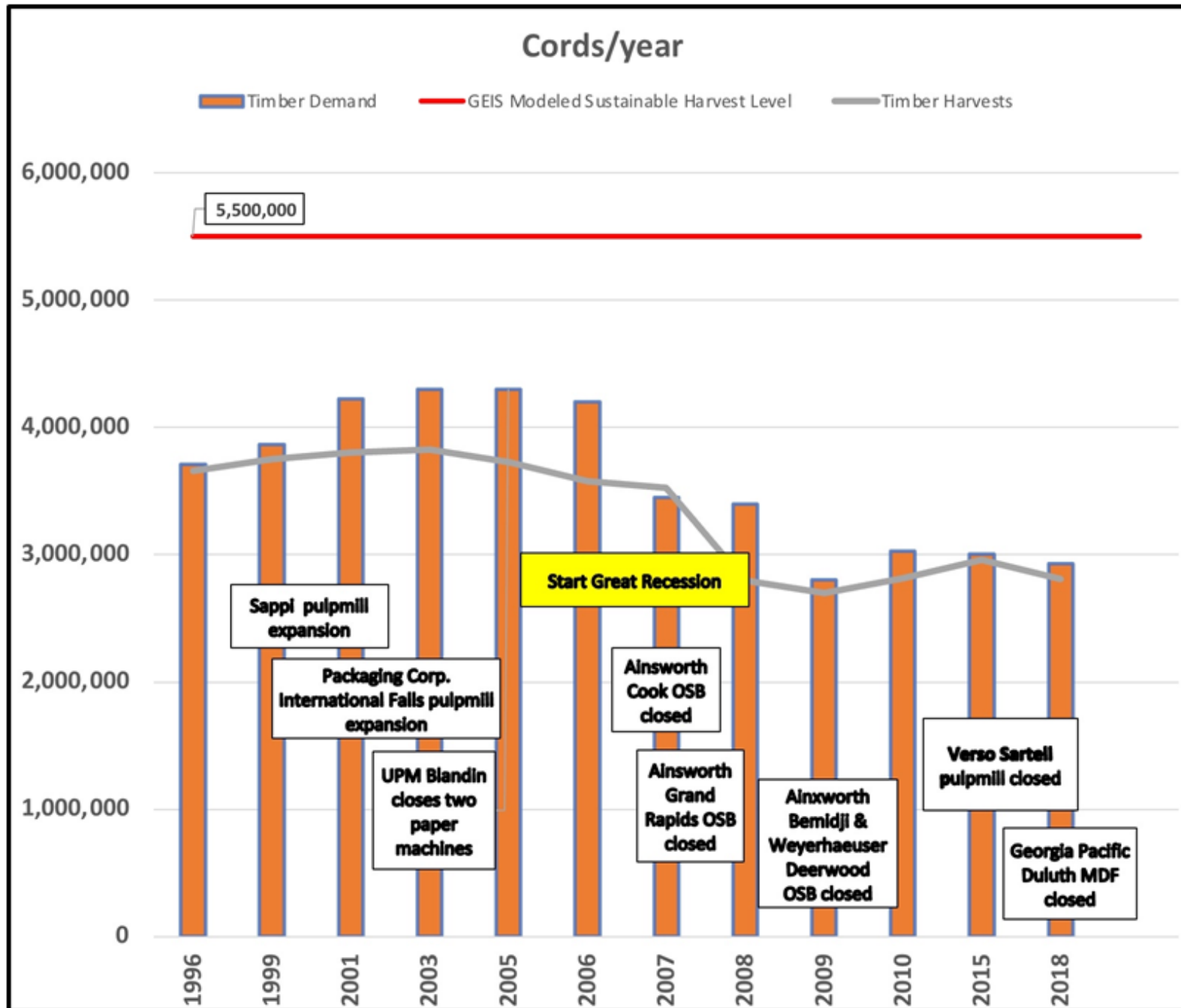
# Fiber Study Scope

- 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



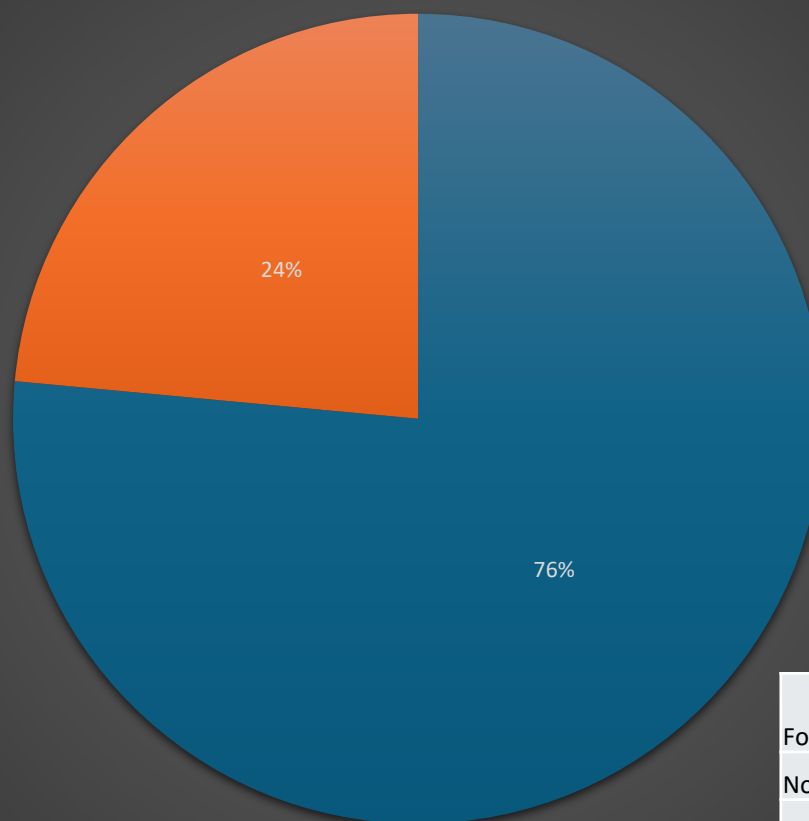


Verso – Duluth and Blandin not included in this graph.



# Cohasset 75-Mile Economically Available Breakdown

Economically Available Fiber, Cohasset 75-mile TMA



■ Forestry & Sawmill Residuals (PTC Compliant) ■ Non merchantable Roundwood

Forestry & Sawmill Residuals (PTC Compliant)	2,166,358
Non merchantable Roundwood	666,274
Total	2,832,632

# 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