Woody Biomass Cost-Benefit Analysis

For Rural Counties in Maryland

April 15, 2026

$137.5 MILLION NEW ECONOMIC ACTIVITY

53 JOBS SUPPORTED

3:1 FOREST GROWTH – DRAIN RATIO

15-YEAR IMPACT

Executive Summary

A recent study by the Maryland Clean Energy Center (MCEC) evaluated the environmental and economic impacts of using woody biomass for institutional-scale heating in western Maryland. The findings are strong:

- A single system could generate **tens of millions in economic activity**
- Support **dozens of local jobs** over 15 years
- Operate **within existing environmental regulations**

Background

The earlier *Fuel Wood Supply Chain Analysis (FWSCA)* found that Maryland forests have a **growth-to-drain ratio of approximately 3:1**—trees grow three times faster than they are harvested. Further modeling showed that:

- Increased wood utilization could **improve forest health**
- More active management may lead to **greater long-term forest growth**

These findings led MCEC to commission a deeper analysis of the broader economic and environmental impacts.

Key Findings

The Cost-Benefit Analysis (CBA) used economic modeling, life-cycle analysis, and regional feasibility data to assess impact.

Economic Impact

- Up to **$137.5 million** in total economic activity (15 years)
- Approximately **53 full-time jobs supported**
- Strengthens rural economies impacted by the loss of traditional industries
- Increases **local and state tax revenue**

Environmental Impact

- Systems range from **low-carbon to carbon-negative** depending on design
- Advanced boilers can meet **state air quality standards**
- Filtration systems further reduce particulate emissions

Recommendations

1. Streamline Policy & Permitting

While biomass qualifies as a Tier 1 renewable and can access Thermal Renewable Energy Credits (TRECs), adoption is slowed by complexity.

Suggested improvements:

- Simplified, coordinated permitting across agencies
- Pre-approved system designs
- A centralized **"biomass portal"** for applicants

2. Invest in Workforce & Supply Chains

Building a biomass economy requires more than installing boilers.

Priority investments:

- Training for installers, operators, and technicians
- Support for forestry and fuelwood production
- Development of local fuel delivery systems

Targeted early investments would enable **faster, more sustainable market growth**.

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