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# The Hawesville Mill

Opportunities and challenges of biomass

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**Kentucky Biomass Task Force**

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November 2009



# The Hawesville Mill



- WILLAMETTE'S BEGINNING IN KENTUCKY MEDIUM MILL (WESCOR) - 1967



- MEDIUM MILL AND BLEACHED PULP MILL IN OPERATION -1969



- 1981 Fine Paper Machine (upper right hand corner)



- HAWESVILLE MILL TODAY
- Second Fine Paper machine added in 1998

# The Hawesville Mill

- At start-up in 1969
  - 220 tons per day of kraft hardwood
  - Bleached market pulp
- Today
  - 1350 tons per day of kraft hardwood
  - Elemental chlorine free bleached pulp
- Steam is produced from burning of spent pulping liquor and woody biomass
- Installed an electrical generator in 1997
  - Producing 45 megawatts (enough to power 32,000 Kentucky homes)
- Currently rebuilding the turbine
  - Will gain another 6-8 MW

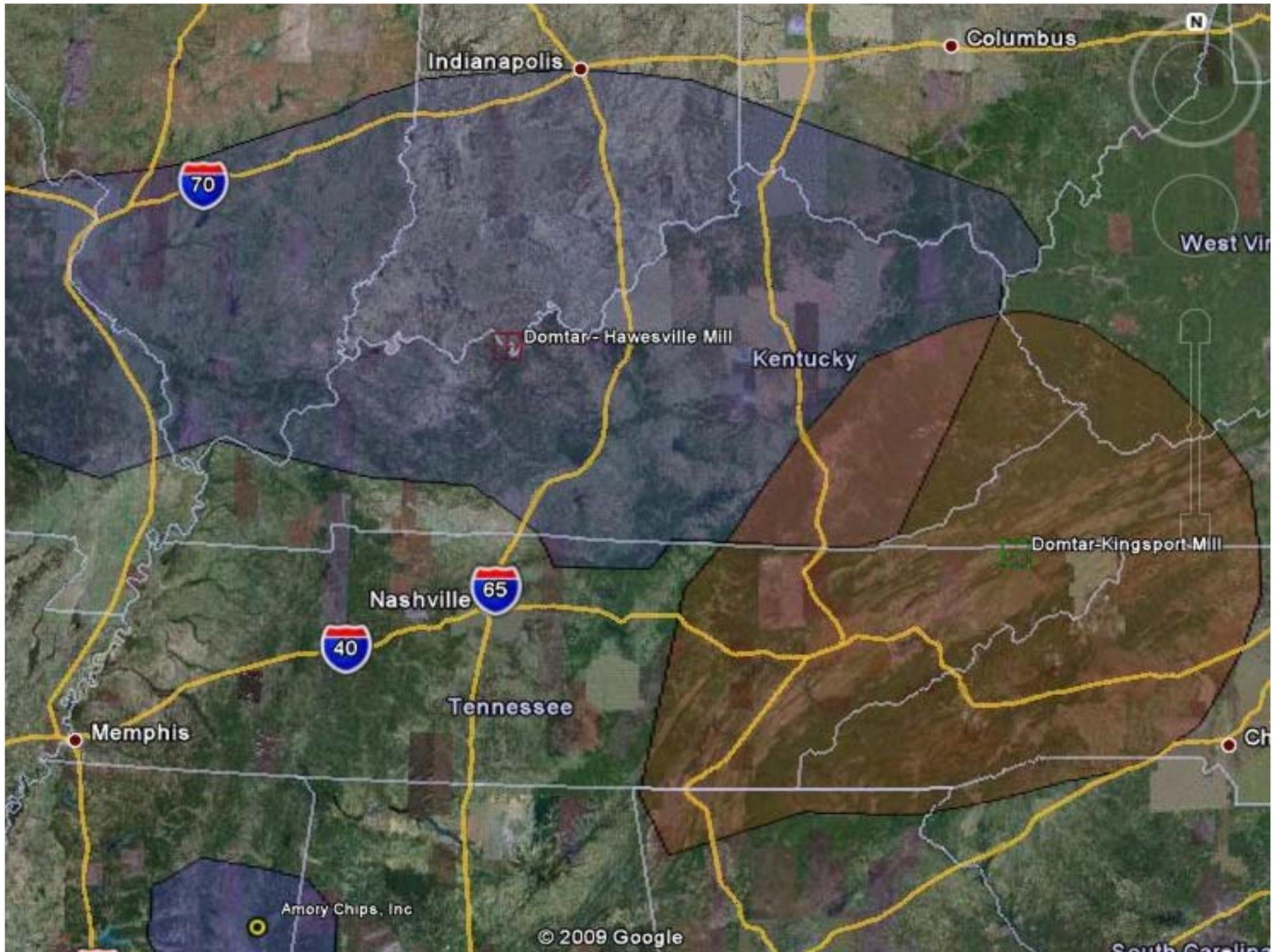
# Environmental Advantages of Biomass:

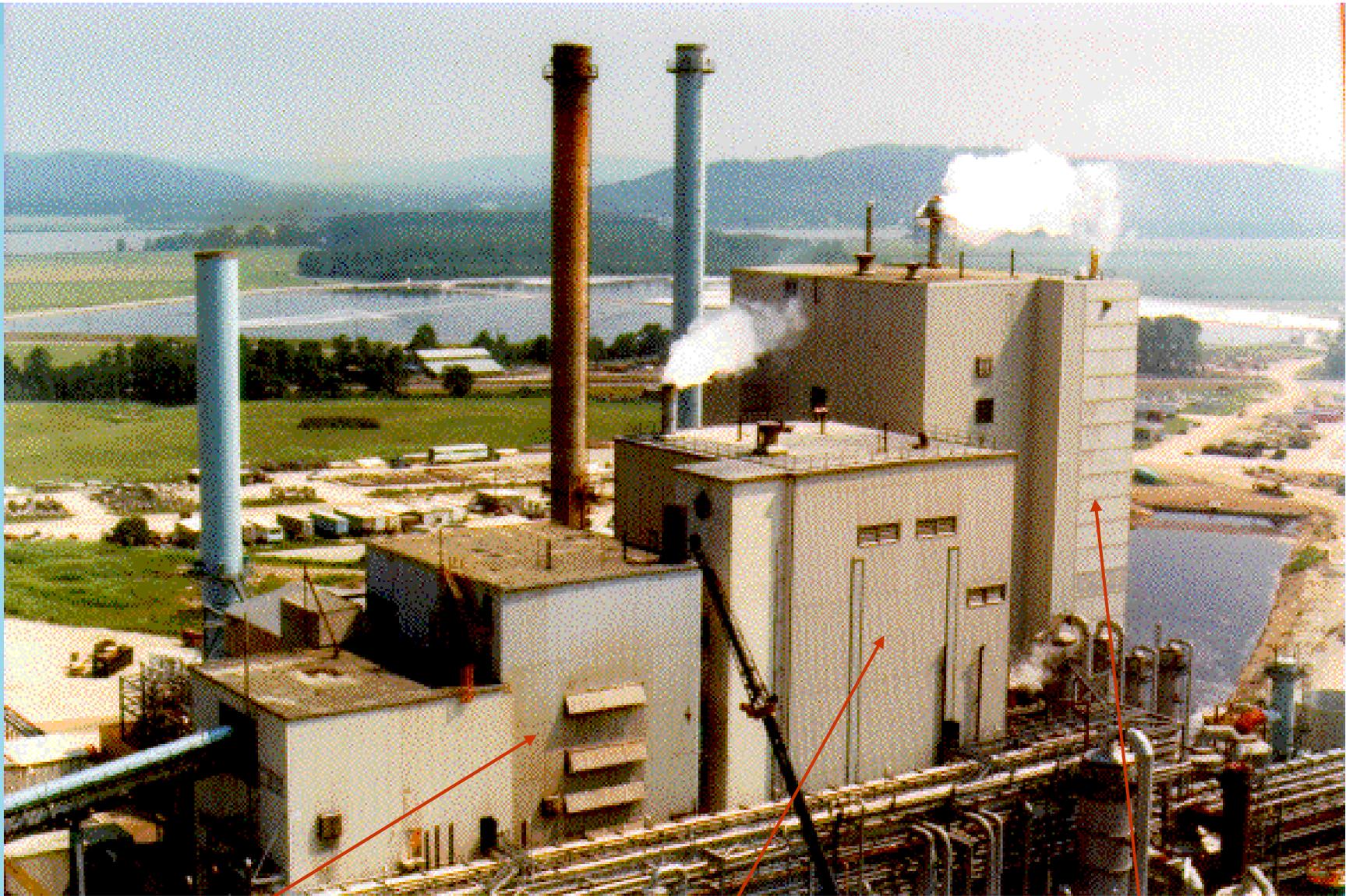
- Clean
- Green
- Renewable
- Carbon neutral
- Helps ensure clean water
- Generates oxygen
- Multi-use aspect of forests/forestry

...but we have to be judicious

# Fiber

- Over 250 suppliers in 2008 delivered wood chips for pulping and/or boiler fuel from six states. Delivered value of approximately \$91,000,000
- Sources of fiber include:
  - Sawmill byproducts
  - Urban wood
  - Pulpwood
  - Forest slash
- Domtar utilized woody debris from the January ice storm
- Hawesville facility has both SFI (Sustainable Forestry Initiative) and FSC (Forest Stewardship Council) “chain-of-custody” certifications





**Bio-Fuel Boiler - 1997**

**#3 Recovery - 1984**

2.1 mm lb. BLS / day  
360 k lb. Steam / hr.

**#4 Recovery - 1997**

3.2 mm lb. BLS / day  
525 k lb. Steam / hr.

# Fine Paper Mill

- Machine H1 started in 1981, with capacity of 290 tons per day of uncoated free sheet
- Machine H2 started in 1998, with capacity of 640 tons per day of uncoated free sheet
- In 2009
  - H1 has a capacity of 500 tons per day
  - H2 has a capacity of 1,100 tons per day
- Total direct employment at Hawesville is 447
- Other direct employment is estimated at 200 (this number includes forestry, transportation, maintenance, security, etc.)

# Domtar in Kentucky

## Social and Economic Impacts

▪ Direct Employment Supporting the Mill	
▪ Hawesville Mill Domtar Employees	447
▪ Converting, logging, transportation, etc.	<u>200+</u>
▪ Total	647+
Indirect Employment Impact (4-1 Multiplier)	2,000
Total Employment Impact	over 2,600 jobs
▪ Domtar Kentucky Payroll	
▪ Hourly and Salaried	\$51,000,000/YR
▪ Total Federal and State Taxes	
▪ Employee Taxes Withheld	\$18,000,000/YR
▪ Domtar Total Kentucky Spending	\$367,000,000/YR

# DOMTAR SUPPORTS

- The federal research, development, and demonstration (RD&D) funding for energy efficiency, advanced manufacturing and biorefinery technologies with the U.S. Department of Energy
- The President's budget initiative for biorefinery R & D to advance the industry's Integrated Forest Products Biorefinery (IFPB) strategy
- The IFPB strategy focuses on "value-added" use of forest resources and processes to develop the industry's use and production energy from biomass in ways that are complimentary to, not in competition with, current industrial practices
- Sustainable forest management and increased productivity of all forest resources

## **Highest, best use for every chip of Kentucky wood must be considered**

- We can't afford to squander wood resources for short-term gains
- Wood is a multi-valued resource
- With proper planning and consideration, multiple objectives can be met

## Research into expanding value proposition is needed.

- Wood chips contain:
  - Wood fiber
  - Lignin
  - Hemicellulose
- Wood can become:
  - Cellulosic ethanol
  - Carbon fiber
  - Butanol
  - Pulp, paper, lumber, etc.

## The real value of Kentucky forests

- Source of clean, pure water
- Recreational resource
- Carbon sequestration and an oxygen source
- Huge economic driver

## **Making a big pile of ash from a big pile of wood isn't always best**

Combined heat and power (CHP) systems typically convert 75-80% of a fuel's potential energy into power

Conventional electricity generation is far less efficient, converting only about one-third of a fuel's potential into usable energy

# Economic Impact: Maximizing the value from every ton of wood fiber

“Using wood as a resource for lumber, pulp and paper products first and only using it as a source of energy at the end of the product life cycle adds eight times more value to the economy and retains thirteen times more jobs than simply burning wood for energy.”

Independent study conducted in 2007 by the  
Confederation of European Paper Industries

# Recommendations

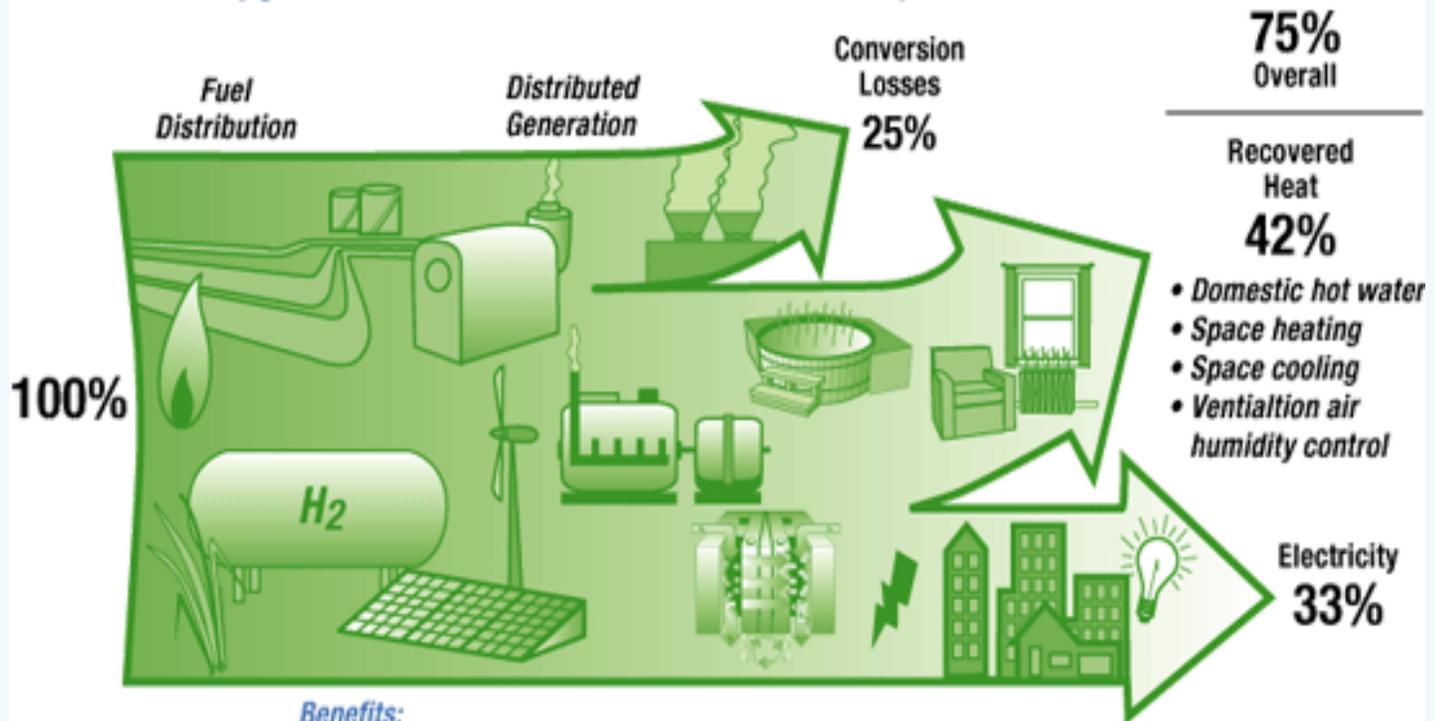
- We must understand the dynamics of the current forest products economy within Kentucky when developing industry to meet the state's RPS voluntary goal of 1,000MW
- Avoid market distorting subsidies that disrupt the dynamics of a functioning economic system with a mid to long-term result of not capturing the full potential from every tree that is grown in Kentucky forests
- Support research aimed at maximizing benefits of Kentucky forests and wood resource

# For a greener planet, we must all work together

## Opportunity for Future U.S. Energy Consumption

*Combined heat and power solution to recycling waste heat:*

*Distribute electricity generation to where waste heat can be recovered and put to use.*



### Benefits:

- More efficient use of our natural resources
- More secure against natural and man-made disasters
- Reduced pollution
- Enhanced indoor air quality and comfort



**Domtar**