

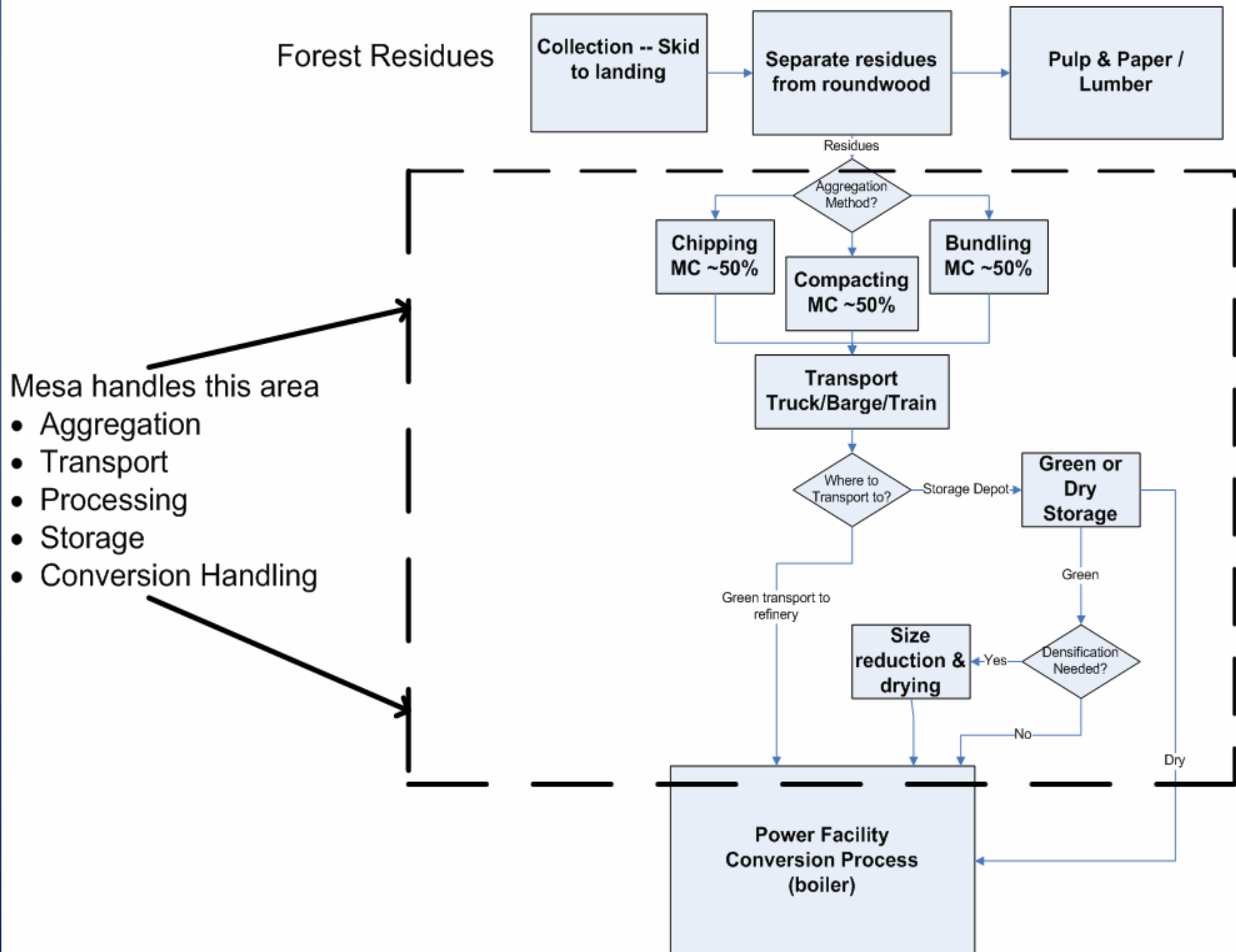
# Woody Biomass for Energy in New York



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# Forest Residue to Power Flow Diagram



# But Isn't Biomass-to-Energy

Bad?



# We Have to Consider Biomass for Energy Use

- Biomass addresses two critical sustainability issues that fossil fuels cannot:
  - Carbon recycling
  - Renewable resources
- Learning how to sustainably use biomass for energy now will help us address these issues for the future

# How New York Gets Its Energy

## 2005 Energy Consumption by Fuel Type, trillion Btu

Petroleum:	1,777.1 (41%)
Natural gas:	1,237.7 (29%)
Nuclear:	438.0 (10%)
Coal:	316.1 (7%)
Hydro:	238.2 (5%)
Net imported electricity:	219.7 (5%)
Biomass:	120.0 (3%)

Source: NYSERDA

# NYS Can Do More With Biomass

- 215.7 million cu ft of removals each year in NYS – mostly Adirondacks, Southern Tier
  - 6.2 million tons (3 million ODT)
  - Forest resource regenerated at a rate of 3:1 from 1980 to 1993; maybe closer to 2.5:1 since
  - 1.275 million tons of processing residues (1996 TPO data – this data is sketchy)

# NYS Biomass Energy Applications

- Typically on-site power/heat distributed generation applications
  - Small boilers to provide on-site steam and heat, some electricity back to the grid
  - J&J Lumber in Dutchess County, Laidlaw Energy in Cattaraugus County, Arnott in Elmira, Norberg in Deposit
- Biomass Power Plants
  - AES Greenidge – co-firing 10% wood chips with coal using waste wood
  - Boralex Chateaugay – 20 MW using waste wood
  - Lyonsdale Biomass – 19 MW using wood chips

# Wood Fuel Sources

## What We Are Using Now

- Mill wastes – fines (sawdust) and coarse slabs put through a grinder
- Pallets
- Land clearing debris

## What We Can Make More Use Of – 2<sup>nd</sup> Level

- Unconventional sources like railroad ties
- C&D material being landfilled now

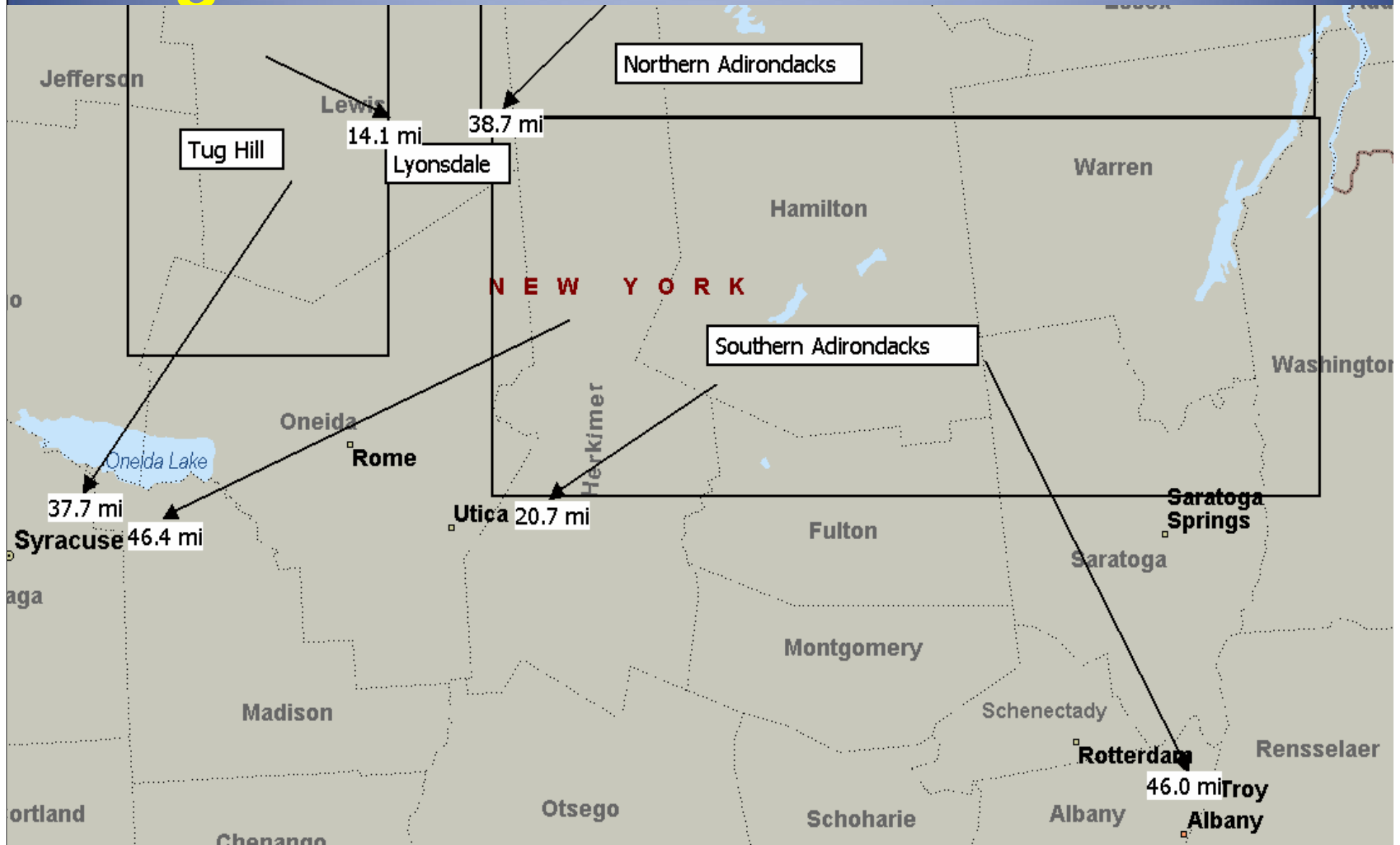
## C&D Material

- 289 registered C&D processing facilities which receive/process unadulterated wood and other nonhazardous waste
- In 2006, NYS C&D processing facilities received 9.35 million tons of debris and recovered 4.75 million tons of material
- Seneca Meadows Landfill (Waterloo) and Hakes Landfill (Campbell ) received almost 1 million tons of material in 2006
- Not known how much of this is clean wood that could be recovered for energy

## 50 Miles to Facility is Key “All Biomass is Local”

- With cost of diesel fuel, transport of material becomes one of the biggest input costs
- We look at resource availability within a 50 mile radius – 25 miles is even better
- Location near highway can extend distance, as can access to rail or barge
- This can be an opportunity for Adirondacks

# Southern Adks Can Be Significant Biomass Fuel Source



# What is Next for Biomass Energy?

Portland Press Herald EST. 1862 Maine Sunday Telegram

## Even sawdust getting pricey

Tight supplies linked to the housing downturn give sawmills a needed revenue boost, but hurt farmers and other buyers.

Clarke Canfield, The Associated Press April 3, 2008



Leon Davies, an employee at Hancock Lumber sawmill, walks past tons of stored sawdust in Casco. Sawdust is commanding premium prices, with buyers paying up to \$50 a ton or more – double what they paid a year ago.

CASCO — As huge saws rip through logs at the Hancock Lumber sawmill, sawdust flies through the air and coats equipment, floors and rafters. Far from a nuisance, though, the sawdust is commanding premium prices as housing construction slumps and energy costs grow.

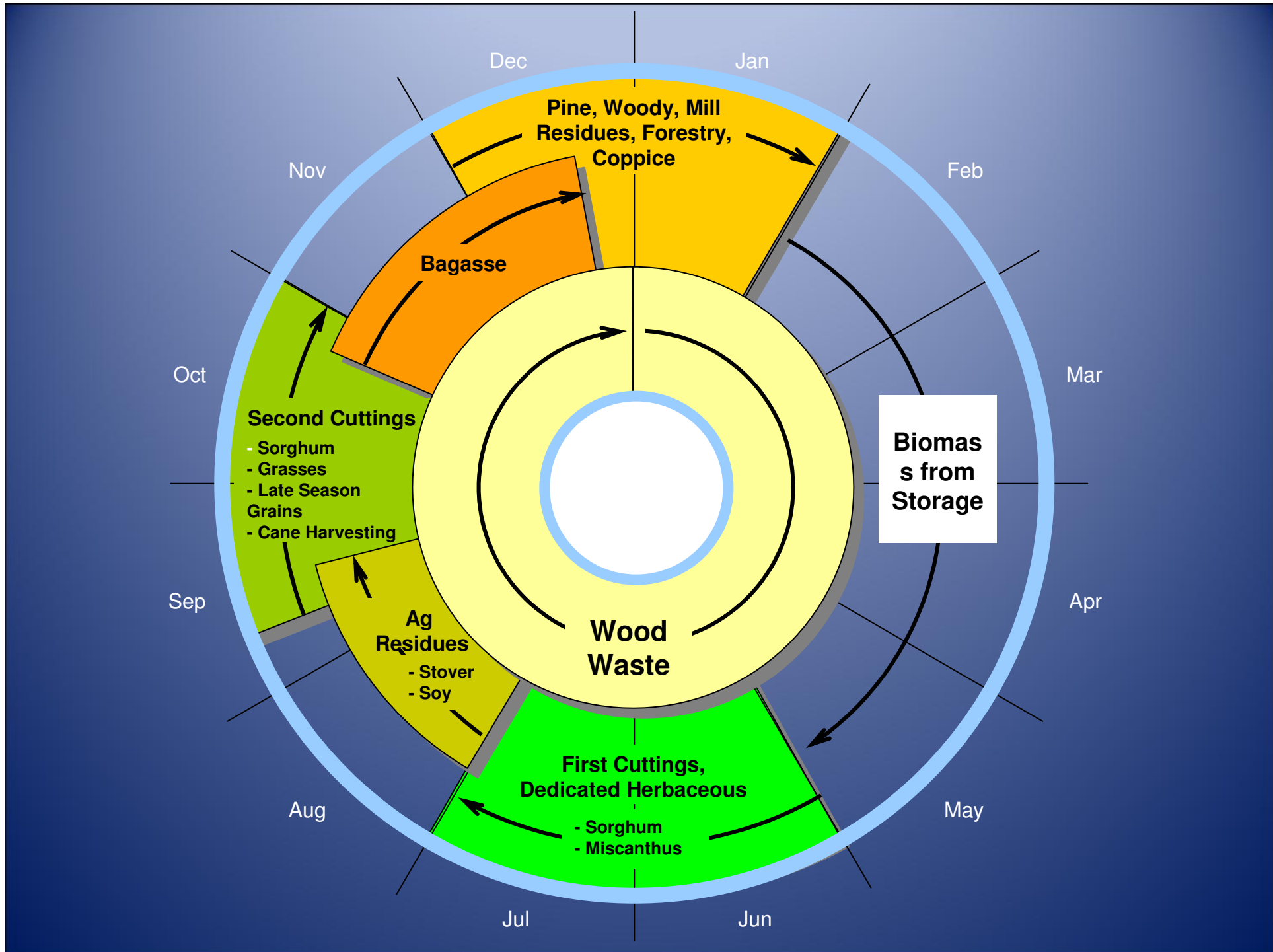
From Maine to Oregon, the price of sawdust, along with other wood byproducts, has soared.

When they can find it, sawdust buyers – dairy farmers, particleboard makers, wood pellet manufacturers among them – are paying up to \$50 a ton or more. That's double what they paid a year ago, some say.

There was once a time when sawmill operators could barely give away their sawdust. They dumped it in the woods, buried it or incinerated it just to get rid of the stuff. These days, they have ready markets for sawdust, as well as bark, wood chips and board trimmings that can't be sold as lumber.

- Large and small scale power applications will increase as fossil fuel costs increase – district heating
- Carbon constraints will impact power generators
  - Regional Greenhouse Gas Initiative (RGGI)
  - Renewable Energy Credit values in RPS states
  - Low-Carbon Fuel Standard in Mass
- Next generation liquid fuels
  - Mascoma in Rome
  - Catalyst in Lyonsdale
  - Other cellulosic projects that are moving forward

- The increased competition will only further tighten supplies, so sources need to be expanded
- This will create opportunities for woody biomass from Adirondacks
- Will be needed to allow for continuous supply -- “biomass supply wheel”



# What is Needed

- Tax incentives/financial assistance for:
  - Private timber stand improvement/management
  - Timber/processing companies to make investment in supply infrastructure (grinders, chippers, storage, delivery)

These incentives will help develop supply base and keep feedstock costs down short-term

# Questions/Thank You

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