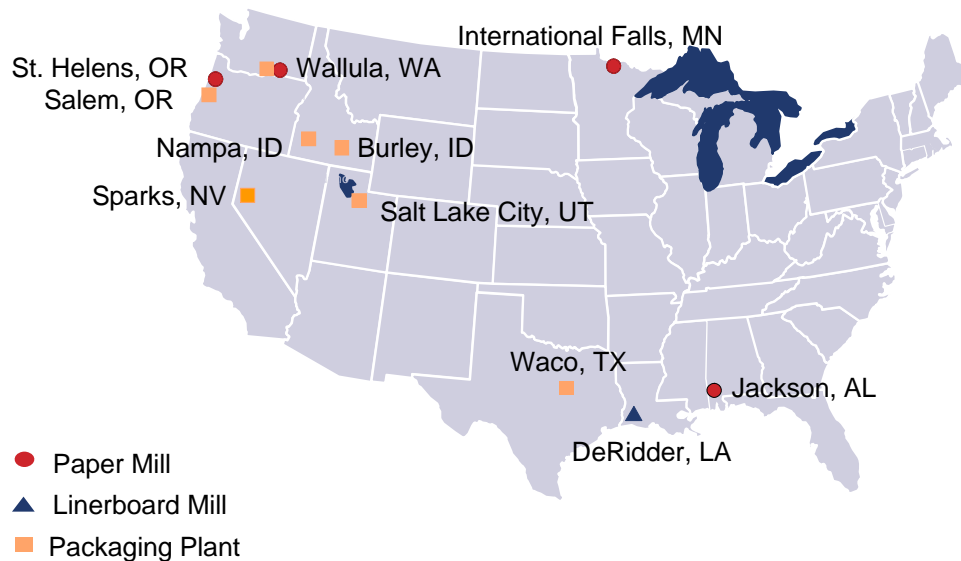


Reducing GHG Emissions in the Pulp & Paper Sector – Manufacturer's Perspective

Climate Leaders Annual Meeting

December 2, 2009

Boise Inc.

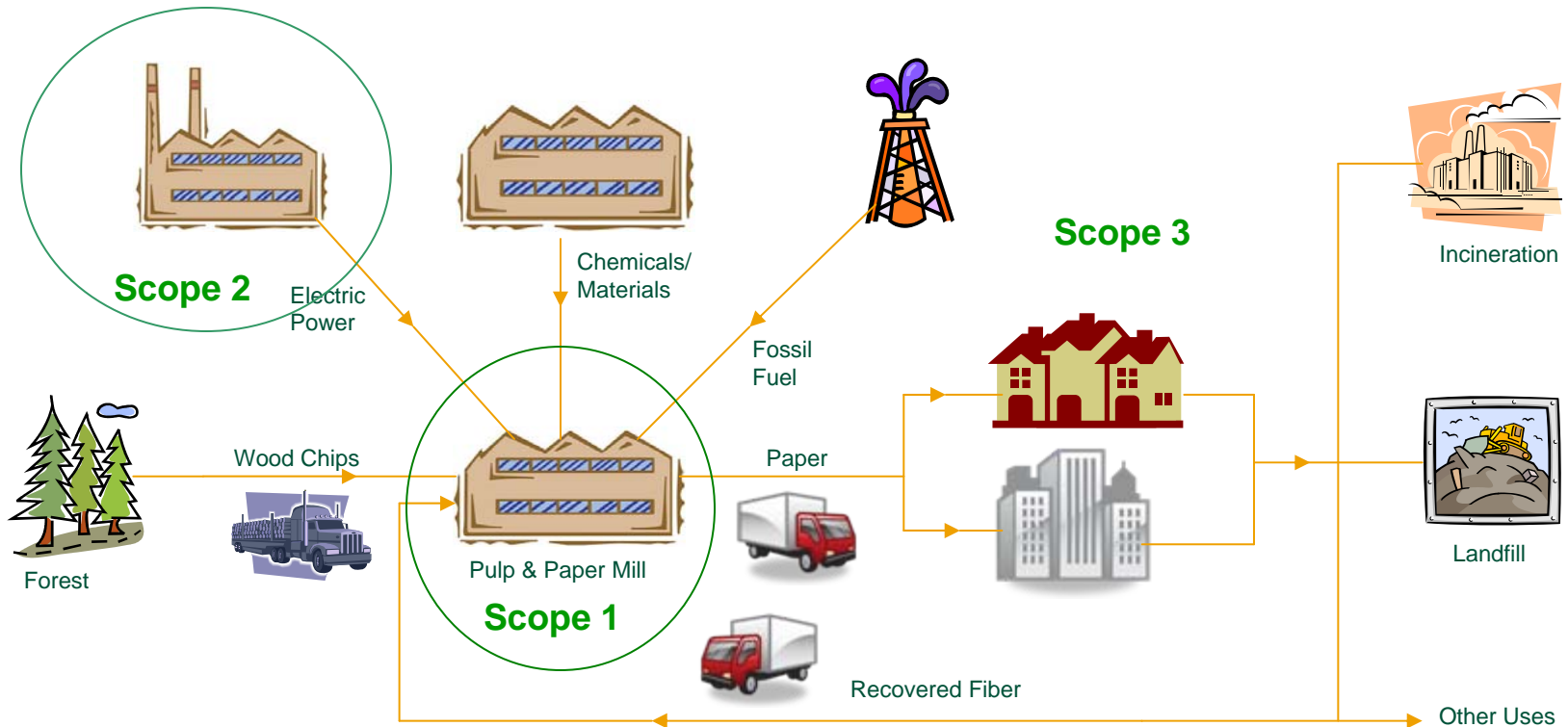


- **Sales ~ \$2 billion**
- **Employees ~ 4,000**
- **Paper**
 - 3 integrated pulp & paper mills (AL, MN, WA)
 - 1 non-integrated paper mill (OR)
 - 1 deink recycle pulp mill (AL)
- **Packaging**
 - 1 integrated pulp & linerboard mill (LA)
 - 7 corrugated container plants (Northwest, TX)
- **Do not own timberlands**

Greenhouse Gas Reduction – Paper Manufacturer's Perspective

- **Overview**
 - Unique Industry Attributes
 - Greenhouse Gas Reductions
 - Strategies
 - Progress
 - Industry Carbon Footprint
 - Biorefineries

Paper Industry Value Chain



Unique Industry Attributes – Carbon Sequestration

- Forests and forest products sequester significant quantities of carbon that trees remove from the atmosphere
- EPA estimated the net sequestration in forests and forest products to be about 699 millions tons of CO₂e in 2005 equal to about 10% of total US emissions



Unique Industry Attributes - Recycling

- Paper is recyclable
- Recycling paper avoids methane emissions from landfills
- In 2007 about 56% of paper consumed in the United States was recovered from the waste stream
- AF&PA has set a new goal to recover 60% of paper from the waste stream by 2012



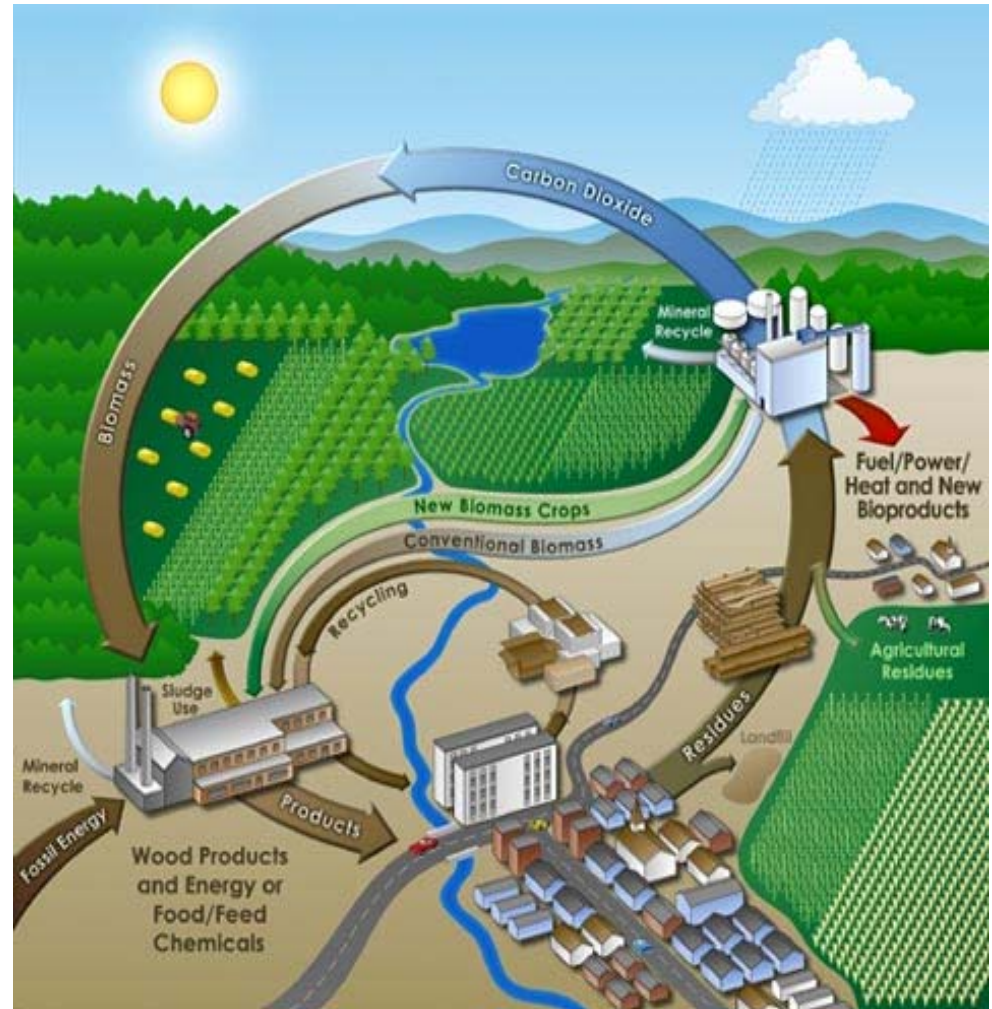
Unique Industry Attributes – Energy

- Paper manufacturing is energy intensive
- However, about 64% of our energy comes from renewable “carbon neutral” biomass
 - wood residuals & spent pulping liquor
 - ~68% of biomass used in all industry sectors for energy
- We produce electricity on-site predominantly with highly efficient combined heat and power
 - ~ 40% of total electricity used
 - ~ 29% of all industry CHP



Carbon Neutrality of Biomass

- Longstanding established carbon accounting principle
 - Recognized by IPCC & EPA
- No net increase in CO₂ emissions as long as the biomass resource is sustainably managed
- Forest carbon stocks are increasing in the US and are accounted for in EPA's GHG Emissions and Sinks Inventory



Greenhouse Gas Reduction - Strategies



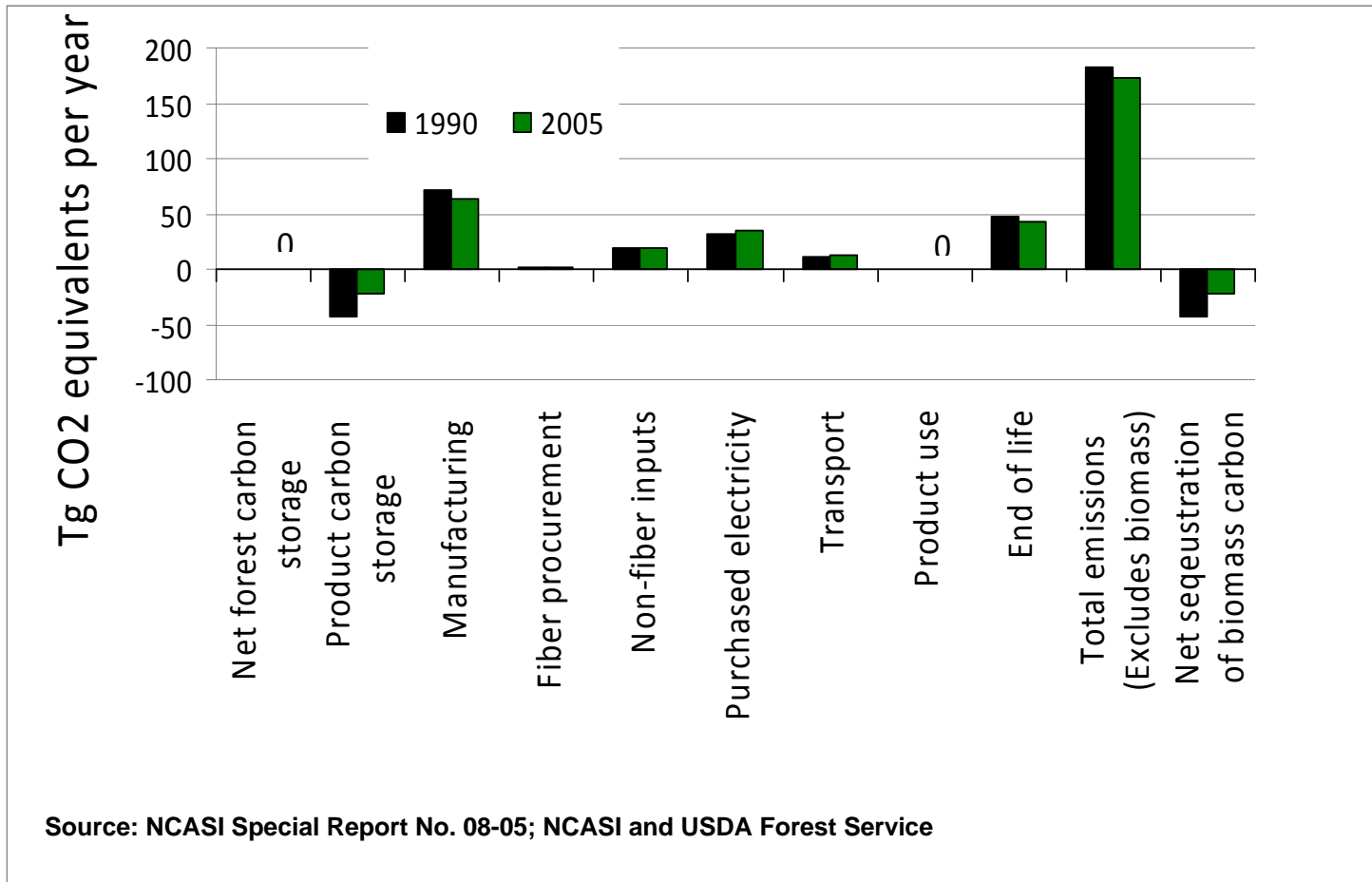
- **Decrease energy use**
 - Conservation
 - Process optimization
- **Displace fossil fuel with renewable biomass**
- **Pursue combined heat & power opportunities**

Greenhouse Gas Reductions - Progress



- From 2000 to 2006, AF&PA estimates member company paper manufacturing GHG emissions (Scope 1 & 2) were reduced
 - ~ 14% on intensity basis
 - ~ 25% on absolute basis
 - ~ 50% of this due to operation improvements &
 - ~ 50% due to production decreases

U. S. Paper Industry - Carbon Footprint



Biorefineries



- **Paper mills are potential sites for biorefineries**
 - Princeton University study estimated could reduce GHGs by 100 million tons per year
- **Further development of renewable electricity from biomass**
 - With combined heat and power improves carbon footprint
- **Concern that biomass resource must be managed sustainably**

Thank you

Jim Jackson

Boise Inc.

Director of Environment

208-384-7602

jimjackson@boiseinc.com