TIMES CHANGE: Relevance of tree improvement to changing land ownerships and objectives

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This presentation reviews the two most significant changes happening on our Nation's timberlands and how those changes might impact tree improvement programs. The two changes are the well documented shift in timberland ownership from the forest industry to institutional investors (and others) and the less well understood or comprehended timber market shift to woody biomass production.

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Times Change!

Relevance of tree improvement to changing land ownerships and objectives

Timberland Strategies, LLC

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Two Key Changes in Progress

- Changing Ownership
  - Shift from forest industry to institutional and other owners
  - Well under way and well documented
- Biomass for Energy
  - Not a new thing but impact is changing
  - Sourcing moving from residue to pulpwood
  - Sheer magnitude is not well understood

What are the ownership changes?

- Forest Industry to Institutional Owners
  - TIMOs
  - Timber REITs
- Conservation Organizations
- Public ownership
- Family Forests

What are the Owner's Objectives?

- Objectives of institutional owners: primarily financial
- Objectives of Conservation Organizations: Forest protection
- Objectives of Public Ownership: Constantly shifting
- Objectives of Family Forest Ownership: Multiple

TIMOs, REITs, Trusts

- Objectives: Generally financially driven
- Impact:
  - Some land removed from production
    - HBU sales
    - Conservation easements
  - Will continue planting
    - Support for tree improvement if financially justifiable
    - Generally longer rotations (less planting)
    - Will respond to biomass market demands, increased planting, need for different genetics traits
  - Willing to financially support tree improvement
    - Direct support to cooperatives
    - Pay for increased value of seedlings
  - Active support for GMOs but uncertainty resulting from certification issues

Conservation Organizations and Other NGOs

- Objectives: Forest protection or preservation
  - Majority of land removed from production
    - Direct sales to state and Federal government
    - Sales to select TIMOs
      - Conservation easements
      - Management restrictions promoting natural regeneration
  - Ultimately, TIMO sale to public entity
- Impact:
  - Little or no planting
  - No interest in tree improvement
  - Active resistance to GMOs

Public Ownership

- Objectives: Multiple and changing
  - Majority of land removed from production
    - Some goes directly to “preserves”
    - Some is managed
      - Timber management not usually a priority
        - There are exceptions, but limited
      - Management restrictions promoting natural regeneration
  - Objectives change with politics/economy but the trend is clear
- Impact:
  - Little or no planting
  - Little interest in tree improvement
  - Active resistance to GMOs

Forest Industry

- Objectives:
  - Some will continue to own land to maintain some level of self-sufficiency to support mill operations
- Impact:
  - Will continue planting on own land but much reduced ownership
  - Forest industry is concerned with competition surrounding biomass demand
    - May see a renewed interest in landowner assistance programs among pulp & paper companies to promote tree planting.
    - Wood Supply Agreements with TIMOs

Family Forests

- Objectives: Multiple, but timber management and a financial consideration are usually present
- Impact:
  - Will continue planting
  - Some land removed from production
    - Home sites
    - Aesthetics
  - Will pay for higher quality seedlings
  - If market is there, they will plant!

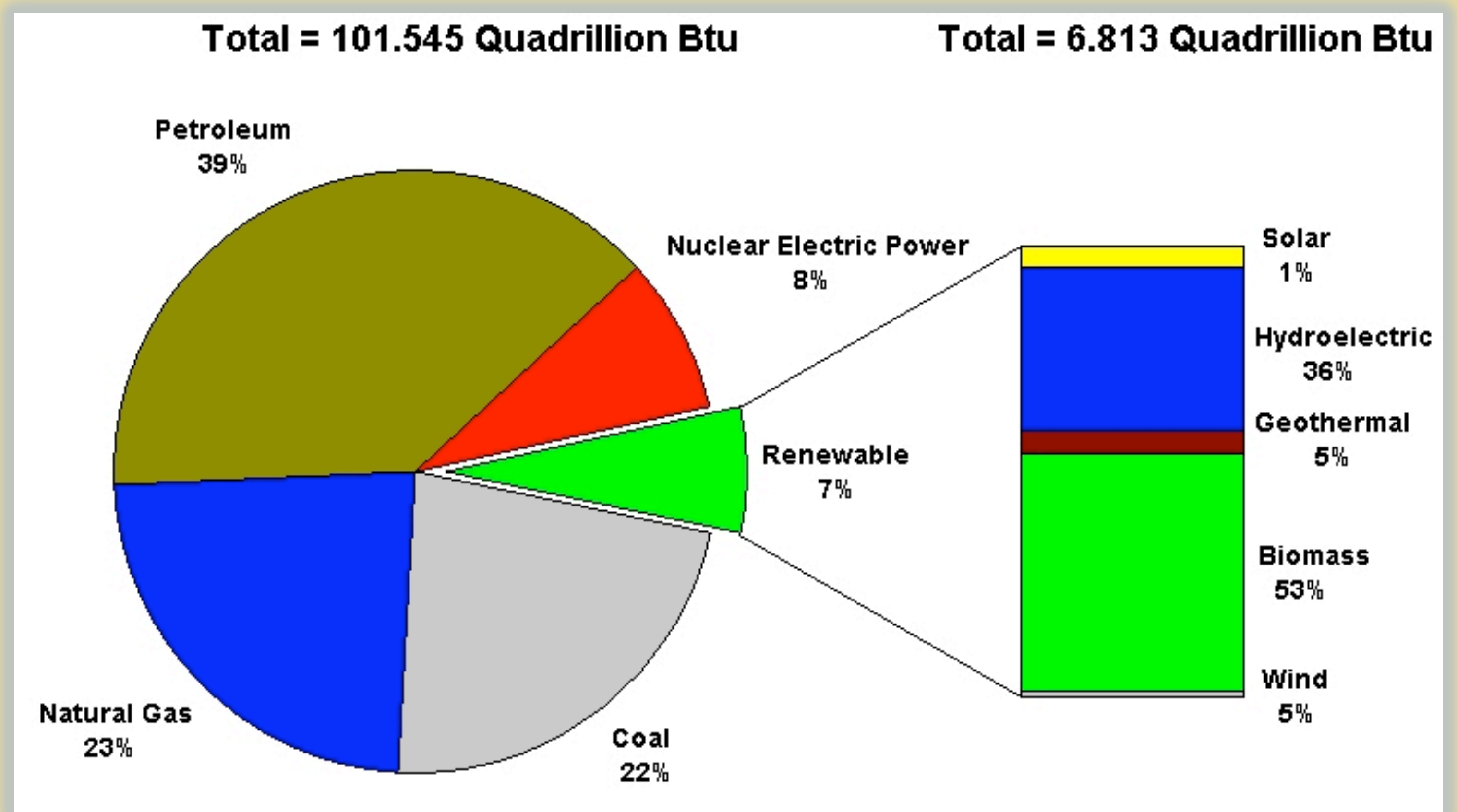
What is the impact on tree planting and tree improvement?

- Institutional Investors and REITs
  - Continued planting
  - Generally longer rotations
  - Will respond to biomass demands, increased planting, need for different genetics traits
- NGOs and Public land
  - Little planting, little demand for improved stock
- Family Forests
  - Poor markets, little cutting, very little planting
  - Good markets, more harvesting, more planting
- Forest Industry: Steady

A Look at Biomass

- Three Drivers
  - Renewable Energy
  - Climate Change
  - Energy self-sufficiency
- Woody Biomass Sources
  - Manufacturing residues
  - Harvest residues
  - Urban waste, construction, etc.
  - Pulpwood!!!
  - Short rotation crops grown specifically for biomass

Biomass Energy Consumption in the Nation's Energy Supply, 2007



Source: Energy Information Administration

A Biomass Mill

- Cottondale, Florida
- First wood pellets produced on April 4, 2008, one year after the site grading started
- The world's largest pellet production facility; 560,000 tons per year
- Resource is 100% SYP ***pulpwood –not residues!***
- 100% export to Europe
- Driver is carbon tax
- Consumption: 1 million green tons plus – that's a new pulp mill!

And Cogeneration

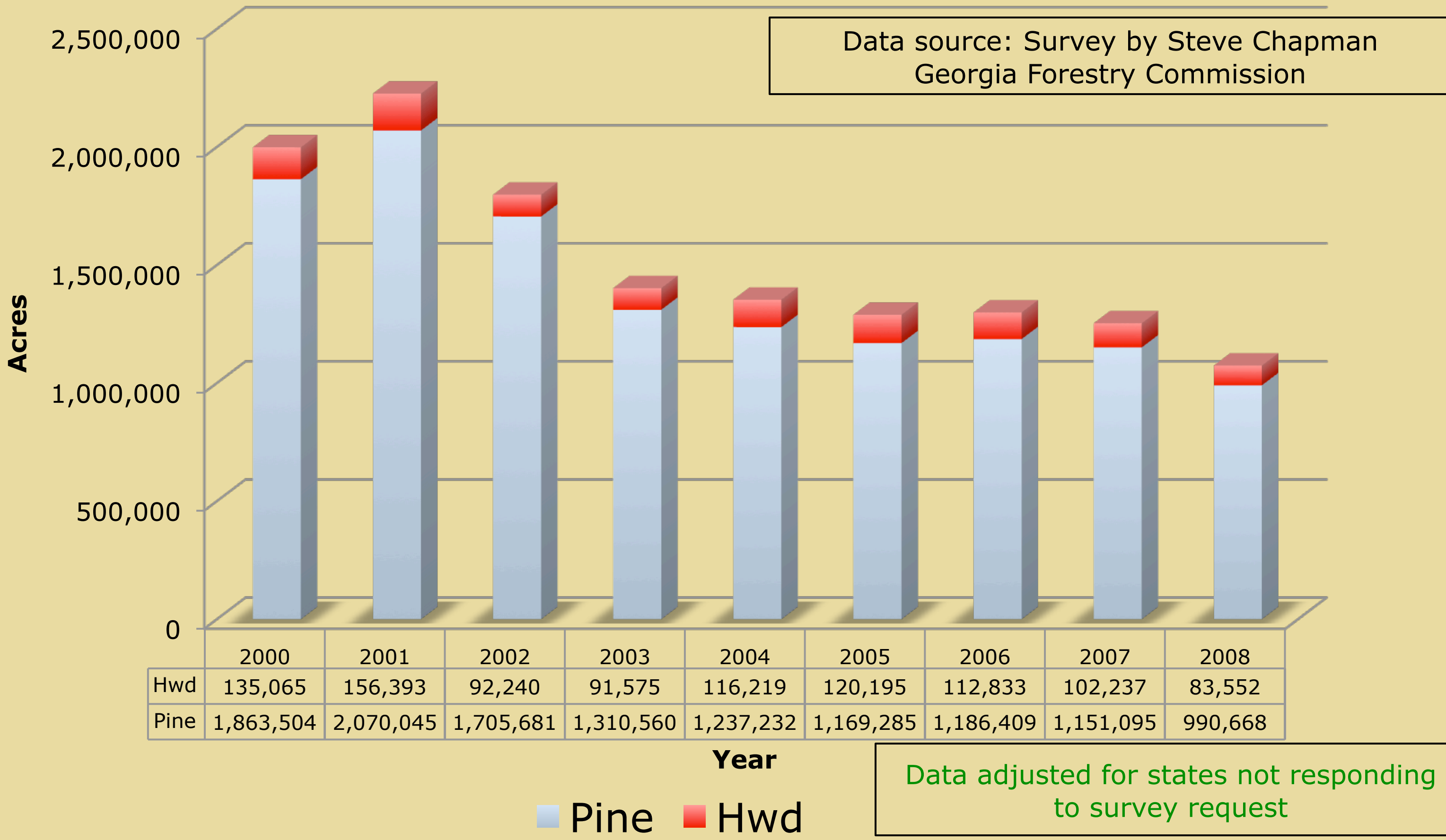
HARTSVILLE, S.C., Apr 22, 2009 (BUSINESS WIRE) -- Peregrine Energy Corporation… announced today that it **plans to develop a new woody biomass-fueled cogeneration plant** at Sonoco's Hartsville Manufacturing Complex. The $135 million investment by Peregrine represents one of the largest single capital development projects in Darlington County's history. Plans are for Peregrine to construct and own a new **50-megawatt** capacity facility that will be capable of generating enough electricity to power approximately 14,000 homes. **The new biomass-fueled cogeneration facility will replace Sonoco's existing coal-fired boilers**. Peregrine intends to **sell the entire electrical output and all renewable energy certificates associated with the plant to Progress Energy Carolinas, Inc., and low pressure steam from the plant to Sonoco for use in the manufacture of recycled paperboard** and other converted products at its Hartsville complex.

The project would benefit the regions' forestry industry by **utilizing pre-commercial thinnings and waste logging residues as the woody biomass fuel for the project.**

A Coal Fired Power Plant

- FirstEnergy at Shadyside, Ohio
- Announced conversion to biomass
- Largest proposed development to date was Yellow Pine Energy's 110 MW project in GA, a million-plus ton/ year wood consumer set to fire up next year
- FirstEnergy's is 312 MW and will consume ***3 million G tons!***

Southern Tree Planting Trend



	2000	2001	2002	2003	2004	2005	2006	2007	2008
Hwd	135,065	156,393	92,240	91,575	116,219	120,195	112,833	102,237	83,552
Pine	1,863,504	2,070,045	1,705,681	1,310,560	1,237,232	1,169,285	1,186,409	1,151,095	990,668

Data adjusted for states not responding to survey request

What drivers are on the horizon?

- ENGO ownership is transient
  - Ultimately moves to public ownership
  - Conservation easements will restrict some silviculture to natural management – no planting
- More public ownership
  - More land removed from production
  - Less intensive management (less planting)
  - More emphasis on “natural”, no GMOs
- Biomass utilization impacts
  - Planting will be critical to address sustainability issues
  - Shorter rotations with high stocking levels will increase planting stock demand
  - Different genetic demands addressing initial growth and traits possessing processing efficiencies for pellet production
  - This is your bright spot!
- Family Forests and TIMO/REITs are critical to the future of tree planting
  - If markets are there, they will plant

About me

Brian Fiacco authors The Timberland Blog *("Examining the changes in timberland ownership and what those changes might mean.")* which is widely read by industry analysts, institutional investors, TIMOs and the forest industry. He also owns Timberland Strategies LLC a consultancy focusing on the subjects of timberland valuation, sales, and resource analysis (including the evolving impact of woody biomass on wood demand). While employed with MWV he was responsible for timberland acquisition, developing appraisal systems, development of wood supply plans, monitoring global fiber supplies and later served as VP of The Forest Technology Group and MWV's real estate development subsidiary. He owns and manages Tree Farms in NY and SC.