

# A Practical View of Future Wood Markets in the US South

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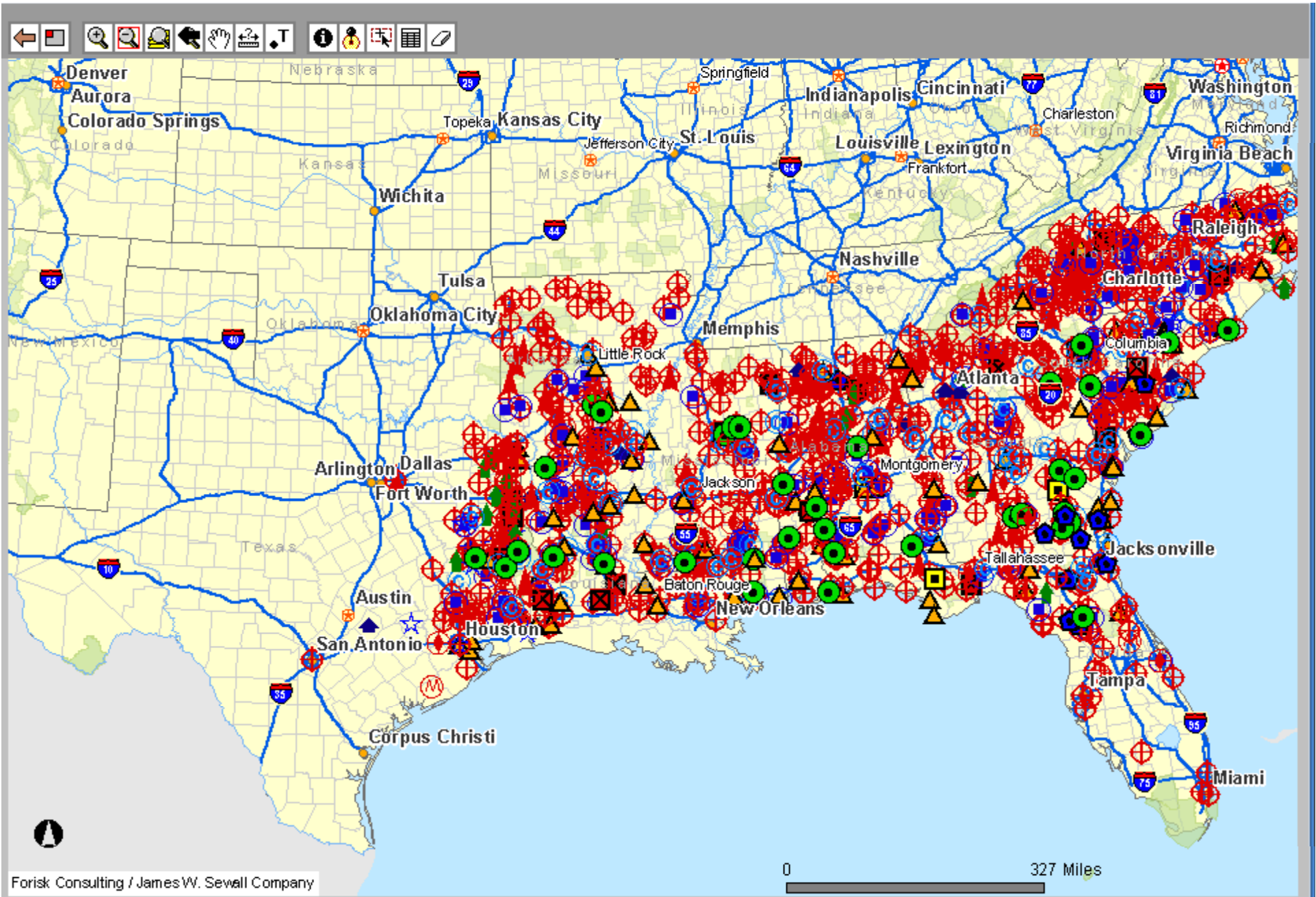


# Topics

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- ▶ Timber markets are uniquely local
- ▶ Evolution of wood demand by industry
  - ▶ Profile of Virginia
- ▶ Screening announced bioenergy projects
  - ▶ Virginia relative to the US South
- ▶ Key supply chain implications
  - ▶ Current issues of focus



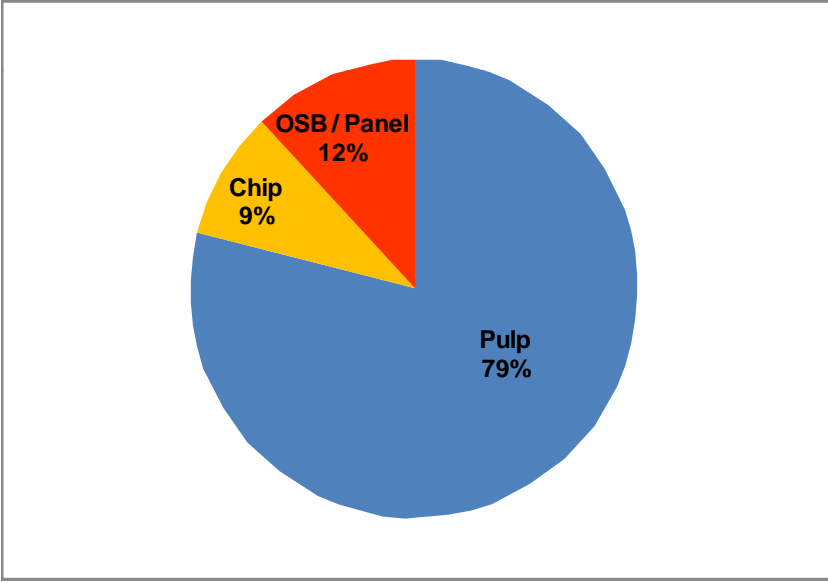
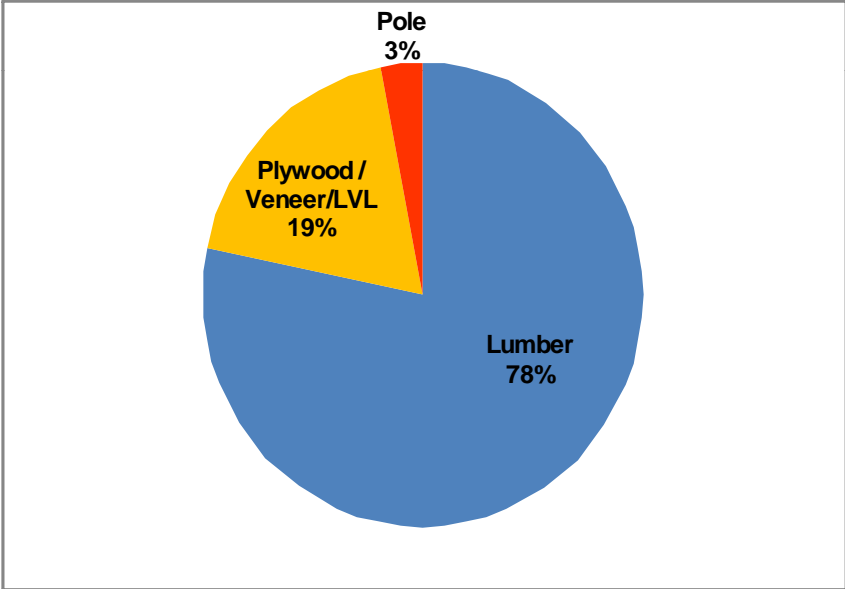


# 2009 South-wide wood demand by end use

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## Pine sawtimber

## Pine pulpwood



# Profile of Virginia Wood Markets

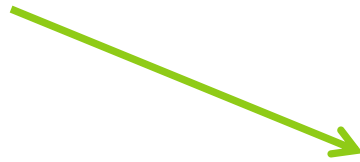
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- ▶ Wood consuming mills
  - ▶ 111
- ▶ 2009 grade consumption
  - ▶ 6.6 million tons
    - ▶ Lumber: 79.6% of pine, 99% of hardwood
- ▶ 2009 pulpwood consumption
  - ▶ 10.6 million tons
    - ▶ Pulp: 63.5% of pine, 89.6% of hardwood

# Wood bioenergy markets differ.

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- ▶ Pellet mills



- ▶ Cellulosic ethanol

  - ▶ Liquid fuel

- ▶ Wood-to-electricity & cogeneration

  - ▶ Retrofit coal plants; utilities adding boilers

  - ▶ Renewable Portfolio Standards (RPS)

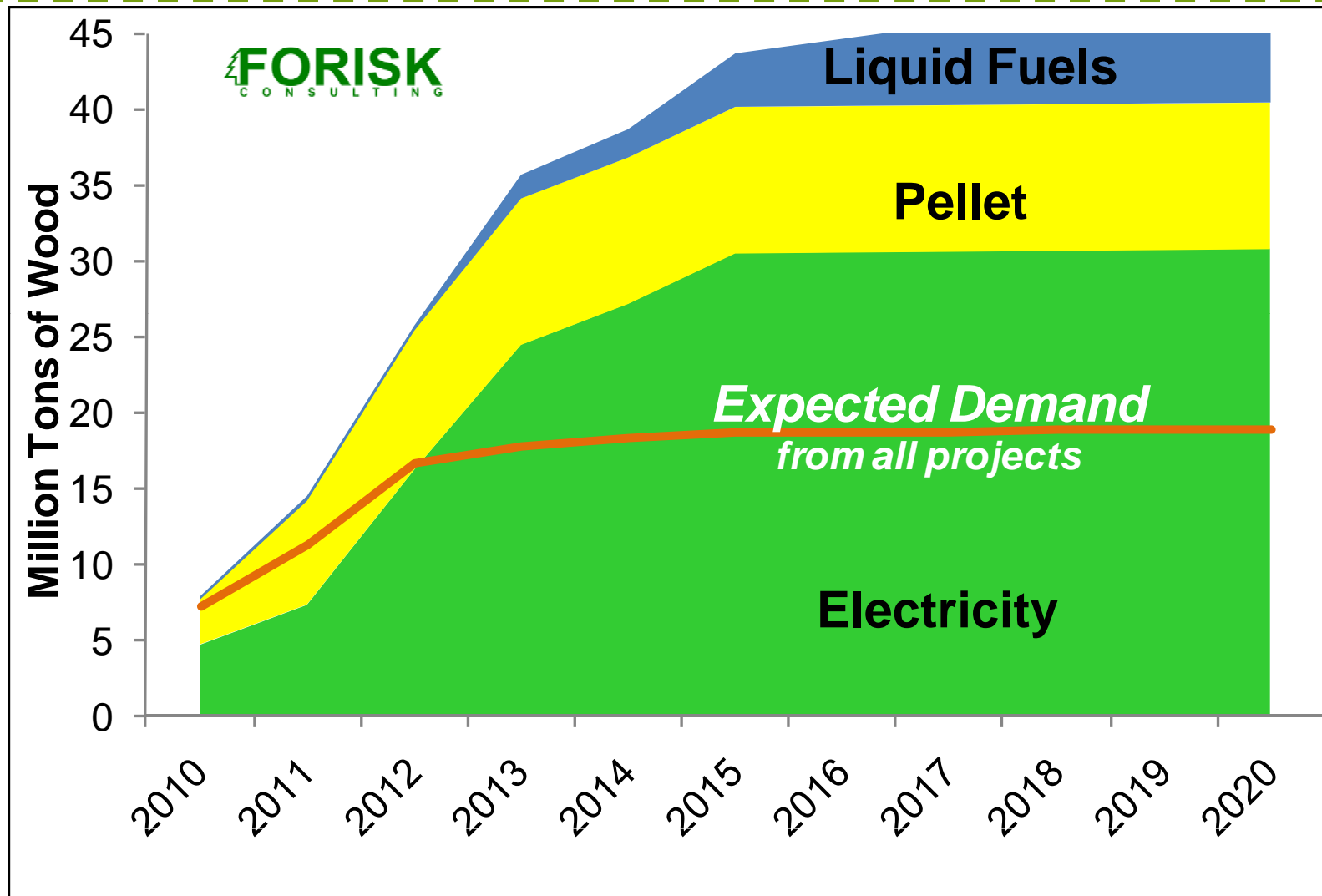
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# 50+% of announced projects will fail.

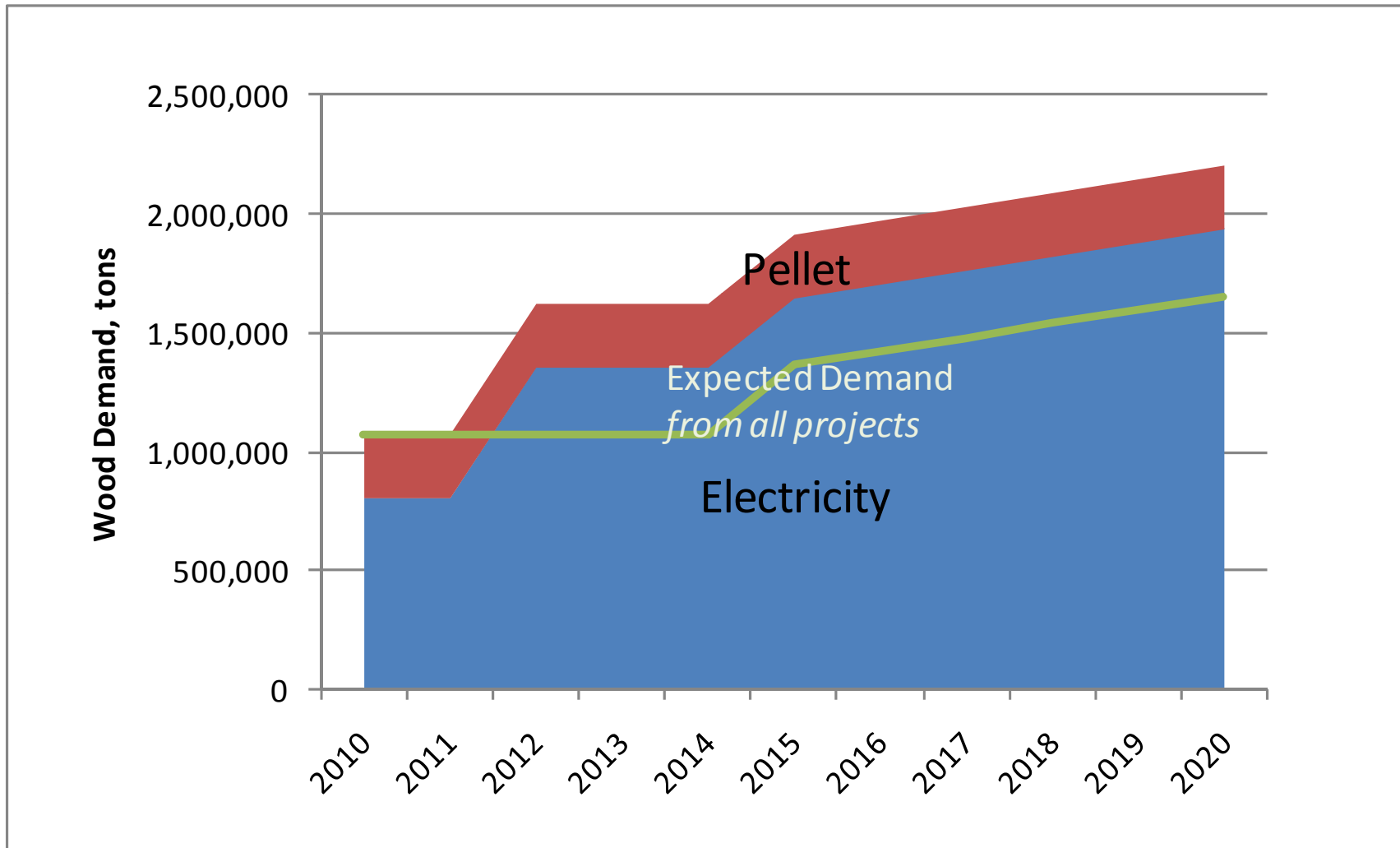
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- ▶ Screen for failure to rank projects:
  - ▶ Technology
    - ▶ Does the project rely on proven or unproven technology?
  - ▶ Status
    - ▶ Is the project under construction or operating?
    - ▶ Has the project received/secured/signed **two or more** of:
      - Financing
      - Air quality permits
      - EPC contracts (Engineering, Procurement & Construction)
      - Power purchase agreements for electricity facilities
      - Interconnection agreements for electricity facilities
      - Wood supply agreements
      - Location

# What if all announced bioenergy projects come online in the South?



# Wood Demand from Announced Bioenergy Projects in Virginia



# Key supply chain implications

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- ▶ What is wood worth? What is value?
  - ▶ Number one issue
  - ▶ Maximize energy content or wood volume to customer?
  - ▶ Tons versus BTUs per load
- ▶ Where should chipping (processing) occur?
  - ▶ In the woods or near the plant?
- ▶ Who's hauling my wood? How? Where?
  - ▶ Major security and efficiency implications

# Thank you

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