Pinchot Institute
Heinz Center
SE Regional Biofuels Policy Forum

Raleigh, NC
August 27, 2009
A Sustainably-Managed, Working Forest is One of the Best Ways to Sequester Carbon and Lower Environmental Impact

Sustainable Forest Management

- Takes into account all factors:
  - Social – land rights, cultural values
  - Economic – supply, demand, costs
  - Environmental – soil health, biodiversity, emissions

- Has observable benefits
  - Prevents urbanization and land-use change
  - Increases carbon stock in soil/biomass
    - Younger trees sequester 2-6 tons of carbon per year
    - Trees reach a saturation point between 15-75 years at which there is no net carbon sequestration
  - Increases in carbon stock in forest products
    - Concrete benefits to recycling wood products

Sources: PEW Center on Climate Change 2005
Forest Resources Provide Renewable Resources where Wind and Solar are Less Viable

- Large growing stocks exist in the northwest, southeast and northeast
- These areas have less potential for solar and wind (unless coastal)
- Utilizing forest residues, fuel treatments and urban wood waste can offset feedstock constraint

Sources: National Renewable Energy Labs
New Coal and Nuclear Face Development Challenges

Traditional Base Load Resources

- 34% coal plants are older than 50 years
  - Represents 42.5 GW of capacity (13%)
- Carbon emission concerns is preventing coal from coming online
  - 50 coal plants were cancelled in last two years
- While there has been renewed interest recently, new nuclear power still faces challenges
  - No nuclear plant has been built since '96 (Watts Bar, TN)
  - While many utilities are applying to build new plants only TVA is currently in construction

Coal and nuclear represent almost 70% of our energy generation...

Sources: Energy Information Administration
Natural Gas has Energy Independence Risks Similar to Oil

History of Natural Gas

• Similarities exist between the fate of gas and that already seen by oil
  - 1972 Natural Gas Moratorium
  - 1980’s Productivity Explosion
  - 1990’s Infrastructure Explosion
  - 2000’s LNG trade
  - Late 2000’s formation of “Gas-OPEC”

• No competitive products exist against gas for dispatchable power

Energy Independence

• US imports of LNG and pipeline gas have risen more than 4x in last 40 yrs
• Despite recent downturn in prices, gas prices and generation are growing
  - 38,000 MW planned capacity between 2009-2012
  - 50% more planned capacity than coal

Imports of natural gas have reached 20% of consumption…

Both natural gas prices and online capacity have doubled in last 10 yrs…

Sources: Energy Information Administration
Demand for Renewable Energy is Growing… as Baseload Fossil Energy is Facing Increasing Challenges

- Renewable Portfolio Standards are already driving demand at the State level
- A Federal mandate has already passed the House of Representatives and the Senate Energy and Natural Resources Committee
- A balanced portfolio of energy based on regional resources is essential to meeting the increased demand

**Renewable Portfolio Standards**

[Map image with states indicating renewable energy goals and symbols for states with RPS.]

- 29 states & DC have an RPS
- 5 states have goals

**Note:**
- Minimum solar or customer-sited requirement
- Extra credit for solar or customer-sited renewables
- Includes separate tier of non-renewable alternative resources
And Other Renewable Energy Technologies Still have Obstacles to Becoming Mainstream

Current Issues

- PV Solar experiences low capacity factor due to insufficient solar resources
- Solar thermal struggles with demanding water requirements in water deficient geographies
- Wind experiences huge intermittency issues, often overloading or undersupplying the grid
- Hydro electric receives pushback due to large environmental impacts
- Geothermal requires access to heat sources found only at specific locations in the earth’s surface
Given This Great Market Opportunity …
ADAGE Formed To Be A Utility Scale Biopower Market Leader

- Joint Venture between AREVA and Duke Energy
- Business was launched Sept 2008 at the Clinton Global Initiative
- Plan to develop, own and operate twelve wood biopower energy plants by 2014

Feb ‘09 Olympia, WA
Energy NW Alliance

May ‘09 Amelia Island, FL
Hamilton Project

From fuel to financing, ADAGE has the resources to execute, offering a higher certainty of outcome.
• On May 27, announced the site of the first facility in Hamilton County, Florida, about 80 miles west of Jacksonville
  – The rights to a 215 acre site have been secured
  – State environmental permits applications have been submitted
  – Exclusive negotiations are under way with the Jacksonville Electric Authority for power purchase and The Langdale Company for long-term fuel supplies
  – Hope to begin construction early in 2010
WGA 2009 - Recent Presentation By Cabinet Members
Limited Emphasis On The Role Of Biopower

Impressionist Ballroom
(The Chateaux)

Plenary II – Tapping the West’s Renewable Energy Potential
Secretary of the Interior Ken Salazar, Secretary of Energy Steven Chu, Secretary of Agriculture Tom Vilsack and FERC Chairman Jon Wellinghoff will provide their perspectives on developing large amounts of clean energy in the West …

As renewable power grows …
we don’t want to be the “other renewable”
Let’s Take Advantage of this Opportunity!
ADAGE Policy Initiatives

- PTC Parity with Wind
- Broaden Biomass Definition
  - Working in Cooperation with Landowners
  - Sustainable Use of Woody Biomass from Public Lands
- Incentives for our Forest Partners
  - Improve Field Collection and Transport
    - Slash Bundlers (reduce open burning)
    - Improved Engine Technology
  - Financing Incentives
    - Innovation Grants
    - SBA Loans