BIOMASS-FIRED RENEWABLE ENERGY

FOR

SOUTH CAROLINA

peregrine

March 31, 2010

Corporate Headquarters

220 North Main St., 6th Floor

Greenville, SC 29601

Since 1993 Peregrine has been providing energy consulting services and developing and operating independent power and other energy-related projects.

peregrine

Woody Biomass Compared to Other Renewables:

- Woody biomass is our most plentiful renewable resource.
- 2007 LaCapra study estimated approximately 66% of our state's renewable energy potential would come from woody biomass.
- A 2007 report prepared for the SCEO concluded: "Landfill gas and combustion of waste wood by the forest products industry are the greatest biomass energy success stories thus far in SC, and both products offer tremendous potential for future growth".

peregrine

Woody Biomass Compared to Other Renewables:

It further stated:

"The most significant present-day obstacle is a lack of understanding by policymakers, energy users and potential energy producers of the viability and magnitude of the opportunity for SC if it makes a stellar effort to overcome barriers and make full use of its indigenous biomass energy potential."

Woody Biomass Compared to Other Renewables:

- Other forms of renewable (solar, wind, etc.) just will not produce the amount of renewable energy today to significantly impact our energy use.
- The standard woody biomass plant is 50MW. Other renewables are far smaller.
- Capacity factor for woody biomass is 85% to 95% - FIRM CAPACITY! Comparable to coal, gas and nuclear.
- Wind and solar have capacity factors in the 20% -30% range.

peregrine

Woody Biomass Compared to Other Renewables:

- Woody biomass energy creates jobs!
- A typical 50MW plant will employ 30 people directly with another 125 in the local area collecting and transporting wood.
- Investment is significant. Capital cost approximately $150 million.
- Generates enough energy for 20,000 homes.

peregrine

The Cost of Biomass Power:

- Renewable energy costs more than the “avoided cost” of our electric suppliers.
- Based on the current methodology, the “avoided cost” of our state’s electric suppliers is around 5¢ to 6¢ per KWH.
- Woody biomass energy requires between 9.5¢ to 11¢ per KWH to be economically viable.
- The cost for other renewable resources (wind, solar, etc.) is even higher.

peregrine

The Cost of Biomass Power:

- The “avoided cost” methodology is still based on a combustion turbine and not the cost of the next coal-fired or nuclear plant.
- We believe that compared with a new nuclear or coal plant, woody biomass power is a competitive option.

peregrine

Paying for Renewable Energy – A State RPS:

Thirty-six states have passed a Renewable Portfolio Standard (“RPS”) that mandates or encourages their electric suppliers to have some portion of their energy generated from a renewable resource.

peregrine

Paying for Renewable Energy – A State RPS:

- Without a RPS in SC, our electric suppliers have no incentive to invest in or purchase renewable energy.
- Without a RPS in SC, our electric suppliers have no mechanism to collect the incremental cost to pay for renewable energy.
- A state RPS would allow the electric suppliers to recover the incremental cost incurred to comply with the renewable energy requirements.

peregrine

Paying for Renewable Energy – A State RPS:

- Fuel represents a large cost component for woody biomass energy (approximately 60% of operating costs).
- A state RPS must recognize that biomass-fired facilities need a mechanism for addressing the fluctuation in fuel cost similar to the “fuel adjustment clause” for rate-based power plants.
- Woody biomass plants will not be financed without a fuel adjustment clause.

peregrine

Other Considerations for a State RPS:

- A SC RPS should recognize renewable electricity and other equivalent forms of useful renewable energy, e.g., steam.
- A SC RPS must also support economic development by requiring that our renewable energy be generated from an in-state renewable resource.
- A SC RPS would allow us as a state to more effectively recruit manufacturing companies that sell their products to the renewable energy market.

peregrine