



100 MW Biomass-fired Facility

Nacogdoches County, Texas

QUESTIONS & ANSWERS

Q: Nacogdoches Power indicates the Sacul biomass plant will be fueled by waste products though its Power Point presentation includes “wood chips” with up to 50% moisture content on its list of “accepted/permitted” fuels. Will Nacogdoches Power use fuel only from waste products or is it leaving the option open?

A: The air permit for the Nacogdoches power plant does permit the use of clean wood chips. It is Nacogdoches Power’s intention to use solely wood residues as fuel since clean wood chips will be relatively high priced and are currently being used by the pulp and paper industry. Our study and the studies of the Texas Forest Service have shown that there is sufficient wood residue available as fuel for the operation of the plant.

Q: **What other fuels are likely to be used?**

A: The plant is currently permitted to use logging residue, mill residue, waste pallets, municipal wood waste, and clean construction and demolition debris. There has been some discussion of the use of agricultural waste as fuel (e.g. poultry litter or rice hulls), however, the plant would require a revision to its air permit to use those waste materials as fuel. The plant is not permitted to burn coal.

Q: Nacogdoches Power indicates it will expect all suppliers of wood products to the mill to use “Best Management Practices,” as defined by the Texas Forest Service. Are BMPs sufficiently stringent in protecting the natural environment? Will Nacogdoches Power institute any environmental measures beyond BMP’s, such as no cutting in streamside management zones and requiring that a percentage of litter/waste remain on the ground to prevent soil erosion protection and nutrient loss?

A: The Texas Forest Service Best Management Practices do address these issues and the Environmental Protection Agency has concluded that Texas has been successful in implementing BMPs to address non-point source pollution from forestry activities. While Nacogdoches Power will be using logging residue, the forest litter will not be harvested. Nacogdoches Power includes in its fuel supply contracts the requirement that the fuel supplier comply with the BMPs. Nacogdoches Power will ensure that the terms of its contracts are met.

Q: **Will the cooling water from Lake Striker be returned to the lake and to the Angelina River at a higher temperature than it is withdrawn? Has Nacogdoches Power determined the level of affect on water quality and aquatic resources that will accrue from its operation?**

A: The Nacogdoches plant uses a cooling tower to cool its condenser water. The water drawn from Lake Striker will be used to make up water that is lost to the atmosphere. The only water that will be returned to the Angelina River is a small fraction (approximately 10%) of the water that is withdrawn. This small amount of water will be cooled as it travels miles underground to the river. As a result it is expected that if there is any increase in temperature, it will only occur within a few feet of the discharge point. Nacogdoches Power has received a Texas Pollutant Discharge Elimination System permit for the discharge of water into the Angelina River. In issuing that permit, the TCEQ considered the impact of the discharge on water quality and the aquatic resources.

Q: **What will the CO2 emissions for the plant be? Will the CO2 emissions be offset by the use of the wood waste? What about other types of wood?**

A: The National Renewable Energy Laboratory has determined that a biomass plant that uses wood waste materials as fuel, such as the Nacogdoches plant, will result in a net 148% reduction in global warming gases as compared to the equivalent amount of coal-fired generation. This results from elimination of all of the global warming gases that would have been produced by the equivalent amount of coal generation (carbon neutral) plus the elimination of the global warming gases that would have been produced by the decay of the wood waste.

Q: **What about the energy used for collecting, transporting and gathering the wood waste? Is this part of the calculations of CO2 offsets?**

A: The global warming gases created during the processing, collection and transportation of the waste material are considered in the NREL analysis.

Q: **What is the long term viability of the fuel source? How will the projected decline in the viability of the East Texas forest due to global warming affect the fuel source?**

A: The East Texas forests have been growing at a rate faster than they are being harvested. The Texas Forest Service 2003 Forest Inventory and Analysis Fact sheet indicates that in East Texas, even after all of the harvesting that has occurred, the volume of softwood increased 18% and the volume of hardwood increased 25% from 1992 to 2002. We do not agree that there is a projected decline in the viability of the East Texas forest due to global warming. The Climate Change Resource Center, in its 2008 report on Forests and Carbon Storage, stated that over the next 50 years, the United States as a whole is projected to be warmer and wetter which will increase forest growth.

Q: **Will the fuel needed for this plant decrease the availability of wood waste and cause other paper mills to have to use green trees?**

A: The Texas Forest Service estimated the amount of logging residue produced in East Texas. In that report, the TFS concluded, "Most of the logging residue in East Texas has not been marketed for competing uses and is left at the logging sites." There is no reason why paper mills will need to use any more green trees than they do today given that logging residue is largely unused today. Even if the paper mills use logging residue the TFS has estimated that over

3,000,000 tons of logging residue are produced in East Texas as compared to Nacogdoches Power's total fuel need of 1,000,000 tons.

Q: Will the price of power from this biomass plant be affected by the funding of the state's (HB 1090) incentive wood waste incentive program? If funded will our price go down?

A: The fuel grants included in HB 1090 will serve to reduce the fuel cost of the Nacogdoches plant by as much as \$6,000,000 per year through 2019 and these savings will be passed along to Austin Energy. The \$2.3 billion contract price indicated for the project does not include possible federal tax credits nor state grants.

Q: Will the fuel price be fixed?

A: In some contracts, fuel prices will be fixed, in others they will not.

Q: Currently, what are the comparable costs of providing electric power to industrial, manufacturing customers in other Texan cities?

A: This type of data is not readily available due to retail competition in Texas

Q: Funding will be provided through the Electric Fuel Charge revenue or future Green Choice Charge revenue. What are the cost implications for customers for these two options?

A: No decision has been made as to whether this will be offered as Green Choice or applied to the fuel charge. If the cost of the power is recovered through the fuel charge, the impact to the average residential bill in 2012 when the plant

would go online is projected at between -\$1.50/month to +\$2.50/month over what it would otherwise be. The fuel charge may increase as much as 40% by 2012 due to increases in all fuel costs, particularly natural gas.

Q: If treated as Green Choice, will this be comparable to all previous Green Choice subscriptions (sign up process, fixed charge based on contract)?

A: If treated as Green Choice the pricing would be adjusted to reflect this agreement. The pricing may not be fixed or may be fixed for a shorter period of time compared to prior Green Choice offerings in order to reflect both variability in the contract pricing and variability in transmission congestion charges.

Q: If treated as Green Choice, will there be a cost impact to non-green choice customers?

A: Any quantity unsold as Green Choice would be applied to the Fuel Charge.

Q: The City Council approved the goals of the Climate Protection Plan to meet 30% of all energy needs through renewable resources by 2020, including 100 MW of solar power. If this biomass agreement is approved, how close to the 30% renewable goal will Austin Energy be? How will the remaining gap be closed and what is the anticipated cost impact at that time?

A: Austin Energy expects to be at 18% renewables with the addition of the biomass. The remaining gap is expected to be closed by a combination of wind, biomass and solar additions.

Q: If Council had not established the goal of 30%, would Austin Energy have pursued this deal based on current and future power generation demands?

A: If fossil fuel supplies were cheap and plentiful and if greenhouse gases were not an issue and there were no potential future costs associated with greenhouse gases (carbon tax) there would be no need for a renewables goal.

Q: What are the comparable costs and amount of production capacity for the various types of renewable energy resources (solar, wind, biomass, landfill, organic waste, etc)?

A: Biomass is expected to be more expensive than wind but less than solar. Biomass is firm generation which means it will be available 24/7 and especially during peak demand periods – when ever they may occur. The biomass plant is expected to be comparable in cost to a combined cycle natural gas facility, which is firm generation, making it less costly than new coal with carbon sequestration or nuclear.

Q: For overall comparison's sake, what are the current costs of providing power from existing Austin Energy production sources: Fayette (coal), Sand Hill (natural gas), South Texas (nuclear), other? If new facilities of these sources were created, what would be the cost of generating a comparable amount of 100MW (based on capital and operating costs)?

A: See previous answer.

Q: Will the plant be exempt from future carbon legislation? Are there provisions in various pieces of federal legislation that embody this expected exemption?

A: It is impossible to predict what future carbon legislation will include. However, the Lieberman-Warner Climate Security Act of 2007 would not have included a biomass power plant as a covered facility.

Q: Congressman Doggett has introduced the Climate MATTERS bill that would establish a carbon cap and trade system. If signed into law, would this legislation impact this plant as it's based on a carbon fuel source? If so, has an associated cost been estimated?

A: This plant will not be subject to carbon legislation

Q: What would the same investment in solar PV yield in MW?

A: The same investment in solar PV could be expected to build 650 MW of solar arrays. To build such a solar farm would require 3,300 acres of land.

Q: How will this plant affect emissions levels in the D/FW and Longview, Tyler Marshall areas?

A: This plant represents Best Available Control Technology and has received a final air permit from Texas Commission on Environmental Quality. The impacts of the plant on other areas of the state were modeled as part of the permitting process. One of the advantages of wood fuel is that it contains essentially no sulfur and therefore the plant will produce only very small amounts of SOx.