

# Biomass Power Generates Traction

By Russell Gold

While solar power is taking root in the sunny Southwest and wind power is growing in the blustery band from the Dakotas to Texas, other places are turning to trees and grass as their best bet for producing renewable energy, leading to a new building boom in "biomass" power plants.

Electric utilities may soon face new rules requiring them to generate 20% of their power from renewable sources by 2020, according to terms in a bill to combat climate change being considered by the House of Representatives. While the cost of generating solar and wind power is declining, making them increasingly attractive options, not all places have enough wind or sunshine to make power generation practical.

The potential for government quotas is a major reason why electric utilities in the Southeast and parts of the Midwest are now beginning to build industrial-scale plants that burn wood and other plant material — or "biomass." The utilities also stand to get significant federal tax credits for producing renewable energy.

Atlanta-based Southern Co. said it will build a \$135 million biomass power plant. Progress Energy Inc. recently agreed to buy power from a separate \$135 million biomass power plant in Hartsville, S.C.

Oglethorpe Power Corp., a power cooperative based in the Atlanta suburbs, said in early May that it had bought land

to build at least two 100-megawatt biomass power plants, costing \$400 million each. "In Georgia, trees are plentiful," says Greg Jones, an Oglethorpe spokesman, "but wind is not abundant."

U.S. energy forecasters predict that by 2030, biomass will generate 4.5% of the kilowatts consumed in the U.S., versus 2.5% for wind, with solar coming in behind both — though all three will trail the more established power sources of hydroelectric, nuclear, coal and natural gas.

Proposed policy that would put a price on greenhouse-gas emissions and provide tax credits and loan guarantees for renewable energy is boosting the prospects for plant-based fuels. Another big reason for biomass's growing popularity: it's dependable. When the wind doesn't blow, electricity utilities need to fire up backup plants. But like coal, biomass can be continuously fed into a furnace to provide a steady flow of juice.

While greenhouse gas is released when biomass is burned, the process is considered nearly carbon neutral because the plants only emit the carbon they absorbed while they were growing. The plants would release the same amount of greenhouse gas if they died naturally and decomposed. The burning of coal, by contrast, releases carbon that otherwise never would have been sent into the atmosphere.

Using nonfood crops to make cellulosic ethanol to fuel vehicles has been the most common path laid out by Congress,

but it may be more efficient to use those crops to make electricity. An acre of crops can generate enough electricity for a battery-powered SUV to travel 15,000 miles, nearly twice the distance that would be covered if the crops were turned into cellulosic ethanol, noted Elliott Campbell, an assistant professor of engineering at the University of California, Merced, in a recent article in *Science* magazine.

Many of the new biomass power plants are using wood scraps left over from the region's timber industry, but some companies are considering planting crops such as energy-rich grasses designed to be burned in power plants. While the practice of burning biomass to generate power has been used in Scandinavia for decades, growing crops specifically designed for biofuel is a new development.

That's the plan FirstEnergy Corp., Akron, Ohio, is pursuing in eastern Ohio. The company said in April it would spend \$200 million retrofitting two units of a coal plant to run on briquettes made of crops grown specifically to burn in combustion boilers to make electricity.

The use of carbon-neutral fuel is important for utilities, because they may soon have to pay for some greenhouse-gas emissions under the climate bill moving through Congress.

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