

BRAZIL: Energy Plan Should Call for More Biomass Sources

By Bob Moser

A new national energy plan is in the works which could pave a smooth, mandated path for bioelectricity's growth in Brazil over the next decade.

Brazil's Ministry of Mines and Energy (MME) will offer to the public in April an official energy plan for the next 10 years. While numbers haven't been disclosed yet, Brazil's Energy Research Company (EPE) – responsible for drafting the country's energy scenarios – says the new plan will ensure more robust participation from biomass and wind farms, and restrict more polluting power sources like coal and diesel, to the tune of BRL45 billion (US\$25.2 billion) in investment potential for biomass and wind.

For an idea on the boldness of the government, in the Ten Year Plan for Expansion of Energy (2008-2017) approved just last year, the share of biomass in terms of installed capacity (considering only the independent producers, producing for the system) was 5.02% of Brazil's electricity matrix, or 4,170 MW, a growth target that was lower than the current installed capacity of biomass, at 4,264 MW.

It was a plan that provided for 10 years of zero growth in biomass-based electricity.

In the new plan being worked up now, EPE isn't saying what biomass' share will be in the 2018 energy matrix, but says it will have significant growth. "We can say that biomass participation will be growing in the coming years, but always in a complimentary role," said EPE President Mauricio Tolmasquim. "The large dams will continue to be the major source of matrix expansion."

Why such a drastic change for biomass in the energy plan from one year to the next? Growth and consolidation of ownership in the sugarcane sector may be encouraging policymakers to expect more from biomass as an energy source. But the main reason may be a lasting scar that remains from November 2009, when heavy rains and wind knocked out power to nearly a third of Brazil – 60 million people. Power lines and transformers carrying power from the nation's largest hydroelectric dam short-circuited. Brazil was criticized for failing to update its energy infrastructure in the last decade, and shifting away from such high reliance on one or two dams is a good first step in the energy plan.

Today's statistics already show the growth of biomass in Brazil. More than 5,200 MW of bioelectricity was commercialised and between 2001 and 2011. Brazil's the only country in the world that allows electricity contracts of 15 years to be auctioned, an extra-large incentive for buyers to pursue bioelectricity contracts when their price will be set for more than a decade. Seventy percent of bioelectricity plants (or cane mills producing extra energy to sell) work in the regulated market, and 30% in the free market.

Forty-five bioelectricity plants are currently under construction, which together will generate 2,165 MW, enough power to supply a city of 13 million people, or equal to the installed capacity of hydroelectric dam Itumbiara (2,085 MW) in Goias state.

The door to Brazil's energy party was kicked open by biomass in August 2008, when the country's first biomass-only energy auction was held. Contracts were ordered for 2,379 MW of bioenergy to be delivered between 2009 and 2010, at an average price of BRL58.84 per MWh, more than most analysts had forecast for biomass' initial foray into Brazilian auctions.

In addition to the 45 plants now under construction, 43 plants (1,796 MW) authorised by ANEEL, Brazil's Electricity Regulatory Agency, are waiting for the government to offer another biomass auction to capture new contracts. In 2008, there were only 982 MW from thermal biomass plants.

Wind farms won't be left behind. Results from the last auction, held in December, surprised the market by showing that these plants were also competitive on price. In an auction with a bid of about 10,000 MW, 753 MW were traded at an average price of BRL148.39 per MWh. The minimum price recorded on the floor was BRL131 per MWh. For comparison, at the first energy auction in December 2005, hydropower was traded at BRL116 MW. Adjusted for inflation, that would be BRL145 per MWh today. The amount of energy expected to be sold at the next wind auction should enable the construction of 1,805 MW in new wind farms.

Growth of wind and biomass energy has also been cited recently by Brazilian politicians as critical to strengthening the nation's energy security, because the high seasons for wind and biomass run alongside the low season for hydroelectricity. Winds are strongest in Brazil's northeast during the summer, when hydropower reservoirs run low on water. And in the cane-rich centre-south, dry summer months are highlighted by growing mountains of cane bagasse at sugar mills, ready to be burnt.

Two auctions have been scheduled this year by the government for alternative energy sources. On April 9, a biomass-only auction will be held, with trading prices expected to be limited between BRL149/ MWh and BRL156/ MWh. Feedstock types will be limited to sugarcane, rice straw and wood chips.

In mid-2010, we'll see a broader second auction for small hydropower plants, thermal, biomass and wind farms. Biomass could win over this auction as well, analysts say, depending on how its price compares to the price set for wind. Some call for caution, though, saying biomass investors have historically demanded higher rates of return than with other energy sources, holding biomass-based energy producers to a greater standard since their plants can have focus diverted by sugar and ethanol production.