Brazilian wind faces winner's curse

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On the surface, Brazils renewables sector looks healthy. Both project financing volumes and the number of deals went up substantially last year. Wind is now a serious contender in Brazils competitive auctions, which are generally open to all energy sources.

At the same time, the once fast-growing small hydro sector is moribund and biomass associated with ethanol faces a series of challenges, including Petrobras willingness to subsidise petrol prices. And local content rules and aggressive offers in auctions are preventing wind from reaching its full potential.

Last year witnessed a comeback for Brazils renewable energy finance market. Including large hydro, the volume raised in such deals hit $4.257 billion, up from a trifling $63 million in 2011 and the highest in 10 years, with the exception of 2009. Last years numbers were skewed by the giant Jirau hydroelectric plant expansion, whose opponents, and most carbon credit registration methodologies, would not class as a renewables project. But large renewables deals also swayed the numbers, including wind farms such Ventos and ERBs Aratinga biomass power project. They raised $409 million and $128 million equivalent, respectively.

Brazilian renewable energy project finance volumes

Year	Amount $m	No. of Deals
2002	74	1
2003	17	1
2004	593	3
2005	463	2
2006	593	2
2007	550	3
2008	1,514	4
2009	12,031	10
2010	299	2
2011	63	2
2012	4,257	16

Source: Dealogic

This year looks rosier for auctions of new capacity, thanks to higher economic growth. The Empresa Pesquisa Energetica (EPE) maps Brazils centrally planned energy sector and provides 10-year plans that are adjusted according to GDP growth. After posting just less than 1% GDP growth in 2012, the Brazilian economy is expected to reach 3.1% this year, according to the latest Central Bank poll of economists.

Lower energy prices, spurred by government policies designed to reduce rates by 18% for consumers and 32% for industry, will further stimulate demand while very low levels at Brazilian reservoirs means the government is keen to tap non-hydro power sources, says Sergio Heumann, managing partner at Rio Bravo Advisory. The government is particularly keen to avoid embarrassing blackouts in the run-up to the 2014 World Cup and 2016 Olympic Games.

Starved for opportunities

Large hydro projects have serious environmental issues, limited opportunities for expansion and mostly are located in the north-east, far from consumers, notes José Soares, a vice-president and senior analyst in Moodys infrastructure group in São Paulo. They also have high capital expenditure requirements and must keep reservoir levels low to reduce their impact, making them much less cost-effective. Run-of-river plants are attracting more attention, though they tend to be much smaller, and government has increasingly resorted to thermal power. Mário Augusto Lima, director of new business in energy at Serveng Civilsan in São Paulo, notes that the government recently shifted to buying thermal output without imposing a time limit, a first.

Incentives for renewables are not that generous in Brazil. Wind power is exempt from payment of a state tax, the ICMS, which accounts for a reduction of around 20%, says Soares, and projects with a capacity of up to 30MW benefit from special income tax treatment. The main benefit comes from using financing from development bank BNDES, which comes in at about 7% all-in, compared to a base rate of 7.25%, notes Soares.

Madeleine Tan, a partner at Kaye Scholer in New York, notes that foreign investors have been avoiding Brazils renewable energy projects and finding better value in Chile and more nascent markets, such as Peru, where rules are clearer. After initially providing price support, the government has effectively stepped out of the market for subsidies and auction prices are low. Brazil doesnt really make sense unless youre a strategic investor, she says. She notes that the governments decision to change the concession regime for existing projects also raised questions about the reliability of the legal environment. Guilherme Forbes, partner at law firm Stocche Forbes in São Paulo, agrees that there are few new investors, particularly for greenfield projects.

Since 2009, all regulated energy market sources have competed against each other at open auctions determined on the basis of price. That has led to wind energys near-total dominance over the last two years at the expense of biomass and small hydro. And the government sees wind growing exponentially. The EPE predicts that wind capacity installed will grow 1,009% in the 10 years to the end of 2021. That compares to juts 74% for biomass and just 56% for small hydro over the same period. Large hydro will grow at an even more modest 40%.

That would skew the mix. Antonio Tovar, head of the alternative energy area at BNDES, says that in the last two to three years, the bank has not been called on to support small hydro and biomass projects, and believes that diversification is helpful: It would be good for us to support other sources of energy. If not, the supply chain for local manufacturing in these industries will not stay in place, he says. Tovar adds that the government is actively considering auctions by source type and by region. It is a delicate balance between opting for the cheapest sources and ensuring diversification, he notes.

Finding a financing focus

Sponsors have few opportunities to diversify their funding mix away from BNDES, which accounts for some 80% of lending volumes. The bank offers terms that multilaterals and certainly no private bank can match. Yet it sets relatively onerous terms, and finances a plants operational phase only when long-term contracts are in place, meaning that sponsors wishing to sell their plants output on the private market are excluded.

Banks are left to focus on advising clients during the auction process and helping structure deals, notes Renato Proença Lopes, executive manager at Banco do Brasil in São Paulo. His bank is analysing 26 wind projects worth R2.6 billion. He agrees that biomass and small hydro have been quiet but says the bank is evaluating four small hydro projects worth R500 million, though nothing in biomass. Banco do Brasil has supported R3.4 billion in wind projects up to the end of 2012.

Other financing models are starting to emerge, although slowly. The Desenvix portfolio, located in the north-eastern state of Sergipe, used financing from the China Development Bank (CDB), which was supporting Chinese-made turbines. The sponsors of Desenvix are Jackson Empreendimentos, SN Power and local pension fund FUNCEF, and it has interests in 15 plants and a roughly 25% share in two transmission projects. It is also developing two hydro-power plants with total installed capacity of 80MW and a 30MW wind power plant. In December 2012, it issued R100 million in four-year debentures after receiving R102 million from the CDB.

For the most part, however, debt financing has been conservative, and the infrastructure bond market is likely to disappoint. Infrastructure bonds will be tax exempt for foreigners and locals when issued with a maturity of more than four years, and are likely to be popular in sectors such as toll roads, but energy has a more established financing template. The market is more comfortable with a clearing-house model and it is easier to obtain straight debt financing, says Forbes. Heloisa Andrade Scaramucci, partner at Tozzini, Freire, Teixeira e Silva Advogados, agrees that there seems to be little interest in the bond market for now.

In equity, the picture is more lively, with a number of private equity funds up and running. Rio Bravos Energia I FIP has already had two closings, for a total of $230 million, and is working on a third, says Heumann. The latest closing is with existing limited partners and could raise up to $100 million, with a focus on international investors. To date, the fund has two non-resident partners with most of the money coming from Brazilian pension funds, he notes.

The fund has already fully invested in RBO Energia, buying a 50% stake in 10 small hydro plants producing 148MW; and has a 51% share in Eolicas do Sul, a 480MW wind project, and 50% of Bons Ventos da Serra. The fund was invested in one year. Other large equity players include Pátria and Tarpon, through its Omega arm. Outside of wind, the story is more based around consolidation and Forbes is working on acquisitions involving portfolios of small plants, he says.

Wind dominates

By 2016, the government estimates that the total capacity in wind will reach 8.5GW, up from current levels of 2.5GW. The EPE has some 600 projects with a potential of more than 16GW of which 450 are based in the North-east accounting for 12GW and 150 projects are based in the south.

But the last energy auction, which was held in December 2012, was a severe disappointment compared to 2011. It saw bids for just 281.9MW of wind energy from 10 projects for completion in 2017, compared to when 1.9GW in August 2011. Biomass and small hydro were entirely absent.

Prices sent a cold gust through the industry, too. The average price contracted was R87.94 per MWh or 9% below the lowest price of the previous year and 21.5% below EPEs own R112 per MWh reference price.

Lima questions the viability of these prices. Its difficult to see how the winners will be able to make decent returns, he says. He predicts returns could be just 6-7%, while inflation is running at close to 6%. There are even whispers that the BNDES will be reluctant to fund deals because of their higher risk profile. BNDES Tovar says that wind projects in Brazil run at exceptional capacity factors compared to the US and Europe. That has helped bring down prices, he says. He adds that because the bids are lower, debt financing will be reduced proportionally.

The wind industry is also grappling with a tightening of the local content rules that govern the availability of BNDES financing. Under the new regime, companies were first obliged to source 60% of turbine components locally and later were meant to start producing or assembling three of the four key turbine elements in Brazil. BNDES disqualified five companies Vestas Wind Systems, Suzlon Energy, Siemens, Acciona and Furhländer that were not meeting its requirements.

Few sponsors were prepared for that development. Tozzinis Scaramucci says that finding suppliers became much harder overnight. In early March, she closed negotiations on turbines for eight wind farms in the north-east, but admits that the deal was much tougher than expected. We spent a really long time negotiating with suppliers, because many other project sponsors wanted to purchase equipment. We did not get the conditions that we wanted, she says. Lima estimates the disqualifications and disruption put prices up by as much as 30%. BNDES insists that the rules are justified in building out a local industry.

Lima points to another large problem facing wind in the north-east of Brazil poor connections to the national grid. His 10 wind farms in Rio Grande do Norte depend on connections that state-owned Chesf is building. The Chesf projects are behind schedule and Lima estimates he will lose some R15 million in the two to three months between the start of his contract and getting hooked up to the grid. We have to buy in the spot market and take the losses. Im pushing for meetings all the time with Chesf executives to ensure the project is completed as swiftly as possible, he says.

He says poor connections in the north-east are hampering projects across the region and especially in the states of Bahia and Rio Grande do Norte. That has led to speculation that the energy regulator might try out new solutions, such as encouraging consortiums to bid for transmission projects, rather than just one company, or packaging generation and transmission together, says Lima.

Biomass bowing out

Biomass has traditionally meant sugar cane bagasse in Brazil, and its fortunes have risen and fallen with those of ethanol. Ethanol has suffered from politically-driven interventions to hold down the price of petrol, with which ethanol competes.

Moreover, the sector is too dependent on large companies, and cogeneration has remained an afterthought, says Forbes. The large players, such as Energias Renováveis do Brasil (ERB) and Cosan, can benefit from vertical integration and do well, but independents have been largely squeezed out. An independent client of Scaramuccis is looking at the possibility of tying up with an ethanol producer but she wonders if any such deal can be pulled off.

Ethanol producers are wary of making multi-year commitments of bagasse volumes to third parties because they may be unable to benefit from improvements in. Lima says that he has looked at the sector but continues to find it risky. The numbers dont add up in public auctions, and the industry suffers from unreliable harvests, and the need to rent land, he says.

Non-ethanol projects are rare, but one big project has emerged that sets an interesting precedent. The Aratinga Ppoject is a $130.7 million wood-to-energy integrated greenfield plant located in Candeias, Bahia, at a Dow Chemical site. The project will save Dow about 250,000m^3 per day of natural gas under an 18-year contract. Aratinga will generate 11MW of excess power with operations to begin around August, says Eduardo Tobias, project finance manager at Energias Renováveis do Brasil (ERB). ERB had to negotiate an upgrade to the project, and get banks and BNDES used to the idea of using wood, he said. To reduce risks to the banks that guaranteed BNDES financing, Aratinga had to commit to sell its 11MW of excess power under a five-year power purchase agreement to get to a 79:21 debt:equity ratio.

Hydro was the sector that seemed to have the most promise until the cost of wind turbines collapsed. For now at least, hydro remains uncompetitive at R130-140 per MWh, and developers have been lobbying the government to provide separate auctions. Rio Bravo thinks it may be possible to develop specific projects without dedicated auctions, though they would need to dispatch on the free market, where PPA availability and lengths are limited, and BNDES only finances small hydro plants with long-term PPAs.