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FEATURED Q&A

What Forces Are Shaping Brazil's Wind Power Sector?



Cheaper equipment and pent-up demand for wind power helped bring prices down to their lowest level ever in Brazil, Siddharth "Sid" Sethy and Gustavo Junqueira de Godoy Pereira say below. // File Photo: Brazilian Wind Energy Association.

Q Brazil's government announced in April that wind power prices fell to the lowest level ever in the country's April 4 auction, nearly reaching the Latin American record set in Mexico last November, Bloomberg News reported. What forces are shaping Brazil's wind power sector? How well are other renewable sources of energy faring? Has Brazil become internationally competitive for low prices of renewables, and what could change that outlook?

A Steve Sawyer, secretary general of the Global Wind Energy Council: "The very low prices for wind power contracted in Brazil's latest auction reflect a growing trend worldwide. In places as diverse as Mexico, India, Morocco, the United States, Canada and Brazil, we have prices around 3 cents per kilowatt-hour, with the most recent prices in Mexico breaking the 2-cent per kilowatt-hour barrier for the first time. Cratering prices for wind and solar have led energy analysts to look at a sustainable energy system of the future as largely electrified, and largely powered by cheap wind and solar. We can see this both in the energy planning of more advanced countries in Europe as well as in Latin America, China and even India. Is the industry cutting margins so thin that it is no longer sustainable? I don't think so, but if the situation persists, it will drive many or most of the small players out of the markets where cost is the only consideration. The extremely low prices raise a number of questions, particularly from the finance sector. Given the numbers, many of these projects are not 'bankable' in the sense of using debt finance in the traditional project finance model. The majority of companies that are making these bids are large companies

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TOP NEWS

OIL & GAS

Total, Siemens Eye Deal for Cuba Gas-Fired Plant

The French and German companies expect to soon sign a deal to construct a 600-megawatt liquefied natural gas-fired power plant in Cuba.

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OIL & GAS

Pemex to Offer Seven Blocks in October Auction

Mexican state-run oil company Pemex is planning to offer just seven blocks in its auction on Oct. 31. The company had earlier planned to offer 160 blocks. Presidential front-runner Andrés Manuel López Obrador has vowed to review the country's oil contracts if elected.

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RENEWABLES

Honduras Opens First Geothermal Power Plant

Honduran President Juan Orlando Hernández (center) was on hand to inaugurate the country's first geothermal power plant, located in La Unión in Copán Department.

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Hernández // Photo: Honduran Government.

OIL AND GAS NEWS

Total, Siemens Plan to Sign Deal for Gas-Fired Plant in Cuba

France's Total and Germany's Siemens expect to sign a deal soon with Cuba to build a 600 megawatt liquefied natural gas-fired power plant on the island, Reuters reported Monday, citing unnamed sources with knowledge of the talks. The two companies are part of a consortium that won a tender for the project last year. Total confirmed in a statement to Reuters that it is "looking at" an LNG power project in Cuba, "one of several countries where Total is exploring similar LNG potentials." Along with other Caribbean countries, Cuba has been searching for alternatives to cheap oil financed by Venezuela's political largesse. Venezuela's economy has spiraled into collapse, putting shipments of oil to fuel power plants at risk. Nearly all of Cuba's electricity is generated from fossil fuels, although the government has set a goal to generate nearly a quarter of power through renewable sources by 2030. Total has been engaged in Cuba since 1993, mainly in marketing and trading in the downstream oil sector, according to the company's website. Total was the first foreign company to drill for oil just offshore in the 1990s, but those initial efforts came up dry. When then-French President Francois Hollande visited Cuba in 2015, reports circulated that Total had signed a new offshore oil and gas exploration deal, but the company later said those reports were incorrect, according to Reuters.

Pemex to Offer Seven Oil Blocks in October Auction

Mexican state-run oil firm Pemex will offer just seven oil blocks in its Oct. 31 auction, down from earlier plans to sell 160 blocks, according to an OilPrice.com report citing an announcement from Mexico's National Hydrocarbons

Commission. The auction will feature seven onshore areas rather than 160 offshore and onshore blocks, which the firm intended to offer according to its 2017 plans. Farm-out auctions for offshore areas in Mexico in September and December 2017 did not attract any offers from oil firms, though the country held a more successful auction on March 27, when it sold 16 of 35 areas in shallow offshore areas,



López Obrador // File Photo: López Obrador Campaign.

according to Reuters. The announcement came amid perceived political risk ahead of Mexico's July 1 presidential election. Andrés Manuel López Obrador, the leftist former mayor of Mexico City, who has a substantial lead in the polls, has vowed to review all 90 oil contracts granted after Mexico's energy sector reforms, which allowed outside firms to begin bidding for blocks in 2015. López Obrador, who is leading second-place candidate Ricardo Anaya by 18 points according to a Reforma poll released on Wednesday, has also said he would cancel all upcoming auctions. Separately, Pemex reported Tuesday that its first-quarter profits in 2018 were over \$5.9 billion, up 29 percent from the same period in 2017.

PDVSA Begins Making Payments on 2020 Bond

Venezuelan state oil firm PDVSA recently began making interest payments on its 2020 bond, Reuters reported, citing three sources in the financial industry. The news came as a reversal from earlier reports that said the company was canceling some payments on the 2020 bonds. Venezuela's government, which is strapped for cash due to plummeting oil rev-

NEWS BRIEFS

Petrobras Reaches Deal With Eletrobras on Debt

Brazil's state-run oil company Petrobras said Monday that it had reached a deal with Eletrobras on the renegotiation of most of the state power company's \$5.76 billion debt, Folha de S.Paulo reported. Under the deal, Eletrobras will pay \$4.8 billion of the debt in installments. The two firms are still negotiating the remaining \$960 million. The debt to Petrobras is seen as a major obstacle in the privatization of Eletrobras, which Brazilian officials have said they hope to complete by the end of the year.

Officials Inaugurate Honduras' First Geothermal Power Plant

Officials in Honduras on Monday inaugurated the country's first geothermal power plant, La Prensa reported. U.S.-Israeli firm Ormat Technologies built the 35 megawatt facility at a cost of 3 billion lempiras (\$127 million) in the city of La Unión. President Juan Orlando Hernández attended the ceremony. Ormat is also active in neighboring Guatemala, where the company has 43 megawatts of installed geothermal power generation in place, with four projects under development.

Uruguay First Oil Auction in Seven Years Attracts No Bids

Uruguay's first oil auction in seven years drew no bids April 26, Reuters reported, citing a source with state-run oil company ANCAP. Interest in Uruguay may have waned after companies that won exploration contracts in two previous bidding rounds found no oil, or competition from oil plays in other Latin American countries such as Brazil and Mexico may have kept investors away. The source told Reuters the government might offer better terms and conditions to revive interest in a possible auction next year.

enues and hyperinflation, had stopped paying interest on some of its \$50 billion in public debt last year. Venezuelan President Nicolás Maduro has blamed U.S. sanctions, saying they have kept Venezuela from making the payments. However, the sanctions do not block interest payments on debt. The first payments on the 2020 bonds reached bondholders on Monday, according to the report. The company had collateralized the 2020 bonds with a 51 percent stake in Citgo, its refining operation in the United States. Separately, Venezuela's vice minister of hydrocarbons, Ángel González, said the company will seek financing as it aims to increase production, Reuters reported. González said at an oil conference in Caracas that the company hopes to increase production of medium and light crude oil by 1 million barrels per day (bpd). Production has plummeted 33 percent over the last year, reaching just 1.51 million bpd in total production in March. "We already have the right prices," González told the crowd at ExpoVenezuela. "These prices will allow us to cover production costs ... and now invest in stopping this shortfall from the oil fields."

RENEWABLES NEWS

BNDES Backs 1.3 GW of Wind Projects With Green Bonds

Brazilian state development bank BNDES has backed 1,323 megawatts of capacity in eight wind projects by emitting green bonds, RenewablesNow reported, citing a BNDES report released on Wednesday. According to BNDES' annual green bond report, the wind projects will offset 421,608 tons of carbon dioxide production per year. The report serves as an update on the status of \$1 billion in green bonds BNDES released in May 2017 with an annual coupon rate of 4.75 percent per year, set to mature in 2024. The bank is investing 1.7 billion reais (\$478 million) in electric power per quarter, much of which goes toward the wind power sector. The report highlights the goal of

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with very strong balance sheets, and there is usually an element of state backing; they have no need for debt finance from the private sector, as they have their own sources of extremely cheap debt and equity, in many cases their own. In the wind industry, we are delivering the largest number of carbon-free electrons at the lowest possible price and creating local jobs, new industries and supporting a diverse supply chain. The focus on price alone will make the latter harder and harder to achieve as we move forward."

A Siddharth "Sid" Sethy, associate at Hunton Andrews Kurth, and Gustavo Junqueira de Godoy Pereira, partner at Dias Carneiro Advogados:

"Despite political tensions, Brazil awarded around 1 gigawatt of contracts in the April 4 renewables auction, expecting to spur 5.3 billion reais (\$1.49 billion) in investment; wind (at 114.4 megawatts) and solar (at 806.6 megawatts) dominated. The average price for the wind projects was 67.60 reais per megawatt-hour, well below the ceiling set by the energy regulator, ANEEL, at 255 reais per megawatt-hour and 31.45 percent less than the average wind price in December's auction, hitting an all-time low. Strong, consistent winds together with improved technology with better, cheaper equipment is resulting in a mature Brazilian wind market with lower prices. However, given low prices and stringent bidding terms, smaller producers may face difficulties winning contracts, which may lead to consolidation as well as diversification, with smaller producers integrating solar and other sources using existing interconnection infrastructure. While biomass and hydroelectric also fared well, with average prices below the ANEEL ceilings, solar dominated with an average price of 118 reais per megawatt-hour, below the ANEEL ceiling of 312 reais per megawatt-hour. The combined effects of cheaper solar components, technological innovation and increased size of solar projects all contributed to aggressive

bidding. The exclusion of solar from the next auction anticipated in August also increased participation. Most of all, pent up demand in Brazil (following two canceled auctions in 2016 and a recession recovery), diversification of funding sources (capital markets

“Smaller producers may face difficulties winning contracts, which may lead to consolidation...”

— Siddharth "Sid" Sethy & Gustavo Junqueira de Godoy Pereira

and cross-border funding alternatives to BNDES) and the presence of international bidders contributed to a competitive bidding process. So long as Brazil can offer a stable government without major upheavals, this appetite is expected to continue, following the global trend, into the next auction rounds planned for August and later this year."

A Brian Gaylord, senior analyst for Latin America and Southern Europe at MAKE: "The pronounced drop in wind power bid pricing in Brazil beginning last December is an outcome of hypercompetition throughout the value chain. This results from a two-year period without new PPAs awarded to wind power developers via auction and a stringent domestic content policy. Bidding, which reached 68 reais (\$20) per megawatt-hour, was enabled primarily by a major drop in turbine pricing. Several original equipment manufacturers offered turbines near cost to ensure production volumes at Brazilian manufacturing facilities. This was essential for reducing costs and ensuring activity at factories which are ill-equipped to compete globally during the impending downturn in the domestic market. Further driving down bidding was developer competition. 26 gigawatts of wind power projects were registered to compete at April's A-4 auction.

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"incentivizing the access of other bond emitters into the market for green bonds." International Capital Market Association established guidelines for green bonds in March 2015. A renewable energy auction in April resulted in a Brazilian record-low price for wind power at \$20.23 per megawatt-hour, nearly reaching the Latin American record of \$18.14 set in a Mexican auction last November. Solar power developers came away with 29 of 39 projects in that auction, with an average price of \$33.25 per megawatt-hour.

ECONOMIC NEWS

Brazil Contradicts U.S. Announcement on Tariff Deal

Brazil's government on Wednesday contradicted a U.S. announcement earlier this week that the two countries had reached a deal on a permanent exemption from steel and aluminum import tariffs, *The New York Times* reported. In a joint statement, Brazil's foreign and trade ministers said they were informed of a unilateral decision by the United States to break off negotiations last Thursday. They were then told that the temporarily suspended tariffs would be applied "immediately" or, as an alternative, they could opt for "restrictive unilateral quotas." The president of the Brazil Steel Institute, Marco Polo de Mello Lopes, said the ultimatum came as a complete surprise, although some of the terms offered were "not that bad" for Brazil's steel industry. The White House said on Monday that it had reached agreements for permanent exemptions on steel and aluminum for Brazil, Argentina and Australia, and that the details of the deals would be finalized shortly. In a statement Wednesday, the White House said those details had in fact not been finalized and President Donald Trump would consider re-imposing the tariffs if they were not settled shortly, *Reuters* reported. "The United States and Brazil reached an agreement in principle on satisfactory alternative means to address the threatened impairment to our national security from steel and aluminum imports," White

SUBSCRIBER NOTICE

Ana Heeren Joins the Board of Advisors

We are pleased to announce that Ana Heeren, a managing director in the Strategic Communications segment at FTI Consulting, has joined the weekly Energy Advisor's board of advisors.

Based in Washington, Heeren leads FTI's Latin America and Caribbean business and brings deep energy sector experience to the practice.

Currently, Heeren provides communications counsel to the government of Mexico as it negotiates the modernization of the North American Free Trade Agreement, and she recently managed a global media crisis for the Panamanian law firm involved in the Panama Papers data breach.

Heeren has also provided public affairs and media relations counsel to HOVENSA, a U.S. Virgin Islands refinery, in its liquidation process, and to the Puerto Rico Electric Power Authority, or PREPA, as it renegotiated its debt and worked to transform its infrastructure.



Heeren

Prior to joining FTI, Heeren was a principal in PA Consulting Group's Global Energy practice. She has also worked at Bain & Company in Rome as part of their M&A due diligence team, and in the Madrid offices of Llorente & Cuenca.

Originally from Rio de Janeiro, Heeren has native fluency in Portuguese, Spanish and English. She holds an M.A. in Energy Policy and Economics from the Johns Hopkins University School of Advanced International Studies (SAIS) and a B.A. in Journalism from the University of Westminster in London.

House spokeswoman Lindsay Walters said in the statement.

IMF Censures Venezuela for Failing to Share Data

The International Monetary Fund censured Venezuela on Wednesday for not sharing data on key economic indicators, the Associated Press reported. Venezuela, which is facing a severe economic crisis and hyperinflation, stopped sharing data with the IMF last November. The country's central bank, meanwhile, has not published official statistics since 2004. "The Executive Board called on Venezuela to adopt specific remedial measures and will meet again

within six months to consider Venezuela's progress in implementation," the IMF said in a statement. Though the censure did not include immediate penalties for the South American country, the IMF could expel Venezuela from its group of member countries if it fails to cooperate. The Fund requires all member countries to share data and submit to an official review, which it says is "an essential first step to understanding Venezuela's economic crisis and identifying possible solutions." In related news, the *Miami Herald* reported on Wednesday that Venezuela's inflation rate for March and April was approximately 18,000 percent, much higher than the 13,000 percent annual rate that the IMF projected for all of 2018, according to economists' projections. Venezuelan President Nicolás Maduro, who is up for re-election later this month, on Monday doubled the minimum

NEWS BRIEFS

Argentine Peso Continues Slide Despite Central Bank Intervention

The Argentine peso fell 3.1 percent against the U.S. dollar on Wednesday, reaching an all-time low value of 21.2 pesos per dollar, La Nación reported. The peso's slide continued despite significant action from the country's central bank, which last Friday raised its median interest rate from 27.25 to 30.25 percent and spent \$1.5 billion of its reserves in an effort to support the peso. The country has one of the region's highest inflation rates at 25.4 percent, and its currency is depreciating due to a strong U.S. dollar, according to a Reuters report.

Peru's Government Will Not 'Significantly' Raise Taxes: Prime Minister

Peruvian Prime Minister César Villanueva told members of his country's Congress on Wednesday that the government will eliminate several tax exemptions and will not "significantly" increase taxes, El Comercio reported. In an address to Congress before requesting a vote of confidence on President Martín Vizcarra's cabinet, Villanueva said exemptions cost the government \$4.89 billion every year. He added that the government aims to reduce the fiscal deficit and broaden the country's tax base.

Guatemalan Embassy Moves to Jerusalem

Guatemala moved its Israeli embassy to Jerusalem from Tel Aviv on Monday, drawing praise from Israeli leaders, Haaretz reported. "I was moved to see the flag of Guatemala waving in Jerusalem in advance of the opening of the Guatemalan embassy," Israeli Prime Minister Benjamin Netanyahu wrote on Twitter on Tuesday. The new embassy is slated to officially open on May 16 in the disputed Israeli capital.

salary in the country amid hyperinflationary pressure

POLITICAL NEWS

Mexico's PRI Replaces Leader Ahead of Election

Mexico's ruling Institutional Revolutionary Party, or PRI, on Wednesday replaced its leader in a move that came less than two months before the country's presidential election, El Universal reported. René Juárez Cisneros, who formerly served as governor of Guerrero State and also was a senator and federal deputy, was tapped as the party's president, replacing



Juárez Cisneros // File Photo: Mexican Government.

Enrique Ochoa. "The party needed a leader who knows the grassroots well and knows how to win elections," an official with PRI presidential candidate José Antonio Meade's campaign told the Financial Times. "It's crunch time." Meade had urged the change, the official told the newspaper. The ruling party had reluctantly accepted Meade, who is not a party member, as its candidate in the July 1 election as the party has been so damaged by corruption scandals that no other candidate offered a better chance at keeping the presidency in the PRI's hands. In the latest polls, Meade is trailing in third place behind leftist Andrés Manuel López Obrador of the Morena party and Ricardo Anaya of the left-right For Mexico to the Front coalition. In a poll released Wednesday by newspaper Reforma, López Obrador had 48 percent support, with Anaya in second place with 30 percent. Anaya had gained four percentage points since a previous Reforma

survey earlier in April. Meade's support slipped one percentage point to 17 percent, according to the poll, which was conducted April 26-30. López Obrador has vowed to reduce inequality in Mexico without hiking taxes or raising debt, Reuters reported. He is likely to slow current President Enrique Peña Nieto's moves toward economic liberalization. He is also expected to be more antagonistic toward U.S. President Donald Trump. [Editor's note: See [Q&A](#) on what a López Obrador presidency would mean for Mexico in the Feb. 22 issue of the Dialogue's daily Latin America Advisor.]

Police, Protesters Clash as Thousands March in Puerto Rico

Police in San Juan clashed Tuesday with protesters, firing pepper spray into a crowd demonstrating during a May Day rally that brought thousands of people into the streets of Puerto Rico's capital, the Associated Press reported. Puerto Ricans came out to demonstrate against pension cuts, school closures and slow efforts at recovery following Hurricane Maria. Protesters gathered at several points around San Juan and marched down Ponce de León Avenue in the heart of the city's financial district. The protest was peaceful until hundreds of youths, many of whom had their faces covered, began throwing rocks and other objects in a clash with police, who shot tear gas and rubber bullets into the crowd. Several people were arrested, and many protesters and police officers sustained head injuries as clouds of smoke rose in the Hato Rey financial district. "This kind of violence damages the good name of Puerto Rico," Gov. Ricardo Rosselló said at a news conference late Tuesday, The New York Times reported. Rosselló said that while the protest had begun peacefully, a small group of protesters had tainted the gathering by throwing "projectiles" at police officers. The "vandalism" continued despite efforts by police to fall back and de-escalate the confrontation, the governor added. A similar protest on May Day last year also concluded with violence and resulted in property damage.

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Wind power bid pricing from the auctions in 2017 and 2018 reveals what could be the new norm for the technology in Brazil if global turbine pricing prevailed unfettered by a domestic content policy. Although similar aggressive bidding will occur at the A-6 auction in August, it is unsustainable in the long term. Turbine pricing will eventually rebound as manufacturers will seek profits once Brazil's economy stabilizes and auction volumes return. Still, wind power has repeatedly demonstrated that it is the lowest-cost source of new power generation in Brazil outside of large-scale hydro, which has proven to be politically controversial in recent years. Winning wind power bidding amounted to a 43 percent discount to PV at April's A-4 and a 53 percent price advantage compared to gas at the December A-6 auction."

A **Camila Ramos, managing director and founder of CELA Clean Energy Latin America:** "Wind energy reached its lowest price level in Brazil's April renewable energy auction, and so did solar PV. Fewer and smaller renewable energy auctions in the past two years as compared to the previous eight years resulted in strong competition among the bidders. Also, advances in both wind and solar PV technologies and reductions in costs are important factors affecting

prices. Prices are also affected by the availability of more competitive financing lines from development banks BNDES and Banco do Nordeste. In the case of wind, this price was a bid by one single player, and an upcoming auction this year is expected to

“Advances in both wind and solar PV technologies and improvements in costs are important factors affecting prices.”

— Camila Ramos

achieve higher prices than those from the April auction, when more wind projects are expected to be demanded and contracted. In the case of solar PV, these low prices are still not fully understood by the industry. Brazil has become internationally competitive for low prices for renewables, and these low prices in the 'regulated market' (auctions) are encouraging companies to look for opportunities in the 'unregulated' or free market, where less than 20 percent of all wind energy in Brazil is traded."

The Advisor welcomes comments on its Q&A section. Readers can write editor Gene Kuleta at gkuleta@thedialogue.org.

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