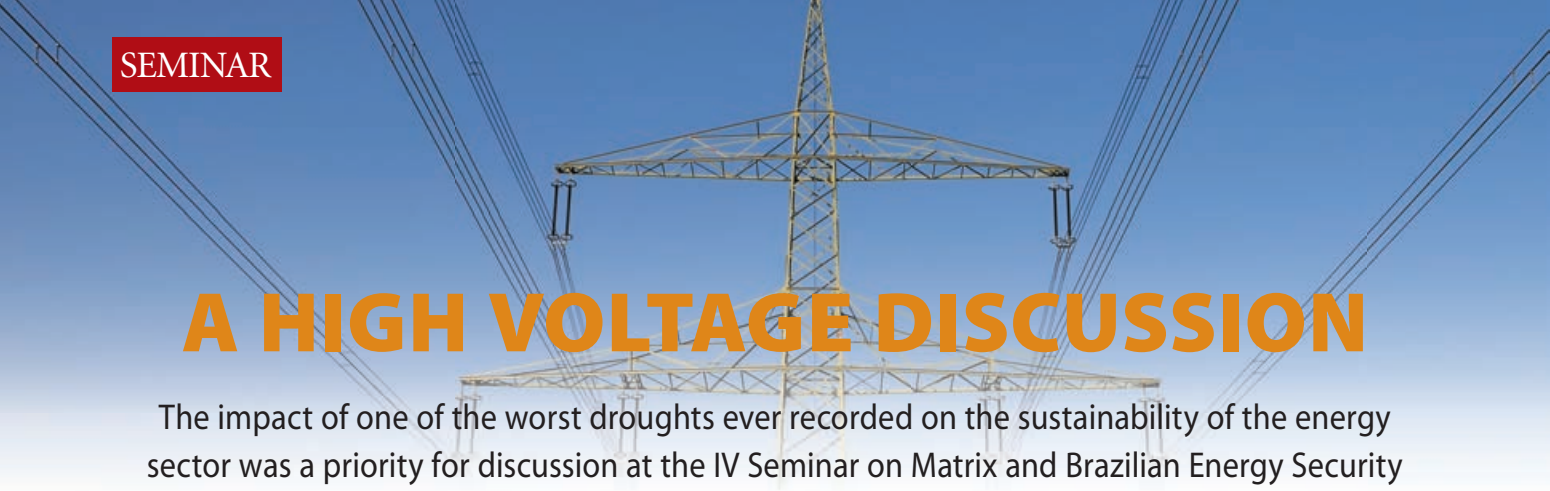

A HIGH VOLTAGE DISCUSSION

The impact of one of the worst droughts ever recorded on the sustainability of the energy sector was a priority for discussion at the IV Seminar on Matrix and Brazilian Energy Security sponsored by the Brazilian Institute of Economics on June 2, in Rio de Janeiro.

Solange Monteiro

DESPITE NEARLY A DECADE of electricity reforms, early 2014 marked another difficult year for Brazil, with severe droughts threatening a rationing of power and underscoring the need for further adjustments.

Speaker Mauricio Tolmasquim, president of the Energy Research Company, pointed out that since 2001 the energy sector has increased generation faster than demand has grown. It has also diversified the sources of power generation, and expanded the network of transmission lines across regions. "While from 1996 through 2001 power consumption grew 7% more than generation, from 2001 to 2014 generation increased 43% more than consumption; and twice as many transmission lines were installed than in 2001. Even considering the worst drought recorded since 1953, there is still a balance between supply and demand for power," he said.

Hermes Chipp, general director of the National Operator of the Electric System, pointed out that from 2014 to 2018 power generation is expected to expand at 4.2% a year, ensuring that the industry will stay ahead of demand. Tolmasquim added that the expected growth in generation also keeps the sector attractive to investors. "For the next auction for power plants, in September, we have a record number of 1,041 projects registered, with total generation capacity of 51 GW," he said. Generating that much more would increase installed capacity by 50%.

Márcio Zimmermann, executive secretary of the Ministry of Mines and Energy, emphasized that Brazil's per capita energy consumption is still low compared to Europe and the US, making it all the more important to plan to produce more power Noting the limitations of hydropower expansion, he said that "Developed countries are in no hurry, because they have no demand pressure. But Brazil has to do everything at the same time in order not to have imbalances between power consumption and production under more strict environmental regulations."

The price issue

But panelists noted that the cost of eliminating risks to power supply is high and affects not only producers but also industries that depend on energy for their production. Distributors of electricity have had to buy more expensive power from thermoelectric plants. Though their losses were partially mitigated by billions in loans from the Treasury, and an auction of energy, "There are still about US$5 billion in losses and no one knows where that money will come from," said Luiz Fernando Leone Vianna, president of the Brazilian Association of Independent Power Producers

(Apine). The current of power generators is also serious. "We estimate that [power producers] will need US$5.7 billion to $10.4 billion to fulfill short-term contracts to supply energy," Vianna said. "In 2015 and 2016, then, consumers of electricity will have to pay for the increased costs."

Current discussions of the electricity sector have focused on how to resolve the Settlement Price Differences (PLD) used to value energy traded in the spot market, which has historically been volatile in Brazil. "In markets like Europe, where thermoelectric power predominates, prices are less volatile. The variation that exists in Brazil makes planning and decision making much more difficult," said Manuel Herrera, director of trading and marketing of Endesa Brazil. Otavio Rezende, director of Votorantim Energy, said that the Brazilian policy of selling electric energy at a very low price when the flow of water is good stimulates this oscillation, which shot up from US$8 per megawatt-hour to US$357 this year with the drought. "We have never had such a high PLD for so long," he said.

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Yet some seminar participants were critical of proposals to change the PLD. "Current suggestions about changing calculation of the PLD because of the circumstances have contaminated the market and generated speculation. … The market is tired," said Paulo Mayon, co-chair of Compass. For him, one solution would be to create an instrument between the free and regulated market that does not depend on the auction calendar to balance demand. He also encouraged the entry of financial institutions that could offer, as with other commodities, futures contracts to protect against fluctuations in electricity prices. APINE's Vianna believes that dialogue between government and electricity companies is of paramount importance to ensure that rules are implemented consistently.

Dario Albagli, Alcoa director of energy, emphasized the importance of electricity rates to industry competitiveness. He noted that a study of the Federation of Industries of the State of Rio de Janeiro ranks Brazil 18th in terms of cheap electricity rates for industry. "Argentina, China, and the United States—our major trading partners—all have cheaper rates than us," he said. He believes Brazil needs a more effective energy policy, citing international examples: "In France, there is a law that allocates 25% of the production of nuclear power plants, which have already amortized the initial investment, to industry at lower rates."

Votorantim's Rezende stressed that for industries like steel, where energy is more than 30% of the cost of production, a sustainable free market and self-generation of electricity are essential. He said, "The free market is going through a delicate transitional phase. By definition, the free market exists only if it offers cheaper power than the captive market. The current price in the free market does not make sense for some industries." Vianna commented that the free market in energy should expand in the second half of 2014, when new regulations will allow companies with less than a 500 KW load to buy there. "Today, the free market represents 27% of total," he estimated, "but it could reach 47%."

More thermoelectric power

It was generally agreed that with limited opportunities to expand hydroelectric power and increase generation of irregular renewable sources like wind, Brazil will have to generate more

Oil prospects sunny, but not totally cloudless



Solange Monteiro

Maria das Graças Foster, president of state-owned oil company Petrobras, emphasized that in May, deep sea oil "accounted for 22% of all oil produced by Petrobras." She also announced that 85% of the investments the company plans for 2014–20 have already been contracted for, and the company estimates that by 2020 total Petrobras production will reach 4.2 million barrels a day, and Brazil's total production will be 5 million barrels a day. Independent forecasters recognize the potential of Brazilian reserves, she said, noting that "the International Energy Agency predicts that by 2035 Brazil will be the sixth-largest oil producer in the world, responsible for 6% of world production."

Helder Queiroz Pinto, director of the National Petroleum Agency, highlighted that "the economic problems that led to the drop in Brazil's oil production in 2012–13 were solved and this year the country will become a net exporter of oil again."

He assured his listeners that the bidding rounds for oil blocks initiated in 2013, after five years without auctions will continue. Experts pointed out the importance of these auctions, which affect planning and the development of the industry. Julio Bueno, Secretary of Economic Development, Energy, Industry and Services of Rio de Janeiro state, called the risks to Petrobras, which holds 30% of all deep sea oil fields, "worrying," because they affect the indebtedness of the company, "especially considering the policy of controlling fuel prices."

Armando Guedes Coelho, chairman of the Energy Council of the Federation of Industries of the State of Rio de Janeiro, emphasized the strategic importance of the deep sea oil and the need to ensure an attractive investment environment. That opinion was shared by André Jacques de Paiva Leite, president of Statoil Brazil, who warned, "The oil and gas industry is experiencing a major challenge. Profit margins have declined because of increased costs, making it less attractive to investors in terms of return." And Carlos de Luca, president of the Brazilian Petroleum Institute, sounded another warning: "As spectacular as deep sea oil is, investors also check out other alternatives, such as the opening of the Mexican market."

The oil industry still has a lot to explore, and Brazil will need partners to do so. "We have 7.5 million square kilometers of sedimentary basins, but are familiar with no more than 1.5 million square kilometers," Bueno said. "We need a program that helps us to better understand our oil potential."

Seminar participants also discussed the regulations that require energy companies to buy goods and services locally. "It makes sense to have a Brazilian oil industry, but we need to change the logic. We need industries participating in the global value chain, integrated with the international market," Bueno said. De Luca raised a question of how well local industry could cope with increased demand: "Investment in the oil sector has grown by eight to ten times in recent years, and some companies have even doubled in size. We need a proposal to generate investment to increase the capacity of local manufacturers to serve them. "

Foster argued that the local content rule is not that much of a problem. "Those of us in the oil sector know the exceptional advantage of having a shipyard nearby," she said as an example. However, she did emphasize the importance of investing in productivity, training, and partnerships with foreign holders of technologies to build domestic industry.

thermoelectricity. Othon Luiz Pinheiro da Silva, president of Electronuclear, said, "We need to think about two Brazils: the agricultural hinterland that can use sources of low-intensity energy, and big city businesses that need large amounts of energy generated by nuclear, hydro, and thermal energy." He cited Brazil's large uranium reserves and the complete knowledge of uranium processing it has acquired since 2010. "Nuclear generation of electricity costs US$64 per MW; sources of thermoelectricity cost US$117 per MW," he said.

Participants also recommended encouraging expansion of renewable energies. Carlos Mathias Becker Neto, president of Renova Energy, noted that in 2014 2.5 GW of wind-generated electric power could not be distributed due to a lack of transmission lines. Marcos Freitas, professor of the Energy Planning Program at the Alberto Luiz Coimbra Institute of Graduate Studies and Research in Engineering, said that a major challenge for renewable energies is boosting local research and development, especially in view of the local purchase regulations: "At present, there is no robust national technological development; there is only domestic production." Becker Neto added that, even so, Brazil is the third largest consumer of wind power equipment in the world.

Brazil's per capita energy consumption is still low compared to Europe and the US, making it all the more important to plan for power expansion.

As for sugarcane biomass, Milas Evangelista de Souza, director of ethanol for Petrobras Biofuel, said that "the impact of the economic crisis and unattractive [controlled] ethanol prices have reduced the competitiveness of ethanol compared to other fuels." He noted that the sector is projecting only a very modest increase in production. Coppe's Freitas also criticized the lack of incentives for the ethanol market: "Our production of ethanol was once the largest in the world. It has now fallen to second place with many business difficulties. We need to take another look at policy for this sector."

Seminar participants

During the seminar, FGV was represented by its president, Carlos Ivan Simonsen Leal; vice presidents Sergio Franklin Quintella and Francisco Oswaldo Neves Dornelles; counselor Lindolpho de Carvalho Dias; FGV Energy's executive director, Carlos Otavio Quintella; the director of FGV/IBRE, Luiz Guilherme Schymura; FGV's international director, Bianor Cavalcanti; strategic planning and innovation director, João Paulo Villela; director of operations Mario Rocha Souza; director of the Institute of Educational Development Rubens Mário Wachholz; director of public policy analysis Marco Aurélio Ruediger; vice director of public policy analysis Rogério Sobreira; IBRE researcher Maurício Canêdo; and IBRE superintendent of communication and dissemination Claudio Roberto Conceição.

Besides Maria das Graças Foster, Márcio Zimmerman, Maurício Tolmasquim, and Hermes Chipp, also in attendance, among others, were the director of the National Agency of Petroleum, Natural Gas and Biofuels, Helder Queiroz Pinto; the CEO of Votorantim Energia, Otávio Rezende; the president of the Brazilian Institute of Oil, Gas and Biofuels, who is also a member of the FGV Business Cooperation Committee, João Carlos de Luca; the president of Statoil Brazil, André Jacques de Paiva Leite; the Secretary of State for Economic Development, Energy, Industry and Services of Rio de Janeiro, Júlio Bueno; the president of the Energy Council of the Firjan System, Armando Guedes Coelho; the president of Eletronuclear, Othon Luiz Pinheiro da Silva; the director of ethanol for Petrobras Biofuels, Milas Evangelista de Sousa.

The 4th Seminar on the Brazilian Energy Matrix and Security was sponsored by Senai, Statoil, Chevron, Tractebel Energia, and Votorantim Energia and had institutional support from Compactor.