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FEATURED Q&A

Is Erosion Putting Power Supply at Risk in Ecuador?

The risk of erosion at the Coca Codo Sinclair hydroelectric plant has prompted Ecuadorean state utility CELEC to revamp thermal power plants as backup. // File Photo: CELEC.

Q Ecuadorean state power utility CELEC announced in August that it will earmark $80 million to revamp thermal power plants that are currently offline in order for them to provide backup electricity supply as erosion puts the Coca Codo Sinclair hydroelectric plant at risk. Meanwhile, the government's new electricity plan for 2031 included updates that allow for the incorporation of about 1.4 gigawatts of nonconventional renewable energy capacity in addition to what is already set to start operations within that period. How big of a risk does erosion pose to the Coca Codo Sinclair facility, and what potential consequences could it bring for electricity supply in the Andean nation? What are the benefits and drawbacks of bringing thermal power plants back online as backup, and could they effectively fill in any gap left by the Coca Codo Sinclair plant? What is the state of Ecuador's renewables sector, and what is the outlook for the sector during President Guillermo Lasso's administration?

A Eduardo Rosero Rhea, president of the Ecuadorean Association of Renewable Energies and Energy Efficiency (AEEREE): "The regressive erosion of the Coca River is a latent risk for the water collection works at the Coca Codo Sinclair hydroelectric plant, taking into account that its annual generation contribution to the electricity matrix is more than a quarter. In addition, on May 1, repairs and maintenance began on four of the plant's eight turbines for a period of 100 days, which has reduced the plant's available power by half. In 2016, the government largely displaced expensive thermal genera-

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Venezuela Will Not Reform Oil Law This Year: Top Legislator

The president of the ruling party-controlled National Assembly's energy and oil committee said reforms to the hydrocarbons law are still on the agenda but unlikely to occur this year.

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More Firms Join Chile's Green Hydrogen Trend

Chile's GNL Quintero is planning to invest $30 million in a green hydrogen project. Meanwhile, Highly Innovative Fuels launched a new project.

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Bolsonaro Creates State Firm to Keep Eletrobras Assets

Brazilian President Jair Bolsonaro signed a decree creating a new state firm to control assets of state utility Eletrobras that cannot be sold as part of the firm's privatization.

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Bolsonaro // File Photo: Brazilian Government.

RENEWABLES NEWS

More Companies Join Green Hydrogen Trend in Chile

Chilean regasification terminal GNL Quintero and its main shareholder, Spain's Enagas, are looking to invest in a green hydrogen project that would launch in late 2024 or early 2025, Argus Media reported last week. The companies are awaiting environmental authorization for the $30 million green hydrogen project, which would use 10 megawatts of electrolysis powered by solar and wind energy through the national power grid from Spanish renewable energy developer Acciona's portfolio in Chile. Initial production is estimated to begin at 430 tons per year and eventually rise to 640 tons per year, depending on demand. Tanker trucks would distribute the fuel locally, initially oriented toward industries in the surrounding area of the Quintero-Puchuncavi installation in the coastal city of Valparaíso. During peak operations, the project would load five trucks per day at a production rate of 1,765 tons per day, Argus Media reported, citing the project's environmental filing. GNL Quintero is joining a larger trend focusing on green hydrogen production in Chile, which is seen as having ample potential in the fuel's emerging market. The development of green hydrogen is a key component of the country's 2050 carbon neutrality goal, with the government last year unveiling a national hydrogen strategy that first focuses on the domestic market and then eyes potential growth in the E.U. and Asian markets over the following decade, according to the report. In related news, construction began last week at the Haru Oni project in Chile's Magallanes region, the first electrofuels project in South America. Electrofuels, or e-fuels, are made by mixing hydrogen derived from renewable sources usually with captured carbon dioxide to create a virtually carbon-neutral version of fuels such as gasoline, diesel and kerosene, The Wall Street Journal reported. Highly Innovative Fuels, or HIF, a branch of Chilean energy company AME, launched the construction on the plant that is set to produce carbon-neutral fuels powered by wind and hydrogen. "We are happy to begin today a project that can radically change current sources of energy for transportation, providing clean fuels for cars and helping to decarbonize the planet," HIF's president, César Norton, said in a statement. "This will allow Chile to export clean energy to the world," he added. Chilean Energy Minister Juan Carlos Jobet attended the virtual launching of the project. "I want to reaffirm Chile's commitment to addressing the climate crisis and the opportunity to achieve sustainable and inclusive development," Jobet said. The green hydrogen project involves $51 million in investments. [Editor's note: See related Q&A in the Aug. 13 issue of the Energy Advisor.]

The development of green hydrogen is a key component of Chile's 2050 carbon neutrality goal.

OIL AND GAS NEWS

Venezuela Will Not Reform Oil Law This Year: Top Legislator

Venezuela will not reform its hydrocarbons law this year, the president of the government-controlled National Assembly's energy and oil committee said on Wednesday, Reuters reported. President Nicolás Maduro said earlier this year that the Assembly would consider overhauling the legislation, which would allow for "new business models" as the country's oil sector struggles after years of mismanagement and underinvestment, and more recently U.S. sanctions tightening business, the wire service reported. However, the legislative committee's president, Ángel Rodríguez, of the ruling United Socialist Party of Venezuela, said lawmakers

NEWS BRIEFS

ExxonMobil Announces New Oil Discovery in Guyana's Stabroek Block

U.S. oil company ExxonMobil last week announced a new oil discovery in the Stabroek block off the coast of Guyana, bringing the number of discoveries in the block to at least 20, Reuters reported. Exxon leads a consortium, which includes Hess Corp. and China's CNOOC, that is operating the 6.6-million-acre Stabroek block. The company said the latest find would add to the previous recoverable resource estimate of more than nine million barrels of oil. Exxon did not detail the size of the newly found reserves.

U.S. Treasury Again Extends License Shielding Citgo From Bondholders

The U.S. Treasury last week again upheld the suspension of a 2018 license for bondholders of Venezuelan state oil company PDVSA, which have the firm's U.S.-based refiner, Citgo, as collateral, Argus Media reported. The move effectively shields Citgo from being seized by bondholders until January 2022. The U.S. government has been extending the license since October 2019 in a bid to keep Citgo in the hands of the Venezuelan opposition.

Brazil Creates State Firm to Keep Eletrobras Assets

Brazilian President Jair Bolsonaro has signed a decree creating a new state company to control assets of state utility Eletrobras that cannot be sold as part of the firm's privatization, the president's press office said late on Sunday, Reuters reported. Among the assets that the new company, ENBpar, would control are the Itaipú hydroelectric power plant and the nuclear plant in Angra dos Reis, in Rio de Janeiro state. ENBPar is set to have a 4 billion real ($765.5 million) budget, Brazil's economy ministry said Monday.

needed more time to review proposals, receive comments from interested parties and debate the legislation. "The hydrocarbons law is still on the agenda, but we are receiving the proposals," Rodríguez told Reuters after a committee meeting. "I don't think there will be a reform this year," he added. The Venezuelan opposition has long pushed for a greater role for the private sector in the oil industry, which has been largely dominated by state oil company PDVSA. The current hydrocarbons law requires PDVSA to have a majority stake in oilfield joint ventures with private and foreign partners, and under the law, the company has a monopoly on exports, the wire service reported. Earlier this year, France's TotalEnergies and Norway's Equinor returned their shares in a joint venture they had with PDVSA, the latest international companies to cut back their presence in the Andean nation. However, some firms see opportunities in Venezuela regardless of the current political and economic crises. In an interview published by Argus Media last week, the directors of Sucre Energy—a Netherlands-based, Spain-registered private equity group that earlier this year acquired the central Venezuelan assets of Japan's Inpex for an undisclosed sum—said Venezuela is at an inflection point in the oil investment cycle regardless of volatile politics. Sucre directors Santiago Fontiveros and Nicolás Faillace told Argus Media that the Andean nation's ample hydrocarbons are still bringing in investors just as more established companies are pulling out of the company. The partners also said they do not think Venezuela needs new or overhauling hydrocarbons legislation to attract investment. Instead, in their view, only five or six main articles of the current law, which permits private

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>
> **— Ángel Rodríguez**

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tion due to its operating costs. According to CELEC, this installed thermal capacity should be actively reincorporated into the country's electricity supply. The government of President Guillermo Lasso has significant challenges in the energy sector, and it must incorporate disruptive changes in both the state vision and in the planning in the short, medium and long terms, opening the way for regulatory reform that effectively—not just rhetorically—incorporates new private investments in the electricity sector, especially investments favoring complementary renewable energies such as solar photovoltaic, wind and biomass power, among others. Since April, Ecuador has enforced two very interesting regulations that encourage distributed generation for both self-consumption as well as for injection in the power grid. This has created new opportunities for the private sector. As a trade association, we have envisioned a potential of at least 500 megawatts for the next three years in distributed generation. This presents a certain possibility for reducing the dependence and vulnerability of hydroelectric plants such as the case of Coca Codo Sinclair. Additionally, it is a source of employment and of benefit to local economies."

A **Carlos St. James, board member of the Latin American and Caribbean Council on Renewable Energy (LAC-CORE):** "Who can blame Ecuador for wanting to have its own Itaipú, its own Yacyretá? Conceptually, it seems like an obvious idea. And yet the Coca Codo Sinclair dam should never have been built—certainly not under the terms the country accepted from China to make it a reality. Given the dam's very real long-term risk, it is wise to begin finding replacement capacity soon—and revamping existing thermal plants is a comparatively easy fix. No doubt the country will continue to build more thermal plants as well, given their simplicity, while still retaining bragging rights on its power matrix's high degree of renewable energy (because of hydropower). But Ecuador has broader renewable energy potential; the issue, as always, is its access to long-term financing and finding investors willing to bet on long-term political stability—a bit of a gamble. A few years ago, Ecuador's energy ministry retained me to help put together a 500-megawatt auction of wind, solar and small hydro energy projects. I brought to the table a dozen large developers intrigued by the potential higher profit margins that projects in Ecuador might provide, and among the concessions made, the power purchase agreements were established for unusually long tenors, and it was clear that pricing would be at eye-popping rates if investors were to proceed. Agreements in principle were reached but alas, shortly thereafter a wave of popular discontent movements took place across the entire region, and the auction was postponed indefinitely."

A **Luis Calero, Ecuador-based energy analyst:** "The regressive erosion of the Coca River, in one of the most catastrophic scenarios, would be serious for Ecuador's economy due to the impact it would have on the oil and electricity sectors. In the case of the oil sector, it would hurt the national hydrocarbon transportation system as well as oil production. In the electricity sector, it could possibly collapse the water collection system at the Coca Codo Sinclair plant, interrupting approximately 28 percent of the country's total electricity generation. In this emergency context, CELEC authorities decided to recover around 426 megawatts (MW) of power, repairing some thermal generation units that are currently out of service. Obviously, the move is about temporarily mitigating the impact that an eventual shutdown of Coca Codo Sinclair would have by using existing facilities while the hydropower plant's problem is solved. The thermal plants' contribution would be partial and temporary. In 2020, renewables accounted for 20 percent of gross domestic energy sup-

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sector control, should be amended alongside tax cuts for the country to be competitive. However, not all analysts see such a rosy scenario materializing. "The recent departure of two important partners from a large project in the Orinoco Belt, without requesting compensation from PDVSA, has set off alarms about the future of international oil companies in the country," Antero Alvarado, managing partner and Venezuela director at Gas Energy Latin America, told the Energy Advisor in a Q&A published Aug. 6. "The maintenance of [U.S.] sanctions until political change is achieved, which can take several years, raises uncertainty for these companies regarding the continuation of existing and future projects in Venezuela," he added.

Petrobras to Launch New Fuel Contract Models, Keep Pricing

Brazilian state oil firm Petrobras announced last week that it would launch new contract models to sell fuel in a bid to be "more flexible" in order to increase its competitiveness in the refining sector, Reuters reported. In a securities filing, Petrobras said the new models would help it adjust to market conditions, though it said there would be no change in its pricing policies. The company has been selling some of its refineries as it seeks to focus on development of its pre-salt oil fields off the country's coast. "In the current market scenario, characterized by the entry of imported products by third parties and by the divestment process of refining assets, it is necessary to promote investments in some commercial and operational clauses," Petrobras said. So far Petrobras has signed deals to sell the REMAN refinery in the northern state of Amazonas, to local company Ream Participaçoes, as well as the RLAM refinery in Bahia state to Mubadala Investment Company, the United Arab Emirates' state-owned sovereign wealth fund. Four others of Petrobras' refineries are in ongoing sales processes, while the company has found no buyers for its RNEST refinery in the northwestern state of Pernambuco. There have been some delays in the sales schedule for the refineries, in part due to the pandemic but also because there has been controversy over the move, with critics saying the Brazilian constitution guarantees a state monopoly of the oil refinery sector, Gilberto Bercovici, professor at the University of São Paulo, told the Energy Advisor in a Q&A published July 16. However, "it is likely that further refinery sales will indeed proceed, even if they are again subject to attempts to block them," Cleveland Jones, professor and researcher at the National Institute

ADVISOR Q&A

Can Suriname's President Prevent a Debt Default?

Q The Inter-American Development Bank said in late August that it expects several Caribbean economies, including Suriname's, to see "double-digit increases in public debt ratios through 2026." The statement followed the one-year anniversary in office of Surinamese President Chan Santokhi, who replaced longtime President Dési Bouterse. What have been Santokhi's biggest successes and setbacks to date, and how has the country's business climate evolved under his administration? How strongly is the country's economy rebounding from the Covid-19 pandemic, and what role could funding from the International Monetary Fund play in its recovery? What is the potential in terms of reserves and production from the country's recent oil discoveries, and how much could investment and exports from the oil sector invigorate the country's economy?

A Steven Debipersad, lecturer and researcher at the Anton de Kom University of Suriname: "The Surinamese government has negotiated with various creditors in the past year and even now to structurally reduce public debt. Debt sustainability is crucial to getting Suriname's economy back on track. The aim is to bring government debt, which now stands at 160 percent of GDP, to 125 percent by 2024 and 60 percent by 2035. To this end, the government is holding intensive discussions with multilateral, bilateral and commercial creditors, both nationally and internationally. President Santokhi's biggest success was stopping the economic downturn. After the deep recession in 2020 (when real GDP contracted 13.5 percent), the economy is slowly starting to recover with a growth forecast of 1.5 percent by 2022. This turnaround was only possible by aligning expenditures with the government's earning capacity. Support from various programs for Covid-19 vaccines has also been crucial. This resulted in almost 45 percent of the target population receiving at least one dose. A major setback, however, is not having the support of the International Monetary Fund, although almost all preconditions have been met. The big challenge is adjusting the economy before oil revenues start flowing in. This ensures sustainable spending of 'petrodollars' and helps protect against the resource curse. Depending on the plans of TotalEnergies and Apache, which they will submit before year-end, first oil could be feasible as early as 2025. Depending on the outcome, the country will see stronger growth figures as has been the case in neighboring Guyana. Now is the time for Suriname to lay a solid foundation toward sustainable development and prosperity."

EDITOR'S NOTE: More commentary on this topic appears in the Q&A of Monday's issue of the Latin America Advisor.

NEWS BRIEFS

Argentina's Inflation Rises at Smallest Rate in More Than a Year

Argentine consumer prices rose 2.5 percent in August, the country's official statistics agency said Tuesday, the smallest increase in more than a year as the government of President Alberto Fernández seeks to temper sky-high inflation that has hurt its popularity, Reuters reported. Despite inflation rates cooling on a month-to-month basis, in part due to the government's price controls and caps on beef exports, the annual inflation rate reached 51.4 percent in August. Consumer prices for the year through August were up by 32.3 percent.

Venezuelan Gov't Wants Jailed Businessman to Participate in Talks

Venezuela's government wants Colombian businessman Alex Saab, a close ally of President Nicolás Maduro who is currently jailed on money laundering charges, to participate in its dialogue with the Venezuelan opposition in Mexico City, said Venezuelan National Assembly President Jorge Rodríguez, Reuters reported. Saab was arrested last year in Cape Verde, where a court ruling last week opened the door to his extradition to the United States.

Brazil's Supreme Court Suspends Bolsonaro's Social Media Order

Brazil's Supreme Court suspended a temporary decree by President Jair Bolsonaro in which he banned social media companies from deleting some content, The New York Times reported Wednesday. The move came after Brazil's Senate President said he would shelve the measure, preventing it from becoming law. Bolsonaro's decree would have prevented social media companies from deleting misinformation, such as false claims Bolsonaro has posted about Covid-19 and the election system.

of Oil and Gas at the State University of Rio de Janeiro, said in the same issue.

POLITICAL NEWS

Haitian Prime Minister Fires Justice Minister

The crisis in Haiti's government deepened Wednesday as Prime Minister Ariel Henry fired his justice minister, Rockefeller Vincent, replacing him with Interior Minister Liszt Quitel, who will head both departments, Reuters reported, citing a statement in the government's official gazette. Henry's action came a day after he fired Port-au-Prince's top prosecutor, Bed-Ford Claude, who had sought charges against Henry in connection with the July 7 assassination of President Jovenel Moïse. Henry's firing of the justice minister on Wednesday also happened hours after another official, Renald Lubérice, who had been secretary general of Haiti's Council of Ministers for more than four years, resigned, saying he could not serve under a prime minister who is suspected in connection with Moïse's assassination, the Associated Press reported. In stepping down, Lubérice said Henry, whom Moïse had selected just days before he was killed in his private residence, "does not intend to cooperate with justice, seeking on the contrary, by all means, to obstruct it," the AP reported. Henry has denied any involvement in Moïse's murder, but he has not publicly addressed phone calls that Claude alleged Henry had just hours after the assassination with Joseph Badio, a key suspect in the case.

Thousands March in San Salvador to Protest Bukele

Thousands of demonstrators took to the streets in El Salvador's capital on Wednesday in protest of President Nayib Bukele, whom critics say has moved to grab power and weaken the independence of the country's judiciary, the Associated Press reported. Some of the demonstrators who marched in San Salvador also were protesting Bukele's initiative to make Bitcoin a legal tender in the country. Some protesters wore T-shirts reading "NO to Bitcoin," and some vandalized special automated-teller machines installed in the capital to handle transactions with the cryptocurrency. Bukele, who was elected in 2019, has maintained a high popularity rating as he has vowed to fight corruption, the AP reported. However, his critics say he is showing dictatorial tendencies.

ECONOMIC NEWS

IMF Taps Goldfajn as Head of Western Hemisphere Dept.

The International Monetary Fund has tapped former Brazilian central bank chief Ilan Goldfajn as the head of its Western Hemisphere Department, the IMF's director announced Monday. "I am delighted that Ilan will join our team as the new [Western Hemisphere Department] director," said IMF Managing Director Kristalina Georgieva. "His proven track record as a policymaker, communicator, as well as his depth of knowledge as an international finance executive and his familiarity with the Fund's work will be invaluable in helping our member countries in the region." Goldfajn will take over the position on Jan. 3, replacing Alejandro Werner, who stepped down on Aug. 31. The Western Hemisphere department's deputy director, Nigel Chalk, will continue overseeing the department on an interim basis until Goldfajn takes over, Reuters reported. Goldfajn previously worked as an economist at the IMF from 1996 to 1999 and was the head of Brazil's central bank from May 2016 to February 2019. He has also served as chief economist at Itaú Unibanco and most recently as board chairman of Credit Suisse's unit in Brazil. Goldfajn will be among those at the IMF leading talks with Argentina about reworking its failed $45 billion program for that country, Bloomberg News reported.

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ply, compared to 10 percent in 2010—there has been a 100 percent increase over the last decade. The current government has modified the Electricity Master Plan, and it expects to incorporate in the coming years more than 1,400 MW, with a private investment of $2.2 billion in photovoltaic, wind, geothermal and other generation projects. In the next few weeks, the government is scheduled to announce some of its regulatory reforms for this purpose."

A **Sam Schlesinger, independent energy consultant:** "While the true threat of current erosive processes at the Coca Codo Sinclair (CCS) plant is uncertain, it's relatively benign considering what's possible for infrastructure built at the foot of a continuously erupting volcano and designed using decades-old hydrological studies. However, the proposal to backstop the quarter of Ecuador's energy currently produced at CCS with investments in mothballed parts of the thermal fleet represents a huge step backward for the nation. Admittedly, an offline CCS coupled with a pronounced dry season affecting other hydropower plants would require additional generation to avoid rotating outages, and Ecuador's unused thermal capacity is capable of meeting load demands. However, replacing CCS' output with fossil fuels would cost hundreds of millions of dollars a year in generation expenses, aggravate long-term environmental and health costs associated with plant emissions, and surreptitiously move Ecuador's generation policy from public infrastructure to lucrative contracts for fuel suppliers. Considering the cronyism and opacity that have plagued the country's petroleum sector, there's little to like about new investment in the thermal fleet. However, it's a piece of the wrong-headed and unrealistic plans to 'double production' from Ecuador's rapidly sunsetting petroleum reserves, as President Lasso has announced. At a juncture that requires careful planning to ensure long-term energy sovereignty, expanding and diversifying the 80-90 percent of energy currently generated through hydropower, it's concerning to see the government entrust future generating capacity to a series of vaguely imagined public-private renewables initiatives, while committing financing to an unsustainable stopgap solution for foreseeable short-term problems."

A **Marcos Ponce-Jara, professor at Universidad Laica Eloy Alfaro de Manabí:** "Erosion of the Coca River puts the largest hydroelectric project in Ecuador at serious risk. The consequences of an eventual shutdown would not represent a problem for energy supply at the national level, but it could hurt exports to Colombia and Peru. The electricity system is oversized—installed capacity exceeds maximum demand by about 50 percent. Moreover, of eight emblematic hydroelectric projects, several are set to begin operations in upcoming months. Modernizing thermal plants could bring some energy security, especially for the coastal provinces of Guayas, Santa Elena, Manabí and Esmeraldas. However, the move would also lead to higher carbon-dioxide emissions as well as state expenditures for fossil fuel subsidies in order to produce energy at the thermal plants. So far, the new government has not shown any new direction in terms of renewable energy, and it is not expected to change course soon. Energy policies in the last decade have been oriented toward hydropower—the large sums of money invested in the construction of the aforementioned eight hydroelectric projects have not yet been recovered, and any energy policy to promote nonconventional renewable energy projects that implies expenses for the state has been considered harmful. Since 2017, the 'net metering' policy has been in force to promote residential and industrial micro-generation. However, it has not had the desired impacts. Greater government efforts are required to promote more effective compensation mechanisms to promote renewables and to increase energy security in the country."

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