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FEATURED Q&A

How Can Latin America Give Cleantech a Boost?

Latin America trails behind other regions in clean energy innovation, according to a report by the Inter-American Dialogue. Mexican President Enrique Peña Nieto is pictured speaking in January at the inauguration of the Iusasol solar panel park. // Photo: Mexican Government.

Q Despite pioneering success in niche areas like biofuels and ocean energy, most Latin American countries trail other regions of the world in important indicators of clean energy innovation, such as filing fewer patents, investing less in technology research and development and receiving far lower royalties, according to a report released in March by the Inter-American Dialogue. What steps can Latin America take to scale up clean energy technology development? What do countries of the region stand to gain from improving these metrics? What more can government agencies and legal systems in Latin America and the Caribbean do to encourage higher rates of patent applications, both domestically and abroad?

A Jesús Alarcón, senior researcher at the Mexican Institute for Competitiveness (IMCO) in Mexico City: "A historical trend for Latin America is that we do not develop and innovate in new technologies, but rather we import the knowledge from other markets. This is due to our low annual investment in science and technology, now at about 0.76 percent of our GDP. In contrast, the European Union has an average of 2 percent, while Korea and Japan invest between 3.5 and 4 percent of their GDP. Investing in clean energy is a first step toward reversing this situation, as Latin America's geographical position is beneficial for harnessing and promoting the development of new technologies. However, we must carry out some actions first: (1). Creating public policies that foster the use of clean technologies (for example, renewable energy certificates or feed-in tariffs schemes). Another approach could be the use of financial incentives for anyone

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TransCanada to Build Mexican Natural Gas Pipeline

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IDB Group to Lend $4 Billion a Year on Climate Change

The Inter-American Development Bank has set a goal to increase financing for combating climate change to 30 percent of its loan approvals by 2020.

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OIL & GAS

Schlumberger Trims Venezuela Business as Debts Mount

Schlumberger, headed by Paal Kibsgaard, said Wednesday that it will reduce its business activity in Venezuela "to align operations with cash collections."

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Kibsgaard // File Photo: Schlumberger.

OIL & GAS SECTOR NEWS

Trinidad & Tobago Sees Increasing Output of Oil, Gas

Trinidad & Tobago's central bank is expecting increased oil and gas production despite lowering its forecasts for economic growth in the near term, the Jamaica Gleaner reported Tuesday. In its latest report, the central bank, headed by Governor and Chairman of the Board Alvin Hilaire, said the nation's GDP will contract by nearly 2 percent this year, largely the result of falling production and continued low prices for oil and gas, the country's chief export. According to data from the Ministry of Energy, crude oil production declined to 72,190 barrels per day in January, a 14 percent drop from 83,883 barrels per day a year earlier. Natural gas production was 7.2 percent lower at 3,819 million cubic feet per day (mmcf/d) in January from the year before. "The energy sector continues to grapple with a low price environment and major maintenance and infrastructural upgrade activity which have curtailed gas supplies," the central bank's report said. On the bright side, officials pointed out that recent private and public sector initiatives should improve the supply of natural gas in the short to medium term. "By the end of 2016, an additional 250 million cubic feet per day (mmcf/d) of natural gas is anticipated from EOG Resources from its Sercan field," the report stated. Moreover, BP Trinidad & Tobago is expected to add another 200-300 mmcf/d to natural gas output from its onshore compression project and a further 590 mmcf/d in 2018 from its Juniper field by the end of 2017. Last month, BP announced that all five subsea trees had arrived for its Juniper project, a facility will take gas from the Corallita and Lantana fields located 50 miles off the southeast coast of Trinidad. For now, the economic downturn has spread from the energy sector to some non-energy sectors, according to the central bank, which said it expects the labor market to worsen, with more layoffs in the energy and manufacturing sectors in particular.

Hilaire // File Photo: Trinidad and Tobago Government.

Schlumberger Trims Venezuela Business as Debts Mount

Schlumberger said Wednesday that it will reduce its business activity in Venezuela "to align operations with cash collections." The oil services giant said the measure is a result of "insufficient payments received in recent quarters and a lack of progress in establishing new mechanisms that address past and future accounts receivable." Schlumberger added that it "appreciates the efforts" of its main customer in the country to find alternative payment solutions and "remains fully committed to supporting the Venezuelan exploration and production industry." For now, the company said that it is "unable to increase its accounts receivable balances beyond their current level," adding that it planned to continue servicing those customers with available cash flow, while allowing for "a safe and orderly wind down of operations for others." Venezuela is facing a severe economic crisis exacerbated by exchange rate distortions that have made it nearly impossible for companies to get paid for goods and services.

TransCanada to Build Mexican Natural Gas Pipeline

TransCanada said Tuesday Mexico's government had chosen it to build, own and operate the Tula - Villa de Reyes pipeline. The

NEWS BRIEFS

Chile to Delay Power Auction Until July 25

Chile's energy regulator, the CNE, has delayed its power auction until July 25 in order to ensure that a transmission law, currently under consideration in Congress, will win approval before power companies begin submitting bids, PV-Tech reported Monday, citing Carlos Finat, executive director of the Chilean Renewable Energy Association. "This delay is in line with requests from different companies and organizations," said Finat, who added that his association is among those who requested the delay.

Malaysia Grants Ecopetrol Patent to Produce Diesel

Malaysia has granted Colombian state-owned oil company Ecopetrol a patent to produce a cleaner diesel fuel that is generated through the use of renewable sources, EFE reported Wednesday. Malaysia's Intellectual Property Corporation has granted Ecopetrol the parent for a process of "obtaining diesel from vegetable oils or animals via hydrotreatment with reduced standing time and products obtained from same," the Colombian company said in a statement. The Colombian Petroleum Institute developed the process, which has also received a patent in Colombia. Patent applications have also been filed in the United States, Brazil, Indonesia and Europe.

Petrobras Extends Talks on Selling Stake in Argentine Unit

Brazilian state-run oil company Petrobras said April 8 that it has extended its talks with Argentina-based Pampa Energía on the sale of a majority stake in its Argentine unit for 30 days, Reuters reported. Last month, Pampa Energía offered Petrobras approximately $1.2 billion for a 67.2 percent stake in the unit, Petrobras Argentina, an unnamed source told Reuters.

Calgary-based firm has agreed to a 25-year natural gas transportation service contract to provide 886 million cubic feet a day to Mexico's state-owned power company, the Comisión Federal de Electricidad, or CFE. Russ Girling, TransCanada's president and CEO, said the contract complements the company's existing pipeline network in Mexico and will generate "stable and predictable earnings and cash flow streams." TransCanada expects to invest approximately $550 million in the 36-inch diameter, 420-kilometers (261-mile) pipeline, which it anticipates will enter into service in early 2018. The pipeline will begin in Tula, in the state of Hidalgo, and terminate in Villa de Reyes, in the state of San Luis Potosí, transporting natural gas to power generation facilities in the central region of the country. The project will connect with TransCanada's Tamazunchale and Tuxpan - Tula pipelines as well as with other transporters in the region. By 2018, TransCanada will be operating six major natural gas pipeline systems in Mexico representing an overall investment of approximately $3.6 billion.

By 2018, TransCanada will be operating six major natural gas pipelines in Mexico.

RENEWABLES NEWS

IDB Group Plans to Lend $4 Billion a Year on Climate Change

The Inter-American Development Bank has set a goal to increase financing for climate change to 30 percent of its loan approvals by 2020. The move, announced Saturday along with the Inter-American Investment Corporation, which together form the IDB Group, would allocate $4 billion per year for climate change initiatives.

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who either generates or uses clean energy. For example, in Colombia those who build a clean energy plant can recover up to 25 percent of their initial investment depending on the project's environmental impact. (2). Improving the legal conditions that protect the intellectual property of researchers and developers of science and technology. In this field, government programs sometimes forget to assist entrepreneurs and startups in the registration process of patenting. (3). Enhancing financing schemes by creating a guarantee program for entrepreneurs in order to promote the diversification of the financial products offered by commercial banks. Investing in clean technologies not only helps to diversify the energy matrix by minimizing its reliance on fossil fuels (including natural gas), it also protects our natural assets by reducing GHG emissions."

A **Jonathan Pinzón, independent consultant on energy and innovation:** "Most Latin American countries have recently opened up markets to clean energy with very interesting results. Unfortunately, public utilities and energy companies have shunned the opportunity to become important players in their emerging innovation ecosystems (with notable exceptions, including EPM). The region's private-sector giants, mostly in natural resource and low-tech content goods and services, provide few natural exits for technological solutions and innovative ventures. Governments can increase the market for cleantech through regulations and market mechanisms. But they can also provide the seeds for economic transformation. A recent discovery in the region is the notion of the 'entrepreneurial state' and the possibilities of mission-oriented finance. With it comes a growing interest in public research and development funding, through levies on extractive industries. Absent, though, have been the needed partnerships with large corporations. In their quest to transition to an innovation-based economy, many governments have supported the creation of Silicon Valley-style venture capital funds, but corporate venture is practically non-existent. By opening up markets for clean solutions, implementing environmental standards and carbon taxes, increasing smart investments in energy problems and incentivizing the involvement of corporations, the region can become a leader in clean energy innovation. Last December in Paris, Brazil, Chile and Mexico all committed to doubling public R&D efforts in energy. But absent were the region's billionaires and corporations that are needed to bring those technologies to market. Without them, the region's proliferating venture capital will continue to fund what they hope will be the next acqui-hire and not the cleantech breakthrough we are looking for."

A **Lisa Viscidi, director, and Rebecca O'Connor, assistant, of the Energy, Climate Change and Extractive Industries Program at the Inter-American Dialogue:** "Governments can play an important role in increasing both overall innovation and clean energy innovation by increasing R&D spending as a percentage of GDP. The region spends only 0.82 percent of GDP on R&D compared to 1.84 percent in Asia and 2.84 percent in the United States. Directing even a small percentage of this R&D spending toward engineering-based innovation will boost research capabilities in energy-related fields. Governments can also strengthen policies to boost domestic demand for indigenous clean energy technologies and create a domestic market for companies to sell their patented technologies and test their prototypes. For example, Latin American governments could create public procurement programs that require minimum levels of domestically developed technology inputs. Finally, to commercialize more technologies, Latin American countries need to

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The Latin American and Caribbean region needs to spend some $80 billion per year between 2020 and 2030 on climate change, representing close to three times the current volume of investment, the multi-lateral lender said. By 2018, proposed IDB investments will undergo a "climate-risk screening process" to identify opportunities to include climate-resilient design elements. The effects of climate change could cost as much as $100 billion a year for the region within four decades, or 2.4 percent of GDP. For a Caribbean country such as the Bahamas, that could be as much as $200 million a year, according to a report last week in The Bahamas Weekly. The IDB's annual meetings this year took place in the Bahamas from April 7 to 10. At the meetings, the Japan International Cooperation Agency, or JICA, announced it will invest a total of $3 billion in Latin America and the Caribbean to support renewable energy and energy efficiency projects, as well as quality infrastructure projects related to energy savings. In recent years, JICA has funded renewable energy and energy efficiency programs in Nicaragua and Honduras, as well as efforts to develop geothermal energy in Costa Rica. Co-financing programs for geothermal energy in the Eastern Caribbean are currently in the advanced stage of preparation, JICA said.

THE DIALOGUE CONTINUES

Will Colombia's Gov't Ration Power?

Q As Colombia continues to struggle with a protracted drought caused by the El Niño weather phenomenon, concerns are mounting that the government may need to begin power rationing. Colombia has launched an electricity-saving program, though it is not expected to have a significant effect on electricity supply. What can President Juan Manuel Santos' administration do to stave off power rationing? Will Colombia import more energy to offset shortages? How will the power shortages and the government's strategies to cut energy consumption affect the business sector? How would power rationing affect Santos' political standing?

A Leopoldo Olavarría, partner and head of energy for the Latin America division, and Pablo Jaramillo, senior associate, at Norton Rose Fulbright LLP: "Colombia's power generation system is largely dependent on hydro power, with residual capacity being generated through thermal power plants. In terms of installed capacity, the country has a large surplus relative to its average consumption and, therefore, it is usually able to export energy to its neighbors. On top of a seemingly solid system, Colombia has had in place a flexible system, through which generators that do not dispatch to the central system receive a reliability payment (the 'Cargo por Confiabilidad') which is designed to allow the generators to remain profitable and in business in exchange for being able to generate at short notice. The current situation that poses a risk of shortages may be explained as the conjunction of three factors. First, one of the strongest 'El Niños' in decades has significantly diminished the level of hydroelectricity dams to less than 30 percent of normal water levels. Second, a fire in the engine room in the Guatapé dam (one of the country's largest) put the dam out of service and, also, retained the water inside. This is significant, because water flowing from Guatapé usually goes to feed at least two other major hydro power plants downstream in the Antioquia region. And third, despite the fact that the 'Cargo de Confiabilidad' was always timely paid to thermal generators, some were unable to generate power at full capacity. To avoid power cuts, the Colombian government initiated a self-regulation campaign to save at least 5 percent of their daily consumption. Despite a successful campaign, the initiative has only achieved, or surpassed, its target during holidays, but not during business days. As to the Guatapé damage, partial operation of the plant will only be achieved in May and full operation is expected for September. On the other hand, most of the country's thermal plants are operating at full capacity. The government has helped the current situation with energy imports from Ecuador. However, these are subject to the physical limits of Ecuadorean surplus and the extent of the transmission line. Therefore, the risk of programmed blackouts does not appear to have been averted."

EDITOR'S NOTE: More commentary on this topic appeared in last week's issue of the Latin America Energy Advisor.

POLITICAL NEWS

Former Argentine President Makes First Court Appearance

Former Argentine President Cristina Fernández de Kirchner refused to answer questions verbally in a Buenos Aires court Wednesday, instead handing over a prepared statement and using the opportunity to accuse the judiciary of "incompetence" and conspiring with political opponents to seek her imprisonment on false corruption charges, Clarín reported. Authorities summoned the former president to respond to questions over alleged irregularities in the foreign exchange market during her administration, the first of several pending cases prosecutors are investigating. A crowd of supporters had gathered outside the court building in Buenos Aires, cheering as she left court after an hour of combative exchanges that led the judge to leave the room. "They can call me in 20 times, they can put me in prison, but they will never shut me up," Fernández told flag-waving supporters as she left the building, Bloomberg News reported.

NEWS BRIEFS

Schreiber Foods Opens Mexico Cheese Plant

Wisconsin-based Schreiber Foods is opening a plant in Guanajuato, Mexico, to produce "American-style" cheese as well as cream cheese and other dairy products for the retail and foodservice industries, El Financiero reported Wednesday. The plant, covering an area of seven hectares with 30,000 square meters of space, is expected to generate 275 jobs. Schreiber, which counts McDonald's among its customers, began operations in Jalisco in 1992. The company also has operations in Brazil, as well as Europe and Asia.

Dominican Republic Needs to Stop Borrowing, Business Leader Says

The president of the Dominican Republic's National Business Council (CONEP) said Wednesday his government should stop borrowing externally and avoid a needing support from the International Monetary Fund, Dominican Today reported. Speaking at an event with opposition party presidential candidate Luis Abinader, Rafael Blanco said the country should also prioritize exports, modernize the labor code and lower the government's fiscal deficit through an electricity pact to eliminate subsidies. Abinder is polling a distant second place in next month's presidential race, behind incumbent Danilo Medina.

Rising Canadian Dollar Sapping Export Strength: Central Bank

Canada's central bank said Wednesday that a strengthening Canadian dollar is sapping the nation's export-led recovery, BNN reported. Growth prospects would be facing a downgrade if not for the fiscal stimulus in the federal budget, the Bank of Canada said, predicting the economy will grow 1.7 percent this year.

Rousseff Adversaries Gain Ground, Vote Still Too Close to Call

Legislators pushing for the impeachment of Brazilian President Dilma Rousseff on Wednesday picked up the support of another centrist party in their bid to oust her in a vote scheduled on Sunday, giving the opposition 308 of the 342 votes needed to pass the measure, Folha de S.Paulo reported. The head of the Social Democratic Party (PSD), the largest centrist party remaining in the governing coalition, on Wednesday night instructed party members to vote for the president's impeachment. Rogério Rosso told reporters the vast majority of the PSD's 38 deputies support Rousseff's ouster, Reuters reported. Rousseff's supporters continue to defend her, however. The minister of the government secretariat, Ricardo Berzoini, said allies of Rousseff in Congress have 200 votes, dozens more than the 171 needed to block the impeachment process, state-run Agência Brasil reported.

ECONOMIC NEWS

Millions of Sardines Killed in Latest Blow to Chilean Fisheries

Tons of dead sardines have clogged the Queule River in southern Chile, Reuters reported Tuesday. The government is under pressure to increase cleanup efforts as health concerns rise. Video of the area shows a solid layer of dead fish stretching hundreds of square yards across the water's surface. "The government here has to declare the inlet of Queule and its surroundings a health catastrophe zone," local fisherman Hernán Machuca said. While the cause of fish kill still a mystery, Chile's substantial salmon farming industry has been hit hard by "biological challenges" in recent years. A massive algal bloom, suspected to be caused by warming sea temperatures, has killed millions of farmed salmon. Norway's Marine Harvest announced Monday it has decided to reduce its workforce in Chile by up to 500 employees due to poor financial results in its operations there. Spot prices for salmon of Chilean origin were below break-even throughout last year, falling 20 percent on average, the company said in its annual report released earlier this month. The company harvested more than 62,000 metric tons of salmon in Chile last year, but it needed to use twice as many antibiotics in its operations there in 2015 compared to the year before, Seafood News reported.

IMF Sees Slower Growth This Year, Improvement in 2017

The economies of Latin America and the Caribbean are expected to continue in negative growth territory for a second consecutive year in 2016, the International Monetary Fund said in its latest World Economic Outlook released Tuesday, with expectations for a 0.5 percent regional decline overall. However, the IMF expects growth to strengthen in 2017, with GDP gaining 1.5 percent. There are substantial differences across regions and countries, the IMF noted. While South America remains heavily affected by the decline in commodity prices, the IMF sees Mexico, Central America and the Caribbean as beneficiaries of the U.S. recovery and, in most cases, lower oil prices. Mexico is expected to continue to grow at a moderate pace, at 2.4 percent in 2016 and 2.6 percent in 2017. In Brazil, output is expected to contract by a further 3.8 percent in 2016, following a contraction of 3.8 percent in 2015. That trend is expected to change as "large shocks" and political uncertainty "run their course" in the months ahead, however. The region's other economic hot spot, Venezuela, is projected to remain in a deep recession in 2016, with output projected to fall by 8 percent following the contraction of 5.7 percent in 2015 amid political uncertainty and the continued decline in the price of oil. Meanwhile, Ecuador's outlook is "highly uncertain" and depends on the availability of external financing, the report said.

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expand industry-academia ties and connect researchers with foreign private sector players that have more experience in marketing and exporting technologies than domestic firms. Latin American researchers also need to patent more of their technologies in larger foreign markets to increase their exposure to foreign companies and increase royalties. Links with international industry and markets will also help Latin American start-ups gain access to international capital."

A **Alexandre Szklo, associate professor at the School of Engineering of the Federal University of Rio de Janeiro:** "Latin American countries (LAC), especially Brazil, have improved their scientific indicators related to number and impact factors of scientific papers. Moreover, in deepwater petroleum upstream activities, Brazilian research centers (such as CENPES, BG and GE) established fruitful partnerships with universities to develop technological pilot studies. Some of these studies provided patents. On one side, this shows that partnerships between energy companies and universities are possible in LAC. On the other side, it also shows that these partnerships have been carried out in Brazil, and even in other countries (Argentina, Peru, Mexico, Colombia) with national oil companies—fully state owned or not—as the driving force behind them. Lessons learned from OECD countries indicated that to overcome the 'death valley' related to scientific developments made at universities, the presence of a third party is relevant. In academic studies, usually all results are public, and scholars are not prone to risk activities from the market side. Patents mean that a company will benefit from a temporary monopoly of a technological development, but also mean that this development will not be fully public for a while. Therefore, LAC lacks a developed market for clean energy innovation, which would include small innovation companies prone to risk (start-up or not), a well-developed financial market (not only based on commodity assets) and a revision of the roles that universities and research centers can assume in helping the cleantech market in LAC."

A **David Bradin, counsel, and Sean Wooden, partner, at Andrews Kurth:** "Latin America and the Caribbean have rapidly growing populations and ever-increasing energy demands, but also have considerable untapped renewable energy potential, with plentiful arable land, favorable climates for growing energy crops and access to low-cost labor. However, limitations associated with switching to clean energy include access to capital, access to technology, lack of government incentives, difficulties in obtaining patents on new technology and competition from relatively inexpensive crude oil. First-generation biofuels, like biodiesel and sugar cane ethanol, are limited by the amount of available feedstock. Second-generation biofuel technologies have higher capital costs, and, even in developed countries, have seen little commercial success, despite decades of research. Assuming an economically viable second-generation biofuel technology is discovered, it is necessary to have effective ways to fund commercial development and to protect intellectual property. With respect to funding, Latin American governments have several tools at their disposal, including tax incentives, public/private partnerships, grants and government-backed loans. With respect to intellectual property, less than 3 percent of global patent applications in renewable technologies are filed in Latin America and the Caribbean. Additional filings could be encouraged, for example, by adopting a regional patent system such as is used in Europe, Eurasia, and Africa. In these regions, far more applications are filed regionally than are filed in individual member states. In the process of negotiating a regional patent system, Latin American and Caribbean nations should also consider negotiating trade agreements that favor regional clean energy development."

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