Renewable Energy Tracker™

IPD’s Pick of the Month: Colombia

Colombia has world-class solar irradiation, wind, and geothermal resources. But the structure of the country’s electricity sector has stymied renewables development. Colombia has limited dependence on fossil fuels, but relies heavily on hydro. It also holds to a principle of technological neutrality and free competition, which means that the government will not intervene to promote any particular technology. But an El Niño-triggered electricity sector crisis in H1 2016 reminded officials that a diversified generation mix is key to a healthy energy sector.

The figure below illustrates Colombia’s installed capacity mix at the end of 2015. It also shows two of twelve potential expansion scenarios the country’s Mining and Energy Planning Unit (UPME) analyzed in its Power Grid Expansion Plan 2015-2029. Expectations for renewables may seem moderate, but they are bold for Colombia. See page 6 for more.

Colombia’s Renewable Energy Growth through 2029

*Scenario with the highest renewable energy penetration in the generation capacity mix
**Scenario with the most diversified generation capacity mix; UPME-recommended grid expansion plan
Source: IPD Latin America based on Colombia’s Mining and Energy Planning Unit (UPME)
Chile’s Latest Energy Auction Sets New Benchmark for Unsubsidized Solar Projects

On August 17, Chile’s Electricity Supply Tender 2015/01 reached its grand finale. The largest in the country’s history, this auction put 12,430 gigawatt hours (GWh) of energy per year up for grabs. The big winners: renewable energy developers, who locked up over 50% of the awarded contracts in a process open to all power generation technologies. Ireland’s Mainstream Renewable Power secured 30% of the offered energy volumes, while Endesa, a subsidiary of Italy’s Enel, snatched up another 40%.

Physical deliveries must begin in 2021 under 20-year supply contracts. The electricity they supply will help service demand from about 30% of Chile’s regulated Central Interconnected System (SIC) and Greater North Interconnected System (SING) users.

The government anticipates that electricity bills will decrease by up to 20% early in the next decade. The cost reduction comes largely thanks to the new record this contest delivered: an average US$47.59 per megawatt hour (MWh) winning price. This value is 40% less than the US$ 79.34 average price of last year’s power tender.

Spanish Solarpack’s winning US$ 29.10 per MWh bid for its Granja Solar project, a 120 MW solar PV plant to be located in Chile’s Atacama Desert, delivered the tender’s biggest surprise. With that bid, Solarpack beat the US$ 29.90 per MWh world record, which the Masdar Group-led consortium had set in May 2016 at the Dubai Electricity and Water Authority’s (DEWA) 800 MW solar power tender. Solarpack’s and other aggressive bids represent a big bet on Chile’s fast-growing clean energy market, which could increase its momentum next year, when the government plans to complete the interconnection of the SIC and SING power grids (for more on Chile’s latest energy auction results, contact IPD at +1 305-767-2177 or info@ipdlatam.com).
Mexico Jumps onto Latin America’s Green Bond Bandwagon and Adds Some Local Flavor

**Topic:** In late August, Mexican development bank Nacional Financiera (NAFIN) sold seven-year green bonds with a 6.05% yield to maturity for MX$ 2 billion (US$ 107 million) on the domestic debt market. This issuance is the first local currency-denominated green security in Latin America. With it, NAFIN expects to raise money to fund two mini-hydropower plants and a wind farm in the states of Nayarit and Puebla, respectively.

**Context:** Mexico’s development bank is advancing its Green Bond initiative. In late October 2015, it issued a US$ 500 million bond with a five-year tenure and a 3.41% coupon. The proceeds will help finance nine wind farms in the states of Oaxaca, Nuevo León, and Baja California. Five times oversubscribed, this issuance was the first Mexican green bond ever and the first in Latin America to be certified by the Climate Bonds Standard Board.

**IPD Insight:** With the latest green bond issuance, NAFIN is adding momentum to Mexico’s climate change mitigation efforts. It is also joining other Latin American institutions that are tapping into what is now a US$ 694-billion global market for climate-aligned bonds (CABs) (see figure). Other major regional players include Costa Rica’s central bank, which issued US$ 500 million in green bonds in April, and the Central American Bank for Economic Integration, which raised the equivalent of US$ 73 million through a fairly complex structure in early August. CABs are meant to finance low carbon and climate-resilient infrastructure; if their proceeds are earmarked for projects with clear environmental benefits, CABs get a green label. Today, energy-focused CABs (both labeled and unlabeled) total US$ 131 billion globally. Latin America represents less than 1% of that; China and the U.S. hold the lion’s share. Energy-related labeled green bonds amount to US$ 33 billion. Mexico accounts for 1.8% of that with its US$ 606.3 million issued. The country has one of the most liquid and robust bond markets in Latin America, but it still has a long way to go. To secure its path toward de-carbonization, Mexico will require huge investment flows for its energy, real estate, transportation, industrial, waste management, and pollution control sectors. It will need a US$ 5 billion capital influx per year (in 2012 U.S. dollars) through 2029 to meet its clean energy targets alone. To unlock the domestic green debt market, the government must secure higher credit ratings for utility-scale renewable energy projects (i.e., wind and solar), improve fiscal and regulatory incentives, and provide transparent access to bond pricing and issuance processes.

**Project of the Month**

**BMR Energy’s wind farm in Jamaica:** On August 11, the Jamaican subsidiary of U.S.-based BMR Energy commissioned a 36 MW wind power plant located on the western part of the island. The Overseas Private Investment Corporation (OPIC), the International Finance Corporation (IFC), and the IFC-Canada Climate Change Program financed 70% of the US$ 89.6 million project. The wind farm will generate about 120 GWh per year, equivalent to 3% of Jamaica’s current power consumption (around 95% of local electricity demand is met with diesel- and fuel oil-fired plants, which has caused high power tariffs). This is welcome news for a country that spends nearly 10% of its GDP every year to import fuels from the U.S., Trinidad & Tobago, and Venezuela to keep its economy running. Jamaica has an untapped renewable energy potential that could help meet 40% of local electricity demand by 2027.
Policy and Regulatory Developments
Puerto Rico

“Boricuas” Shine Up Their Power Grid

**Topic:** On August 6 this year, Puerto Rican Governor Alejandro García Padilla signed “Act 133,” which amends a series of clean energy-related laws. The legal modifications are largely meant to accelerate renewable energy penetration into the power generation mix.

**Context:** This new law is founded on bill No. 1666, which the Senate debated with the Puerto Rico Energy Commission (PREC) in public hearings. Key provisions include:

- The Puerto Rico Electric Power Authority (PREPA) will modernize its net metering program through remote meter reading and web-based solutions for streamlining interconnection procedures.
- Distributed generators with up to 5 MW of capacity will adopt the interconnection rules set by the Federal Energy Regulatory Commission’s (FERC) Order No. 2006.

**IPD Insight:** “Act 133” paves the way for faster installation of small PV systems in Puerto Rico, where distributed solar generation capacity reached 37 MW in 2015 (up from 4.1 MW in 2012). The government is betting on community solar schemes and micro-grids. But Puerto Rico has a long way to go: renewable energy sources account for barely 2% of its total electricity output.

Argentina

Supreme Court Says No to Macri’s Plan to Cut Gas Subsidies

**Topic:** On August 18, 2016, Argentina’s Supreme Court ruled against the government decision to raise natural gas prices for residential users as of April. The court deemed the decision illegal because it lacked the Constitution-mandated prior public consultation.

**Context:** President Macri’s administration has desperately sought ways to slash a budget deficit that represented 5.4% of GDP in 2015. It urgently needs to cut heavy energy subsidies. But with the court’s ruling, the government will now have to roll back natural gas utility rate hikes to the tune of approximately US$ 5.4 billion.

**IPD Insight:** Macri’s administration can still proceed with its plan. As per court order, it will hold public hearings in September. But the Supreme Court can still invalidate electricity tariff increases on similar grounds. Such an outcome could worsen Argentina’s investment climate, which has already inhibited major investments in the energy sector. The RenovAr program’s October 12 energy bid round will act as a litmus test. If the program follows current Latin American renewable energy auction trends, Argentina may secure some electricity supply at highly competitive prices. Adequate financing sources will be the key to this tender’s success.
Profile of the Month

Máximo Pacheco Matte, Chile’s Energy Minister

On March 11, 2014, President Michelle Bachelet named Máximo Pacheco Chile’s Energy Minister for her 2014-2018 term (her first term ran from 2006 to 2010).

A militant member of Chile’s Socialist Party (PS), Pacheco has strong political ties with leftist statesmen and local entrepreneurs. He has also been a close friend and financial sponsor of then-presidential candidates Ricardo Lagos (1999-2000) and Michelle Bachelet (2005-2006).

With family ties to former presidents Arturo and Jorge Alessandri, he is part of Chile’s long-established political elite. Pacheco is also a member of the Matte family, which runs Grupo Matte, one of the top-three holdings in Chile that participate in highly strategic areas of the local economy (i.e., energy, banking, real estate, telecommunications).

“For a long time, in this country we looked warily at non-conventional renewable energy sources because we thought they were technologies bound for rich countries, and that they could only prosper with fiscal subsidies...”

Pacheco’s To-Do List

Pacheco will have to execute the government plan to further integrate Chile’s national transmission network. To this end, he must work with energy regulatory and technical bodies to implement the recently-enacted Electricity Transmission Law. If the integration is completed in 2017 as planned, it could add redundancy and reliability to the power grid through adequate infrastructure.

Pacheco and his collaborators must secure adequate long-term planning to procure a well-diversified power generation mix that includes steady renewable energy growth. Overcoming transmission congestion issues is not enough. Grid expansion plans will have to ensure enough base load capacity to meet incremental power demand under cost-efficient production schemes.
Colombia’s Regulatory Decisions a Lynchpin for Renewables

In 2014, the Santos Administration (2010-2018) implemented Law 1715/2014, which sets the basis for Colombia’s renewable energy sector policy. The law represents a first step in promoting renewables development. But that development has clashed with the country’s abundant, inexpensive hydro sources, as well as a long-standing principle of technological neutrality. Today, Colombia’s generation mix includes less than 1% renewables other than hydro. The dominant concern is reliability and a general sense that other technologies cannot compete with hydro.

During the first half of 2016, an El Niño-triggered electricity sector crisis prompted major political turmoil; Minister of Mines and Energy Tomás Gonzalez resigned from his position. The crisis highlighted Colombia’s excessive dependence on hydro, and how risky it is to rely exclusively on a thermal-based back-up system. President Santos demanded that new Minister of Mines and Energy, Germán Arce, put the incorporation of renewables at the top of his priority list. In addition, UPME’s 2015-2030 expansion plans for renewable energy are more ambitious than ever (UPME recommends that these new technologies make up more than 50% of capacity expansion). Other institutions involved in regulation development, particularly the Ministry of Environment, have finally executed regulations permitting renewable energy investors to access the incentives established in Law 1715. It took two years to get to that point.

Structural hurdles remain. Incentives for generation mix expansion are rooted in a reliability charge, which final users pay. Those funds are supposed to help generation plants expand future capacity. Plants are eligible for this payment based on the amount of energy they will be able to offer in the future (energía firme) at the lowest cost. That calculation is made every year. The development of renewable energy plants suffers under this system, as current formulae are not designed to calculate these plants’ available power; they do not allow for intermittency.

Officials agree that they must change the rules to clear the way for renewable energy incorporation. Relevant players may consider options that include the following:

- Launch long-term auctions to guarantee plants a fixed return on their investments.
- Allow auction bidders to propose portfolios that cover plants with different technologies, instead of bidding on separate plants (e.g., a wind farm backed up by a hydro plant) to allow for firm future availability calculations.
- Calculate future energy availability for shorter periods or on a seasonal basis, which would facilitate future power availability calculations for renewable energy plants.

CREG is looking for ways to put renewables on an even playing field with conventional generators. It plans to publish those options for public comment in late September. October seems more likely.

Fear-based Challenges and Vested Interests

Conventional generation players have shown interest in renewable energy developments, and are aware of Colombia’s need to diversify its mix. The country’s largest generators (including Isagen, Celsia, EPM, and Enel Green Power, among others) are in advanced stages of renewable energy project development,
including assessments, for over 3 GW of wind projects in La Guajira. UPME has analyzed and proposed transmission alternatives to make those projects viable.

But these players’ enthusiasm seems to end within the lines of the regulatory status quo. Defending the principle of technological neutrality, conventional generators oppose bold regulatory modifications that could, in their view, represent an intervention to privilege specific technologies. They fear that new formulae could cause disruptions in the system, promote excess supply, and push electricity prices downward – jeopardizing the financial health of traditional generation.

Those fears have likely obstructed more ambitious goals; they seem to be the main cause behind slow policy advancements. Colombia’s renewable energy law (1715/2014) sets orthodox goals; they mostly target off-grid areas. Regulations that will guide access to the law’s stipulated incentives have developed at an exasperatingly slow pace. Despite political announcements that electricity basket diversification is a priority, there is a clear lack of political will to move beyond timid alternatives.

**IPD’s Takeaways**

- Electricity sector institutions have started to explore ways to place renewables on an even playing field with conventional generators. Currently, regulation remains the main challenge. Above all, it will take political will to tap into Colombia’s renewable energy potential.
- All market players will need clearer rules. Everyone needs to understand that alternative generation sources are necessary and do not jeopardize the system.
- The technology neutrality principle should not supersede the country’s urgent need to diversify its generation mix. The government will have to promote formulae that seek economic efficiency, diversification, and reliability. Renewable energy technologies have demonstrated that they are a viable alternative.
- Participation mechanisms designed specifically for different technologies are a must (e.g., reliability charge, long term auctions). Clear rules should supplant conventional generators’ uncertainties, and freedom to choose among different mechanisms should take hold.
- Investors should not expect unorthodox measures. Mechanisms like technology-specific auctions, which other Latin American countries have used, are not in the cards for Colombia any time soon. The formula that requires the least government intervention in the market is the most likely to win consideration.

Colombia’s government continues to show a lack of vision and movement. But the country cannot afford to sit back and watch other countries advance with very positive auction results while it stalls out. This year will likely bring key decisions that shed some light on where renewable energy is headed in Colombia. Investors cannot ignore Colombia’s conditions and market size (the third largest in Latin America after Brazil and Mexico).

*For more on Colombia’s electricity sector regulations and policy, renewable energy promotion policy, or other related topics, please contact us at info@ipdlatam.com*
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- **Monthly Reports**: The **Renewable Energy Tracker** provides key analytical insights on the most relevant sector events across Latin America. The tracker includes regulatory and deal flow updates, an energy auctions monitor, profiles on key stakeholders, and exposés on notable renewables sector developments, among other information and analysis.

- **Online, Dynamic Dashboard**: Password access to an online, dynamic, systematically updated dashboard allows for easy comparison of key indicators and regulatory elements in the electricity and renewable energy sectors. All monthly reports are also archived online.

- **Quarterly Webinars**: IPD analyzes the latest developments impacting renewables across the region in these quarterly, one-hour, multi-client webinars. A Q&A session rounds out the prepared presentations.

Beyond the **Renewable Energy Tracker** service, IPD also offers the following:

- **Individual Country Profiles**: Analysis developed on-demand for clients interested in a particular country or sub-region. IPD’s concise, comprehensive country electricity sector profiling tool covers key markets aspects, including economic and financial overviews and country risk assessments; institutional framework and policy mandate for the electricity sector; power market size and supply-demand fundamentals; generation, transmission, and distribution segment structure; and renewable energy regulatory framework.

- **Due Diligence**: IPD undertakes market reputation and financial due diligence for potential investment opportunities.

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