Box 2
Possible Upward Pressures on Electricity Rates

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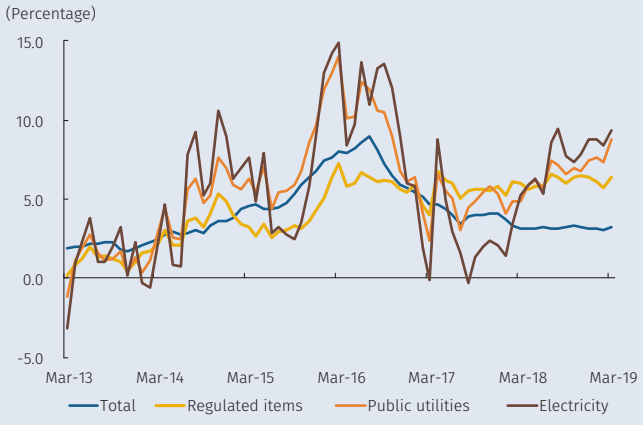
Graph B2.1
Performance of Energy Inflation



Source: DANE; calculations by *Banco de la República*.

The upward pressures brought to bear on annual inflation so far this year have been caused by food, excluding meals outside the home, and by public utilities within the regulated component of the CPI. Inflationary pressures in this last segment have been generalized (electricity, water and residential gas), but led by adjustments in electricity rates (Graph B2.1). The current structure of the electricity market and its present situation are described briefly below, so as to identify the main upward risks to rates in the near future.

1. Structure of the Electricity Market

In Colombia, electrical power is obtained from different sources, the main one being hydroelectric plants, which produce about 70% of all electricity generated in the country. The rest is produced mainly by thermoelectric plants (28%), while unconventional sources generate 2.0%, with wind power being the prime one. It is important to point out that generating electrical power with sources of water is the least expensive under normal weather conditions. However, in dry periods or during bouts of *El Niño* weather, the percentage of power supplied by thermoelectric plants (especially those powered by gas and coal) tends to increase significantly in order to make up for the deficit in the power supply from hydroelectric plant. In most parts of the country, hydroelectric generating facilities see their volume of output decline when faced with episodes of this type.

1.1 Who manages, regulates and oversees this Market?[1]

In the electricity market, the Energy-Mining Planning Unit (UPME), a national technical entity attached to the Ministry of Mines and Energy, is responsible for planning and coordinating the agents in the sector. It also is in charge of defining sector policies on generation, transmission, distribution and marketing, until the product reaches the end consumer. The market is regulated by the Energy and Gas Regulation Commission (CREG), an entity that defines policies to improve the quality and coverage of power service. Surveillance, inspection and control over the provision of electrical power are the responsibility of the Office of the Superintendent of Residential Public Utilities (SSPD), a self-managed entity that has its own assets and is independent of the service commissions.

Moreover, in this scheme, operation and management of the electricity market are assigned to XM, an entity of the Commercial Trade System Administrator (ASIC in Spanish), which receives price offers from the companies that generate electricity and allocates daily power generation through auctions, ensuring the costs involved in generating electrical power are kept at a minimum. The regulatory framework establishes two categories of users: regulated (small consumers: households and small businesses) and unregulated (large consumers: medium and large companies).[2] The difference between them is explained by the

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1 Law 142 and Law 143, enacted in 1994, created a new scheme for the electrical sector nationwide. The highlight of this legislation is that it allows the private sector to participate in the provision of public utilities, divides the production chain into several segments (generation, transmission, distribution and marketing), and establishes a regulatory system by creating the Energy and Gas Regulation Commission (CREG) and by designing mechanisms to defend the quality and reliability of service through the Office of the Superintendent of Residential Public Utilities (SSPD).

2 In this respect, see http://www.creg.gov.co/index.php/es/sectores/energia/estructura-energia .

prices that are applicable to the sale of electricity. The rates for regulated users are established by CREG, via a price formula, while the price charged to unregulated customers is negotiated freely between them and the companies that sell electrical power.

2. Developments in Prices, Difficulties and Upward Shocks

As mentioned in Chapter 3 of this report, most of the inflation pressures so far this year have come from food, excluding meals outside the home, and from regulated public utilities. Specifically, prices in the regulated group have raised annual inflation during the course of this year, having gone from 8.82% in December to 9.37% in March. During the first quarter of 2019, according to the capital cities included in calculating the CPI, energy prices rose by 5.99%, on average, in the main cities on the Atlantic coast (Barranquilla, Santa Marta and Cartagena), a figure that is quite high in light of the average growth (1.75%) recorded for the others. This sharp inflationary drive is associated with *El Niño*, which has been strongest in the Caribbean region and could last until the end of summer in the northern hemisphere. Added to this are the financial problems plaguing *Electrificadora del Caribe* (Electricaribe), a firm that has been obliged to purchase more electrical power on the spot market. Electricity traded on the intraday market and in cash is usually more expensive than electricity purchased through contracts with the generating companies.[3]

Faced with Electricaribe's breach of payment obligations on the wholesale market, and as a measure to ensure the provision of electrical power in the Caribbean region, the SSPD took over the company for the first time at the end of 2016 and, in March 2017, ordered its eventual liquidation, so as proceed with a change in operators. In turn, under the leadership of the Ministry of Mines and Energy, several measures were designed for that Superintendency and were included in the National Development Plan, which would take effect after being endorsed by the executive branch.[4]

Article 311 in the National Development Plan creates a national surcharge on electrical utility service that amounts to four pesos per kilowatt consumed in households in income brackets 4, 5 and 6. Equal surcharges will be included in the rates charged to commercial and industrial users and to unregulated users of electrical power up to December 31, 2022. This additional payment is expected to generate an estimated COP 160,000 million in revenue per year, destined to pay off of the financial obligations of the electrical power distributors that are having trouble guaranteeing the delivery of service. Furthermore, the nation will assume COP 1.2 trillion in pension liabilities owed by Electricaribe, and an additional 1.0% contribution will be created between 2020 and 2022, which companies monitored by the SSPD will be required to pay.

On the other hand, the Government intends to segment the market that was assigned initially to Electricaribe, distributing it in almost equal portions to Caribe Sol (Atlántico, Magdalena and La Guajira) and Caribe Mar (Bolívar, Sucre, Córdoba and Cesar). The operation would be carried out in two successive auctions: the first in September and the second one in October of this year. To qualify, buyers will have to invest COP 7.1 trillion in a ten-year plan, which is expected to solve the financial problems and difficulties involved in supplying electricity to consumers on the Atlantic coast.[5]

Moreover, the National Government, through the Ministry of Finance and the SSPD, set aside COP 420 billion for Electricaribe to purchase energy in the first quarter of this year, given the company's high exposure to the spot market, which is over 35%. This is well above the national average and has increased costs, as perceived in the prices charged for electricity in the major cities on the Caribbean coast in recent quarters. It is important to point out that there are two ways to purchase electrical power in the Colombian market: on the wholesale exchange and through long-term contracts (with more stable prices), which few generating plants are willing to offer Electricaribe.

Other electrical power companies also are facing operational and financial difficulties. The most worrisome, because of its size, is Emcali, a firm that has had financial problems since the early 1990s and currently owes the nation COP 1.2 trillion. In some cities in the Cauca Valley, high-income households already pay a surcharge on their energy bills to help cover this item.

On the other hand, the startup of operations at the largest hydroelectric power plant in the country (Hidroituango) has been delayed. Since April of last year, when the first landslides occurred at this facility, and particularly due to the damage caused to the powerhouse, the start of operations at this megaproject has delayed and might not happen until the end of 2021. Once up and running, it would contribute nearly 17% of the electrical power generated in Colombia. Consequently, the authorities in electrical sector were forced to adopt preventive measures to

3 The population served by Electricaribe accounts for 24.0% of the demand nationwide. This percentage underscores how strategically important the company is to Colombia's entire electrical system being able to operate fully.

4 The National Development Plan (Pact for Colombia, Pact for Equity, 2018-2022) is expected to be endorsed by the executive branch and converted into law at end of May.

5 In this respect, see https://boletinmineroenergetico.uexternado.edu.co/electricaribe-sera-fraccionada-en-caribesol-y-caribemar-para-su-venta/

meet the future demand for electricity. One of these calls for auctioning reliability charges[6] to make up for the electricity that would be generated by Hidroituango, which had been scheduled to begin operating partially by the end of 2018. Although the execution of this hydroelectric project is covered by insurance, the aforementioned energy deficit could lead to upward pressure on rates in the coming semesters.

As an additional strategy to guarantee a supply of power in the future, an unconventional energy auction was held on February 26 to encourage the generation of solar and wind energy, and to expand the power supply by an additional 1,500 megawatts (MW). The country's installed capacity, at present, is 17,200 MW. However, on that day, no contact was awarded and a second auction will be scheduled for the second quarter of this year. The Government's objective is to increase the amount of installed capacity for generating solar and wind energy to thirty times what it is at present. Moreover, UPME estimates La Guajira could provide the National Interconnected Transmission System with 13% of the power supply, with non-conventional energy projects.

In summary, energy utility rates are expected to rise, bringing significant inflationary pressures on consumer prices in the near future. This would be associated with the prospect of adverse weather (*El Niño*) in the coming months, which, although weak in intensity, is already generating rising costs due to the added generation of thermal energy. In addition, there are difficulties caused by cost overruns and the delay initiating operations at the largest hydroelectric power plant in the country. Also, the troubling financial situation of two of the main electrical power distributors in Colombia is compromising the supply of electricity, making it difficult to stabilize rates. Specifically, solving the economic problems of the main electrical power distributor on the Atlantic coast will increase the price for every kilowatt consumed in all the upper income brackets of the population and in the country's business sector during the next four years, in accordance with the provisions outlined in the 2018-2020 National Development Plan.

6 The reliability charge is a remuneration scheme designed to encourage investment in the generation of electrical power, by efficiently responding to the demand for energy under critical supply conditions, with long-term signals and stabilization of revenue for the generator. One of the essential components of the new scheme is the existence of firm energy obligations (FEO), which are a commitment on the part of generators to produce stable energy during critical supply conditions. In this regard, see: https://www.xm.com.co/Promocin%20First%20Subasta% 20of% 20Energa% 20Firme / abc2.pdf