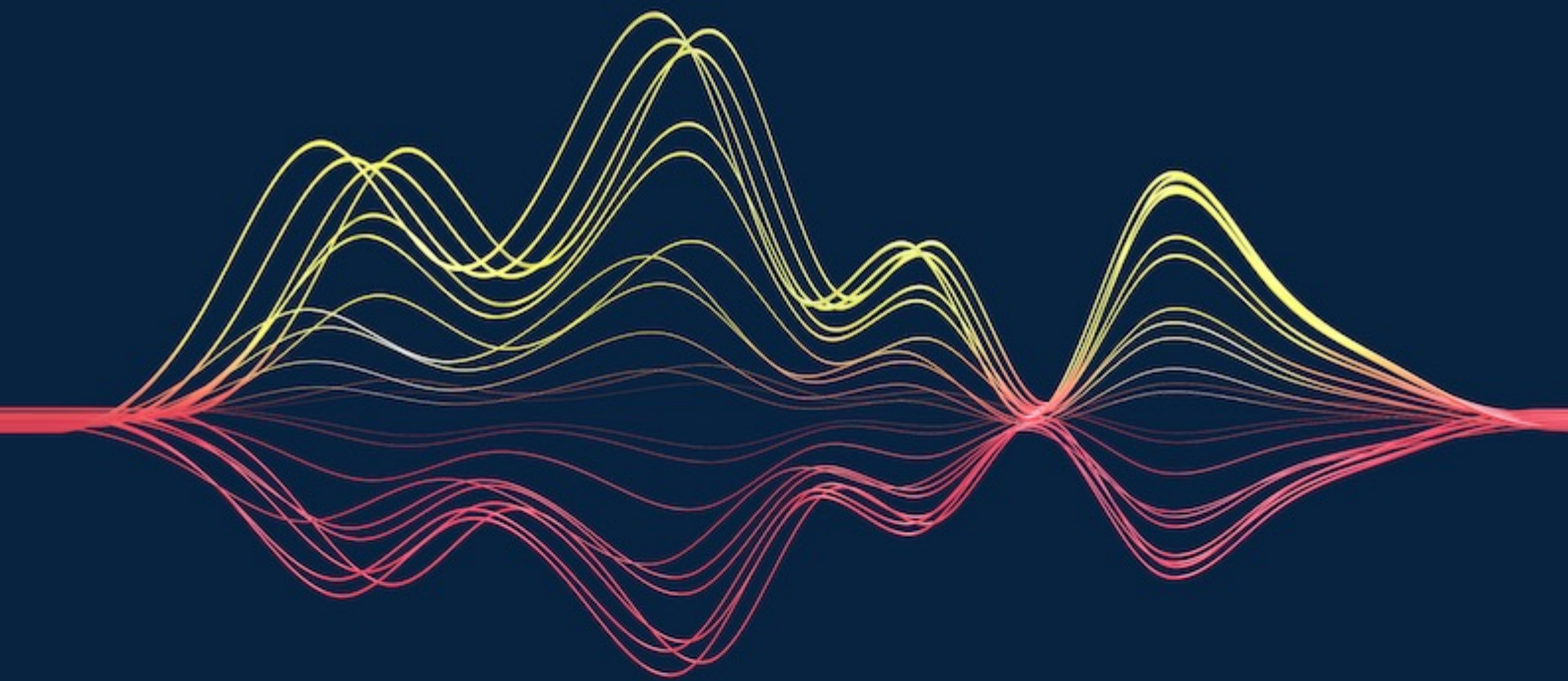


BRAZIL

Corporate Power Purchase Agreements





Brazil

Last modified 06 September 2023

PPA structures and parties involved

To what extent are corporate PPAs presently deployed and what sort of structure do they take?

Corporate PPAs in Brazil (which are essentially for solar and wind sources) have been exponentially growing in the past years and the regulatory and economic perspectives indicate that this trend will continue for the future.

Most PPAs in Brazil are physical, however, the development and maturity of this market has been leading to the rise of more complex arrangements, such as the trading of power derivatives, which have become more usual and popular in the last few years.

Do the country's regulators allow corporate owners to purchase (1) directly from a facility, or (2) from a choice of suppliers?

According to Brazilian regulation there are two power market structures: Regulated Market; and Free Market. Consumers included in the Regulated Market can only purchase power from the local distribution company, which are concessionaries of the distribution services and operate in a monopolistic structure within the applicable geographical areas.

As for the consumers allowed to be part of the Free Market, they can buy their power from other market agents, including directly from generation facilities and energy brokers. Accordingly, corporate PPAs in Brazil are executed within the Free Market.

Since January 1, 2023, consumers that have a charge equal or above 500 kW, supplied at any voltage, can enter the Free Market. But this threshold is expected to be reduced even further. According to the current regulation, as of January 2024, all high voltage consumers will be able to migrate to the Free Market. Also, the complete opening of the free market (ie to all consumers, regardless of charge or voltage) is currently under discussion and is expected until 2028.

Other than the generator and the off-taker, are any third parties commonly party to the PPA structure (e.g. a utility or other market agent)?

Most corporate PPAs are between generators and offtakers. However, the development of the power sector enabled a trend in the market that involves an energy broker taking part in the agreement to enable better risk allocation. The energy broker may undertake risks that the other parties are not willing to take (such as submarket and production/consumption profiles risks), since its diversified power portfolio allows it to better allocate and mitigate them.

Other agreements are required to enable the physical delivery of the power to the offtaker, such as agreements for the use of the distribution/transmission system, entered with the relevant distribution/transmission utility company.

Is a generator permitted to sell electricity directly to an end user? If so, do they require a licence or other form of authorization?

Yes, the generator may sell electricity directly to the end user, provided that both the generator and the end user are participants of the Free Market.

To be part of the Free Market, the parties must be enrolled as agents before the Chamber of Electricity Commercialization (CCEE). The enrolment process involves the provision of several documents and information related to corporate and financial aspects of the company, the adhesion to the commercialization rules, the adequacy of the consumer's or the generator's electricity measurement systems, among other steps. Moreover, agents must comply with the applicable requirements and regulations issued by the Brazilian National Electric Energy Agency (ANEEL).

Challenges

What are some of the technical, political, financial or regulatory challenges to corporations adopting green energy in the short/medium term in your country and how have these challenges been overcome (or how can they be overcome)?

Financial

There is a financial risk associated to the corporate PPAs considering the uncertainty of future energy prices. The price of the spot energy market, which is currently calculated on an hourly basis, takes into consideration several variables such as hydrological conditions, power demand, entrance of new players, among numerous others. Prices may rise significantly and directly affect the parties; or they may decrease and become a competitive disadvantage. This risk may be mitigated by means of a price review mechanism agreed between the parties.

Planning

Considering the long-term structure of corporate PPAs, the offtaker needs to estimate its power consumption level, taking into consideration the possible growth in its consumption, as accurately as possible, otherwise some divergences between the planned and the actual consumption rate may occur. To mitigate this risk, it's important to establish contractual mechanisms that can absorb some variations regarding the initial planned amount, such as defining a contracted amount limited to a percentage of the global charge, or contracting a diversified portfolio, with different term and delivery conditions, to minimize any exposure.

Counterpart

Corporate PPAs are used by developers to obtain funding for the construction of their facilities and delivery of the agreed power. Until the generator's facilities are completed there's a risk of delays or issues in the construction of the plant and, therefore, in the delivery of the contracted power supply. To mitigate this risk, it's important to analyze the developer's background and its capability of delivering the project on time and include provisions in the PPA regarding construction and delivery milestones. Another way to mitigate this risk is asking the developer to present a performance bond.

Performance

Renewable sources, especially wind and solar, are intermittent and, therefore, may generate contractual exposures for the offtaker or the generator, depending on the contract structure. The Brazilian power market has been mitigating this risk by contracting an energy broker that may provide the remaining power when the renewable sources included in the corporate PPA do not perform as expected. Additionally, corporate PPAs in Brazil generally contain specific provisions regarding supply obligations and guarantees.

Submarket

The Brazilian power market is divided into four submarkets, which may present different spot prices among them. So if the consumer is in a different submarket of the generator, even if the amount produced is the same as the amount consumed, there may be some positive or negative amounts that need to be settled. This difference between submarket prices may create risks for both the offtaker and the generator. To minimize these risks one strategy is purchasing electricity from a generator that is located in the same submarket of the offtaker; but this alternative is not always available due to certain conditions, including technical and geographical ones. An alternative that has been used by the power market to address this matter is including energy brokers in the PPA contractual structure to manage the submarket risk, due to their diversified portfolio. Another alternative is including provisions that anticipate the costs of submarket swaps, so both parties have more predictability and may better allocate their risks.

Technical (Connection)

The exponential increase of renewable power projects in Brazil in the last few years, especially in certain regions of the country (ie northeast region), has created an outlet issue for all such generated power, since the current power transmission infrastructure in Brazil is not sufficient to accommodate all the projects that have already been authorized by ANEEL. In this sense, one of the main risks for power projects under development in Brazil is the attainment of the relevant authorization to connect to the grid. As an effort to minimize such risk and restriction, ANEEL has been adopting certain measures to improve the transmission flow margin, including the promotion of new Transmission Auctions, which are set to take place over the new few years. The purpose of these auctions is to attract investments for improvements and expansion of the Brazilian power transmission grid infrastructure.

Regulatory changes

Are there any anticipated regulatory changes which will alter the regulatory landscape for corporate green energy and corporate PPAs?

Modernization of the Brazilian Power Sector

At the beginning of 2019, the federal government announced its plan to submit a set of measures to modernize the regulation of the power sector and the Ministry of Mines and Energy (MME) formed a work group for this purpose. One of the main results of the discussions held in this working group is Bill of Law No. 414/2021 (PL 414). PL 414, also known as the Bill of Law of Modernization of the Power Sector, which has been in discussion in the Brazilian congress since 2021, is considered a priority of the new Administration (elected in 2022). The main aspects of PL 414 are to:

- complete opening of the power market (further detailed below);
- improve the power market;
- improve rates; and
- reduce charges.

Expansion of the Free Market

In the past years, the Brazilian power market has seen an expansion of the Free Market, increasing the direct participation of corporate consumers in the energy sector. As mentioned above, since January 1, 2023, consumers that have a charge equal or above 500 kW, supplied at any voltage, can enter the Free Market. The next step of such expansion will occur in January 2024, when all high voltage consumers will be able to migrate to the Free Market, which represents approximately 106,000 consumer units in Brazil. A complete opening of the Free Market is under discussion in the federal government and the Congress, with an expectation of a complete opening until 2028.

Review of Incentives

In the last few years, small hydro, solar, wind, biomass, and qualified cogeneration projects received a subsidy in the form of a discount of 50% in transmission and distribution tariffs. These subsidies were reviewed and terminated for new projects, and a transition regime is being put into place by the Federal Government. Please refer to Item 10 for further details.

PPAs in Foreign Currency

The Foreign Exchange Legal Framework (Federal Law No. 14,286/2021), which entered into force in December 2022, enabled the possibility of payments in foreign exchange for obligations performed in Brazil, in agreements entered between exporters and holders of a concession, permission or authorization in the infrastructure sector. This new legal framework enabled the possibility of execution of PPAs in foreign exchange, which, previously, had several restrictions under Brazilian law.

This possibility was highly anticipated by the sector, and it is expected to contribute even further for the development of the power sector in Brazil, facilitating the obtainment of foreign investments and financing, and reducing exchange risk to developers, since most of the supply agreements related to the construction of a power plant are entered with foreign companies, in foreign currency.

Incentives and benefits

What is the corporate appetite for green energy, including any political or financial incentives available to corporates to adopt green energy?

Considering the increase of the supply of power generated from renewable sources, the prices have become more competitive over time. The advance of technology related to renewable power generation also contributed to the competitiveness of the energy prices, since such power generation became cheaper in the long-term. This trend has generated an interest in the consumers to replace their power supply agreements, which use sources that cause more environmental impact, for renewable power.

Also, corporate PPAs offer the possibility of associating offtakers' brands to the financing and acquisition of renewable energy, which has shown to be very beneficial since, more than ever, both consumers and investors claim for companies that show their concern with the environment and sustainability and that have consistent ESG policies.

What are the key local advantages of the corporate PPA model which can benefit our clients?

Due to Brazil's natural characteristics (hydrology, availability of solar radiations, strength of the winds), the country is a global leader in the generation of power from renewable sources. This vast experience of the Brazilian market contributed to a business environment with great diversification of players, business models and risk appetite which presents opportunities to clients with several business profiles and objectives.

What subsidies are applicable to the generation and sale of renewable energy?

In the past few years, to promote the development and the competitiveness of the renewable sources, the federal government granted a subsidy for small hydro, solar, wind, biomass and qualified cogeneration projects in the form of a discount of 50% in transmission and distribution tariffs (TUST and TUSD, respectively). However, considering the goal has already been attained, in 2021, Federal Law No. 14,120/2021 was enacted and terminated the grant of such discounts for future generation projects, creating a transition regime.

The projects that already benefitted from TUST or TUSD discount will retain the benefit until the end of their respective authorization grant (in the event of renewal of the grant, the discount will not be renewed). As for new projects, the law established that (i) if the authorization request was filed before ANEEL until March 2, 2022, and (ii) the power plant achieved commercial operation within 48 months counted from the issuance of the relevant authorization grant, then the project could still benefit from the discount. New projects that do not comply with both of these criteria are not entitled to the discount.

Without prejudice to the above, additional transition rules are still under discussion by the sector's authorities.

Does your country implement a national support scheme with tradable green certificates (such as guarantees of origins)?

Brazil integrates the International REC Standard and, therefore, is authorized to issue RECs (Renewable Energy Certificates), by means of a single authorized issuer, and the Brazilian companies can trade such RECs. The issuance of such certificates has exponentially risen in the past few years, with over 9 million certificates issued up to 2022. Each certificate equals 1 MWh of renewable energy generated and injected in the power system.

Typical PPA terms and risk allocation

To the extent corporate PPAs are deployed, how are prices, terms and risks affected?

Topic	Details
<p>Do prices tend to be floating or fixed?</p>	<p>There are a number of possible options: fixed prices, step prices adjusted over the term, and price indexation; hybrid forms of these alternatives are possible. Given the private nature of contracts, it is difficult to generalise on commonly used pricing arrangements across the Brazilian market.</p>
<p>What term is typically agreed for the PPAs?</p>	<p>The usual term for a PPA in Brazil is within the range of 8 to 20 years.</p>

Are the PPAs take-or-pay or limited volume?

The PPAs deployed in Brazil are usually structured as a take-or-pay combined with a monthly flexibility (usually between 10% and 15%) and yearly seasonality.

Are there any other typical risks?

For the main risks regarding corporate PPAs in Brazil, please refer to [Challenges](#).

To the extent corporate PPAs are deployed, in whose favour will the risks typically be balanced?

Type of risk	Details
Volume risk	If the generator falls short of the contracted power amount, it will need to acquire the necessary amount in the market to comply with the PPA.
Change in law	Neither party. Generally, corporate PPAs contain a provision establishing that in the event of change in law that affects the contract, the parties will renegotiate its conditions in good faith.
Increase / reduction of benefits	Given the private nature of contracts, it is difficult to generalise on this across the Brazilian market, but where the reduction of benefits is caused by a change in law, this may be covered by a change in law clause.
Market liberalisation (if applicable)	Not applicable
Credit risk	Offtaker or generator, depending on the credit rating of the parties involved.
Imbalance power risk	Not applicable
Production profile risk	Offtaker or generator, depending on the PPA structure and generator's and consumer's production and consumption profiles, respectively.

Balancing

Does your country operate a balancing responsibility scheme?

Yes.

If your country operates a balancing responsibility scheme, who is the balancing authority and do the generator and offtaker typically undertake balancing themselves?

The physical delivery of the electricity is controlled by the Operator of the National Electricity System (ONS), who centralizes the dispatch of the power plants.

The contractual/financial portion is handled by Chamber of Electricity Commercialization (CCEE), who is responsible for the financial balance of the power system. CCEE is also responsible for the short-term or spot market and for the calculation of the spot price.

All corporate PPAs must be registered with CCEE. If generators fail to provide the amount of power contracted or if consumers fail to contract all their consumption, the difference between the actual and the contracted electricity production/consumption will be subject to the spot price. Also, generators and consumers may be penalized by CCEE for their shortfall.

Significant transactions

What significant transactions/deals have taken place in the last 12-18 months?

- Scatec, Equinor and Hydro Rein (joint developers of the Mendubim Project) entered into a PPA with Alunorte in July 2022. The PPA has a term of 20 years, and it involves approximately 60% of the capacity of the project (531 MW).
- Casa dos Ventos and Braskem entered into a BRL2.1 billion PPA in March 2023, with a term of 22 years.
- Atlas Renewable Energy and Brasil Albras entered into a PPA in April 2023, with a term of 21 years. This is reported as one of the largest PPAs executed in Latin America.
- CEMIG and Gestamp entered into a PPA in November 2022, with a term of ten years and total expected supply of 79.2 GWh.

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