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BENCHMARK STUDY: FREE MARKET WIND AND SOLAR PV PPAS 2023

March 2023

STUDY SPONSORS

SOBRE O ESTUDO DE BENCHMARK

CELA invited the main wind and solar PV power producer companies that currently have PPAs signed in the Free Market.

The objective of this study is to provide a overviews of the segment in Brazil today, focusing on the business models used in the Free Market, based on the answers of the interviewed companies – we emphasize that this is not a survey of the entire market.

The study is treated confidencially: it was agreed with the participants that individual responses would be confidential in order to obtain better results. Therefore, none of the participants who requested that their name not be disclosed are indentified, and Only the consolidated responses are made available.

We emphasize that not all respondents answered all the questions, and therefore these participants will only receive the partial results from which they participated.

The results are based on March 2023 - the date of the interviews.

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PROFILE OF THE COMPANIES INTERVIEWED

- 15 companies interviewed, with more than 11.1GW of renewable energy free market PPAs in Brazil
- 100% of the interviewed companies are power producers
- 100% of the PPAs analyzed are for energy from wind or photovoltaic sources in the Free Market, all already signed

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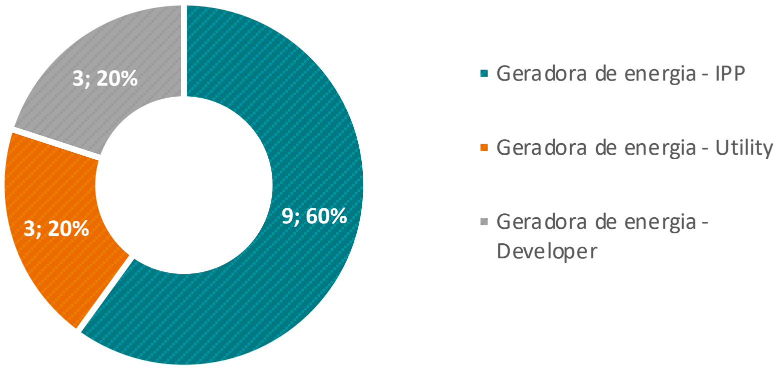
CHARACTERISTICS OF THE STUDY PARTICIPANTS: SEGMENT

- 60% of the study participants are generators with an IPP profile: large energy generators that intend to operate the projects in the long term
- 20% of the participants are generators that are part of an Utility
- 20% of the participants are generators with a Developer profile: companies that will sell the project at some point
- Long-term generators own 52% of the contracted energy from these PPAs, and generators that will eventually sell the project at some point own 34% of the contracted energy

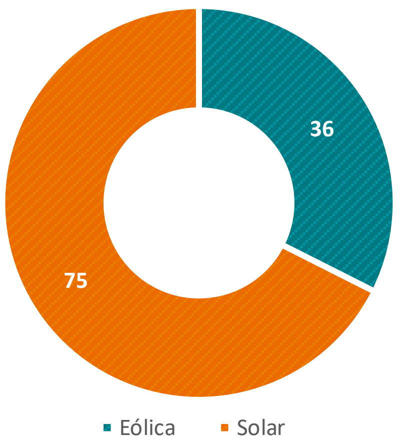
Profile of the study participants, in % and in number of companies, 2017 to 2023



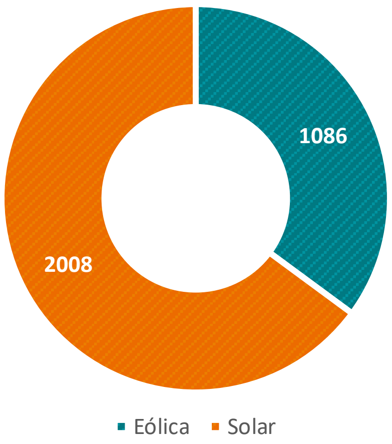
Source: CELA – Clean Energy Latin America

PROFILE OF THE ANALYZED FREE MARKET WIND AND SOLAR FV PPAS: 111 PPAS AND 3,093 MW AVERAGE CONTRACTED

of PPAs signed in the Free Market, by source



MWaverage contracted in the Free Market, by source



Source: CELA – Clean Energy Latin America
Capacity factor used for calculation of installed capacity according to ONS Monthly Operation Bulletin of March 2023; average CF for Brazil in the last 12 months for wind = 43.5% and solar PV = 22.9%.

- This study analyzed 111 wind and solar PV PPAs signed in the Free Market, of which 75 are for solar PV projects and 36 for wind projects
- The total contracted energy is 3,093MWaverage, 2,008MWaverage from solar PV and another 1,086MWaverage from wind energy
- Compared to the study carried out in 2022 by CELA, the volume of energy contracted in the Free Market of wind and solar projects fell by 30% between March 2022 and March 2023
- In terms of installed capacity of projects with energy contracted in the Free Market, there are approximately 10.8GWp* of solar PV projects and 2.5GW* of wind projects

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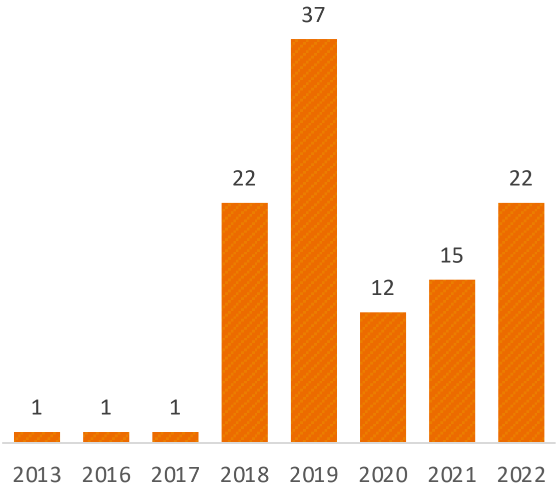
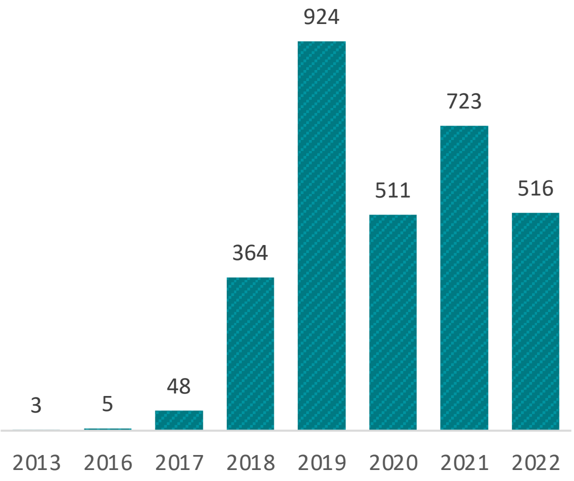
PPAS CHARACTERISTICS: YEAR OF SIGNATURE

- 33% (37) of the analyzed PPAs were signed in 2019, equivalent to 924MWaverage of wind and solar PV energy contracted in the ACL, the year with the highest activity mapped
- 17% (516MWaverage) of the energy contracted in the PPAs analyzed were signed in 2022, coming from 22 PPAs, and the average size of the PPAs was smaller than the 2021 PPAs
- The average size of PPAs had been growing each year, reaching 48MWaverage in 2021, but dropped to 25MWaverage in 2022

PPAs signed, by year of signature of the PPA



Contracted MWavg, per year of signature of the PPA



Source: CELA – Clean Energy Latin America

WANT ACCESS TO THE COMPLETE STUDY, WITH DETAILED ANALYSIS OF THE 111 PPAs?

- To purchase the complete study, contact CELA. The results presented in the previous slides are preliminary and represent only a small part of the study content, described in more detail in the Table of Contents.

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