Ebook

State of Green: Brazil

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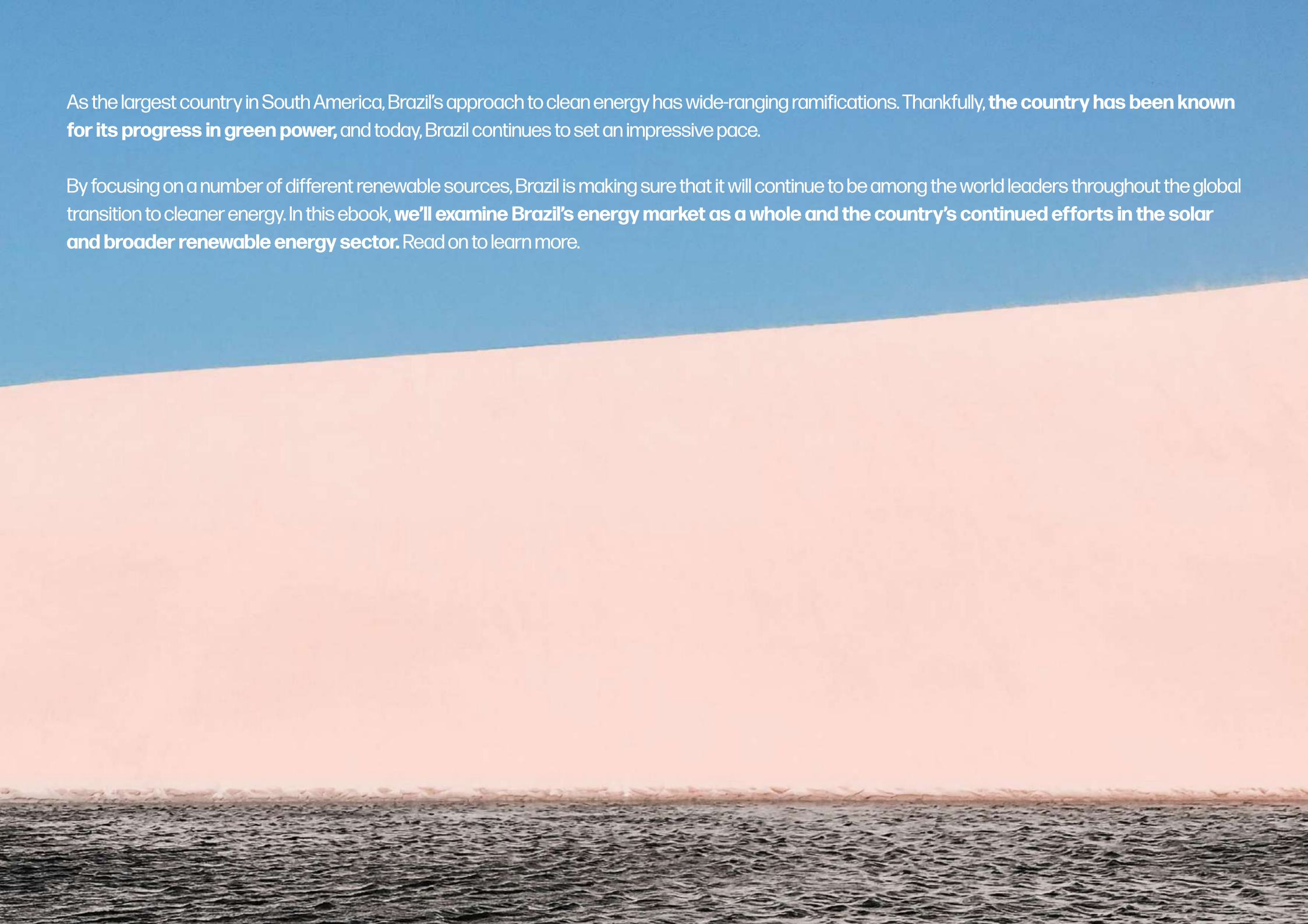
As the largest country in South America, Brazil's approach to clean energy has wide-ranging ramifications. Thankfully, **the country has been known for its progress in green power,** and today, Brazil continues to set an impressive pace.

By focusing on a number of different renewable sources, Brazil is making sure that it will continue to be among the world leaders throughout the global transition to cleaner energy. In this ebook, **we'll examine Brazil's energy market as a whole and the country's continued efforts in the solar and broader renewable energy sector.** Read on to learn more.



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01. Brazil's energy market

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It's rare for a country of Brazil's size to have considerable power generation stemming from renewables, but that's precisely what the country has achieved. According to the Brazilian Ministry of Mines and Energy, **93.1% of Brazil's electricity generation came from renewable sources in 2023**, an impressive figure that puts Brazil well ahead of global averages.

The overall energy makeup is primarily dominated by hydroelectricity and **solar power, with the former alone accounting for approximately 80% of Brazil's electricity generation.** This is a testament to the country's abundant natural resources, which have been harnessed effectively over time. More recently, **solar power has been on the rise, and its momentum now makes it the second-largest electricity source in Brazil.**

In line with this trend, **substantial investments are being made into expanding renewable infrastructure** all across the nation, particularly concentrating on wind and solar projects. The wind sector shows promising signs of growth, with projections indicating a potential reach of 44 GW by 2028.

93.1%

of Brazil's electricity generation came from renewable sources in 2023

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Interestingly, despite being such a giant in the renewables space, Brazil also holds significant sway in the global oil and gas markets. As Latin America's leading oil producer with substantial natural gas production from offshore pre-salt fields, **Brazil continues to assert itself as an important player on the international stage.**

That said, the country's commitment to sustainability remains resolute. **Brazil has set ambitious targets for reducing carbon emissions by 50% by 2030 while also aiming for zero illegal deforestation.** This is all part of its longer-term plan to achieve net-zero emissions by 2050.

02. Brazil's solar market

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If we look specifically at Brazil's solar market, we'll find an **industry on the rise.**

34.9 GW

The nation reached 34.9 GW of installed photovoltaic (PV) capacity in 2023

15.8%

of the power generation mix and is projected to generate...

6.37B kWh

of electricity from solar power alone by sometime in 2024.

This rapid expansion hasn't just occurred by chance. Initiatives and policies from the Brazilian government, like net metering, have played essential roles in propelling the industry's growth trajectory. **ANEEL, the country's economic regulator of the energy sector, has also implemented the Plano Decenal de Expansão de Energia (PDEE) 2027** to help steer Brazil towards its goal of increasing non-hydro renewable power sources to make up nearly one-third (28%) of its total electricity mix by 2027.

The Brazilian market for solar products is broad and dynamic, encompassing everything from panels and batteries to inverters designed for various residential, commercial, and industrial sectors. There is a lot of investment in the industry, including from the likes of the European Investment Bank, which is helping to facilitate more solar installations throughout Brazil.

To understand Brazil's solar industry's strength, you need only to look at how fast things are progressing. **After surpassing the 10 GW of installed solar capacity milestone in 2021, the country reached the 35 GW mark in late 2023** and is fast approaching 40 GW in 2024.

This number means that solar energy now makes up about 17% of the country's total electricity mix, and Brazil is well on its way to meeting the 28% goal by 2027.

03. Largest PV plants in Brazil

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Janaúba Solar Complex

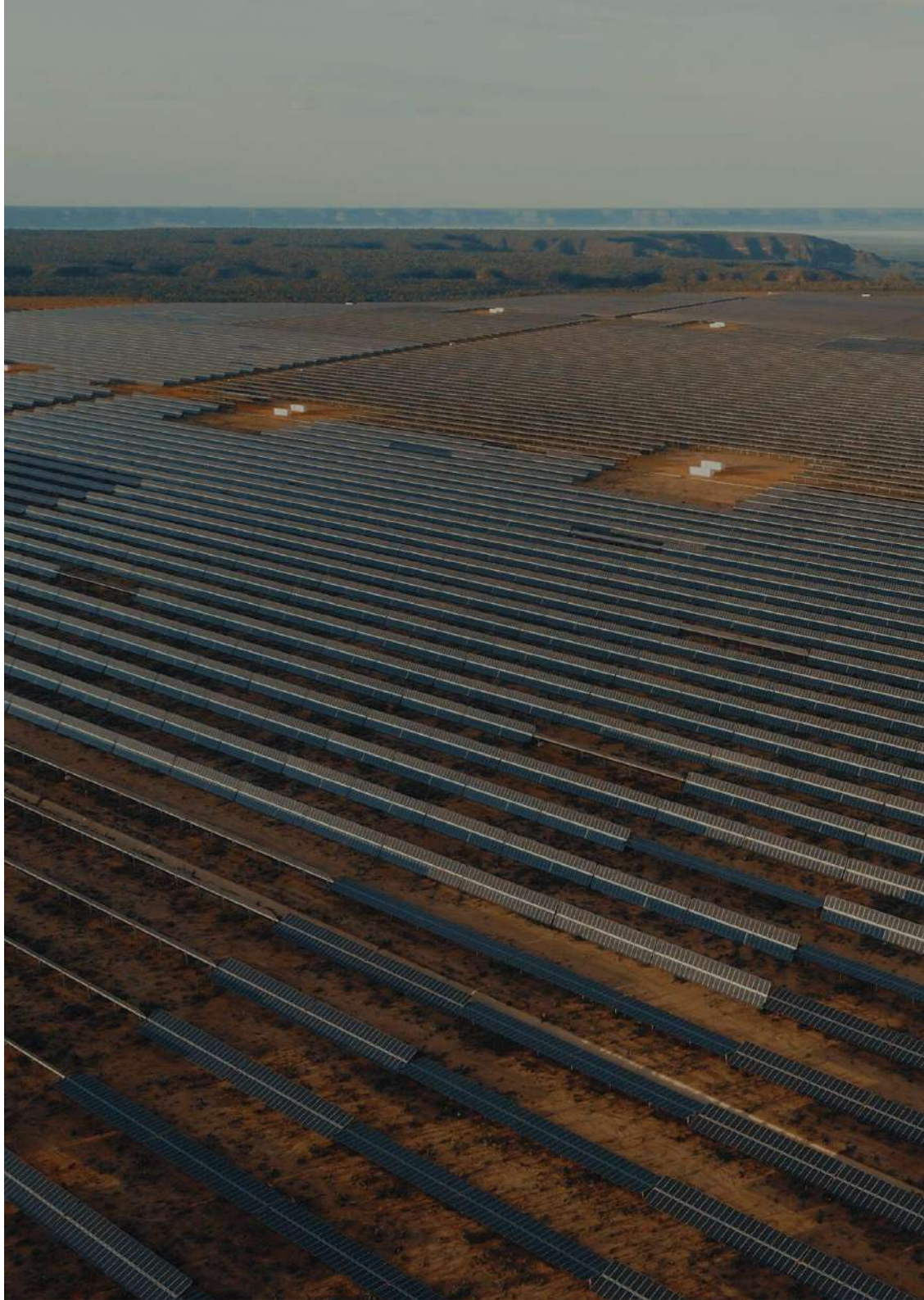
With such a booming solar industry, it's no surprise that Brazil has many thriving PV plants spread throughout the country, but **none are bigger than the Janaúba Solar Complex.** Located in the state of Minas Gerais, Janaúba is a true behemoth, **featuring an incredible total capacity of 1.2 GW spread across 20 individual solar parks.** The facility spans an area of 3,000 hectares, making it **one of the biggest solar complexes not just in Brazil but anywhere in the world.**

Image: Prefeitura de Janauba

São Gonçalo Solar Facility

Another of Brazil's largest PV plants is the São Gonçalo Solar Facility in the northeastern state of Piauí. This facility has a total operating **capacity of 608 MW, and a further 256 MW is currently under construction.** The facility has more than two million solar panels, and the ambitious expansion of São Gonçalo is a sure sign that it's going to be a big player for many years to come.

Image: Enel Green Power



Futura 1 Solar Complex

Several hundred miles away from São Gonçalo in Bahia is the Futura 1 Solar Complex. This relatively new complex **began commercial operations in early 2023** after a mammoth project that involved over 3000 temporary jobs and over $600 million of investment. The complex has an installed **capacity of 692.40 MW**, and there are **plans to add 2.3 GW of energy capacity in the form of wind farms.**

Image: Eneva

In addition to the vast Janaúba Solar Complex, there are a couple of other big projects in the state of Minas Gerais. The first of which is the **Sol do Cerrado Solar Park, located in Jaíba and developed with a $600 million investment from mining company Vale.** Sol do Cerrado features over **1.4 million solar panels** and has a total **capacity of 766 MW**, placing it firmly in the category of Brazil's biggest PV plants.

The other noteworthy facility in Minas Gerais is **Helio Valgas Solar PV Park, developed by Mercury Renew**. This is another new facility, and although it has yet to be fully up and running, it will feature a **662 MW capacity** once it is.

Elsewhere in the country, there are many more important solar facilities, including both the **SSM1&2 Solar PV Park (320 MW) and Nova Olinda Solar Plant (292 MW) in Rio Grande do Norte, the Ituverava Solar Facility (254 MW) in Tabocas do Brejo Velho, and the Bon Nome Solar PV Park (130 MW) in Pernambuco.**

04. The future of Brazilian renewables

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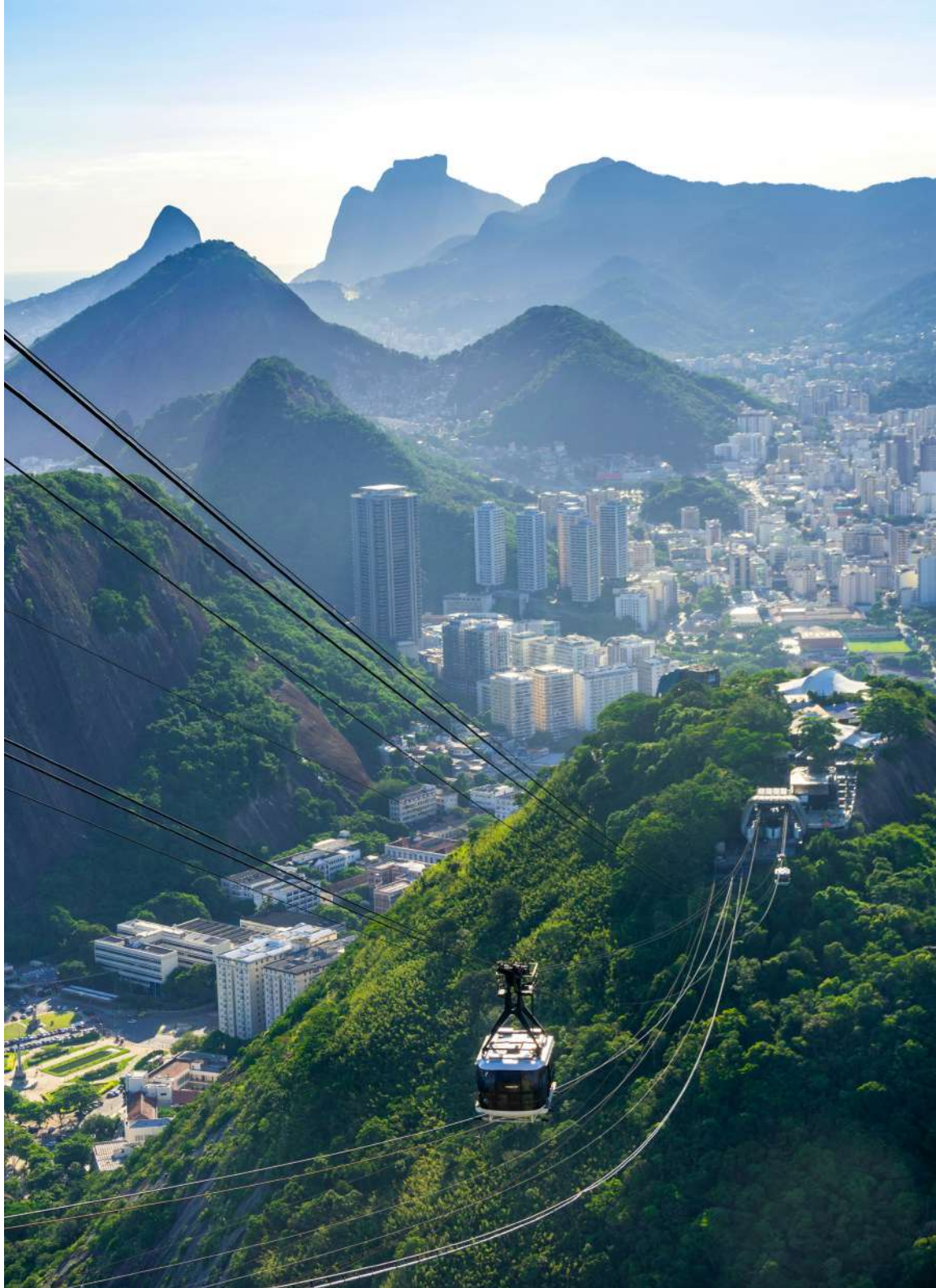
According to Absolar, the future of Brazil's photovoltaic solar power is bright.

Further growth in 2024 will be driven both by a considerable increase in installed solar source capacity and significant advances in technology. These include **more efficient and economical batteries, new materials and designs for solar panels, integration of intelligent management systems, and the advancement of floating solar plants** – the last of which will triple the size of the installed capacity, reaching 150 Mwp by the end of 2024.

By January 2024, the solar segment was already responsible for 15.9% of the energy matrix throughout the country. While Brazil reached the mark of 35 GW of installed power from photovoltaic solar energy, **the investments mentioned above are expected to increase the amount of solar energy generated annually through photovoltaic systems by 23%**, reaching a mark of 68 GW by 2029.

Brazil's solar market



68 GW

by 2029 is the anticipated milestone for the annual increase in solar energy generated through photovoltaic systems, reflecting a 23% rise.

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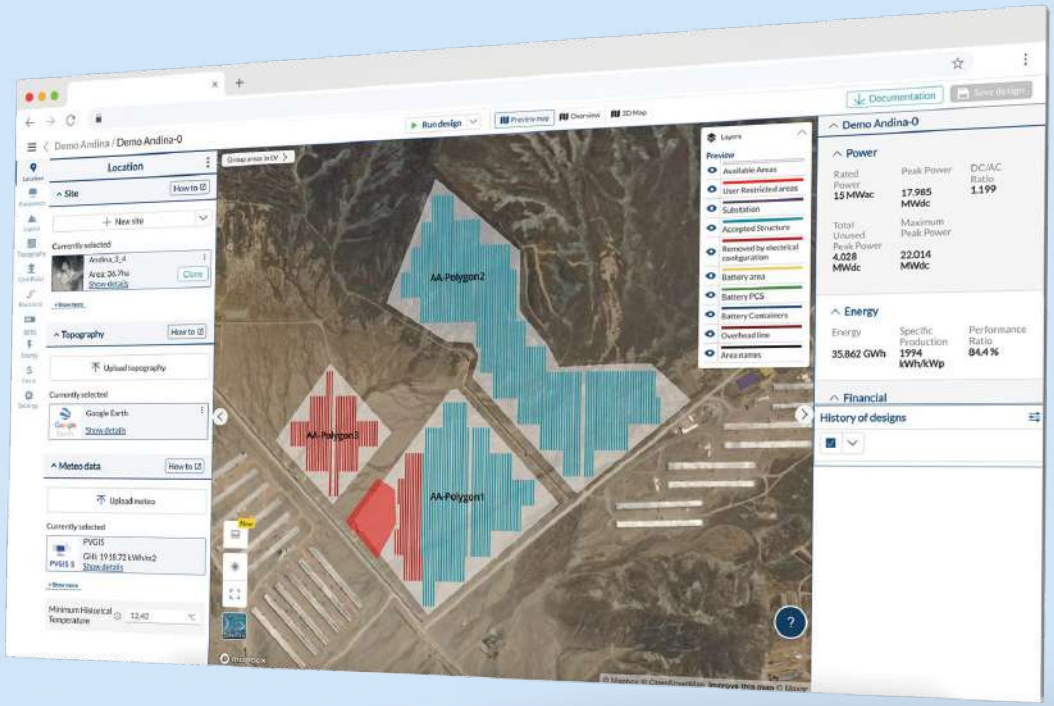
Discover how to unlock the full potential of your solar projects with RatedPower, an advanced software that simplifies the process of designing, optimizing, and executing PV installations.

Find out more



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Crafted solutions for every solar professional

And if you are looking to try out RatedPower's software for yourself, book a demo today and take your PV designs to the next level!

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