

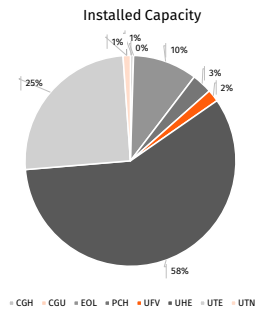
## MANGIFERA MONTHLY

February 2021  
Issue Nr. 002

Mangifera Monthly is your regular statistical insight into the Brazilian renewable energy market. A set of technical and financial indicators carefully curated for the international investment community to provide a comprehensive overview of the sector in the past 4-weeks, against recent months. Sign-up to the newsletter to stay informed with this monthly quick-reference guide to the most important trends impacting a Brazilian energy sector undergoing significant reform. For more detailed analyses, tailored reports, and bespoke financial modelling visit [Mangifera Analytics](https://mangifera-analytics.com).

### RENEWABLE ENERGY GENERATION IN NUMBERS

#### Energy Matrix



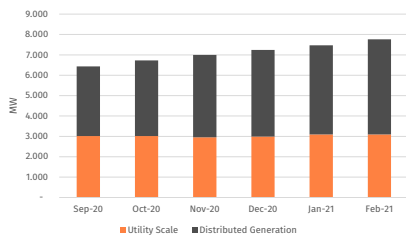
- Legend:**
- CGH: Hydropower plants < 1MW
  - CGU: Wave power plant
  - EOL: Wind power plant
  - PCH: Hydropower plants < 30MW
  - UFV: Solar power plant
  - UHE: Hydropower plants
  - UTE: Thermal power plant
  - UTN: Nuclear power plant

**Total installed generation capacity<sup>1</sup>** 176 GW

<sup>1</sup> does not include distributed generation capacity

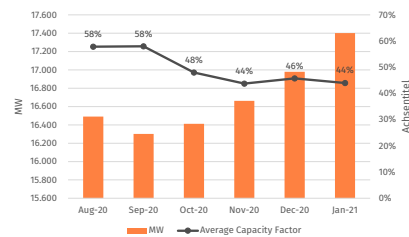
#### Solar

##### Installed capacity evolution last 6 months

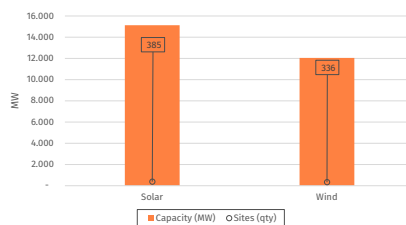


#### Wind

##### Installed capacity evolution last 6 months



#### Capacity under development - Solar and Wind



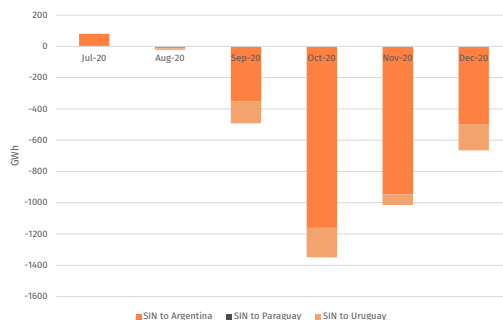
#### Mangifera's Probability Index<sup>2</sup>

Solar 95%  
Wind 88%

<sup>2</sup> The Mangifera's Probability Index is an estimate of the portion of the capacity under development, i.e. projects under construction or already approved but not yet in construction, that are likely to be finalized. The Probability Index is inexact in nature and reflects the aggregated portion of the expansion capacity that is approved but presents such a delay either in construction or in the ready-to-build phase, that the financial feasibility (for a regular investor under fair market assumptions) is questionable.

#### Import / Export Balance

Across its borders, the Brazilian Interconnection System (SIN) is connected to Argentina, Uruguay and Paraguay, enabling electricity exchange with these countries.



Positive numbers mean a positive export balance to Brazil.  
Negative numbers mean a positive import balance to Brazil.

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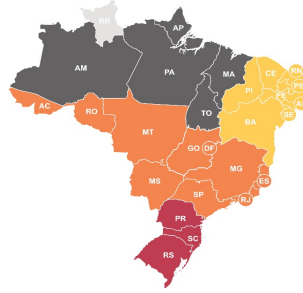
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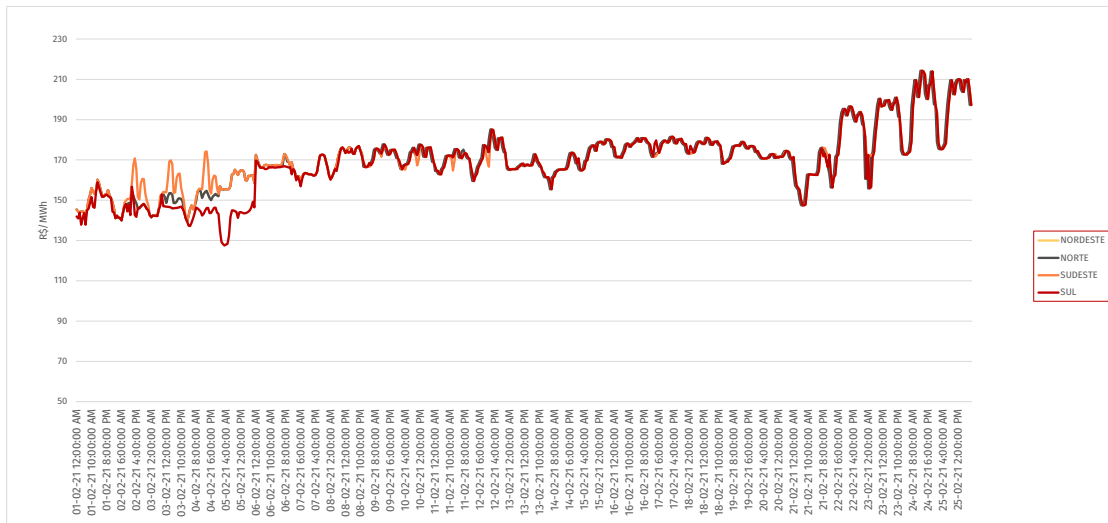
## SPOT PRICES



Sistema Interligado Nacional (SIN) is Brazil's national interconnected system consisting of several individual power systems normally operating with a number of transmission lines.

On 01-01-2021, a new way of pricing the Short Term Market in Brazil was implemented, the hourly PLD, which seeks to give more dynamism to the sector and bring prices closer to the reality of the market. It is published daily, for the following 24 hours, for each of the submarkets in the SIN. Values are limited to a minimum hourly value (minimum hourly PLD), a maximum hourly value (maximum hourly PLD) and a daily limit (structural maximum PLD). They are: Minimum Hourly PLD R \$ 49,77/MWh, Maximum Hourly PLD R \$ 1.197,87/MWh and Structural Maximum PLD R \$ 583,88/MWh.

February showed lower price fluctuation than January. With the submarkets' reservoirs operating on an average storage level of 46,75% (submarket Southeast showing lowest level of 27,66%, and the submarket South the highest with 64,85%), the PLD reached its highest value of R\$ 214,28/MWh on 24-02 at 2pm in the submarkets Southeast, North and Northeast. The lowest price of R\$ 127,52/MWh occurred on 05-02 at 3am. On 15-02 showed the highest average for all submarkets, resulting in R\$ 174,66/MWh. In the weekly average, the PLD maintained results close to the Future Cost Functions - FCF calculated for the week, using the Decom model.



[Follow day by day prices update in our interactive monitoring tool.](#)

### Average price in current month and change to previous month (R\$/MWh)

	February	January	Change
Southeast	170,5	256,6	↓ -33,31%
South	170,6	255,4	↓ -33,80%
Northeast	171,1	253,8	↓ -32,85%
Northeast	169,1	255,4	↓ -33,20%

### Average price in the solar hours\* (R\$/MWh)

	February	January	Change
Southeast	173,6	258,5	↓ -32,87%
South	171,4	257,5	↓ -33,43%
Northeast	172,9	255,8	↓ -32,39%
Northeast	173,4	257,4	↓ -32,66%

3: Solar hours: The term solar hours is a proxy for the period between 7 am and 5 pm regardless of the region and season of the year. The accurate solar hours per region and state may and

### Average spot price in the peak hours\* (R\$/MWh)

	February	January	Change
Southeast	175,7	263,9	↓ -33,42%
South	173,3	261,3	↓ -33,66%
Northeast	174,6	259,4	↓ -32,70%
Northeast	175,5	261,3	↓ -32,84%

4: Peak hours account for the period between 6 pm and 9 pm on week days, regardless of public holidays. The spread between peak prices and solar hour prices supports the financial feasibility of distributed solar projects.

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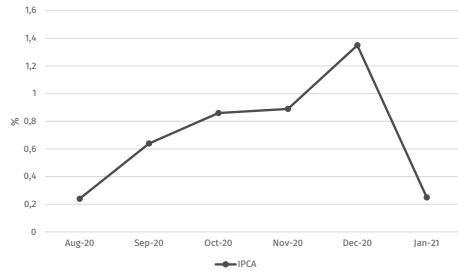
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## FINANCIAL INDICATORS

### IPCA - (Inflation)

The IPCA - Extended National Consumer Price Index - measures the change in the cost of living of families with an average income of 1 to 40 minimum wages.

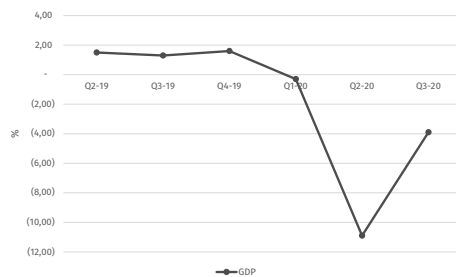


Last 12 months  
**4,56%**

Year to date  
**0,25%**

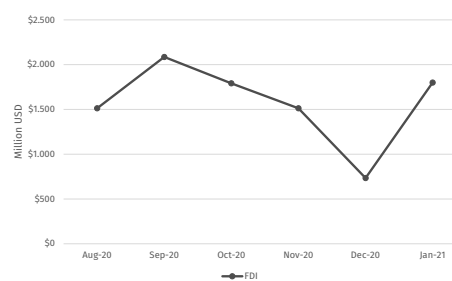
### GDP

Evolution of GDP in time, comparing its performance quarter by quarter



### FOREIGN DIRECT INVESTMENT

Net inflows of foreign direct investments received from abroad, including equity capital and intercompany loans



### Sources

ANEEL  
ABSOLAR  
ONS  
Trading Economics  
Banco Central  
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