Benefits of Wind Energy

- Generates income and improves life for landowners with lease for placement of towers
- Enables landowners to continue planting or growing their animals
- One of the best cost-effective energy tariffs
- Provides training and qualifications for local labor
- Wind parks do not emit CO₂
- The installation of wind farms contributes to increase in the Gross Domestic Product (GDP) and the Municipal Human Development Index (MHDI), as identified by a study by GO Associados.

Industry size in Brazil

- **19.1 GW** of installed capacity
- **726** Wind Farms
- **8,585** Turbines in operation
- **12** States

How many energy do they generate?

- **57.0 TWh** of wind energy were generated in 2019
- **10.0%** of all the generation injected into the National Interconnected System in the period.
- **1.9%** growth over the previous year.

What represents this generation?

- **28.8 Million** of households per month can be supplied
- **86.4 Million** of benefited inhabitants

Brazilian electricity matrix in GW

- **3.3 GW** Natural Gas
- **14.8 GW** Power Plant
- **2.0 GW** Nuclear
- **3.6 GW** Wind
- **19.1 GW** Wind
- **10.8%** of wind power installed capacity until 2024*

Contributions to wind energy in Brazil

- **US$35.8 Billion** of investments from 2011 to 2020.
- **21.2 Million** tons of CO₂ avoided in 2019 equivalent to the emission of about 20.9 million cars.

Benefits of Wind Energy

Through a comparison between a group of municipalities that have wind farms and another that does not, it was possible to conclude that in the municipalities where there are wind farms: to identify that in the municipalities that received their installation:

- real GDP increased by **21.15%** (period 1999 to 2017)
- the MHDI grew about **20%** (2000 to 2010 period)

Wind energy occupies little land, allowing the continuation of the creation of animals or plantations. Considering the space chosen for a wind farm, the turbines occupy about **8%** of the area, and can reach about **6%**.
Future data in the chart above comes from contracts already confirmed in auctions and transactions completed in the free market. New auctions will add further capacity in coming years.

**Capacity installed and Number of Wind Farms by State**

<table>
<thead>
<tr>
<th>State</th>
<th>Installed Capacity (MW)</th>
<th>Wind Farms</th>
<th>Wind Turbines</th>
</tr>
</thead>
<tbody>
<tr>
<td>RJ</td>
<td>2,354.7</td>
<td>191</td>
<td>2,444</td>
</tr>
<tr>
<td>RN</td>
<td>5,267.8</td>
<td>201</td>
<td>2,261</td>
</tr>
<tr>
<td>PI</td>
<td>2,385.1</td>
<td>92</td>
<td>1,115</td>
</tr>
<tr>
<td>RS</td>
<td>1,835.9</td>
<td>81</td>
<td>1,007</td>
</tr>
<tr>
<td>PE</td>
<td>798.4</td>
<td>34</td>
<td>417</td>
</tr>
<tr>
<td>MS</td>
<td>426.0</td>
<td>15</td>
<td>172</td>
</tr>
<tr>
<td>SC</td>
<td>238.5</td>
<td>14</td>
<td>173</td>
</tr>
<tr>
<td>PB</td>
<td>157.2</td>
<td>15</td>
<td>121</td>
</tr>
<tr>
<td>MA</td>
<td>34.5</td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td>SE</td>
<td>28.1</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>PR</td>
<td>2.5</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>FT</td>
<td>19,103.4</td>
<td>726</td>
<td>8,585</td>
</tr>
</tbody>
</table>

**Records by area**

- **NE** 94.40% of the energy consumed in Northeast subsystem came from wind farms, with a capacity factor of 71.14% and generation of 9,255.73 MWmed. (06/AUG/2020)
- **S** 16.90% of the energy consumed in South subsystem came from wind farms, with a capacity factor of 85.41% and generation of 1,705.09 MWmed. (25/MAY/2020)
- **N** 7.44% of the energy consumed in North subsystem came from wind farms, with a capacity factor of 95.73% and generation of 407.82 MWmed. (21/DEC/2019)
- **SIN** 15.06% of the energy consumed in National Interconnected System came from wind farms, with a capacity factor of 62.57% and generation of 10,733.44 MWmed. (08/APR/2019)

**International comparisons**

Brazil is ranked 7th in the World Ranking of wind energy installed capacity

In 2012, Brazil was ranked 15th

- **2012**: Brazil is ranked 15th in the World Ranking of wind energy installed capacity.
- **2020**: Brazil is ranked 7th in the World Ranking of wind energy installed capacity.

**Favorable winds in Brazil**

- **34%** is the Capacity Factor approx. global average.
- **59%** was the largest average monthly Capacity Factor that wind energy in Brazil achieved during the “Wind Harvest” period in 2020.
- **40.6%** was the average Capacity Factor in Brazil in 2020.

**Did you know?**

80% of Brazilian wind farms are in the Northeast, a region that has one of the best winds in the world for producing wind energy.

The favorable winds for producing wind energy are more constant, have a stable speed and do not change direction frequently.