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**

**It is renewable, it does not pollute, it contributes for Brazil to fulfill its objectives in the Climate Agreement**

**Wind parks do not emit CO₂**

**Provides training and qualifications for local labor**

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.

**How many energy do they generate?**

55.9 TWh of wind energy were generated in 2019

9.7% of every generation injected into the National Interconnected System in the period.

15.5% growth in relation to the year previous. It is worth mentioning that, in the same period, the generation of all sources in the National Interconnected System grew 1.5%

**What represents this generation?**

28.8 Million of households per month can be supplied

86.3 Million of benefited inhabitants

Brazil will have about 26.9 GW of capacity wind power installed until 2024*

*Considering auctions already carried out and contracts signed in the free market

**Industry size in Brazil**

17.00 GW of installed capacity

660 Wind Farms

8,000 Turbines in operation

12 States

**Contributions to wind energy in Brazil**

US$31.3 Billion

From 2011 to 2019 the investment in the sector was 2019 = US$ 3.45 billion

22.9 Million tons of CO₂ avoided equivalent to the emission of about 21.7 million cars.

26.9 Million of benefited inhabitants

15 jobs are created.

1.1% 2.0 GW Nuclear

1.8% 3.1 GW Small Hydro

3.6% 6.2 GW Biomass

8.7% 15.3 GW Wind

5.1% 8.9 GW Fuel Oil

2.1% 3.6 GW Mineral Coal

8.6% 15.0 GW Natural Gas

Sources of energy in Brazil in GW

103.0 GW Hydro

59.2% 59.2 GW Wind

9.8% 9.8 GW Wind

8.7% 8.7 GW Biomass

6.2% 6.2 GW Small Hydro

3.6% 3.6 GW Small Hydro

15.2 GW Wind

**Sources of energy in Brazil**

59.2% Hydro

103.0 GW of capacity wind power installed until 2024*

**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:**

- 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%.

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## Capacity installed and Number of Wind Farms by State

### 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.

### Records by area

#### Northeast (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)

#### South (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)

#### North (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)

#### Southeast (SIN)
- 14.70% of the energy consumed in National Interconnected System came from wind farms, with a capacity factor of 66% and generation of 10,340 MWmed. (05/OCT/2020)

### International comparisons

Brazil is ranked 7th in the World Ranking of wind energy installed capacity. In 2012, Brazil was ranked 15th.

### Favorable winds in Brazil
- **34%** is the Capacity Factor approx. global average.
- **42.7%** was the average Capacity Factor in Brazil in 2019.
- **59%** was the largest average monthly Capacity Factor that wind energy in Brazil achieved during the “Wind Harvest” period in 2019.

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**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.