

INFOWIND BRAZIL

Infowind nº 7 | Update 2018 August, 1.



**INDUSTRY
SIZE
IN BRAZIL**

13.4GW

OF INSTALLED
CAPACITY

534

WIND
FARMS

MORE THAN
6,600

TURBINES IN
OPERATION

OPERATING
IN **12**
STATES



AND HOW MANY ENERGY DO THEY GENERATE?

WHAT DOES THIS GENERATION MEAN?



AN AVERAGE OF 22 MILLION
HOUSEHOLDS WERE SUPPLIED
BY WIND POWER MONTHLY IN 2017



AROUND
67 MILLION
PEOPLE

Enough energy was generated from wind in 2017 to power a population larger than the entire northeast region of Brazil.



During the last 12 months (June/17 through May/18) wind generated a total of 44 TWh of energy



This represents a 24% increase compared to the last 12 months (June/16 through May/17)



This is 8% of all the energy fed into the National Interconnected System in 2017.

(Source: CCEE/ ABEEólica)



By 2023 over 4.2 GW will be installed, considering only past auctions. New auctions will add even more wind energy capacity.

RECORDS

NORTHEAST

On July 23rd, 2017, **72% of all energy used in the northeast** came from wind farms operating at a 72% capacity factor.

SOUTH

On September 1st, 2017, **14% of the energy used in the south** came from wind farms operating at 77% capacity factor.

NORTH

On October 1st, 2017, **4% of energy used in north** came from wind farm at a 97% capacity factor.

SIN National Integrated System

On September 10th, 2017, **14% of all energy used in the National Integrated System** came from wind farms operating at a 70% capacity factor.

FAVORABLE WINDS IN BRAZIL

Average capacity factor in Brazil in 2017:

41.8%

The average capacity factor for wind farms worldwide is around

25%

From July to November, the windy season, the capacity factor for Brazil can be higher than 60%.

Why are winds in Brazil so good?



Same
Direction



Constant



Stable
(Speed)

Such winds are abundant in Brazil, especially in the northeast and south.

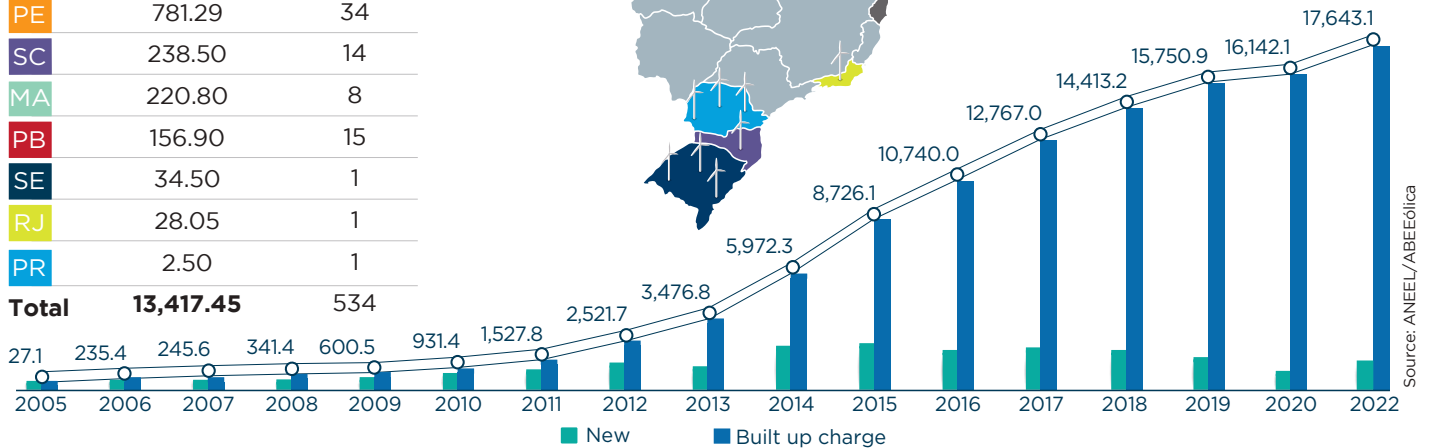
INSTALLED CAPACITY AND WIND FARMS BY STATE

STATE POTENCY (MW) FARMS

RN	3,722.45	137
BA	2,907.64	111
CE	2,049.86	80
RS	1,831.87	80
PI	1,443.10	52
PE	781.29	34
SC	238.50	14
MA	220.80	8
PB	156.90	15
SE	34.50	1
RJ	28.05	1
PR	2.50	1

Total 13,417.45 534

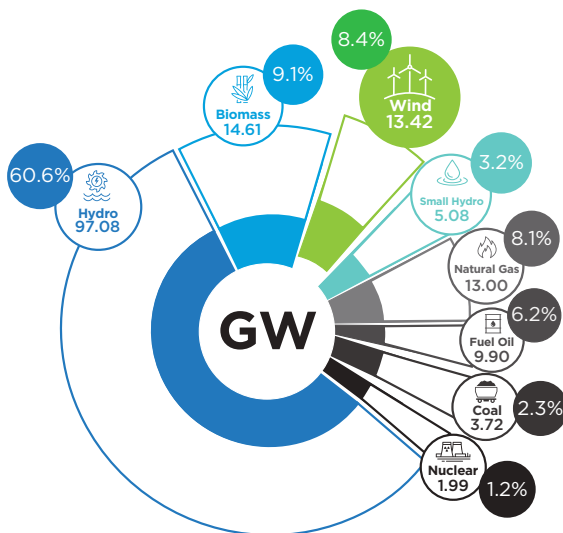
GROWTH OF INSTALLED CAPACITY (MW)



Source: ANEEL/ABEEólica

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.

SOURCES OF ENERGY IN BRAZIL (GW)



INTERNATIONAL COMPARISONS

Brazil passed Canada in the World Ranking of installed capacity, and is now 8th. In 2012, Brazil was ranked 15th.



Source: ANEEL/ABEEólica

Source: GWEC

CONTRIBUTIONS TO WIND ENERGY IN BRAZIL

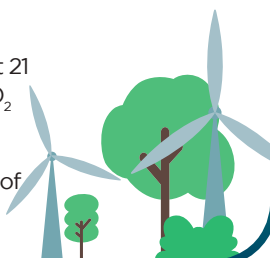
From 2010 to 2017 the investment in the sector was US\$ 32 billion



2017 = US\$ 3.57 billion

Every MW installed creates 15 jobs
Meaning wind energy has already created 190 thousand jobs.

Wind energy avoided the emission of about 21 million tons of CO₂ in 2017. This is equivalent to the annual emissions of some 16 million automobiles



BENEFITS OF WIND ENERGY

- Wind power is renewable, non-polluting, has low environmental impact and helps Brazil fulfill its Climate Agreement Goals.
- Wind parks do not emit CO₂.
- The best prices for energy offered at the December 2017 auctions came from wind farms.
- Generates income and improve the quality of life of land-owners who lease their land for wind tower placement. There are now some 6.500 such towers in operation in Brazil. We believe some 4.000 families are receiving over R\$ 10 million a month in total from leasing land for towers.
- Enables land-owners to continue planting their crops or growing their animals.
- Provides training and qualifications for local labor.