

Deutsche Bank

Latin America Renewable Power Day

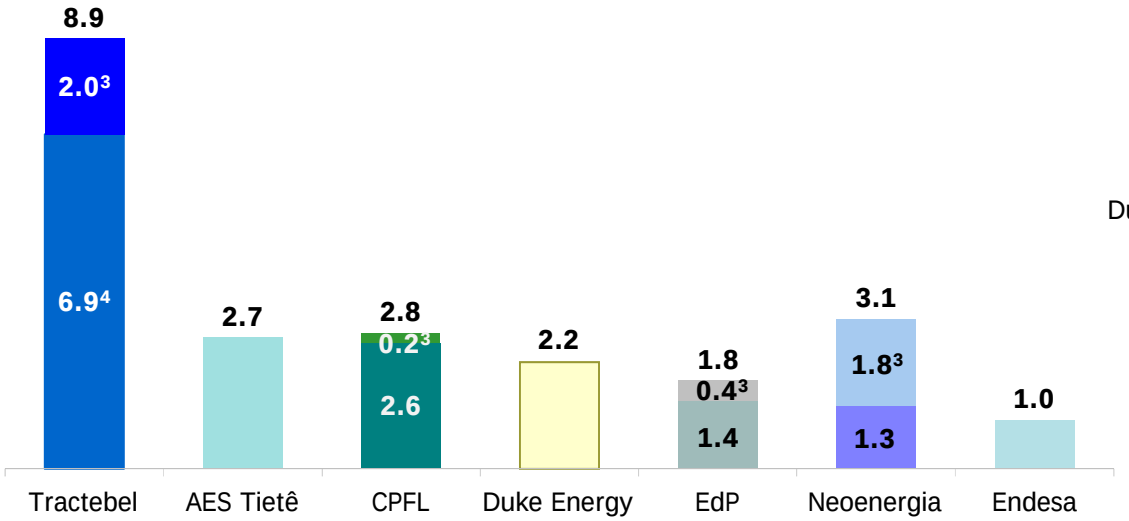
January 24, 2012

Tractebel Energia | GDF SUEZ – All Rights Reserved

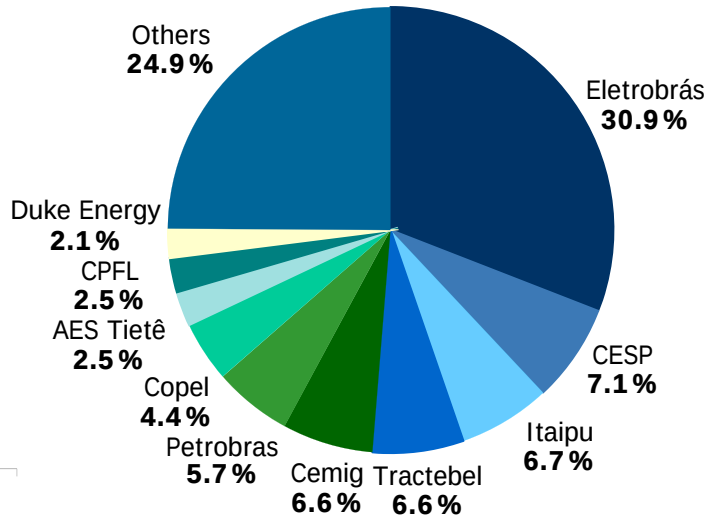
Tractebel Energia: market position

- Largest private sector electricity generating company in Brazil, with 6.6% generating market share.
- ISO 9.001 and ISO 14.000 at its plants.
- Shares on BOVESPA – 68.7% owned by GDF SUEZ – *Novo Mercado* (TBLE3).
- ISE – Corporate Sustainability Index.

Private Sector – Installed Capacity (GW)



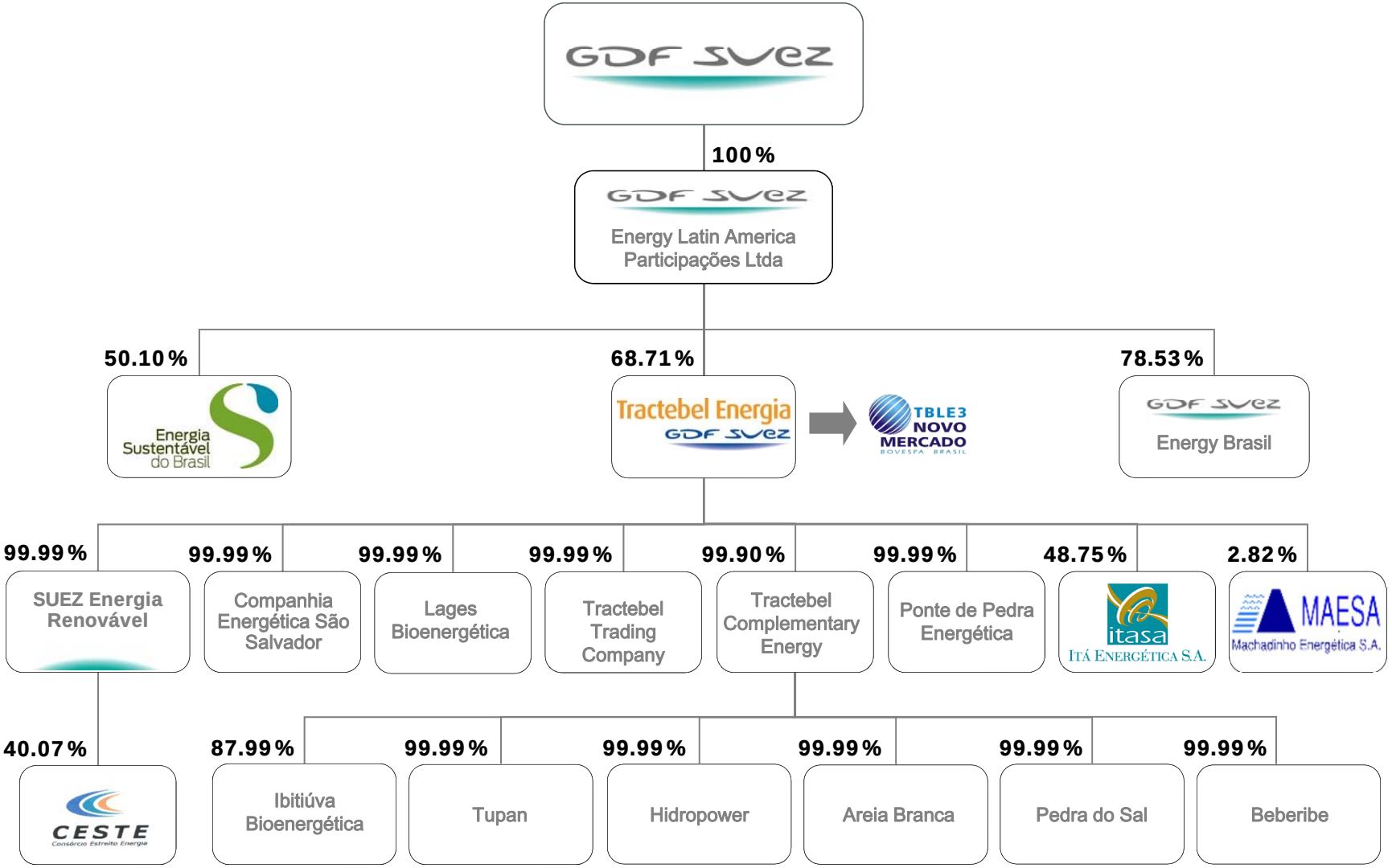
Brazil – Existing Installed Capacity [1,2]



Source: ANEEL, company websites and internal studies.

Notes:
[1] Value corresponds to SIN – National Interlinked System.
[2] Includes only the Brazilian tranche of Itaipu.
[3] Installed capacity under construction. For Tractebel, the figure includes the holding company's share (50.1%) in Jirau HPP.
[4] The complete motorization of Estreito HPP is expected for 2012.

Tractebel is controlled by GDF SUEZ, world leader in energy



NB: Simplified structure

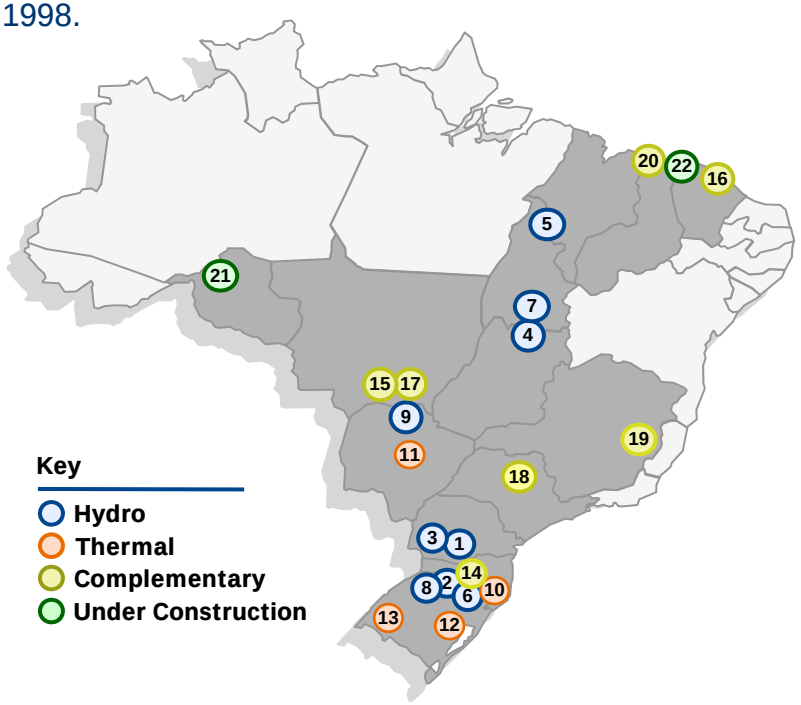
Tractebel Energia: generating complex

Installed capacity of 6,907.6[1] MW from 22 plants operated by Tractebel Energia: 81% hydro, 17% thermal and 2% complementary. This capacity has seen a 86% increase since 1998.

Hydro Power Plants	Installed Capacity (MW)	Commercial Capacity (aMW)[2]
1 Salto Santiago	1,420.0	723.0
2 Itá	1,126.9[3]	544.2[3]
3 Salto Osório	1,078.0	522.0
4 Cana Brava	450.0	273.5
5 Estreito[1]	435.6[3]	256.9[3]
6 Machadinho	403.9[3]	147.2[3]
7 São Salvador	243.2	148.5
8 Passo Fundo	226.0	119.0
9 Ponte de Pedra	176.1	131.6
Total	**5,559.7**	**2,865.9**

Thermal Power Plants	Installed Capacity (MW)	Commercial Capacity (aMW)[2]
10 Jorge Lacerda Complex[4]	857.0	649.9
11 William Arjona	190.0	136.1
12 Charqueadas	72.0	45.7
13 Alegrete	66.0	21.1
Total	**1,185.0**	**852.8**

Complementary Power Plants	Installed Capacity (MW)	Commercial Capacity (aMW)[2]
14 Lages (Biomass)	28.0	25.0
15 Rondonópolis (SHP)	26.6	10.1
16 Beberibe (Wind)	25.6	7.8
17 José Gelazio da Rocha (SHP)	23.7	9.2
18 Ibitiúva (Biomass)	21.2[3]	12.8[3]
19 Areia Branca (SHP)	19.8	11.1
20 Pedra do Sal (Wind)	18.0	5.7
Total	**162.9**	**81.7**

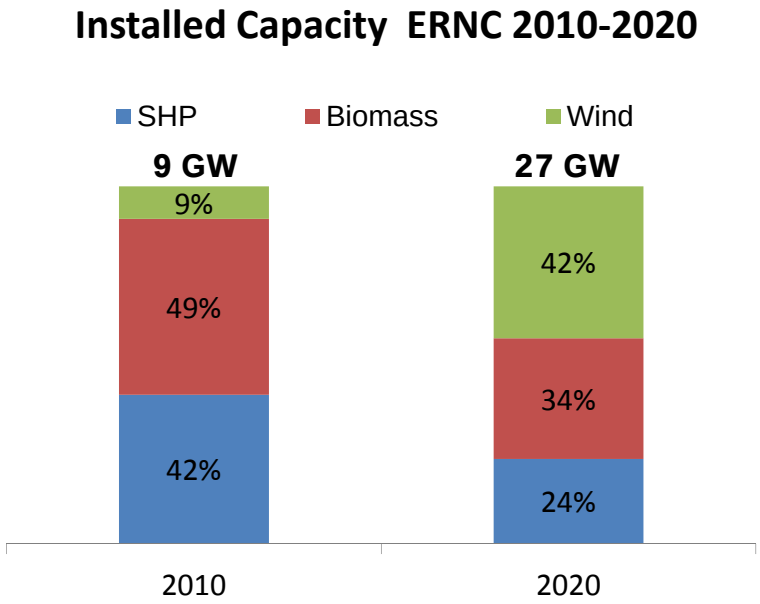


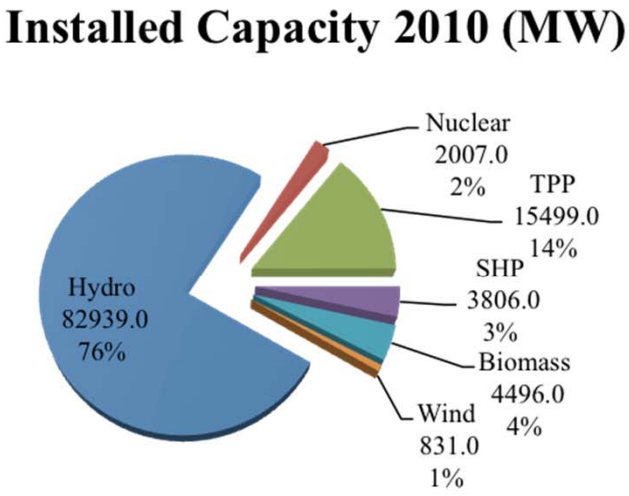
Power Plants Under Construction	Installed Capacity (MW)	Commercial Capacity (aMW)[2]
21 Jirau (Hidro)	1,878.8[5]	1,094.5[5]
22 Wind Projects[6]	145.4	74.7[7]
Total	**2,024.2**	**1,169.2**

Notes:
[1] The complete Estreito HPP ramp-up is expected for 2012.
[2] Figures following specific legislation.
[3] Portion owned by Tractebel Energia.
[4] Complex consists of 3 power plants.
[5] Portion owned by the Parent Company, based on 3,750 MW total installed capacity.
[6] Includes the Porto do Delta and Trairi Complex projects which is comprised of the Mundaú, Fleixeiras I, Trairi and Guajirú wind farms.
[7] Estimated value (awaiting MME definition).

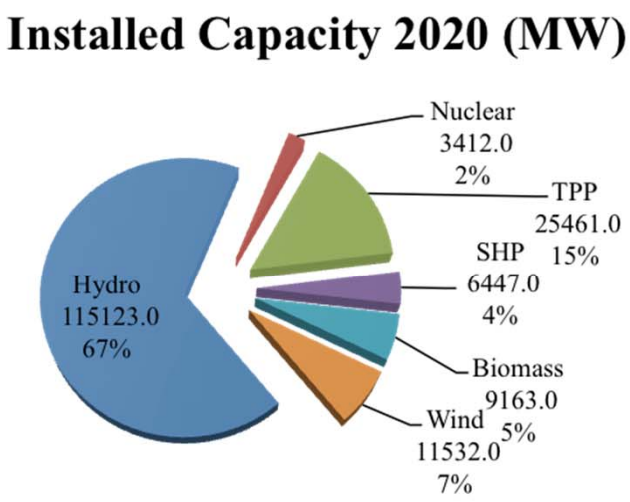
Ten-year Energy Growth Plan (PDE 2020)

- PDE 2020 estimates that renewable sources will account for 83% of electricity generation (HPP, SHP, WIND, BIO).
- Biomass's share of the energy matrix is expected to increase from 4.1% in 2010 to 5.4% in 2020.
- In this scenario, 34% of Non-Conventional Renewable Energy (ERNC) will be supplied from biomass plants, an increase from 4.4 GW in 2010 to 9.1 GW in 2020.



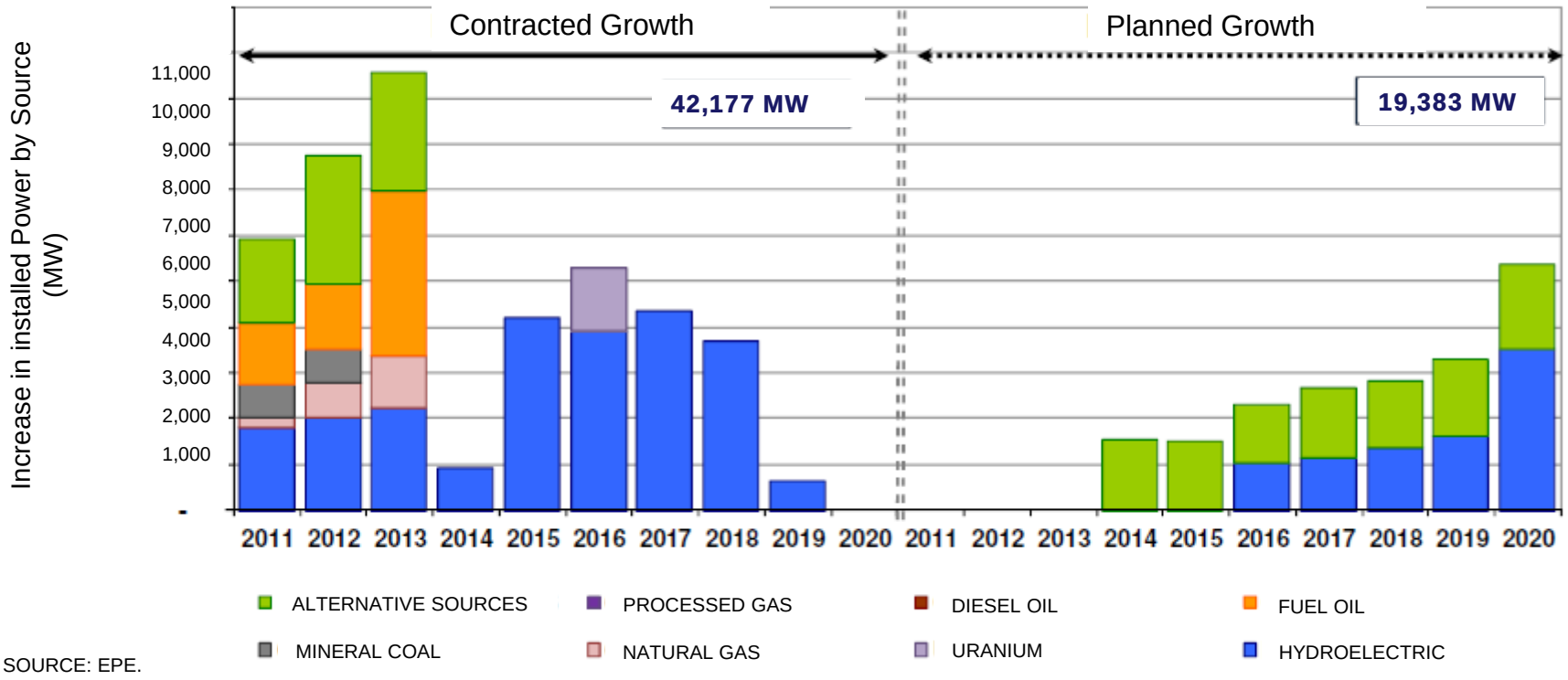






Ten-year Energy Growth Plan (PDE 2020)

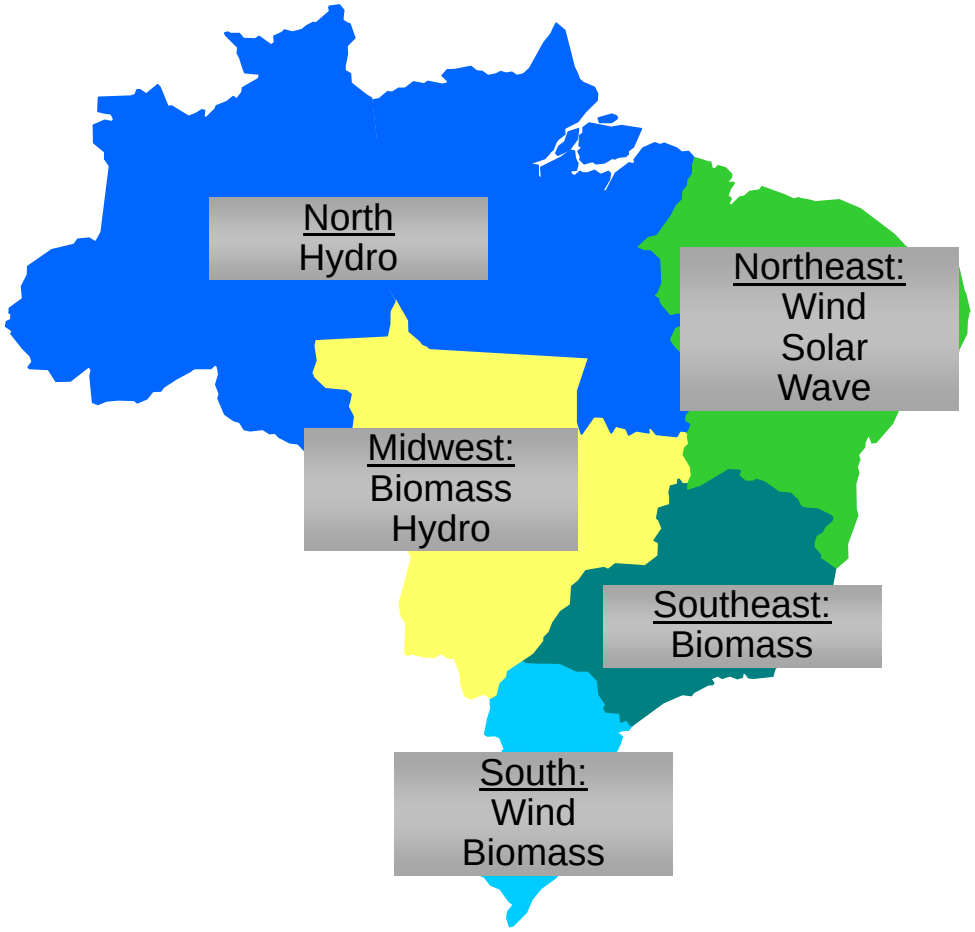
- Increase in annual installed capacity by source:
  - ✓ The Government intends to reduce share of thermoelectric plants
  - ✓ A question mark over nuclear
  - ✓ Growth is expected from hydro plants and alternative sources

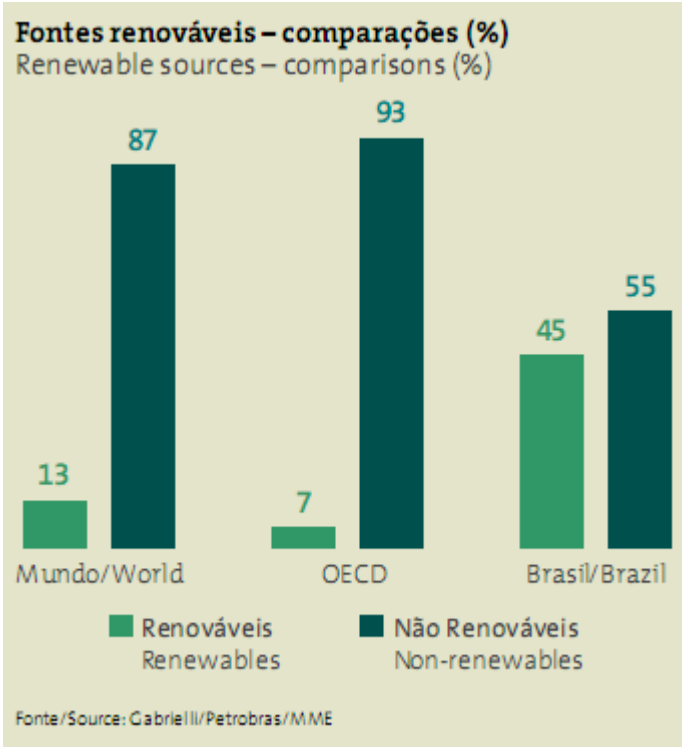


SOURCE: EPE.

Renewable energy: potential in Brazil

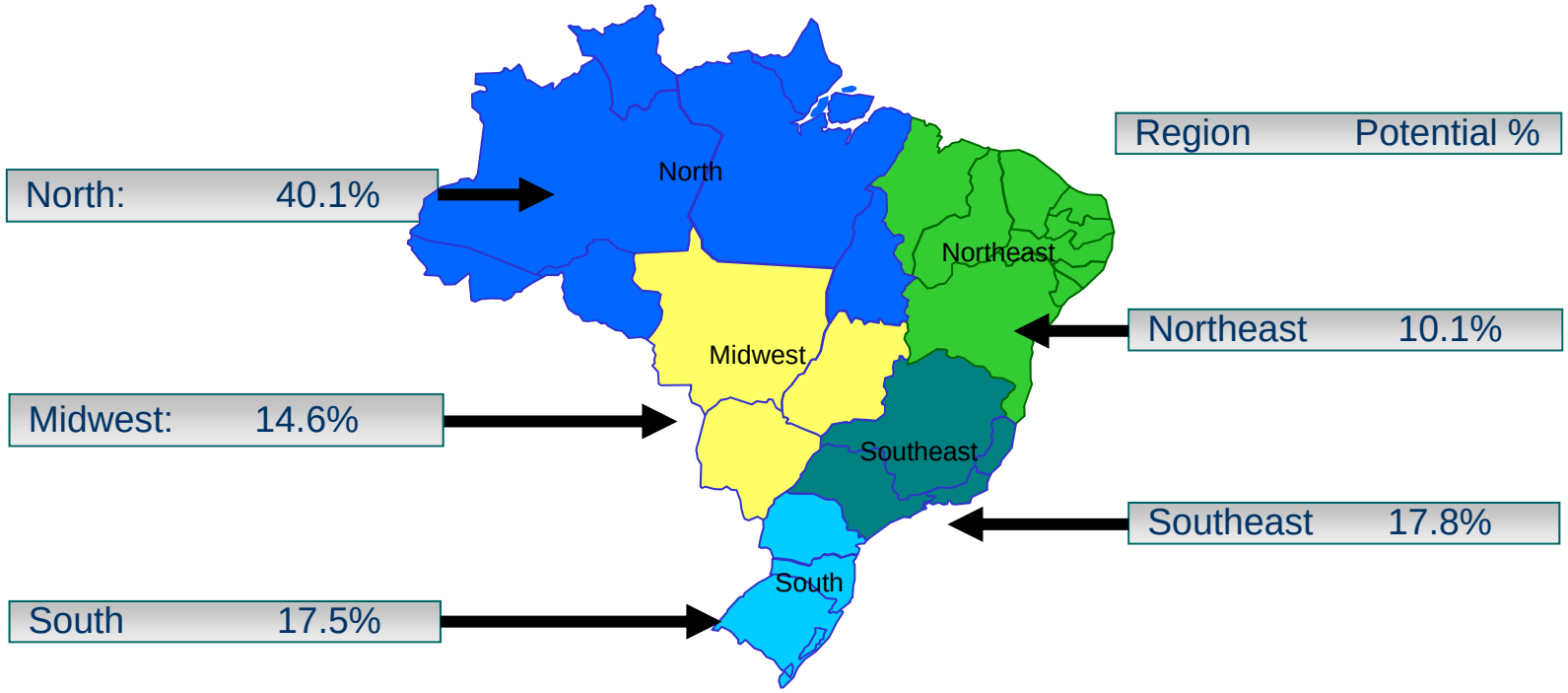
Potential of renewable sources by region





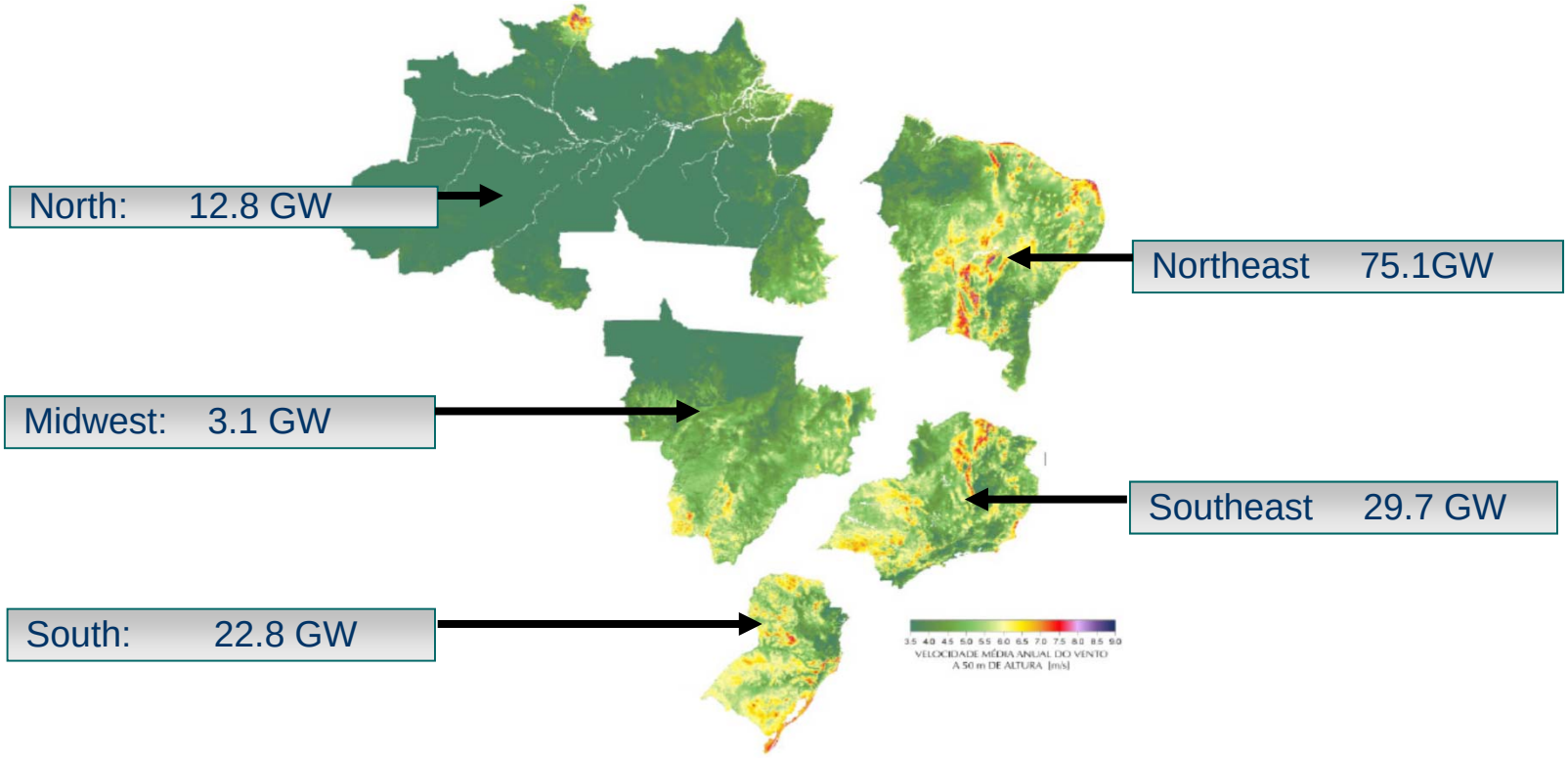
Hydroelectric potential – 246 GW

- Installed capacity in operation: ~83 GW
- 32 GW in HPPs will be added to the generating complex by 2020, totaling 115 GW
- USD 50 billion will be invested in the construction of new HPPs
- Main projects:
  - ✓ Under construction: Jirau (3.7 GW), Santo Antonio (3.1GW), Belo Monte (11 GW)
  - ✓ In development: Teles Pires Complex (3.6 GW), Tapajós Complex (10.7 GW)



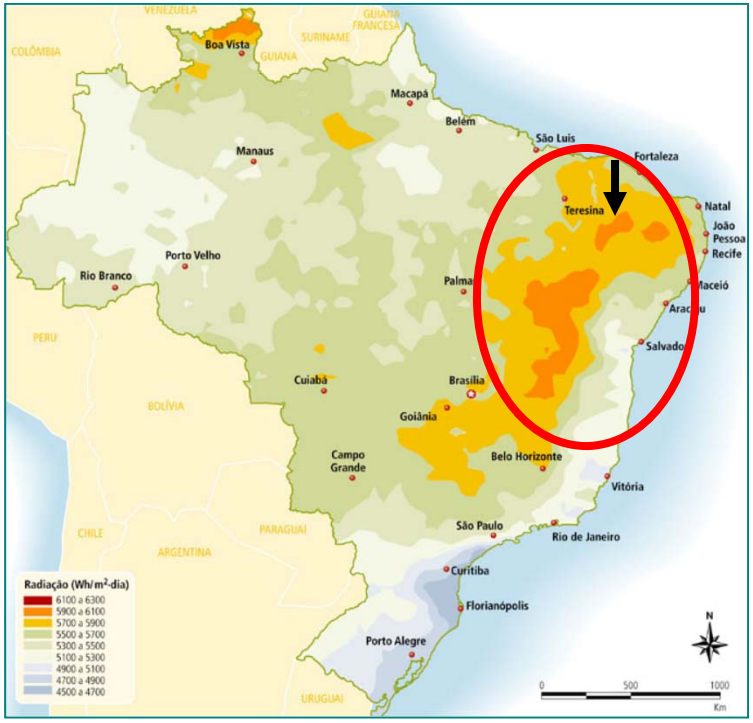
Wind potential – 143 GW

- Installed capacity in operation: ~1GW
- Under construction: 4.5GW
- 8.5% of new capacity to be installed will be wind
- Average price of wind power at Auction of Aug/2011: 99.54 BRL/MWh
- Greatest potential (capacity factor): Northeast and South



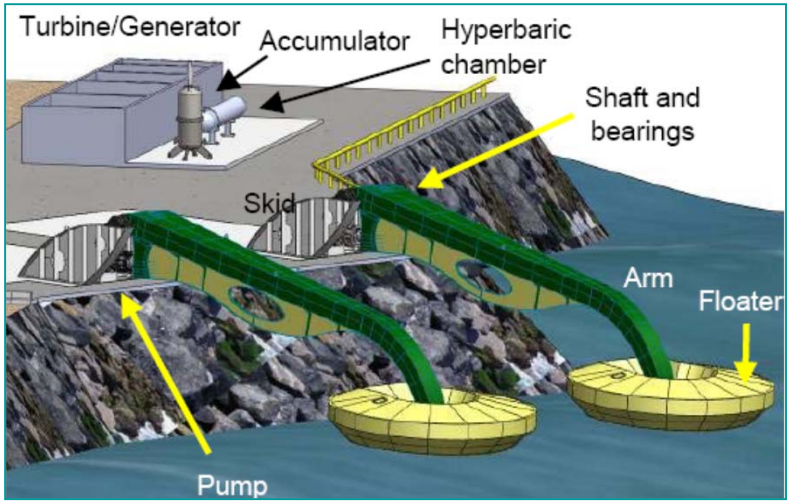
Solar and wave potential

- The Northeast Region has the greatest potential for solar energy generation.



- First solar plant in operation in the state of Ceará – 1MW

- Wave Energy Prototype – R&D project

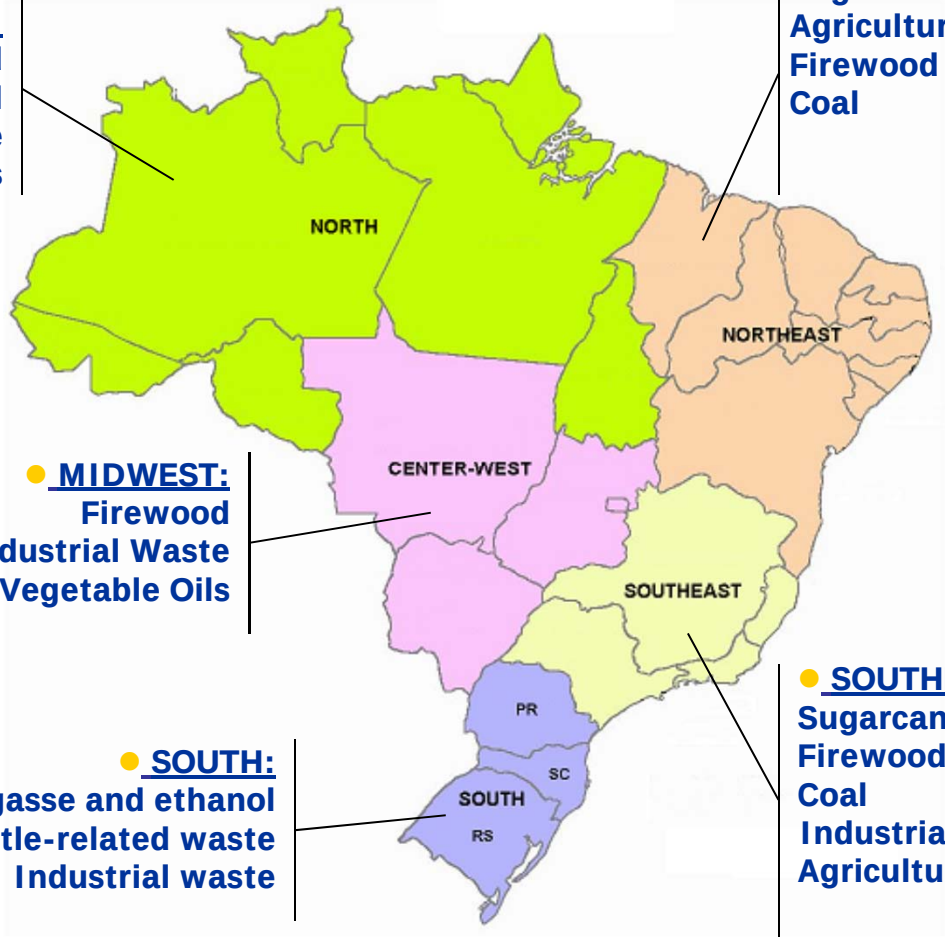


- In operation since 2011
- First plant in Latin America
- Installed Capacity: 100 kW
- Location: Porto de Pecém, state of Ceará

Main sources of biomass in Brazil

NORTH:
Firewood
Coal
Agricultural waste
Vegetable oils

NORTHEAST:
Sugarcane bagasse and ethanol
Agricultural waste and vegetable oils
Firewood
Coal



In major cities, urban waste

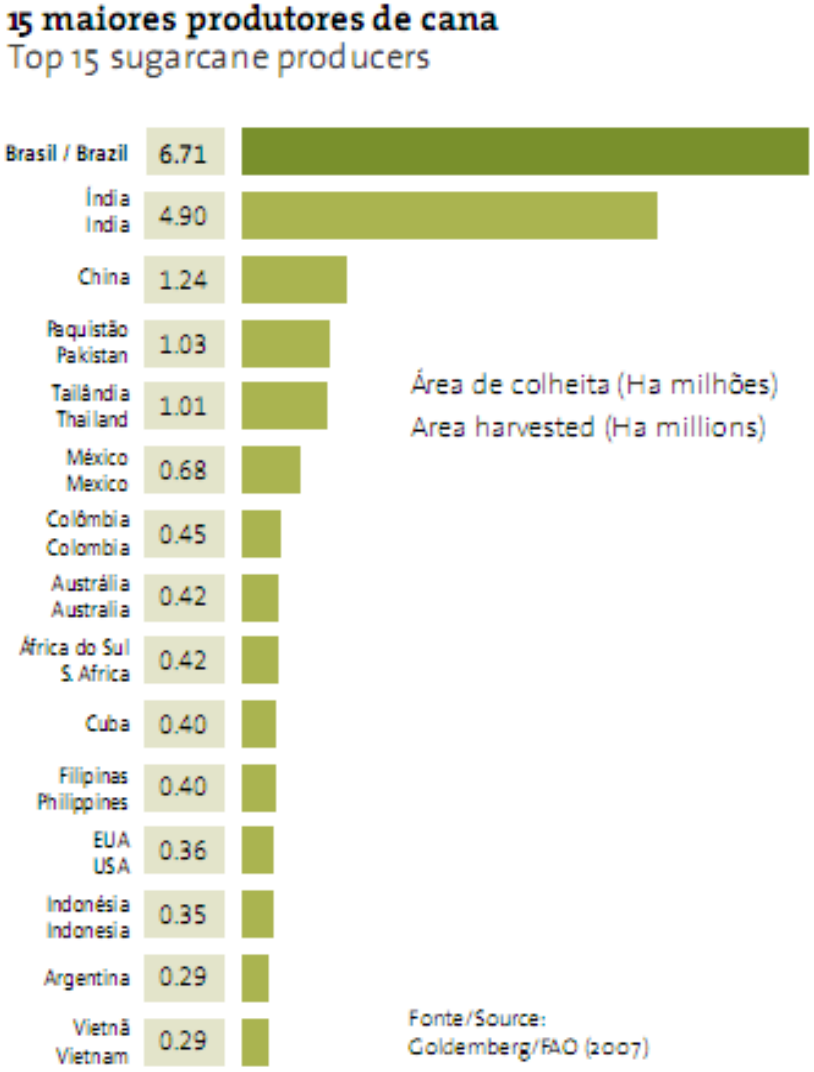
MIDWEST:
Firewood
Industrial Waste
Agricultural Waste and Vegetable Oils

SOUTHEAST:
Sugarcane bagasse and ethanol
Firewood
Coal
Industrial waste
Agricultural waste

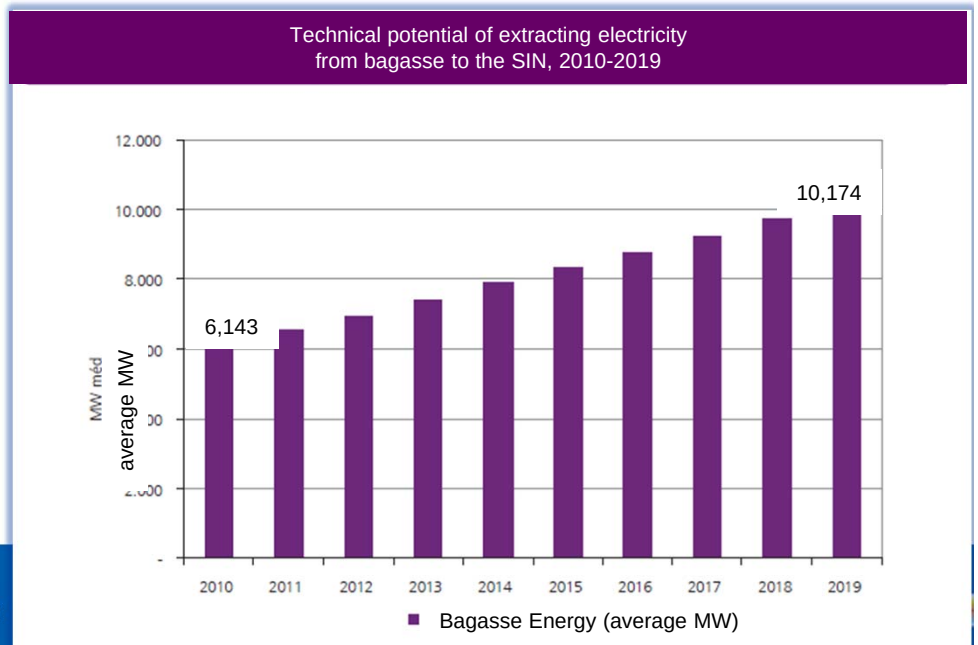
SOUTH:
Sugarcane bagasse and ethanol
Cattle-related waste
Industrial waste

Sugarcane bagasse

- The sugar-ethanol sector provides the largest quantities of biomass for electricity production in Brazil.
- Brazil is the largest producer of sugarcane in the world.



- The potential supply of energy from sugarcane waste is greater than 10 GW in 2019;
- This potential is equal to two Belo Montes (4,571 average MW).



Share of renewables in Auctions

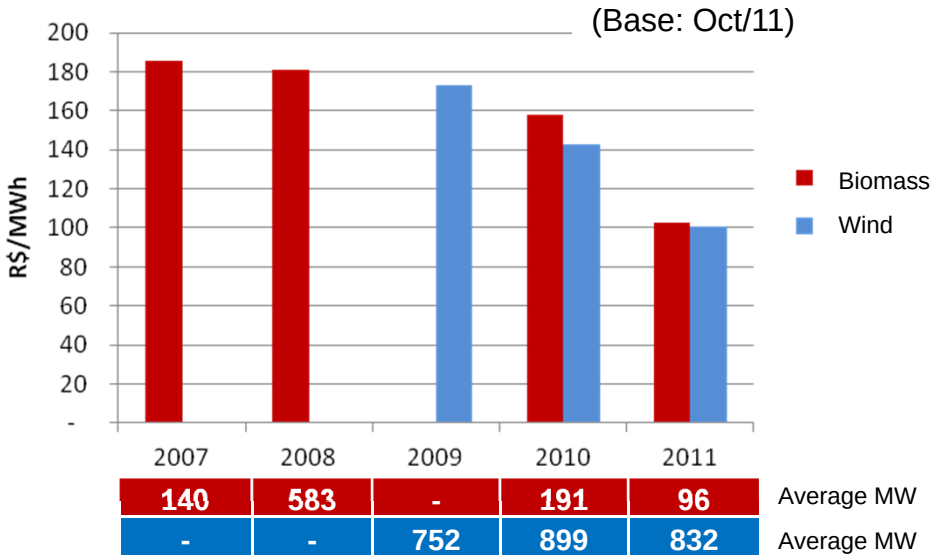
Government focused on renewable sources → **The latest Auctions confirm it!**

ACR (Mwavg)	Coal	Natural Gas	Process Gas	Fuel Oil	Diesel	Hydro	Biomass	Wind	Small Hydro	Total	NCRE	% NCRE
2005	292	1.391	0	0	244	1,006	83	0	0	3,016	83	*2.8%*
2006	0	200	200	291	241	1,530	131	0	67	2,660	198	*7.4%*
2007	930	351	0	1,620	0	2,269	140	0	46	5,356	186	*3.5%*
2008	276	968	0	2,801	0	1,504	583	0	0	6,132	583	*9.5%*
2009	0	0	0	0	0	0	10	752	1	763	763	*100.0%*
2010	0	0	0	0	0	4,456	191	899	109	5,654	1,198	*21.2%*
2011	0	866	0	0	0	209	96	832	0	2,004	929	*46.3%*
Total	**1,498**	**3,776**	**200**	**4,712**	**485**	**10,973**	**1,234**	**2,483**	**223**	**25,585**	3,940	*15.4%*
%	*5.9%*	*14.8%*	*0.8%*	*18.4%*	*1.9%*	*42.9%*	*4.8%*	*9.7%*	*0.9%*			

Competitiveness at Auctions

- More attractive prices and regulatory developments have determined growth from biomass generation as of 2007:
  - ✓ Seasonality – contracting and delivery according to harvest;
  - ✓ ICGs – Shared transmission installations;
  - ✓ Accounting rules at the CCEE;
  - ✓ Reserve Energy – substituting more expensive thermoelectrics.

Average price of energy at auction



	2007	2008	2009	2010	2011	
Biomass	140	583	-	191	96	Average MW
Wind	-	-	752	899	832	Average MW

- Wind is the most competitive among the ERNC:
  - ✓ Reduction in the price of wind power equipment; factories idles in Europe (mainly) due to the financial crisis, since 2008; constant technological improvements (technology maturation curve); and increase in Brazilian suppliers;
  - ✓ At the most recent Auctions, significant reduction in energy prices: < 100 R$/MWh.

- As biomass generation has partipated in recent Auctions alongside wind power, and with wind project sales prices ever lower, this competition implies that biomass has the challenge of achieving market viability, as fewer and fewer biomass projects are willing to sell energy for 100 R$/MWh.

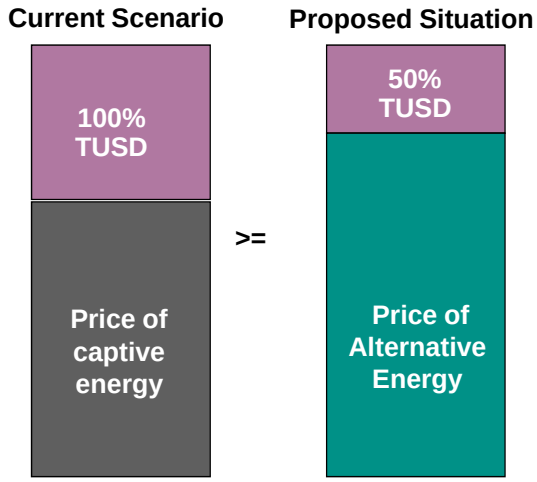
Free Market – Incentivized Energy and Special Consumers

• On the free market, consumers contract energy directly with a generating or trading company, and must agree with distribution and transmission companies the right to use the system (paying a tariff for use);

• **Types of Free Market consumers:**

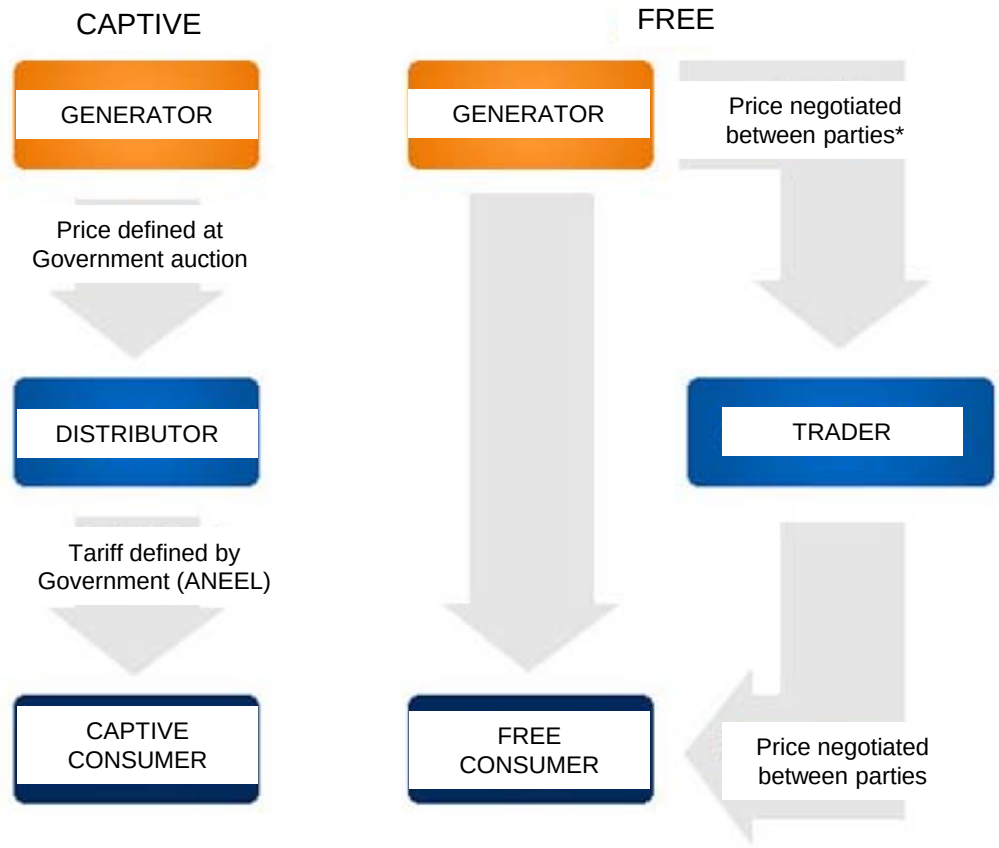
- **Free clients:** contracted demand greater than 3MW and connected with tension greater or equal to 69kV. May buy energy from any source;
- **Special consumers:** contracted demand greater than 0.5 MW and connection with tension of 13.8kV or more. May only buy energy from alternative sources;

• **50% discount on Tariffs for Use of the System for incentivized energy:** so as to incentivize an increase in alternative energy generation, the government has introduced a 50% discount on the tariff for use of the system for alternative energy generators and for free and special consumers that contract this energy.



Energy sales to Special Consumers

- Tractebel Comercializadora has already prospected the Special Consumers market and has clients interested in purchasing this energy in excess of 150 average MW;
- The prices on the incentivized energy market are more attractive than the energy prices at the latest auctions;
- Some clients are interested in showing that they buy energy from wind sources;
- The contract periods should vary from 2-10 years;
- Just as in the Conventional Free Market, Tractebel should use this window of opportunity to be one of the first entrants in this market and gain a competitive advantage.

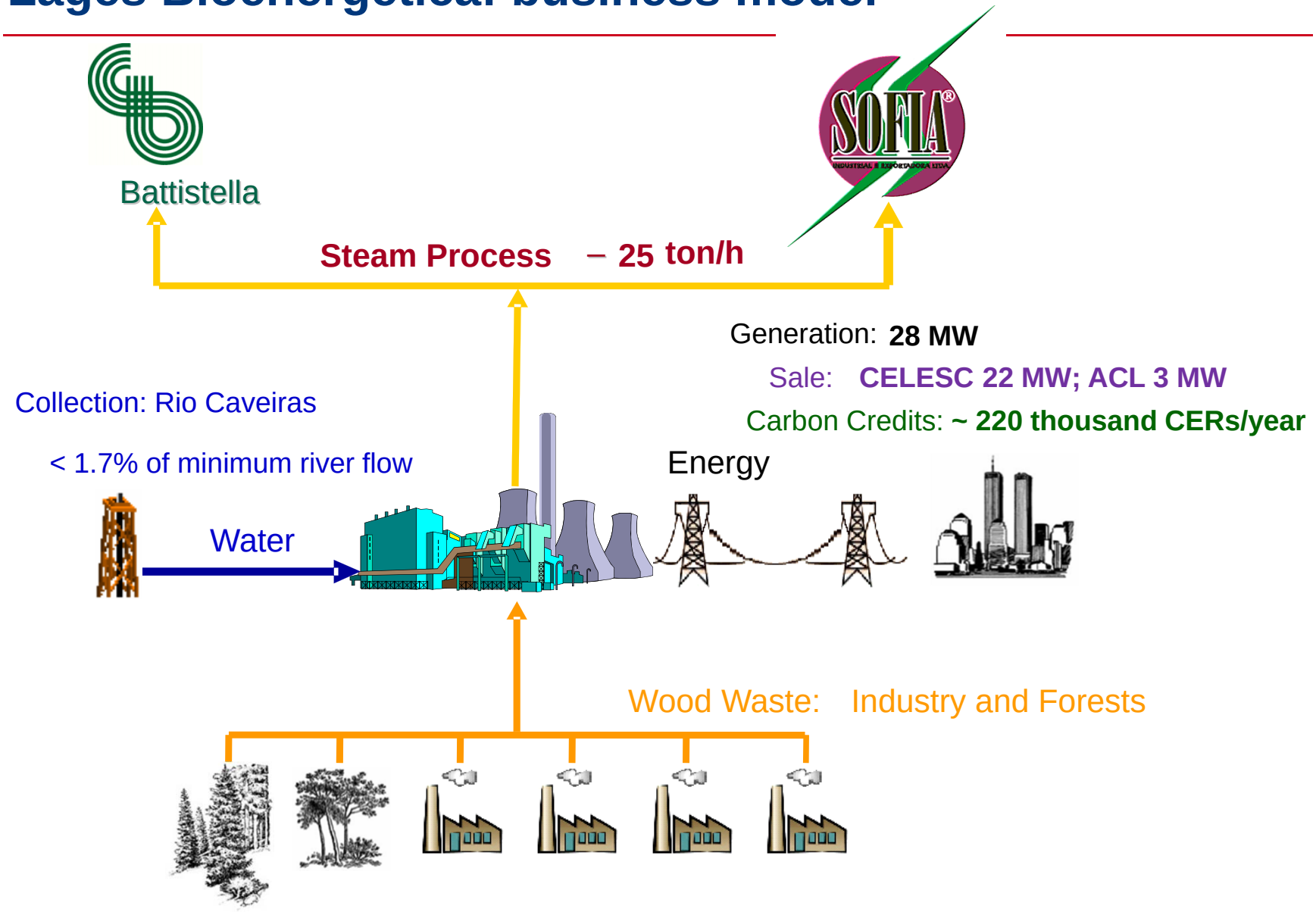


In the case of state generator: a transparent process (auction/public offering/ public announcement)

Lages Bioenergética



Lages Bioenergética: business model



Ibitiúva Bioenergética: sugarcane bagasse

- Partnership with Açúcar Guarani, at the Andrade Sugar and Alcohol Plant
- Located in Pitangueiras, state of São Paulo
- Operational Startup: May 2010
- Installed Capacity: 33 MW
- PPA: 15 years LER 2008





Features of the partnership

- The partnership model is based on a Consortium, formed of the Sugar and Ethanol Plant and a SPE controlled by Tractebel Energia, to generate energy for sale on the market.
- The Consortium structure allows companies to contribute funds toward the Consortium objectives and in return receive their corresponding share of results.
- This business model frees the Plant to focus on expanding and growing its core business while Tractebel Energia makes investments related to supplying the required energy.





Features of the partnership in biomass

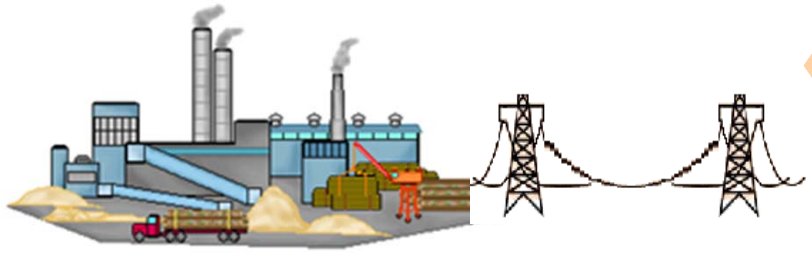
Consortium

Sugar and Ethanol Plant

- Land
- Water
- O&M (routine)
- Licences
- Biomass

- Electricity
- Steam

Cogeneration Plant



SPE controlled by Tractebel

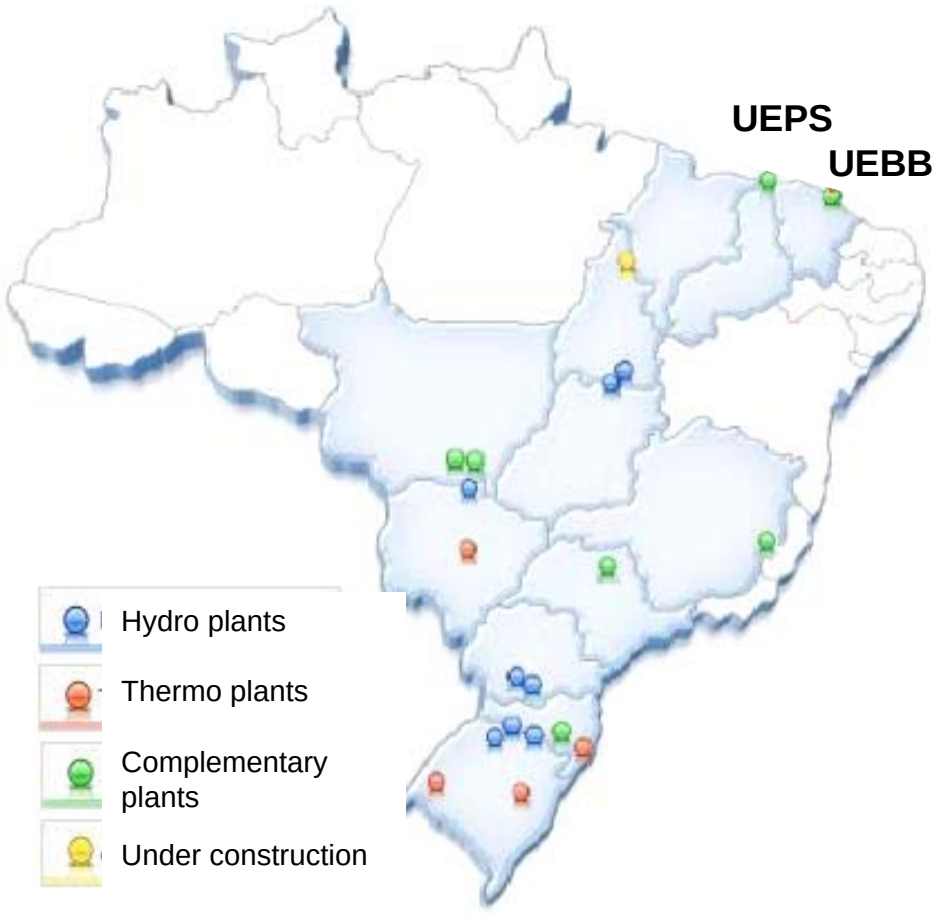
- Financing
- Investment
- Insurance
- Authorizations
- EPC
- O&M (advance)

- Electricity

Wind plants in operation

1. Pedra do Sal WPP
- Installed Capacity: 18 MW
- 20 WTG Enercon E-44 of 0.9 MW
- PROINFA Contract
- Contracted Energy: 52,360 MWh/year
- Location: Parnaíba, state of Piauí
- Tower height: 55m
- Rotor diameter: 44 m
- COD: - 85% on 12/31/2008
  - 15% on 02/15/2008

2. Beberibe WPP
- Installed Capacity: 25.6 MW
- 32 WTG Enercon E-48 of 0.8 MW
- PROINFA Contract
- Contracted Energy: 73,574 MWh/year
- Location: Beberibe, state of Ceará
- Tower height: 75 m
- Rotor diameter: 48 m
- COD: 09/11/2008

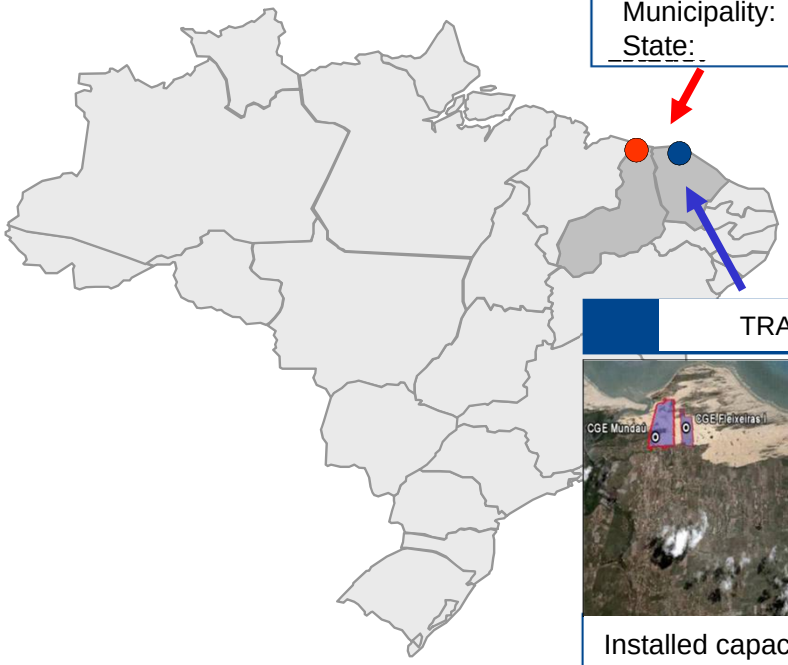


Wind plants in operation

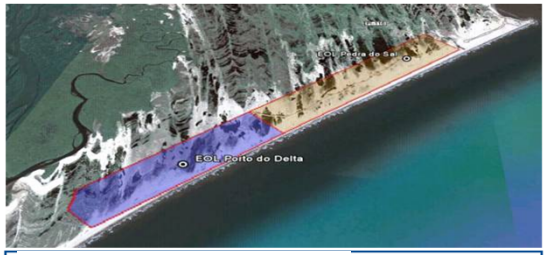
Installed Capacity: 145.4 MW
Energy for Sale: 74.67 average MW
Capex value: R$ 641 million
Equipment: 63 x Siemens SWT 2.3-101
Tower height: 80 m
Rotor diameter: 101 m

1. Trairí Complex
Installed Capacity: 114,5 MW
Wind turbines: 50
Location: Trairí, state of Ceará
•Mundaú Wind Farm (30 MW)
• Guajirú Wind Farm (30 MW)
• Trairi Wind Farm (25.4 MW)
• Fleixeiras Wind Farm (30 MW)

2. Porto do Delta Wind Farm
Installed Capacity: 30 MW
Wind turbines: 13
Location: Parnaíba, state of Piauí



PORTO DO DELTA WIND COMPLEX



Installed capacity:	**30 MW**
Municipality:	**Parnaíba**
State:	**Piauí**

TRAIRI COMPLEX



Installed capacity:	**115,4 MW**
Municipality:	**Trairi**
State:	**Ceará**

Solar R&D project

Photovoltaic solar plant (PV) of 3MW and assessment of the technical and economic performance of PV generation in different climatic conditions in the Brazilian energy matrix.

Duration: 36 months **TOTAL value: R$ 56,301,400**

Applicant Company: Tractebel Energia

Cooperating Companies:

1. Energética Barra Grande - BAESA
2. Campos Novos Energia - ENERCAM
3. Centrais Elétricas Cachoeira Dourada - CDSA (Endesa)
4. Central Geradora Termoelétrica Fortaleza - CGTF (Endesa)
5. Companhia Energética Rio das Antas - CERAN
6. COPEL
7. Foz do Chapecó - FCE
8. Light SESA
9. Light Energia
10. CPFL Paulista
11. CPFL Piratininga
12. Rio Grande Energia - RGE

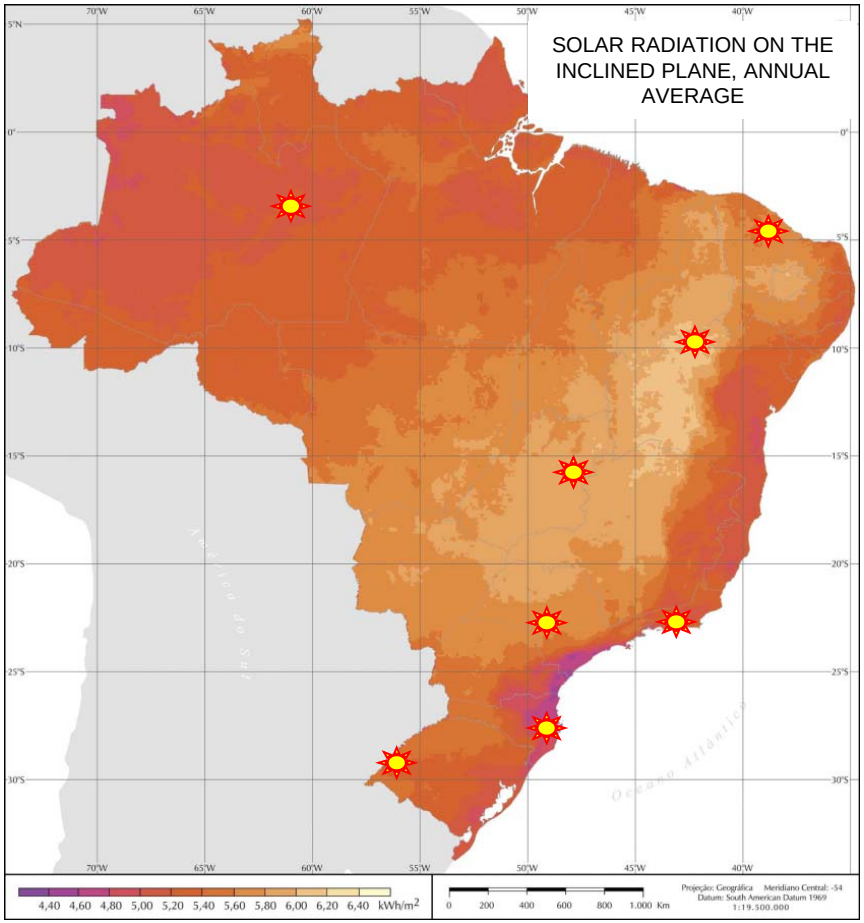


Solar R&D project

- To design, install, monitor and analyze the performance of 8 Assessment Modules (MA) with 7 PV technologies and solarimetric stations in 8 locations with different climates:

1. Crystalline silicon with tracking (c-Si)
2. Crystalline silicon without tracking (c-Si)
3. Amorphous silicon (a-Si)
4. Microcrystalline silicon (a-Si/mc-Si)
5. Cadmium Tellurate (CdTe)
6. Diselenide of Copper, Indium and Gallium (CIGS)
7. Photovoltaic concentrator with tracking







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