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Associação Brasileira de Energia Solar Fotovoltaica

PV in Brazil: Market Status, Opportunities and Challenges

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Member of the Board of
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Seminário Energía Solar – CEPAL / UN

Santiago (Chile) – 04/05/2016



About Us

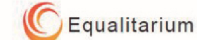
- Gathers national and international companies from the whole PV value chain operating in Brazil.
- Coordinates, represents, and defends the interests of the PV sector in Brazil and represents Brazil internationally.
- Advocates and campaigns for PV to federal, state and municipal governments, media, NGOs, and the civil society.
- Hosts strategic events and networking opportunities for the PV sector.

Together we can make PV thrive in Brazil! Join us!

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Our Members

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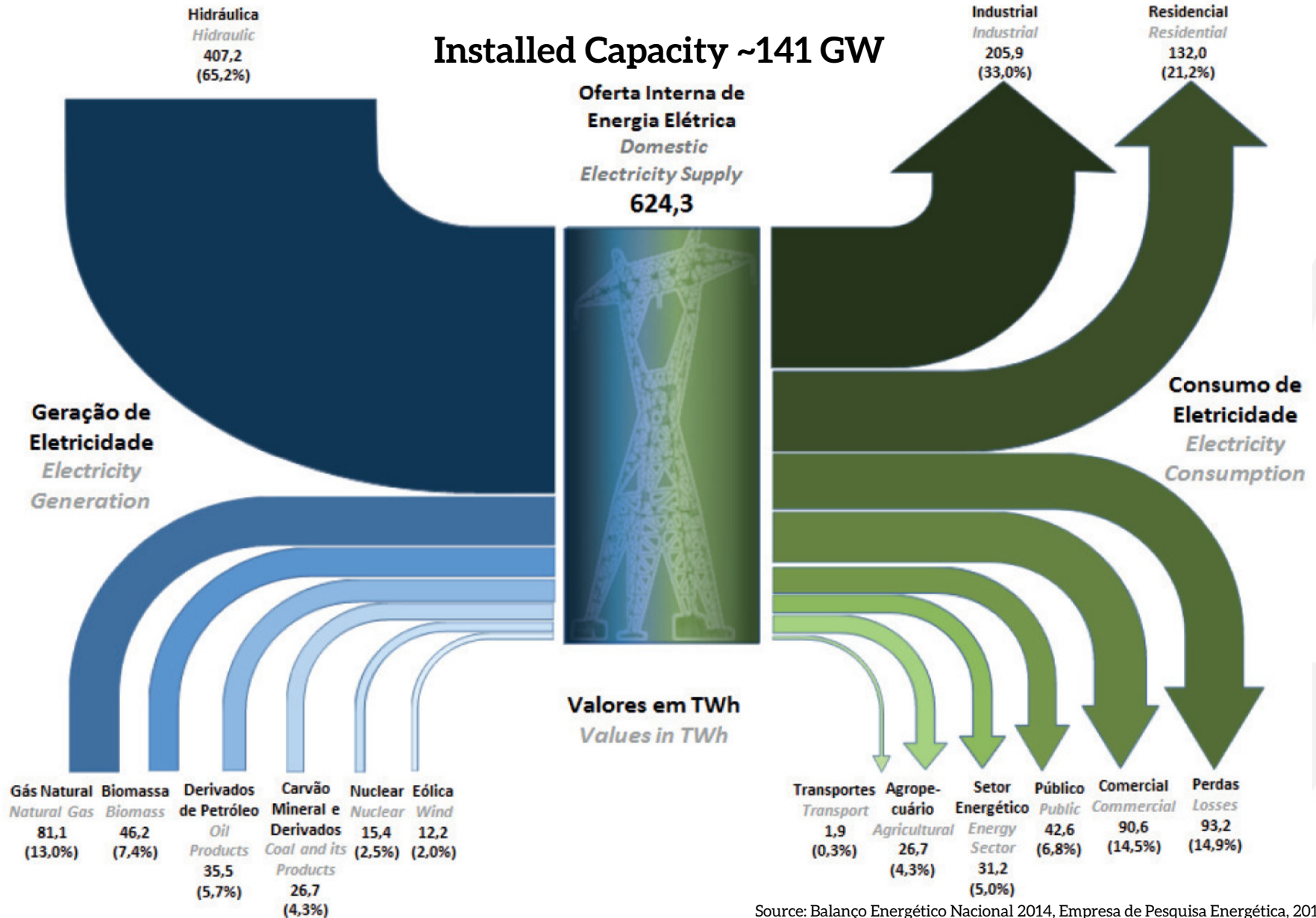
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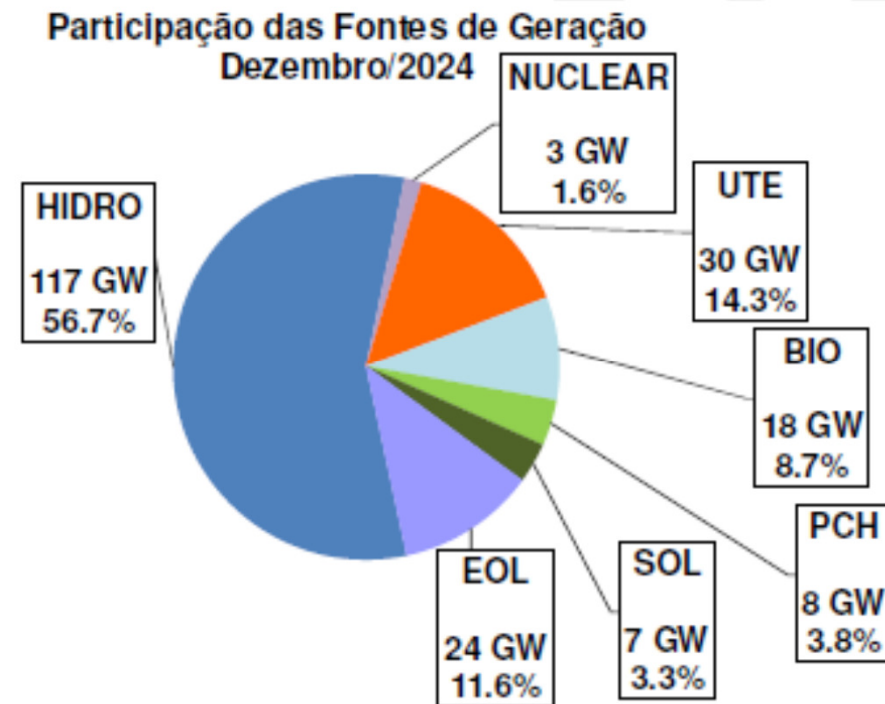
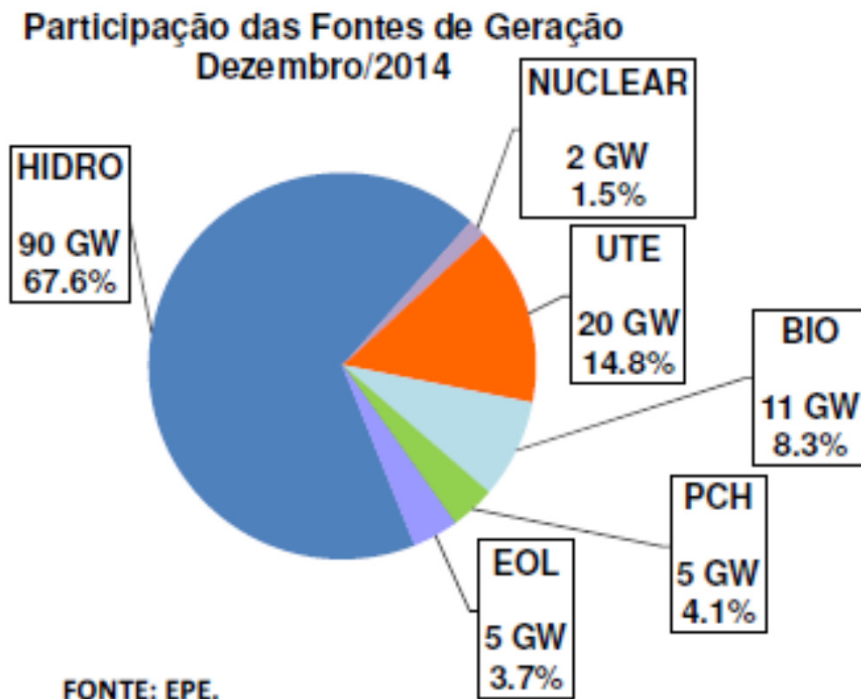
The Electricity Sector



Source: Balanço Energético Nacional 2014, Empresa de Pesquisa Energética, 2015.

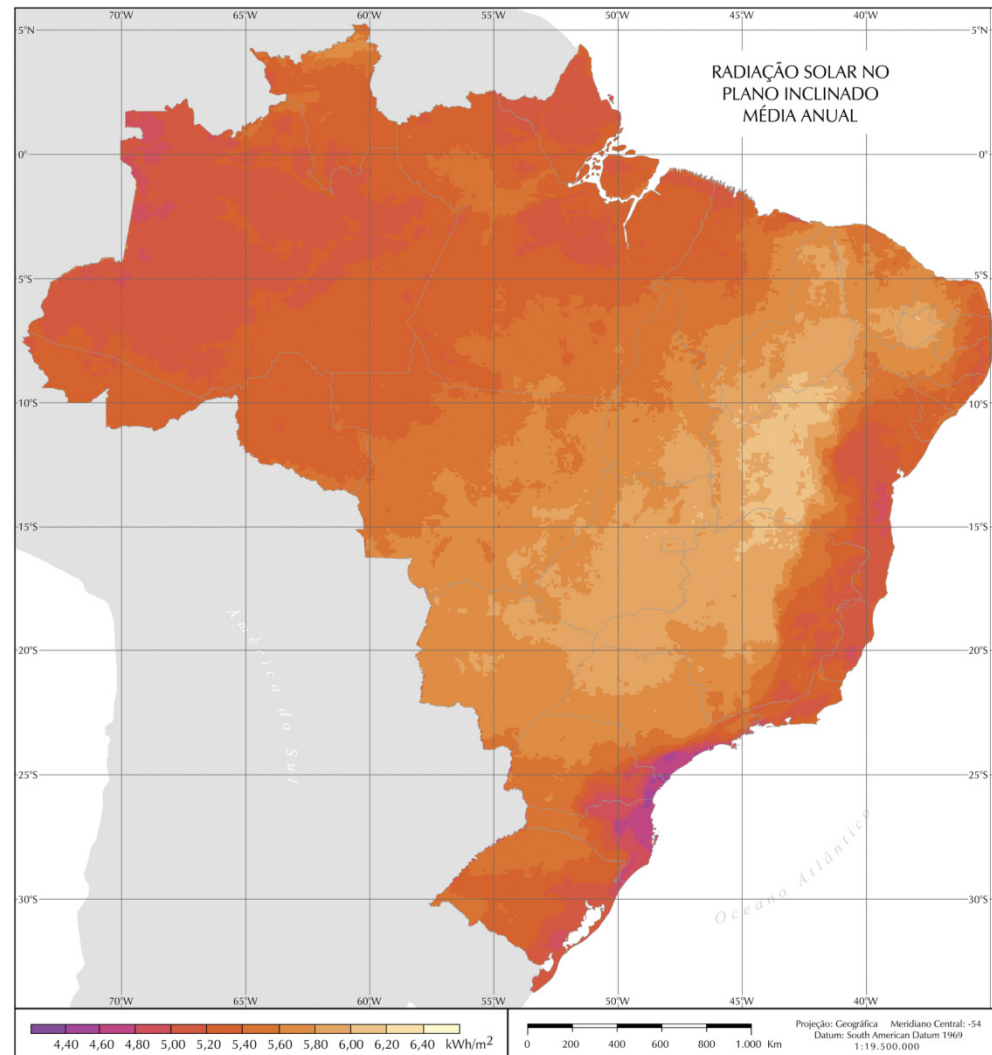
Brazilian Electricity Sector

- Largest electricity market in Latin America.
- Electricity demand growing > 4% per year.
- At least 74 GW to be added until 2024 (+56%).
- National goal of 23% non-hydro renewables by 2030 (COP21).



PV Drivers in Brazil

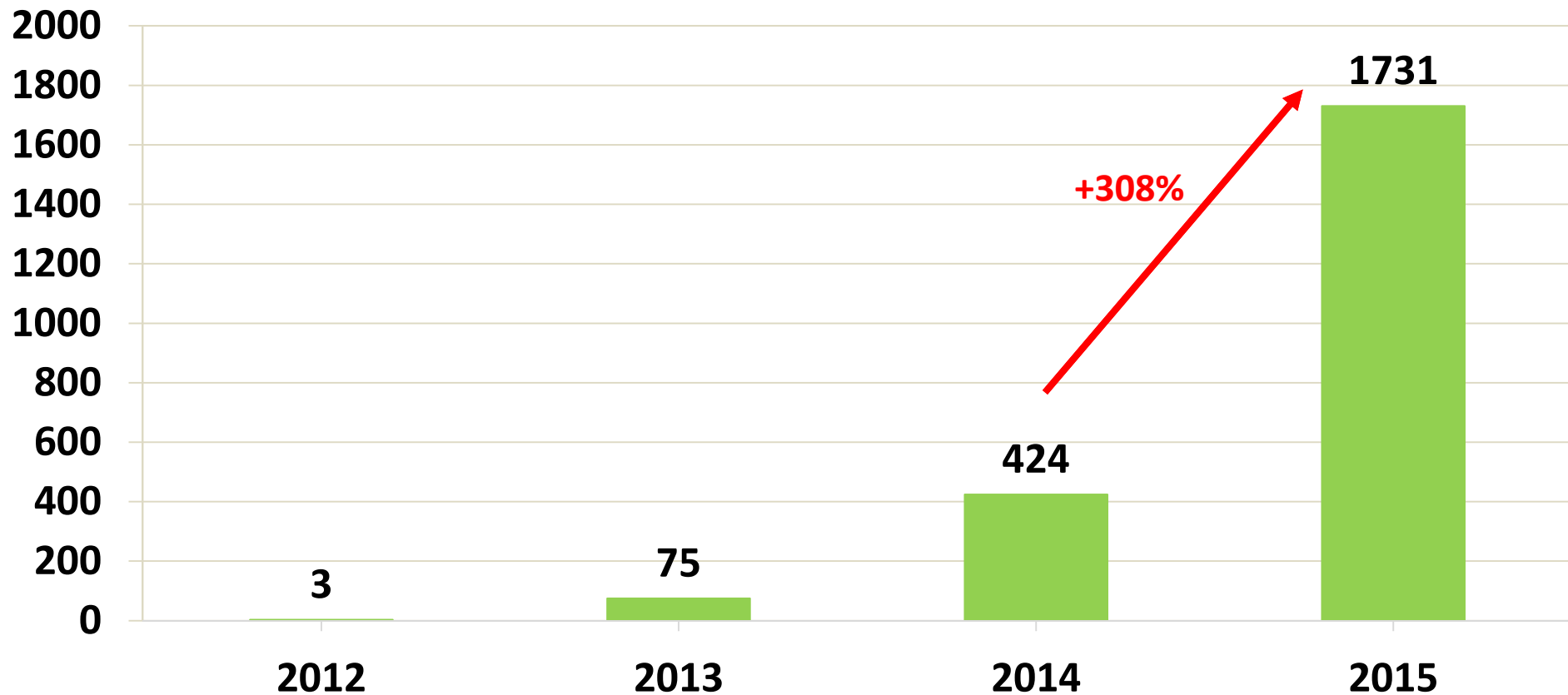
- Excellent solar resource: between 1550 and 2350 (kWh/(m².year)).
- Well-spread throughout the country.
- Good match between resource and load location.
- Complementary to other renewable sources (e.g. hydro, wind, biomass).



Source: Atlas Brasileiro de Energia Solar, INPE, 2006.

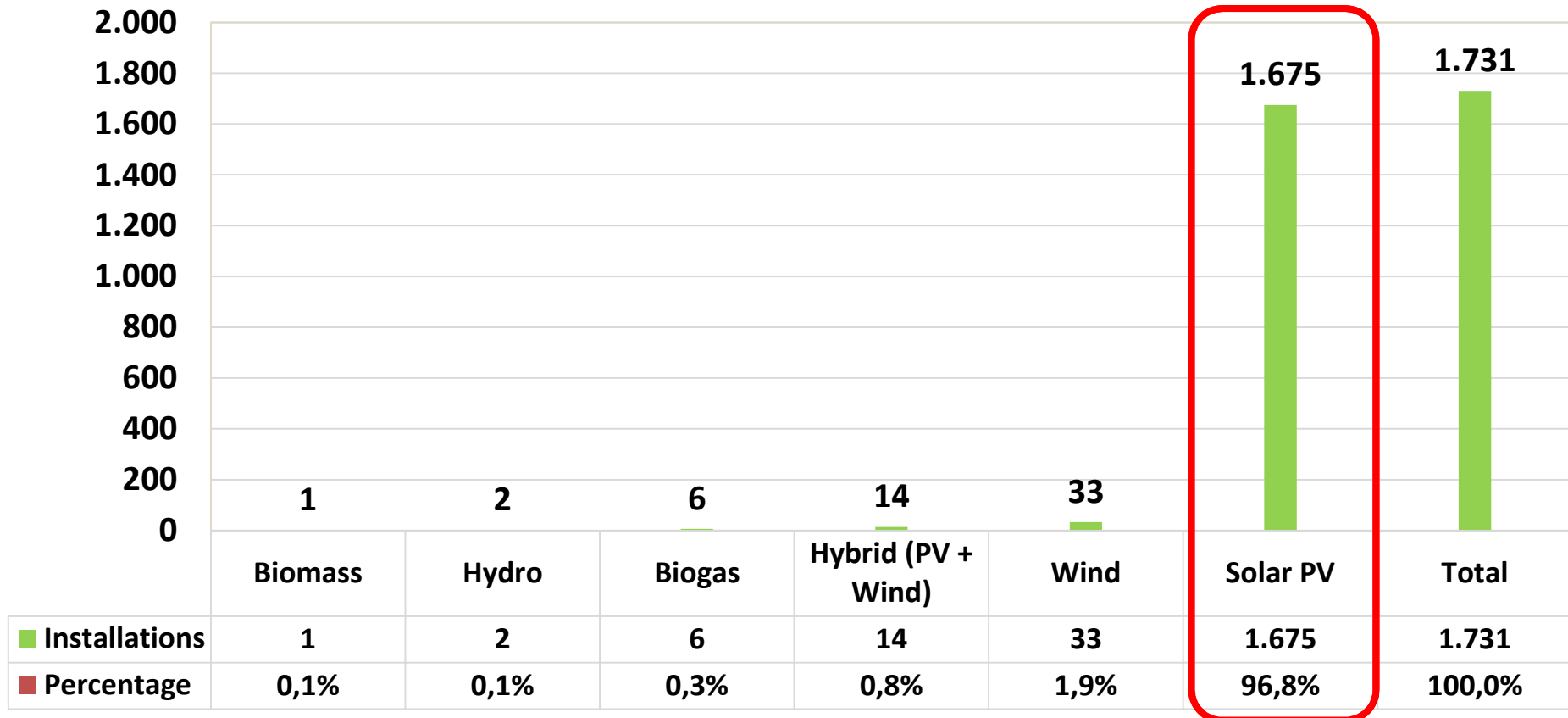
PV Distributed Generation Market

Cumulative Net-Metering Installations



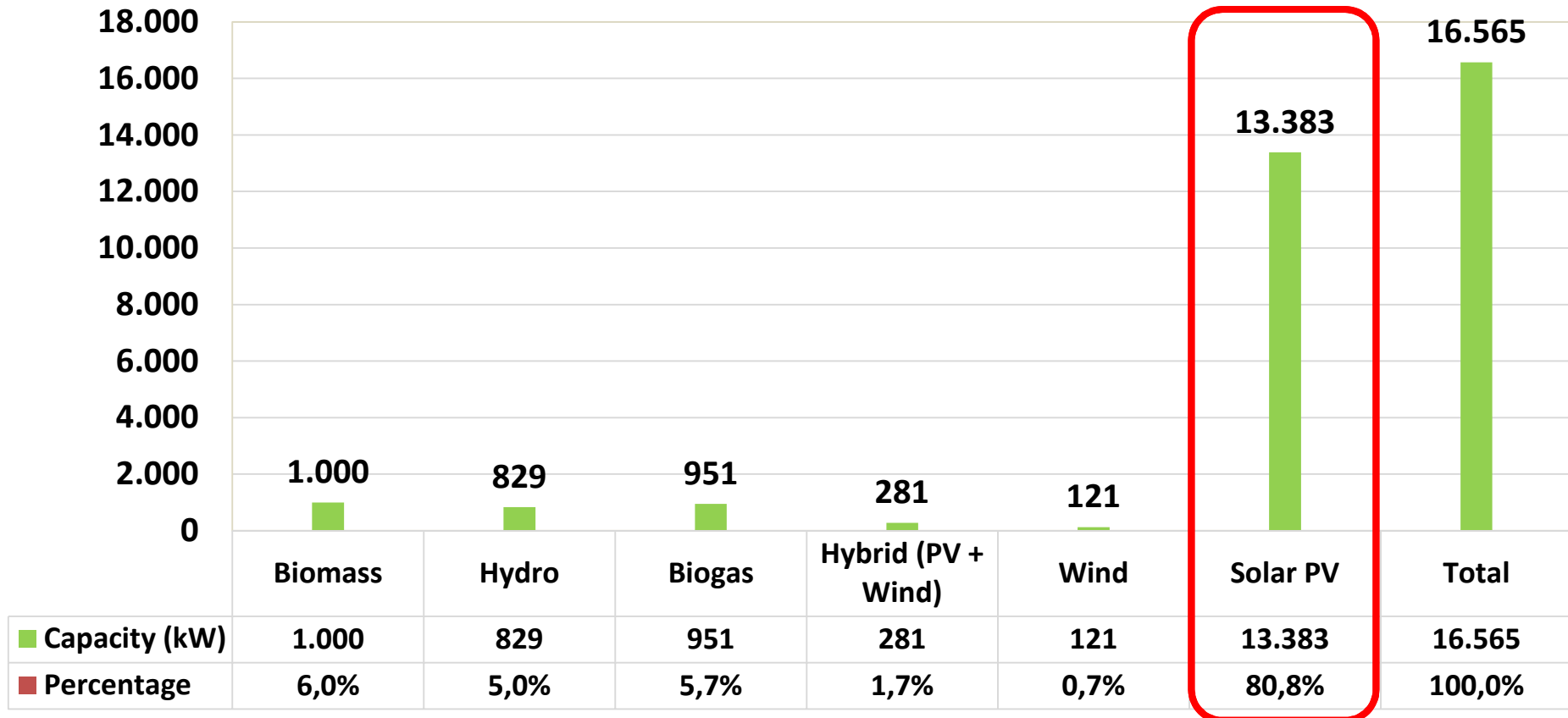
PV Distributed Generation Market

Cumulative Net-Metering Installations by Source



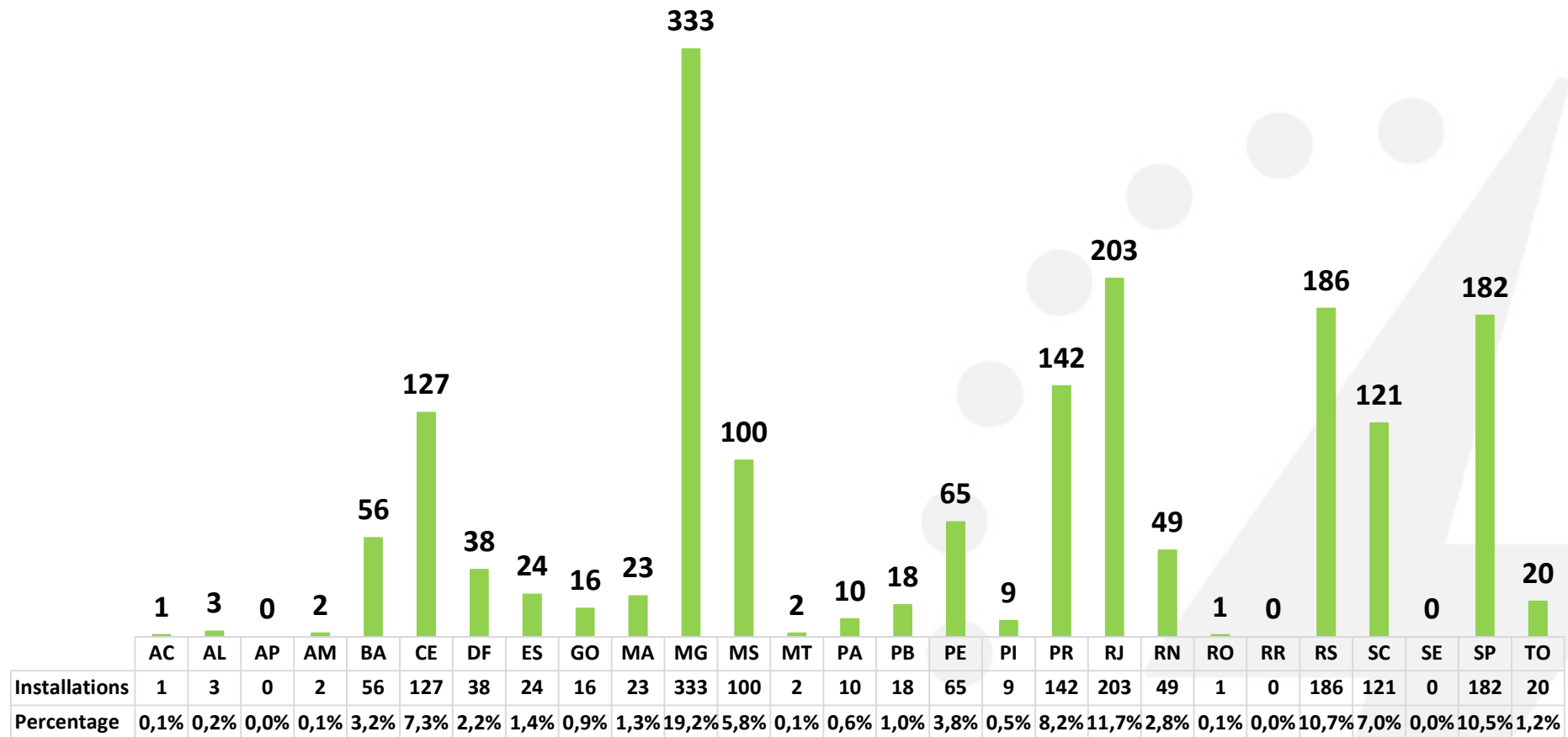
PV Distributed Generation Market

Cumulative Net-Metering Capacity by Source



PV Distributed Generation Market

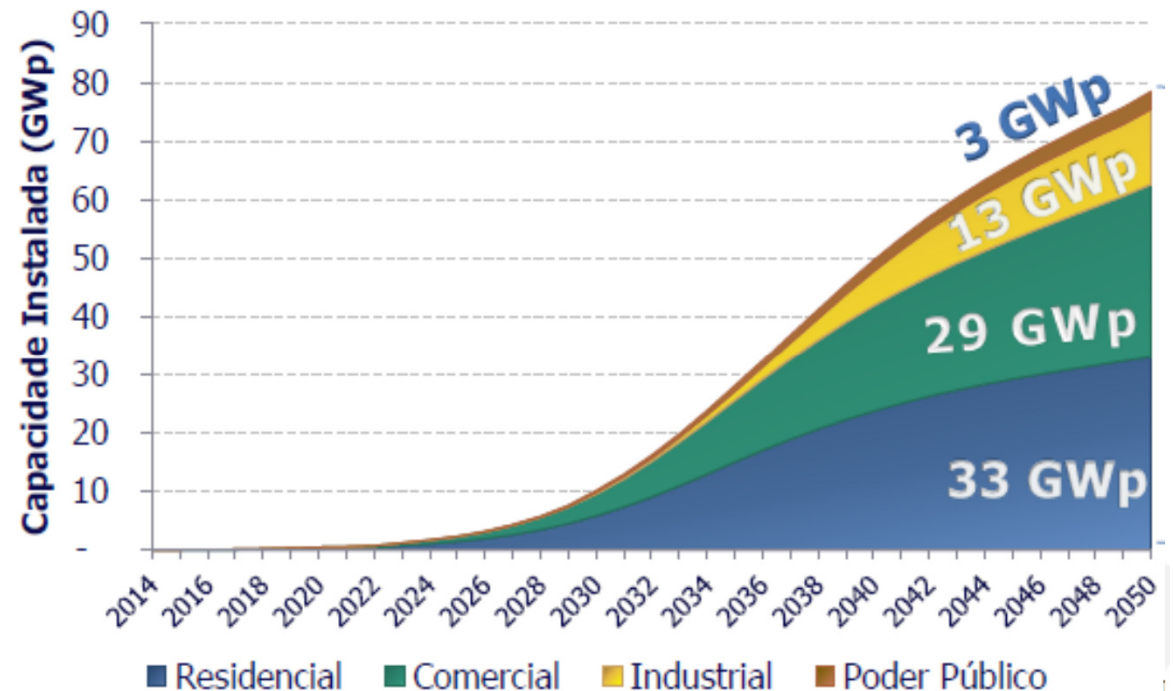
Cumulative Net-Metering Installations by State



Distributed Generation

- Market growth fostered by electricity price increases.
- Positive taxation developments improving net-metering value.
- New financing options available in public banks, private banks and state funding agencies.
- Landmark revision of the Brazilian NEM regulation (REN 687/2015) to foster strong market growth.

DG PV Market Forecast per Segment until 2050



Source: EPE, 2015.

Financing for PV in Agriculture

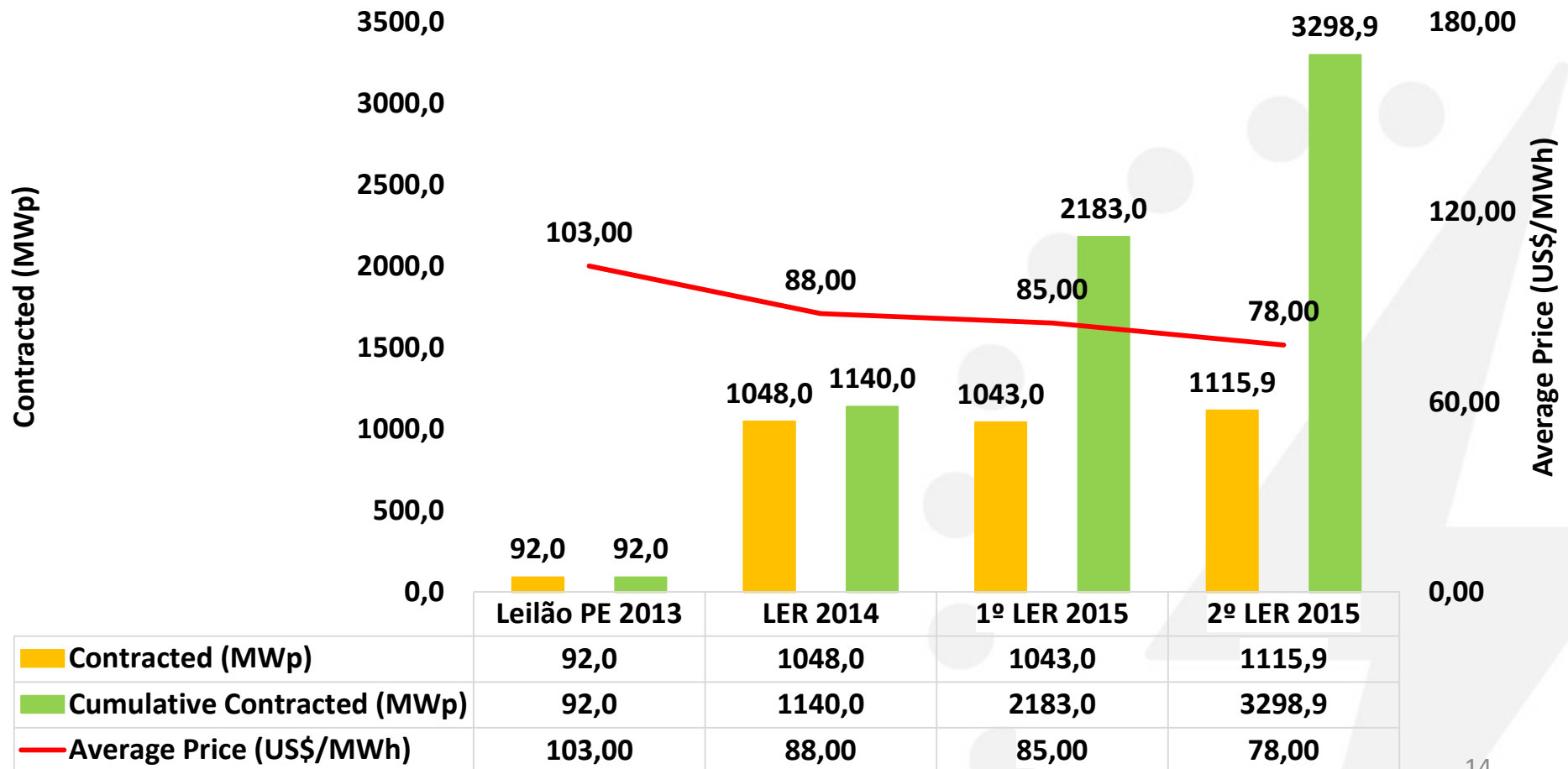
Ministry of Agricultural Development & ABSOLAR

- PRONAF Mais Alimentos:
 - Renewable energy financing for small agricultural producers.
 - Financing share: up to 100% of project (equipment + services).
 - Interest rate: between 2,5% and 5,5% per year.
 - Payment term: up to 10 years, with up to 3 years of grace period.



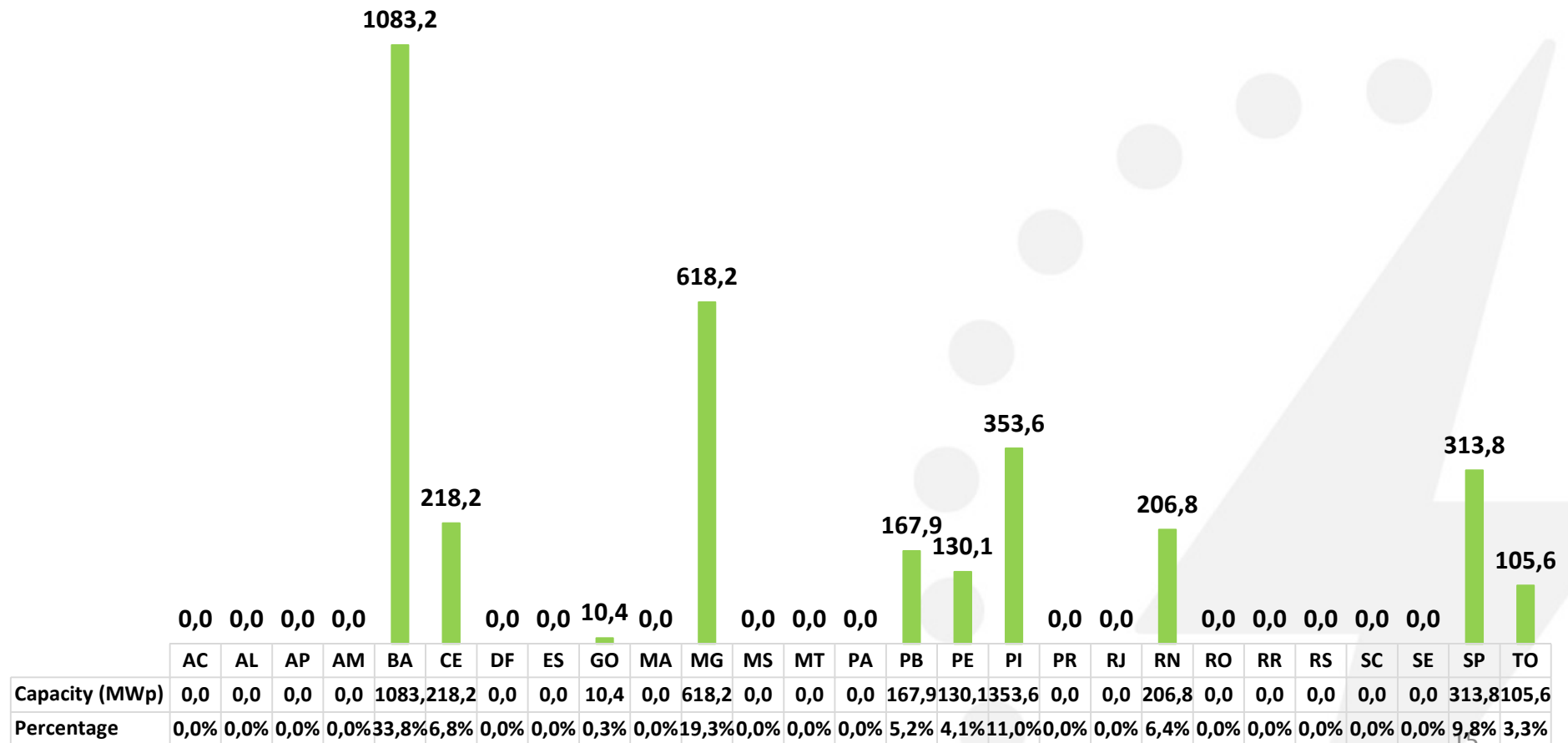
Electricity Auctions

Large-Scale PV Power Plants in Electricity Auctions



Electricity Auctions

Large-Scale PV Power Plants per State



Electricity Auctions

2016 – Reserve Energy Auctions (LER)

Two new solar auctions announced for 2016:

- 1º LER 2016 – 29/07/2016
 - Projects must be operational by 01/07/2018.
- 2º LER 2016 – 28/10/2016
 - Projects must be operational by 01/07/2019.

Levelling the Playing Field for PV

Solar Sector Competitiveness (compared to other sources)

- Need of IPI, PIS, COFINS and ICMS tax exemptions to the main components of a PV system, as already provided to other renewable energy sources:
 - Inverter.
 - Mounting structures.
 - Cabling.
 - Connectors.
- Fast-track environmental licensing, compatible with the low environmental impact of PV technology.

PV Value Chain

3 Pillars for PV Industrial Competitiveness

- Enabling a robust national PV demand to promote local manufacturing capacity.
- Development of a specific industrial policy to support the establishment of a local value chain:
 - PADIS: reduction of taxation over raw materials and machinery to equalize fabrication costs (include NCM codes of the PV sector).
 - BNDES Progressive Nationalization Plan until 2020.
- Availability of competitive financing for both PV projects and new factories.

Challenges Assessment

Demand Signals:

- Federal (PDE, PNE) PV capacity targets starting to materialize.
- State PV capacity targets could follow.

PV Sector and Industry Competitiveness:

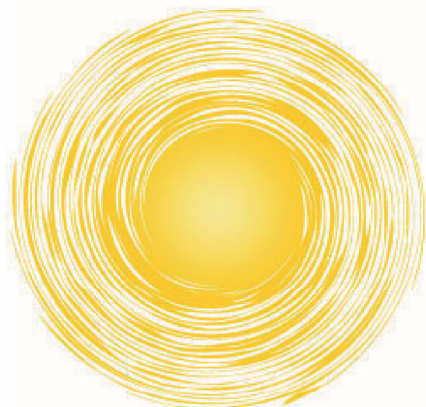
- Taxation of PV raw materials, goods, services and electricity needs to be reduced.
- Industrial policies to establish and develop a local PV value chain (modules, solar cells, inverters, mounting structures, cables, connectors).

Access to Funding:

- Need of financing alternatives with attractive conditions.
- Development banks, private banks, investment funds, bonds.
- Tracking the impact of local content requirements (BNDES).

BRASIL SOLAR POWER

2016



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*30 de junho e 01 de julho
Rio de Janeiro*

GARANTA SUA PARTICIPAÇÃO E DE SUA EMPRESA NA FEIRA DE NEGÓCIOS DO EVENTO OFICIAL BRASILEIRO DE ENERGIA SOLAR FOTOVOLTAICA. ESPAÇOS DE 3 A 54M² E AS MELHORES OPORTUNIDADES PARA SUA EMPRESA.

WWW.BRASILSOLARPOWER.COM.BR

Conference & Exhibition June 30th and July 1st



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MAKE SURE YOU AND YOUR COMPANY ARE PART OF THE OFFICIAL BRAZILIAN PV CONFERENCE & EXHIBITION. BOOTH SPACES FROM 3 TO 54M² AND OUTSTANDING OPPORTUNITIES FOR YOUR BUSINESS.

JOIN US!



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Thank you for your attention!
Special thanks to CEPAL for the kind invitation and
support!

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