

Enabling PV in Brasil

Market Opportunities under the Auction Mechanism

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German Solar Industry Association

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TASK To represent the German solar industry in the solar thermal and photovoltaic sector

VISION A global sustainable energy supply provided by solar (renewable) energy

ACTIVITIES Lobbying, political advice, public relations, market observation, standardization

EXPERIENCE Active in the solar energy sector since more than 25 years

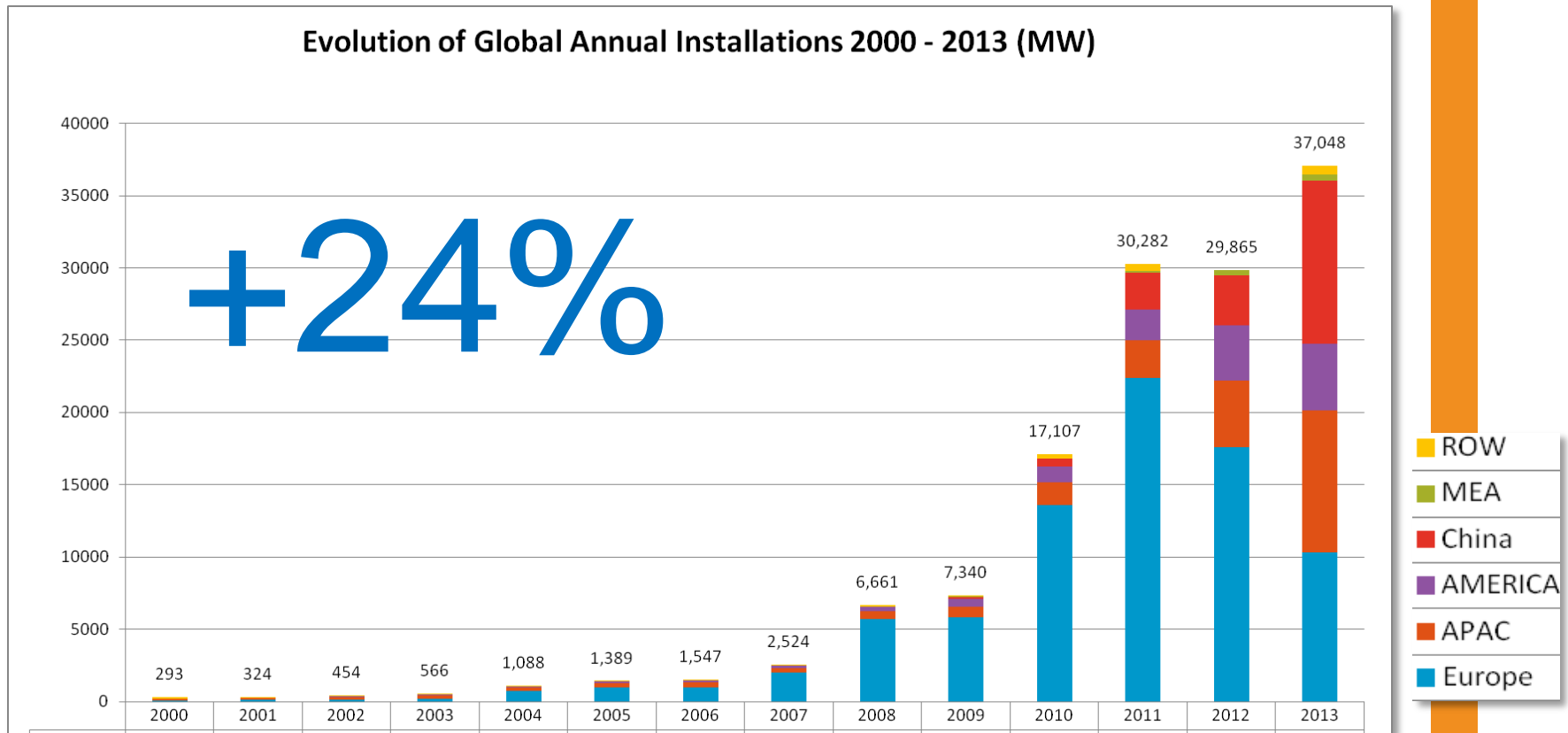
MEMBERS More than 850 solar producers, suppliers, wholesalers, installers and other companies active in the solar business

HEADQUARTERS Berlin

Overview

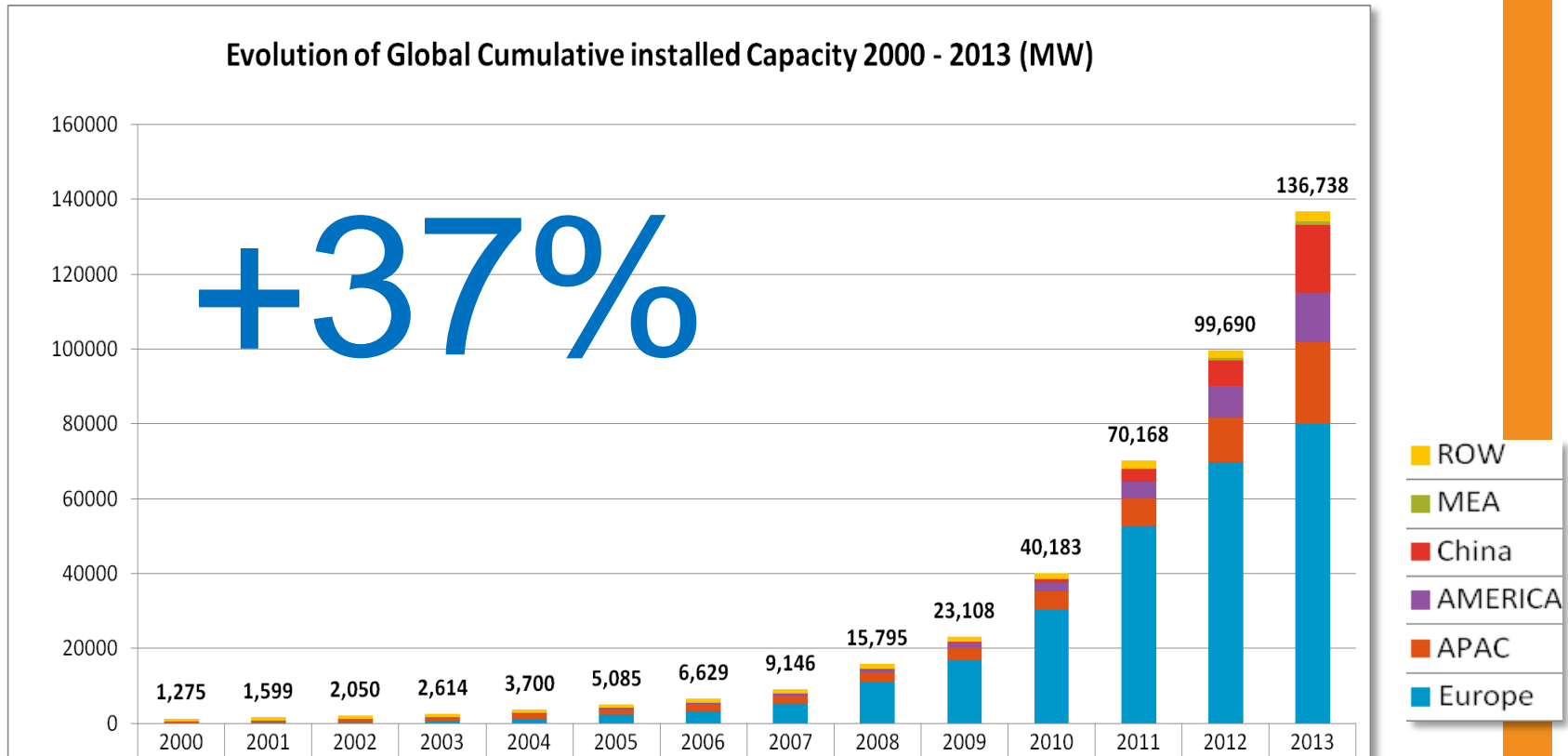
- International PV market at a glance
- Constraints in Market development
- General framework of Brazilian auctions
- Process, recommendations

PV world market has reached 37 GW in 2013, but american contribution < 5 GW



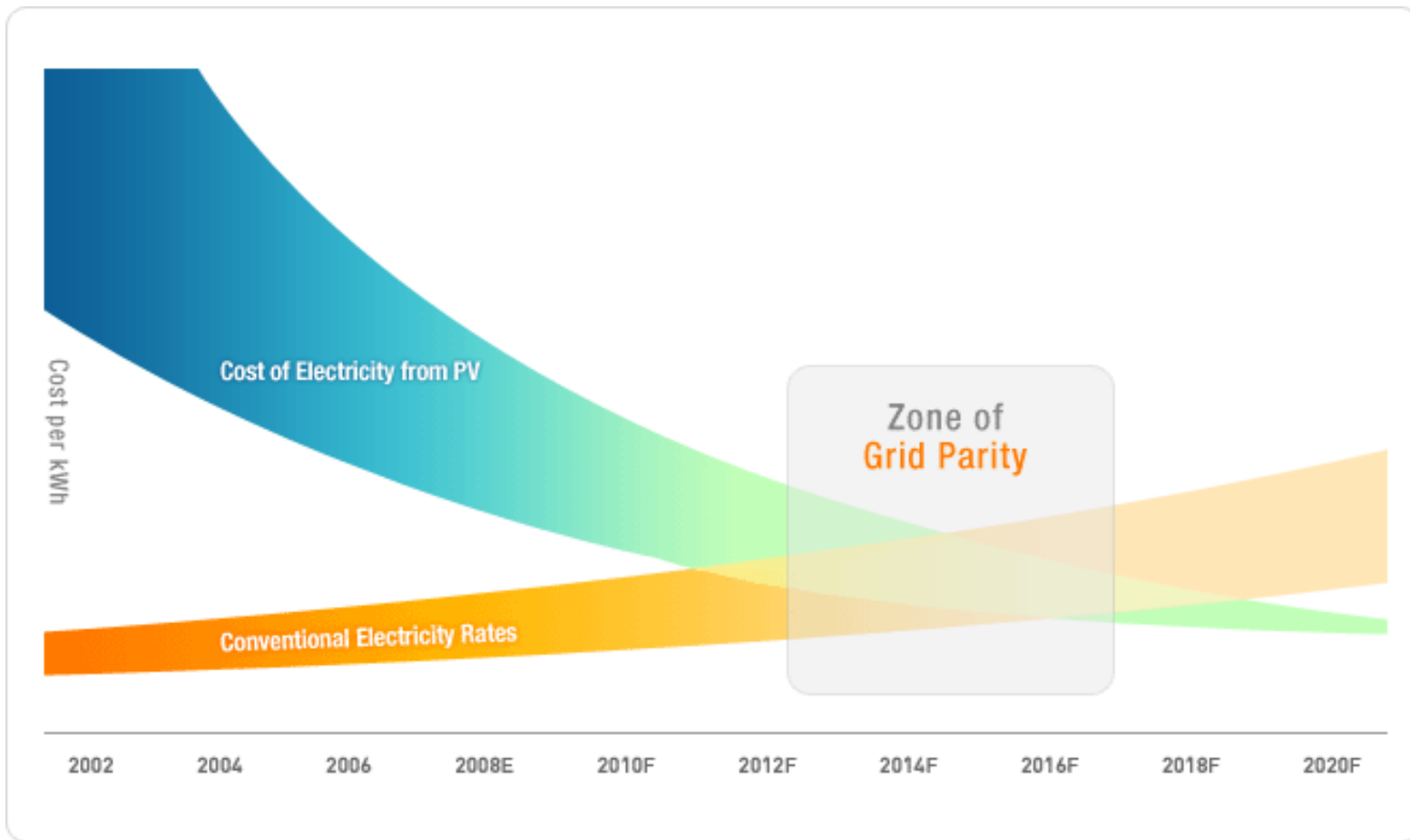
Source: EPIA 2014

As of today, 137 GW of PW power is installed worldwide

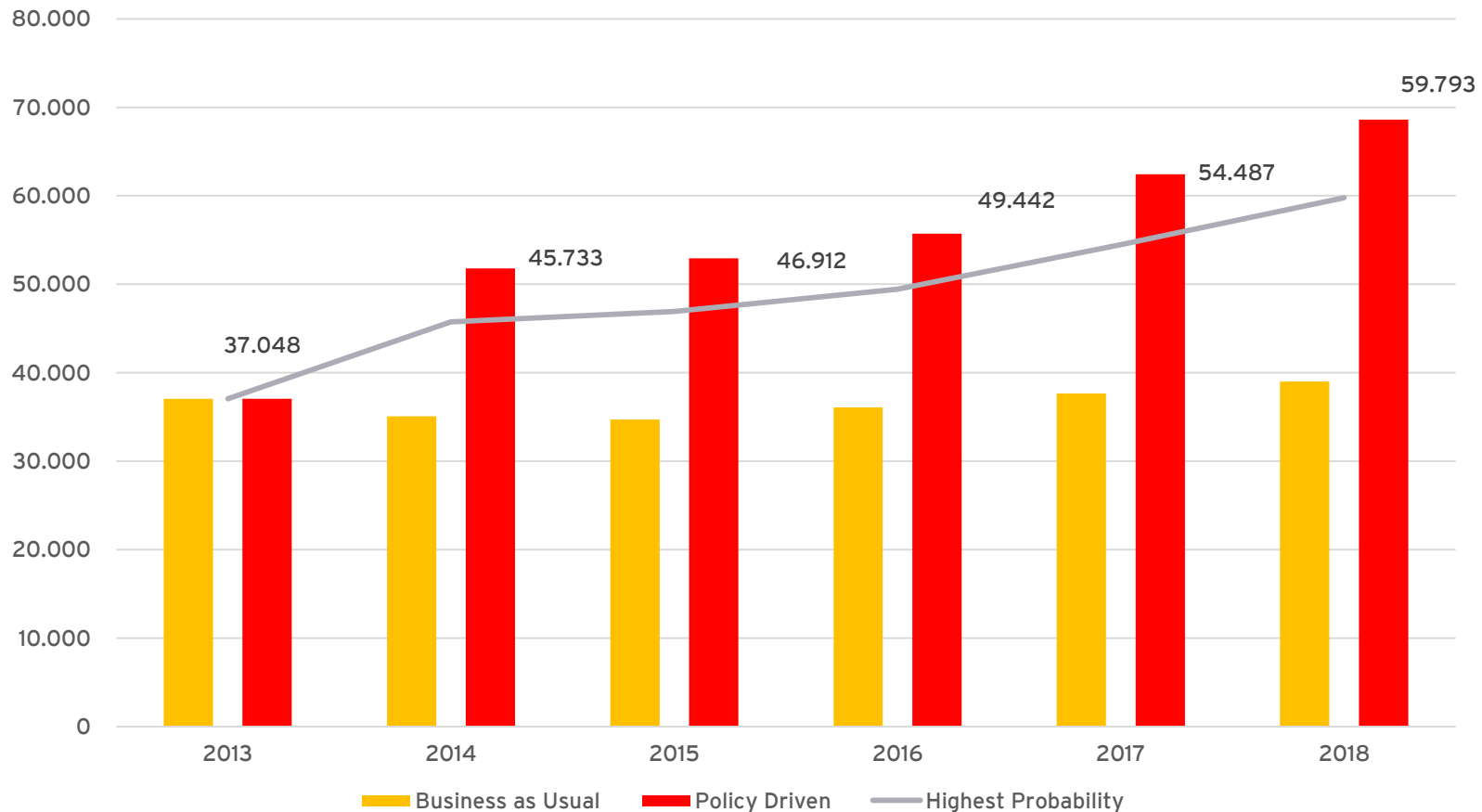


Source: EPIA 2014

PV costs decreased by 60% in 5 years, reaching grid parity in many countries



Apparently, further growth depends on policies with smaller rate of increase



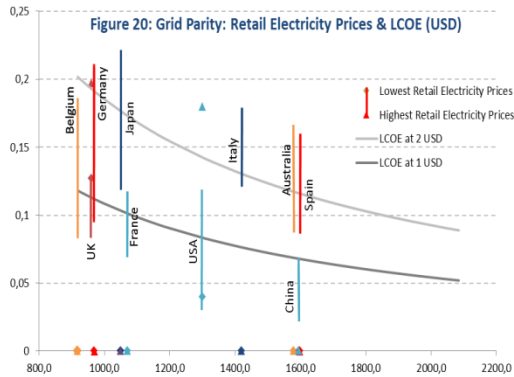
Source: EPIA 2014

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PV faces various constraints that go beyond grid parity

Competitiveness ?



Which Business Models ?



Political Stability



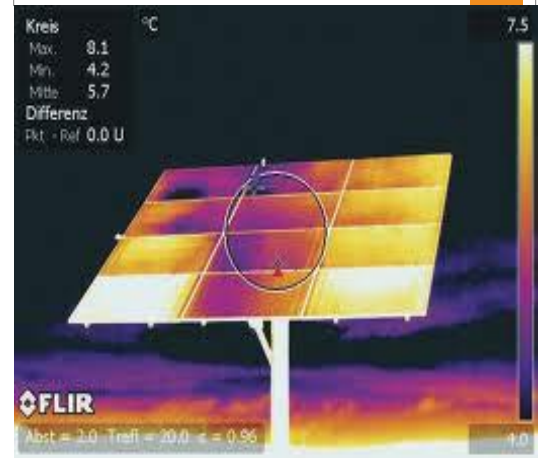
Grid Hosting Capacity



Cost of financing



Quality & Reliability

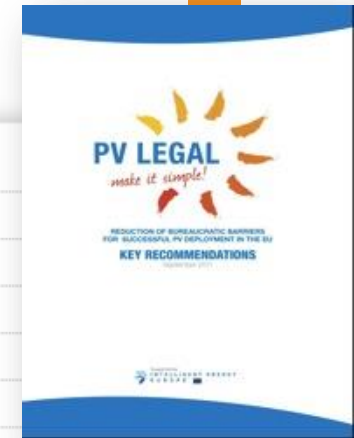
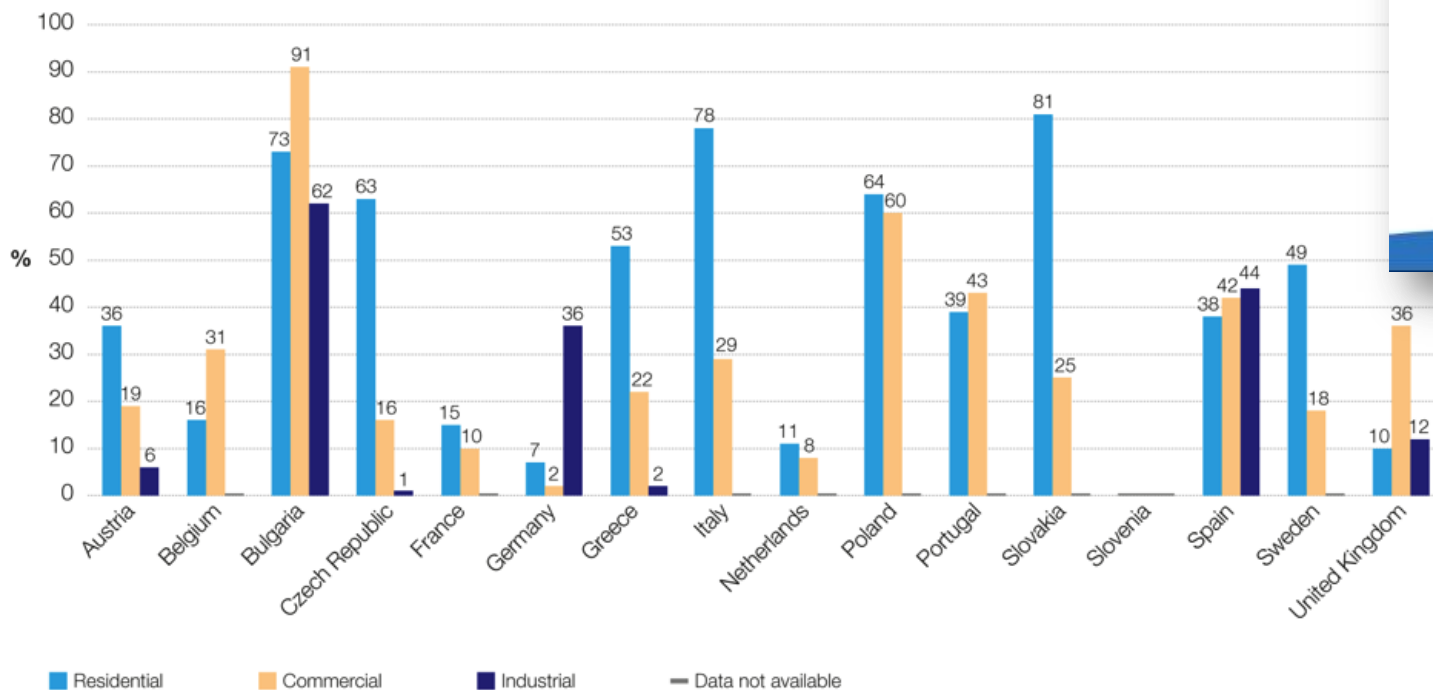


Source: EPIA 2014

BSW-Solar examined the main constraint for Europe: administrative barriers

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PV project development:
Legal-administrative Cost Share (over total project development costs in %)



- The share of legal-administrative costs over total project development costs show burden that project developers have to bear
- This burden is normally reflected in national PV system prices

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General Framework: Auctions are set in MME Ordinances

- Trade of electricity between parts of the Brazilian National Interconnected System (SIN) is mainly regulated by Law 10.848/04 and Decree 5.163/04 and its amendments.
- In the context of energy auctions, MME Ordinance 21 of 18 January 2008 set important provisions related to the registration procedure for energy auctions.
- In addition, MME Ordinance 236 of 30 May 2014 sets the rules for the first energy auction at national level with solar PV not competing with other renewable sources.
- Auction shall take place in October 2014

General Framework: ANEEL and EPE play important roles in implementation

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- Besides the Ministry, the energy agency ANEEL has the competence to issue supplementary rules for the implementation of the provisions
- ANEEL is responsible for preparing the auction notice document (*Edital de Leilão*) and the corresponding contracts for the purchase and sale of electricity (Art. 20 Decree 5.163/04) that are signed after the bidding process is completed.
- The Brazilian federal Energy Research Company (EPE) is responsible for assessing and registering the technical projects.

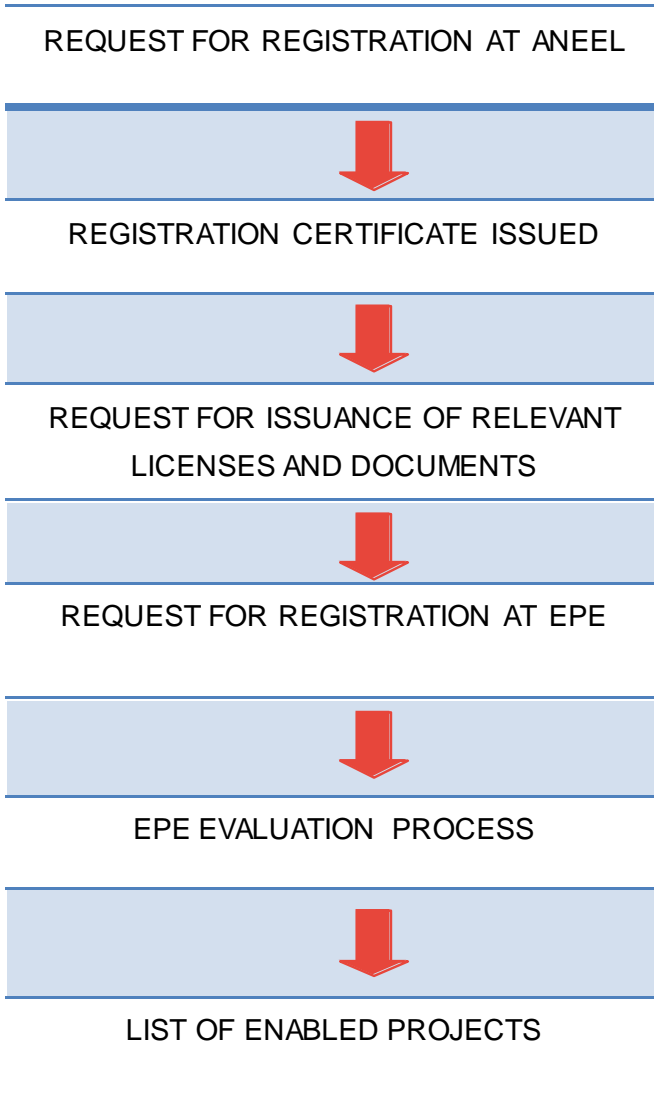


For the Oct. 31st auction, 400 solar projects with a total of 10 GW have been registered!

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The six relevant steps in the administrative and technical process



1

Request for registration at ANEEL

RES-E producer requests for registration at the National Agency for Electric Energy (ANEEL) prior to participating in an energy auction

2

Registration Certificate issued

ANEEL has up to 30 days to issue a certificate

3

Request for issuance of relevant licenses and documents

RES-E producer requests the issuance of relevant licenses (e.g. environmental permit) to federal, municipal, and municipal agencies

4

Request for registration at EPE

RES-E producer requests at the Energy Research Company (EPE) the registration of a project to take part in an energy auction

5

EPE Evaluation Process

EPE assesses the technical proposal and might notify the RES-E producer to provide additional information or disqualify the project

6

List of enabled projects

EPE sends to the Ministry of Mines and Energy a list of projects enabled to take part in the auction

Funding of projects supported via two major public sources

- The Brazilian National Bank for Economic and Social Development (BNDES) provides financial programs for projects focusing on the production of RE (so far: wind)
- BNDES released conditions for a specific funding program to support projects from auctions conducted in 2014
- New program does not consider the nationalization index based on weight and value
- New rules offer flexible alternatives to nationalization and reward a higher national content
- Solar projects can also apply for financing through traditional programs, such as "BNDES Finem", or subprograms of the Climate Fund



BNDES Finem:

Minimum amount is set at R\$ 20 million (approx. € 6.5 million) and the bank's participation is up to 80% with a maximum amortization period of 20 years

Climate Fund:

minimum amount of funding is set at R\$ 3 million (approx. € 1 mill.) and the bank's participation is up to 90% with a maximum amortization period of 16 years.

Bidding Process and Power Purchase Agreement (PPA)

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1

Registration at the CCEE

Project developers register at the CCEE for the online auction

Bidding Process and Power Purchase Agreement (PPA)

2

Online Auction

CCEE manages the auction divided in bidding phases. In the end the winners are presented and the system proportionally distributes the energy lots between registered distribution companies

Bidding Process and Power Purchase Agreement (PPA)

3

Power Purchase Agreement

The winners of the auction sign contracts with all distribution agents that participated in the auction

Recommendations for improving the PV business opportunities

- Use the new BNDES funding if you fulfill if possible
- Look for local partners who provide legal expertise and help overcoming barriers.
- Employ your own Portuguese speaking sales staff
- Examine the economic viability of the most relevant market segments
- Explore existing business networks by joining existing stakeholder associations (such as ABSOLAR / ABINEE)

- Strengthen the collaboration between RES industry and public bodies (administrative and regulatory bodies) to improve the business environment for PV investments

Conclusion

- Brazil is ready to take off
- The current phase is auspicious for investors and project developers who want to take a pole-position in a growing market

Thank you for your attention

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Framework Assessment for the Photovoltaic Business Opportunities in Brazil

Developed by:
BSW-Solar
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