

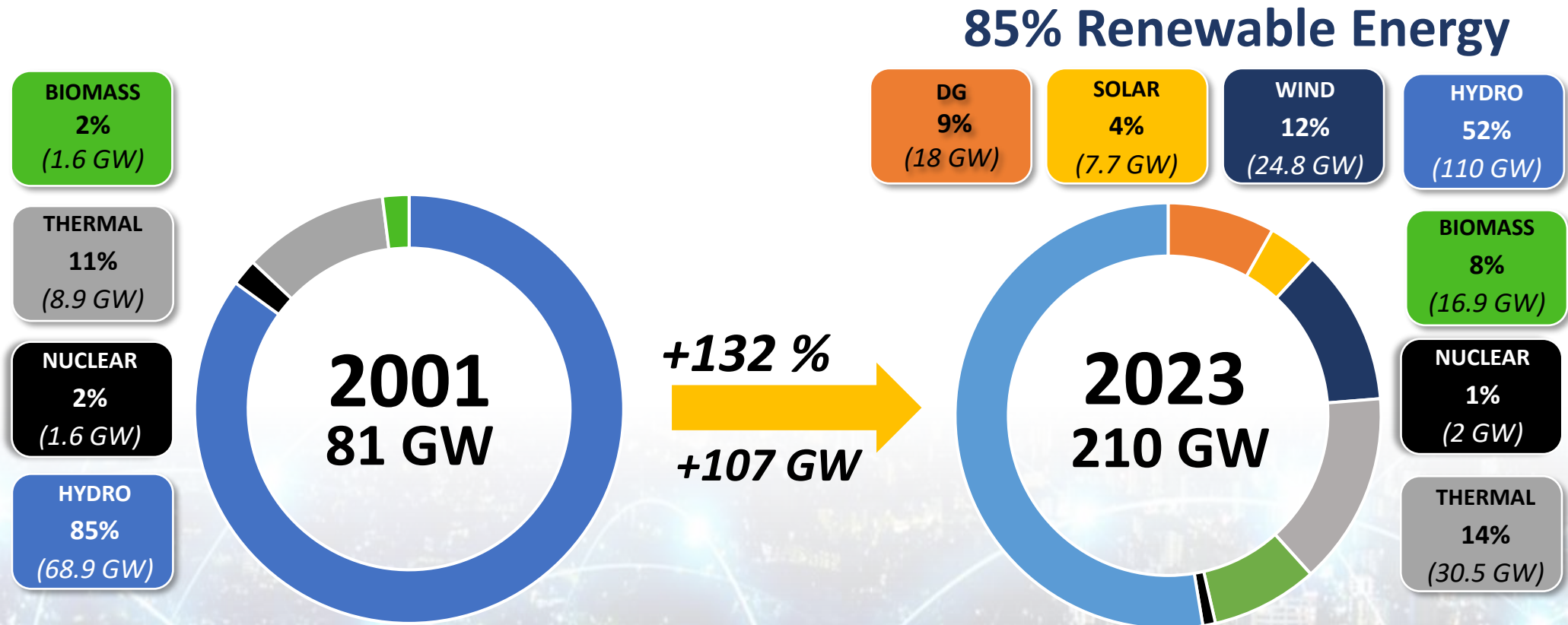
SESSION-7 POLICIES AND REGULATIONS TO PROMOTE DIGITAL MANAGEMENT OF ROOFTOP PV



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Brazilian Electricity Regulatory Agency - ANEEL*



Brazilian Electricity Matrix Evolution



SOURCE: ANEEL January/2023

Small Scale Distributed generation in Brazil

28 Feb – 04 March 2023 | New Delhi

- Exceeding all predictions



1.7 millions

DG systems installed



99%

PV Solar



9%

Brazilian Electricity
Matrix



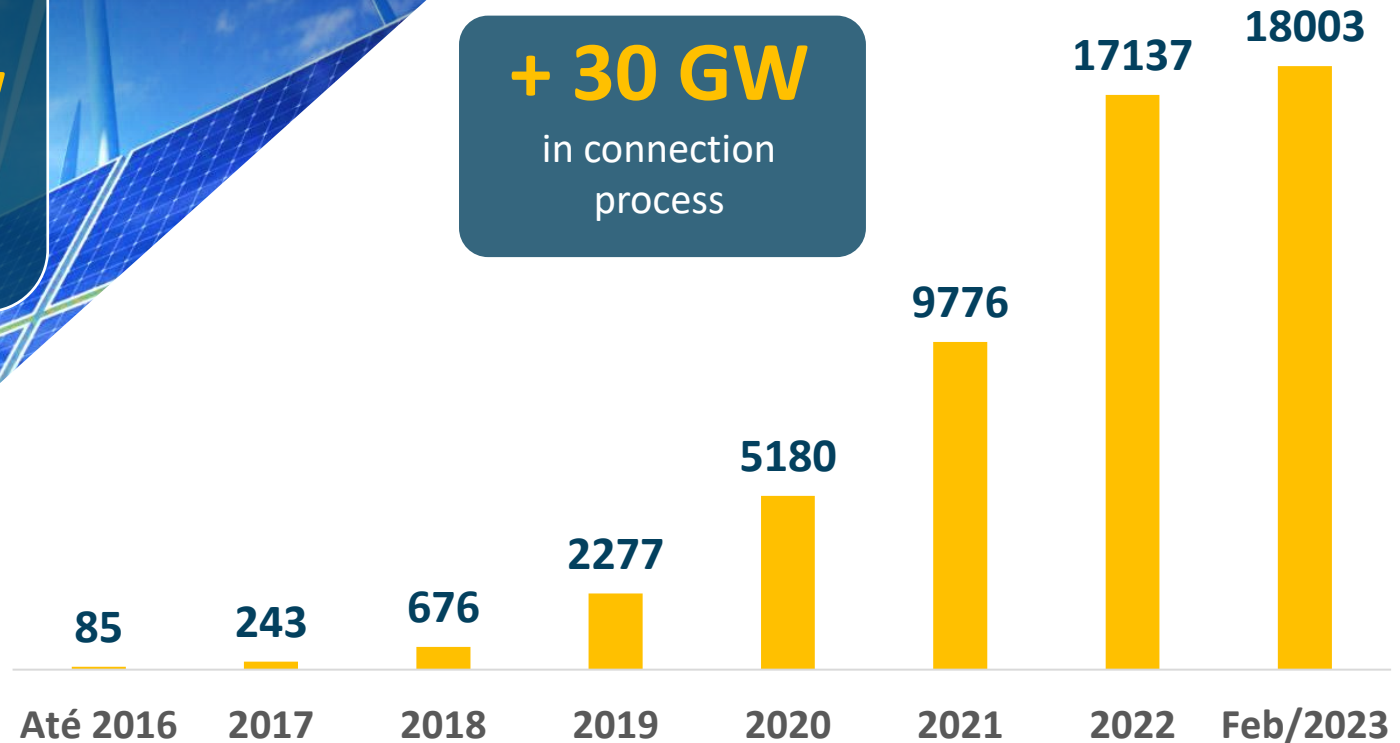
1.2 GW

Every two
months

Installed Capacity of DG
(MW)

+ 30 GW

in connection
process



Impacts related to the rapid dissemination of DG

Technical Issues

- Overcoming local grid limits
- Voltage level
- Blackout risk at national grid

Economical Issues

- Cross subsidy: may reach US\$ 3 Bi/year, or about 10% of residential electricity tariffs
- Investments to connect DG ➔ means less investments to improve the grid

Impacts related to the rapid dissemination of DG

Technical Issues

- Remote adjust the set for frequency protection (National Grid Operator)
- When overcoming the local hosting capacity:
 - Reduce the size of generation
 - Storage solutions
 - Real time response (smart inverters)
 - Connect in another point of the grid
- Promoting regulatory sandboxes
- Studying a Smart Meters rollout for following-up DG in real time
- Ancillary services for DG in study

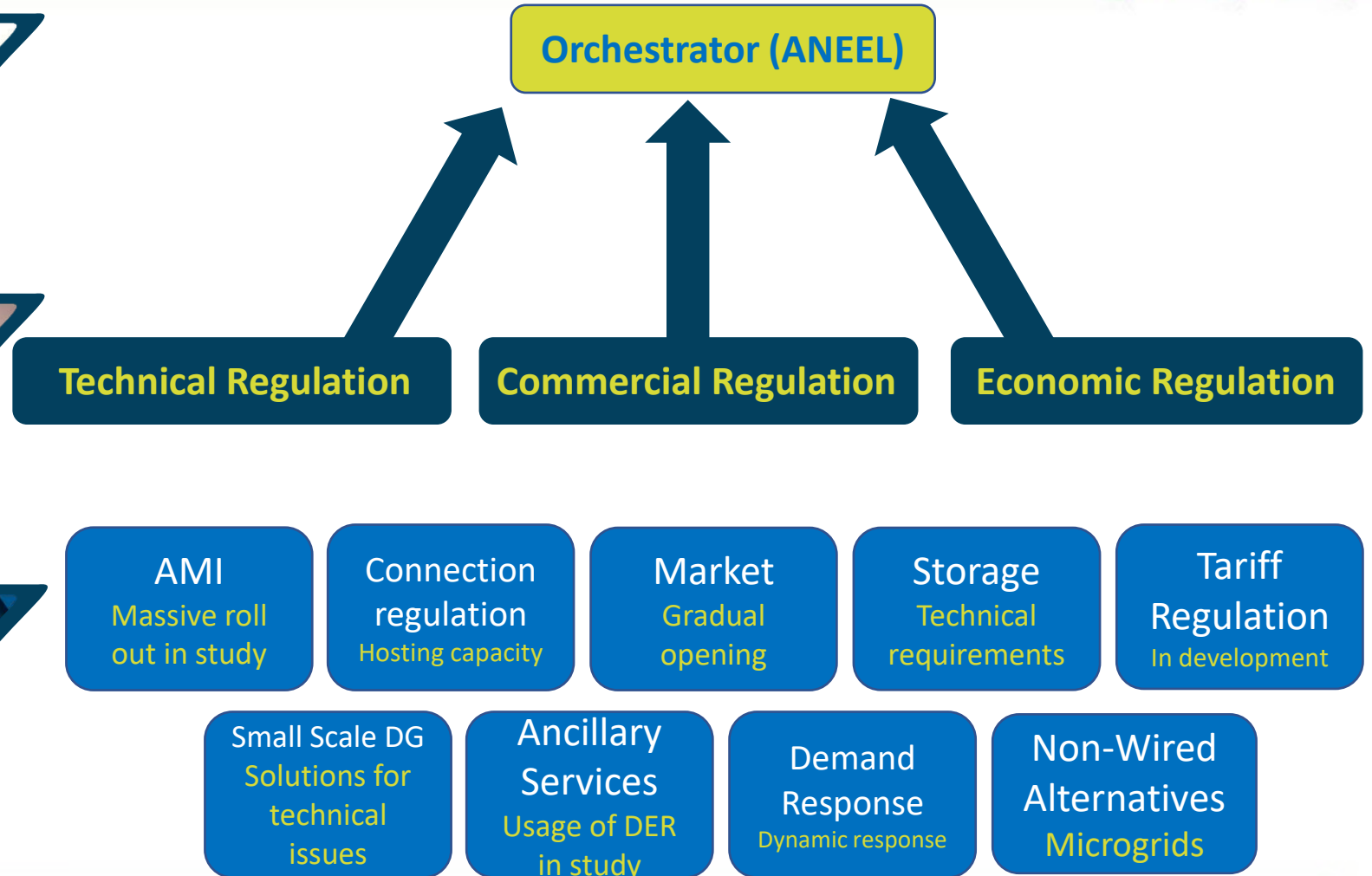
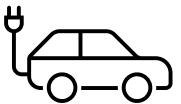
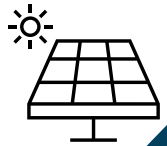
Economical Issues

- Reduce or remove the cross subsidy for new DG (Law)
- Mandatory cost and benefits calculation for DG (Law)
- Subsidy transparency for other users (“Subsidy-o-meter¹”)
- Tariff modernization studies
- New distribution services model: from DNO to DSO
- Regulate new grid architectures, enabling new schemes (microgrid, storage, virtual power plants, etc.)



Strategic Coordination to set a ANEEL's Roadmap

28 Feb – 04 March 2023 | New Delhi



Thank You

For discussions/suggestions/queries email: helvio@aneel.gov.br
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