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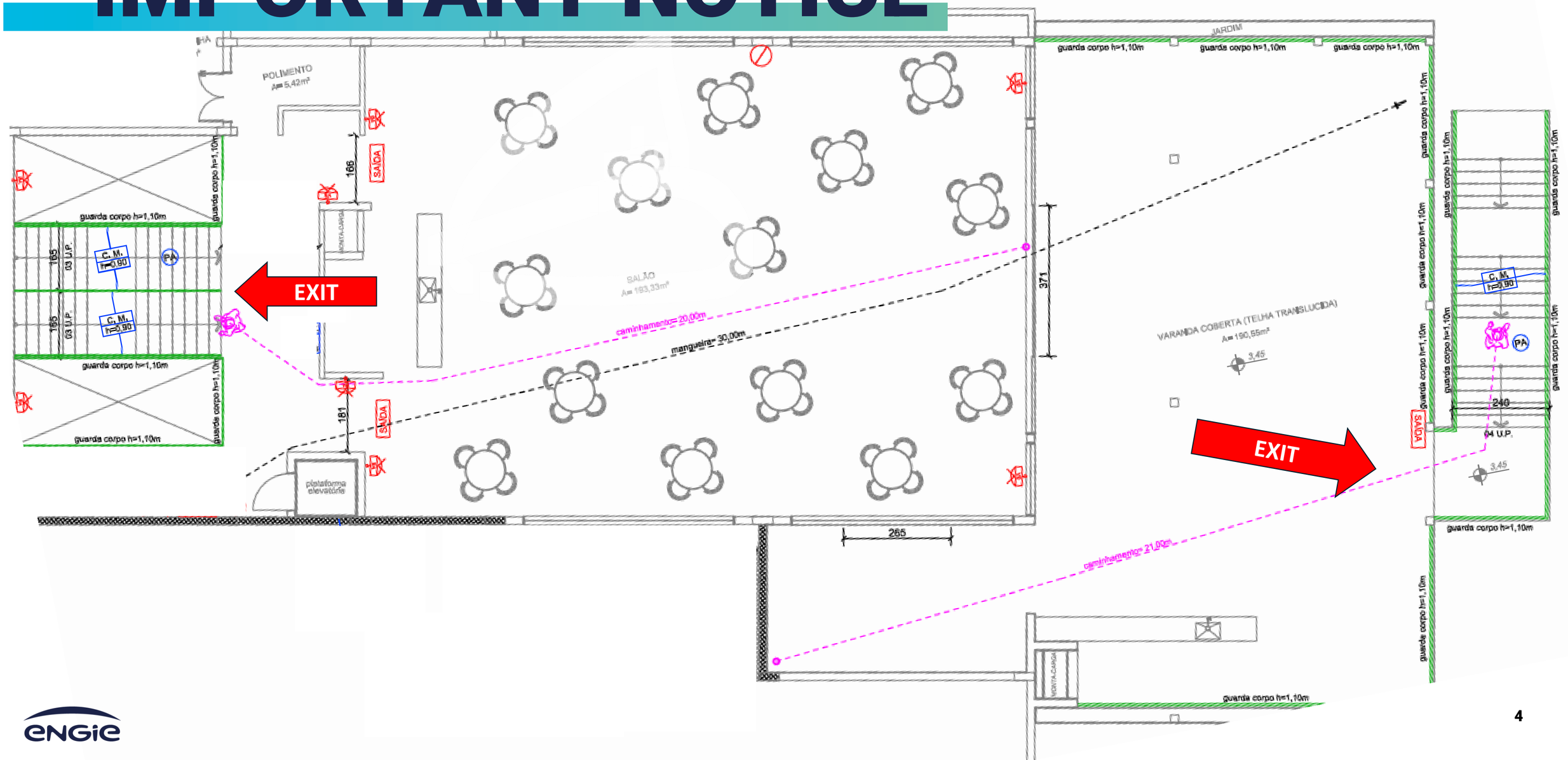
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EDUARDO TAKAMORI

CHIEF FINANCIAL AND INVESTOR RELATIONS OFFICER

IMPORTANT NOTICE



PROGRAMMING

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14h00 – Welcome

- Energy Market and Curtailment Panel
- Commercialization Panel

16h20 – Break

- Present and Future Panel

18h00 – Closing cocktail

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EDUARDO SATTAMINI

CHIEF EXECUTIVE OFFICER

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MARCOS KELLER

CHIEF REGULATION AND MARKET OFFICER

Energy Market and Curtailment

- Supply and demand scenario
- Brazilian electrical system
- Curtailment – concept, origin and types
- Short- and long-term energy prices.



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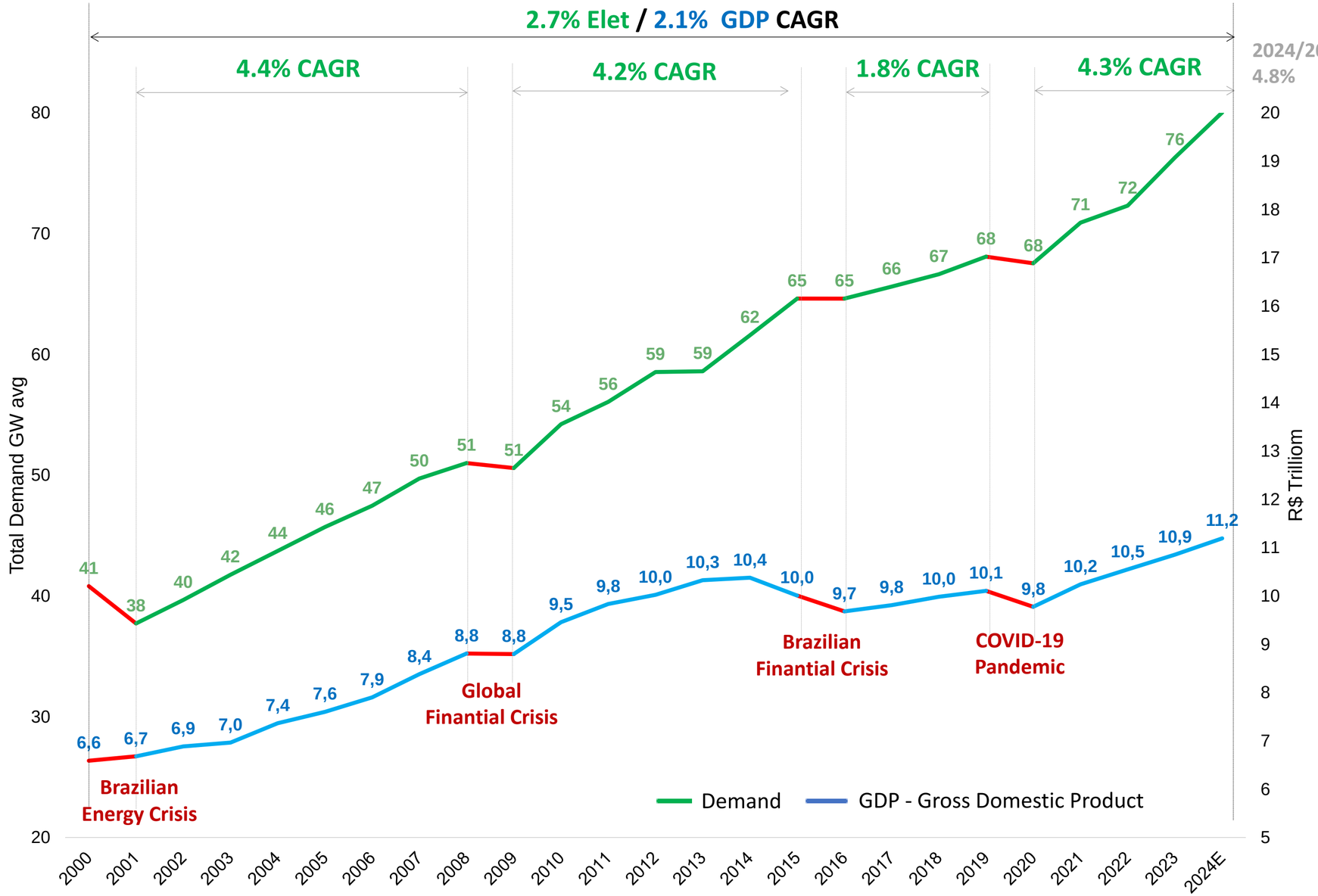
2024

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System Update

System Gross Demand



For 2024, a strong 4.8% growth is expected over 2023.

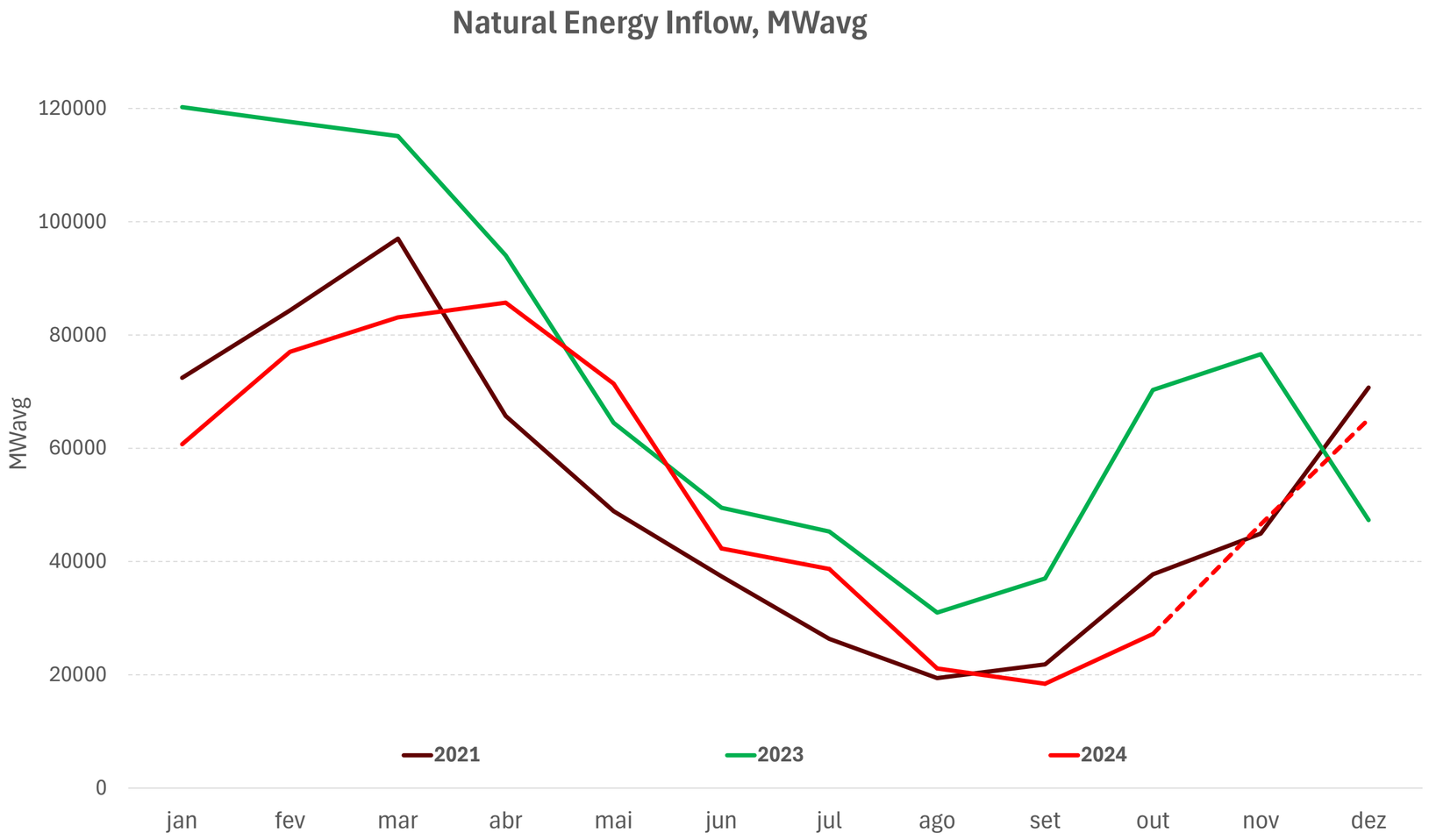
CAGR of 4.3% py for the last 4 years, meaning strong increase in the gross demand (before DG impact).

Average CAGR since 2000 is 2.9% py, even considering 4 big crisis.

Hence, gross demand growth in the Brazilian Market is not an issue.

There is a long-term trend of increasing intensity of energy use.

Inflows



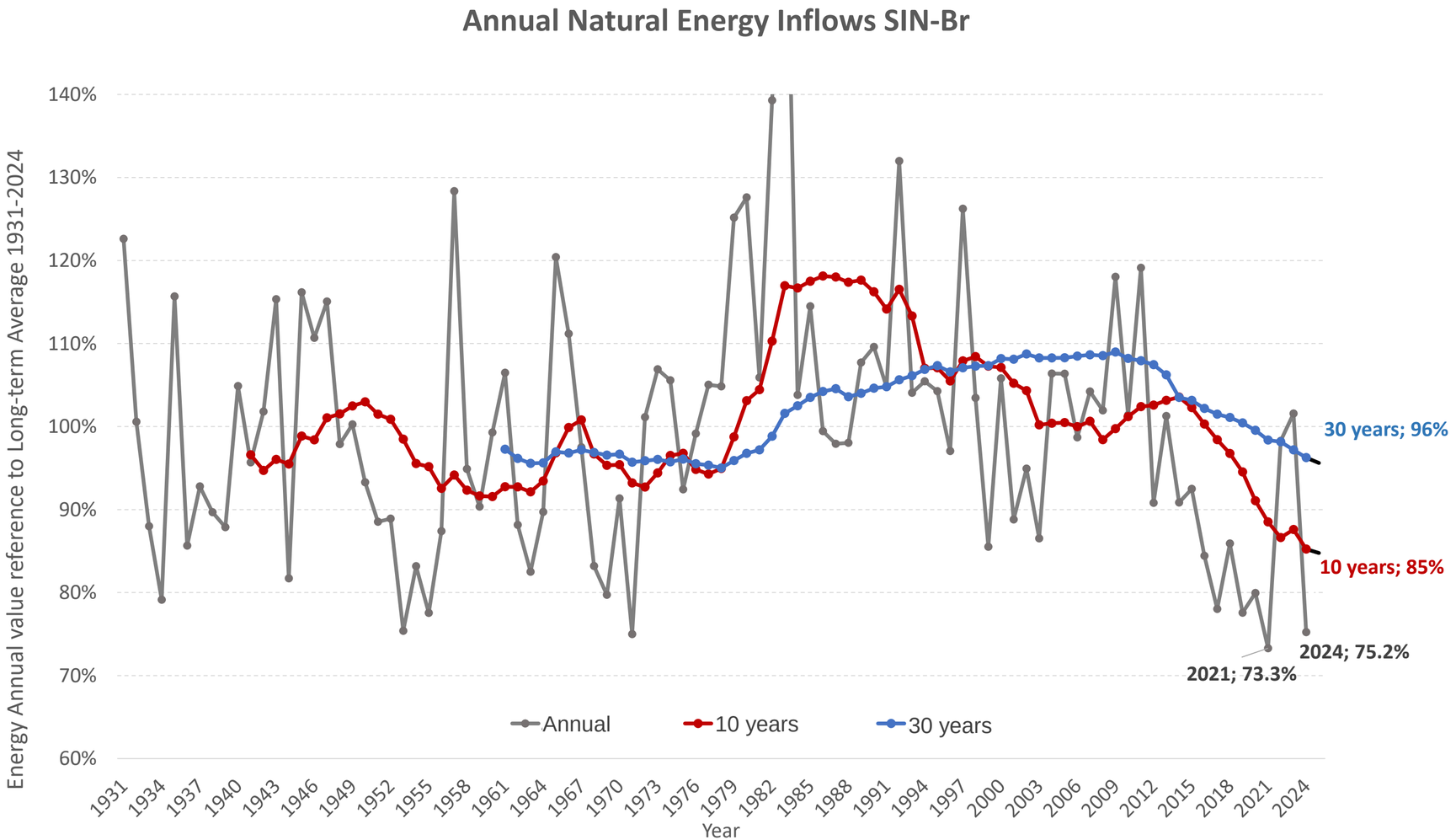
After an extreme dry season, rains returned gradually to the Southeast throughout October and November with relevant increase in the Natural Inflow Energy.

Next wet season is expected within the precipitation climatology, especially for the region with main reservoirs.

Expected Inflow for CAL 2024 is 75% of the LTA (long term average).

The 4th inflow in 93 years records.

Inflows

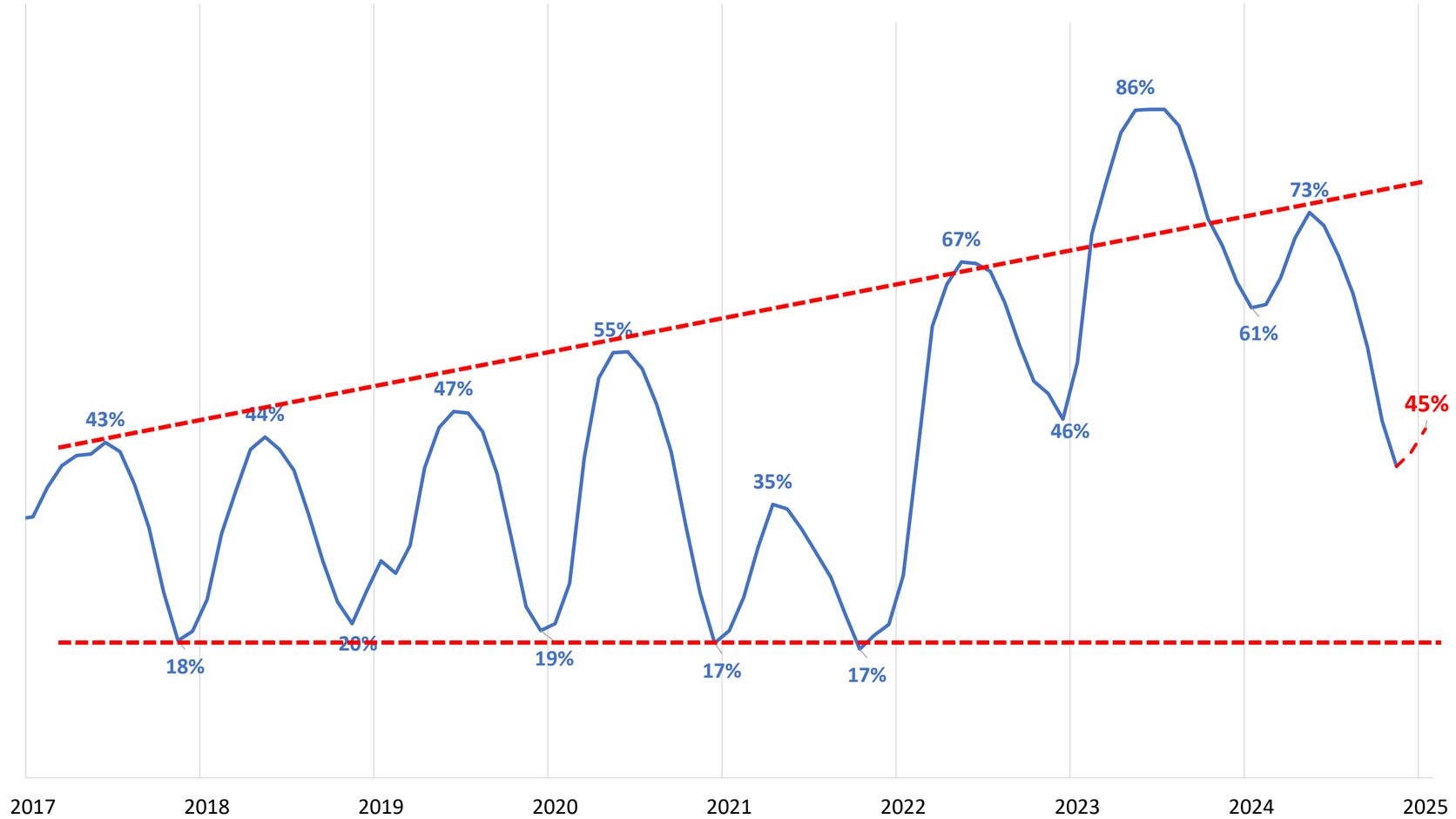


Is 2024 inflow another outlier?

2015 – 2024:

- 1 out of 10 years above average
- 7 out of 10 years bellow 90% LTA
- 1st and 4th worst inflows ever
- 10 years-average: 85% LTA, lowest in the history.

Storage

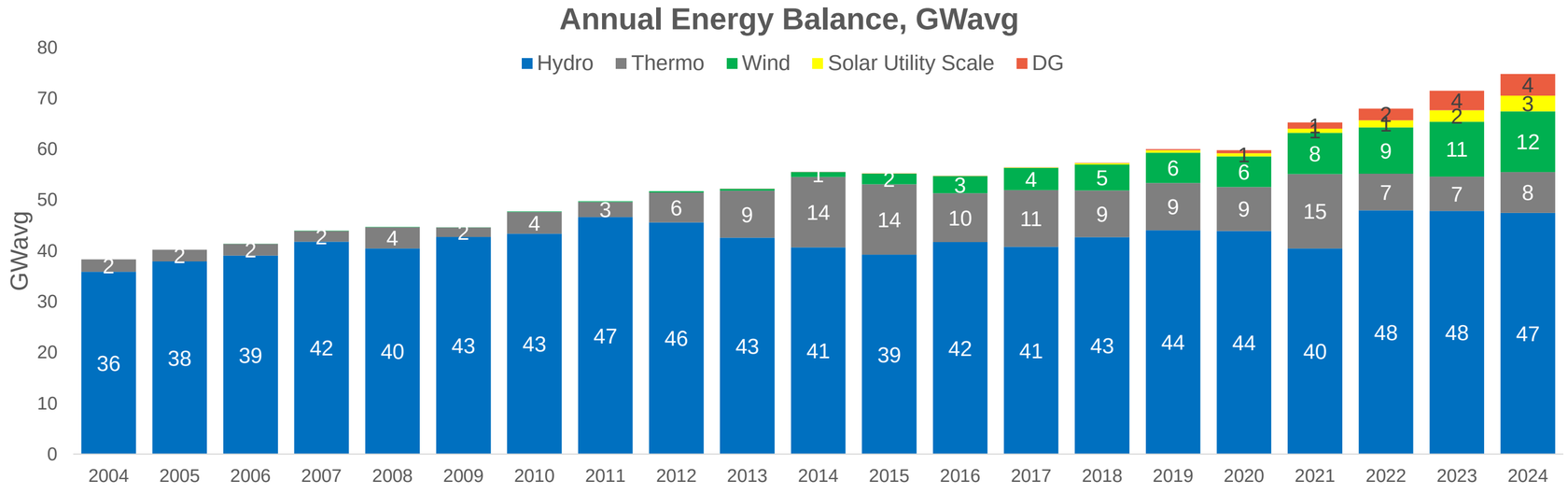


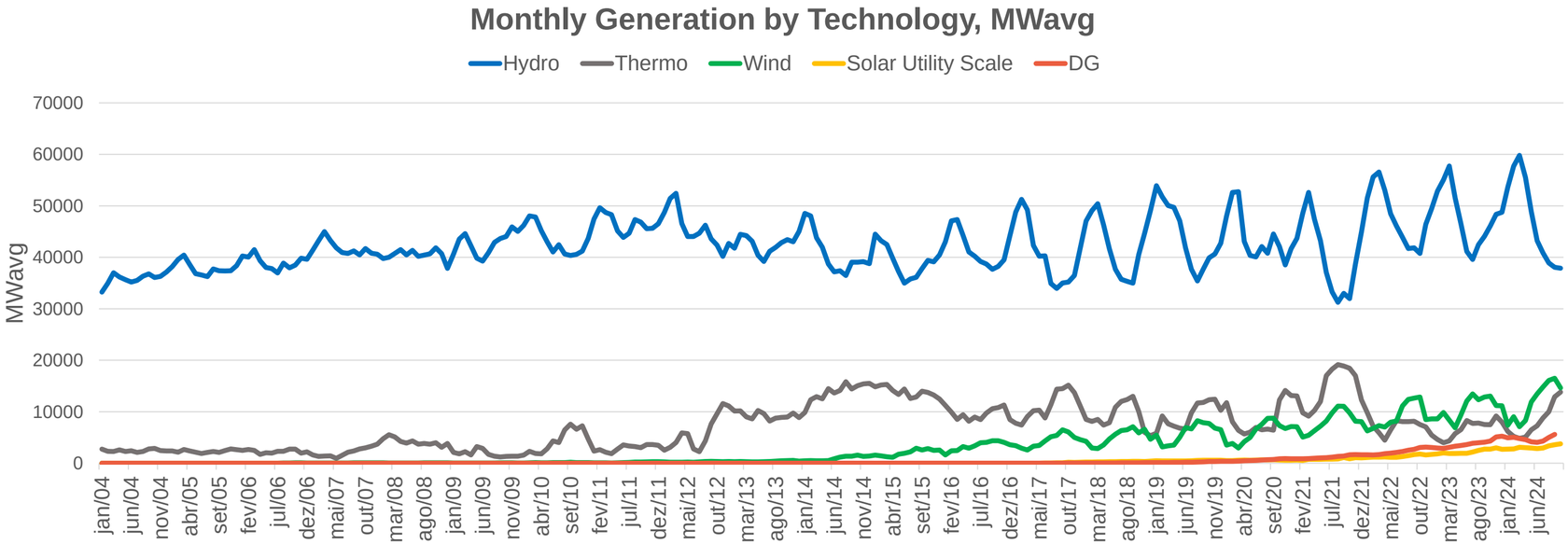
2024: strong gross demand growth and poor inflow: intense use of stored energy.

2024 highest level (73%) was far below 2023 but still a very good storage level compared to the recent history.

Expected end-of-year level of 45% is a comfortable number, considering the tendency for the wet period to be like the average.

Generation





Hydro: high volatility and intense use of reservoirs.

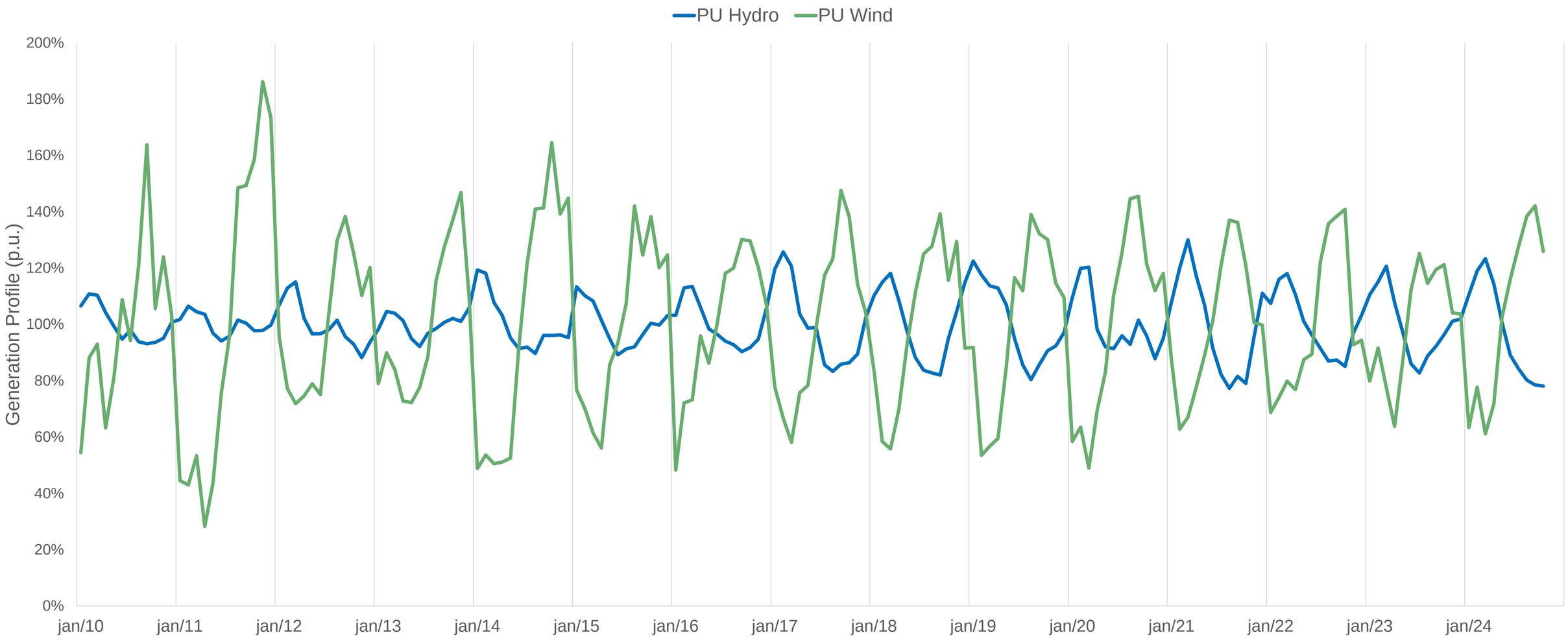
Thermal: low generation since 2022 and a huge increase for July on.

Wind: fast development over last years. Second major source in Brazil.

Solar utility scale increasing generation.

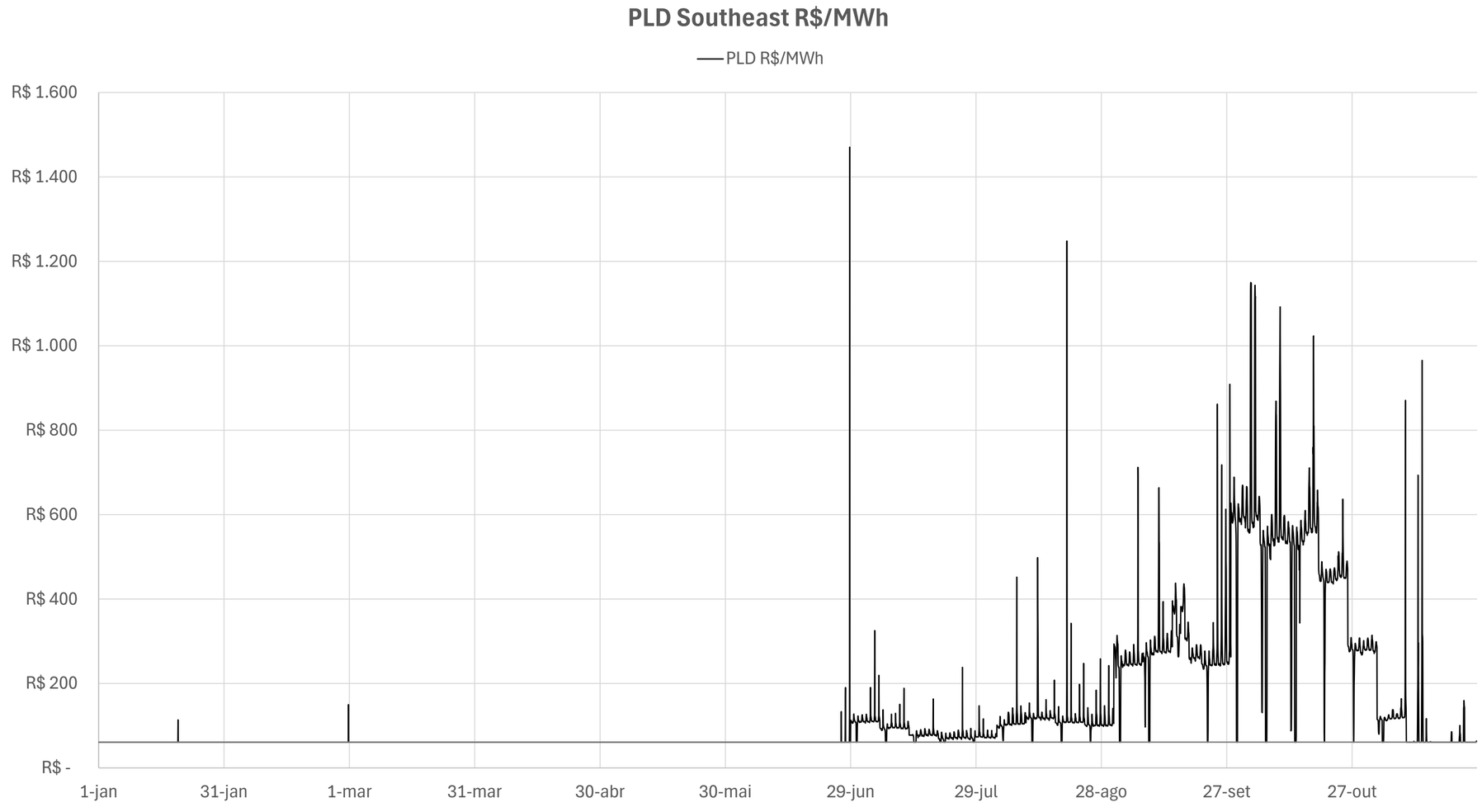
DG is so far the most accelerated development. Generation bigger than solar utility scale in the economy.

Monthly Generation Synergy Between Hydro and Wind



Southeast Spot Price R$/MWh

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Floor spot price for the 1st half .

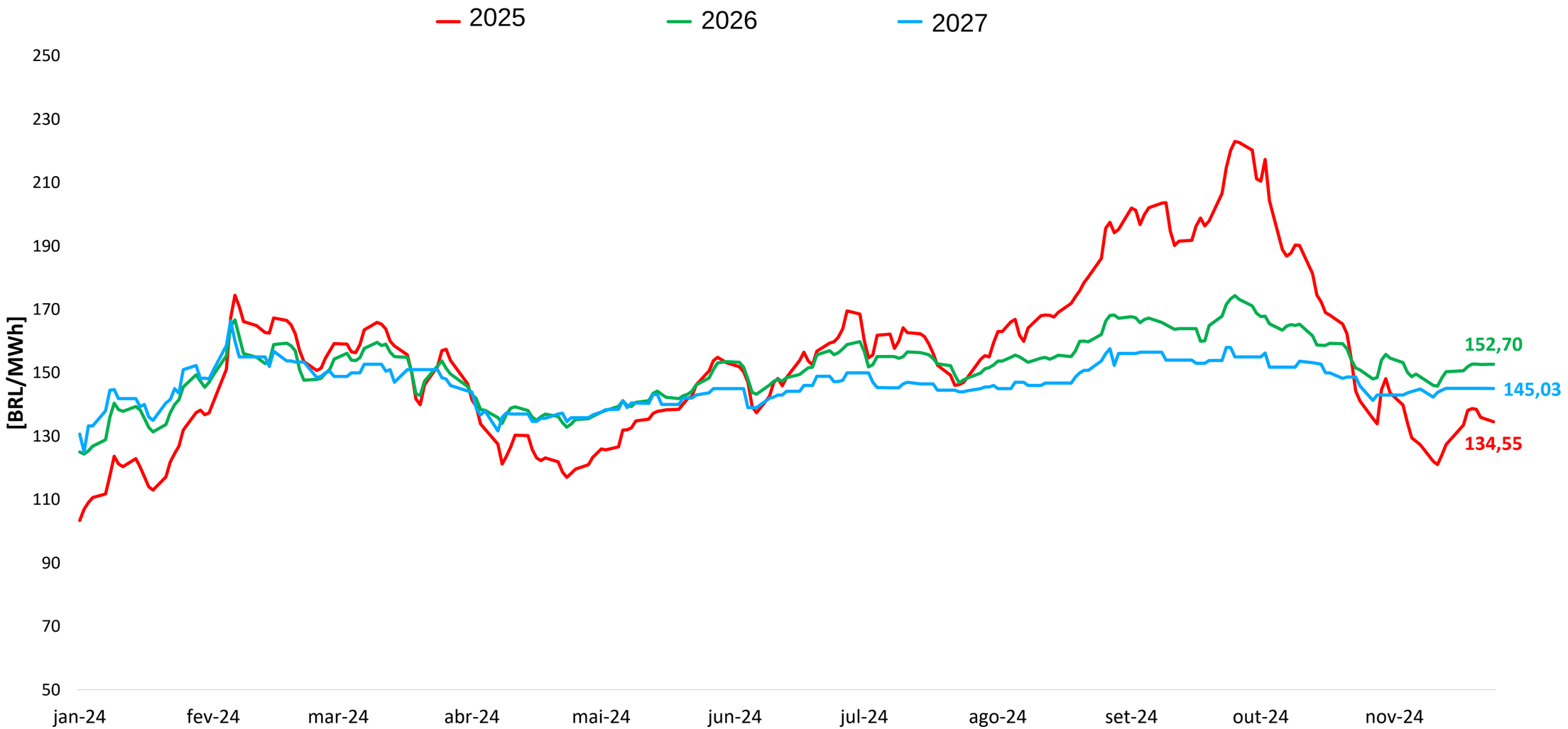
Huge volatility since July.

Peak prices for some weekdays and floor price for most Sundays.

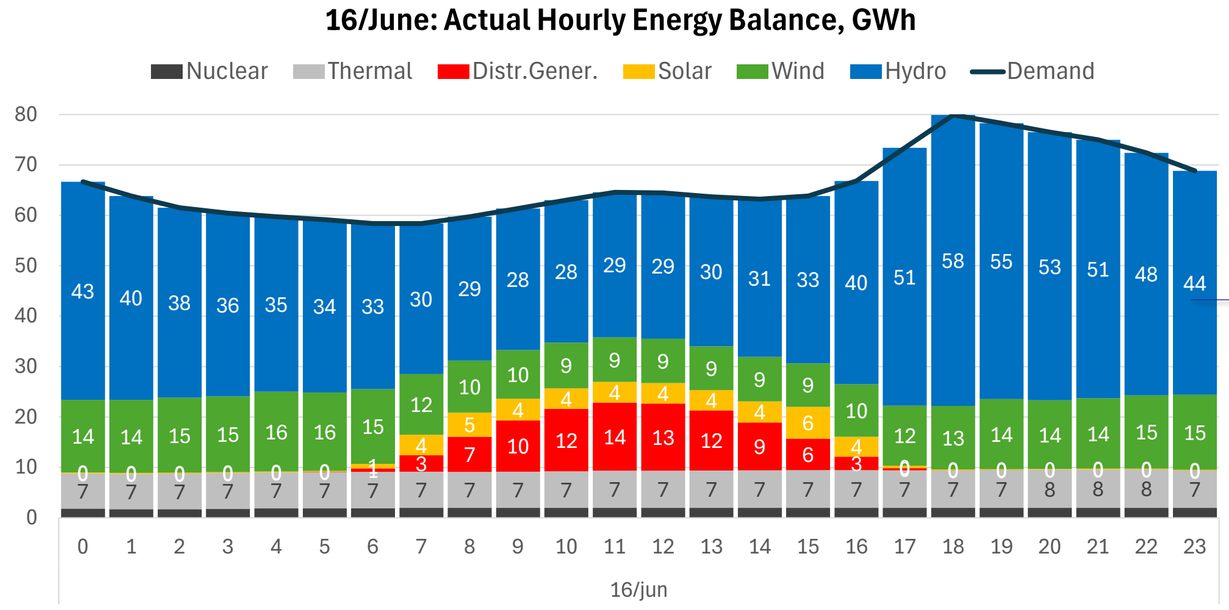
Avg spot price until Nov 25th is R$ 134/MWh.

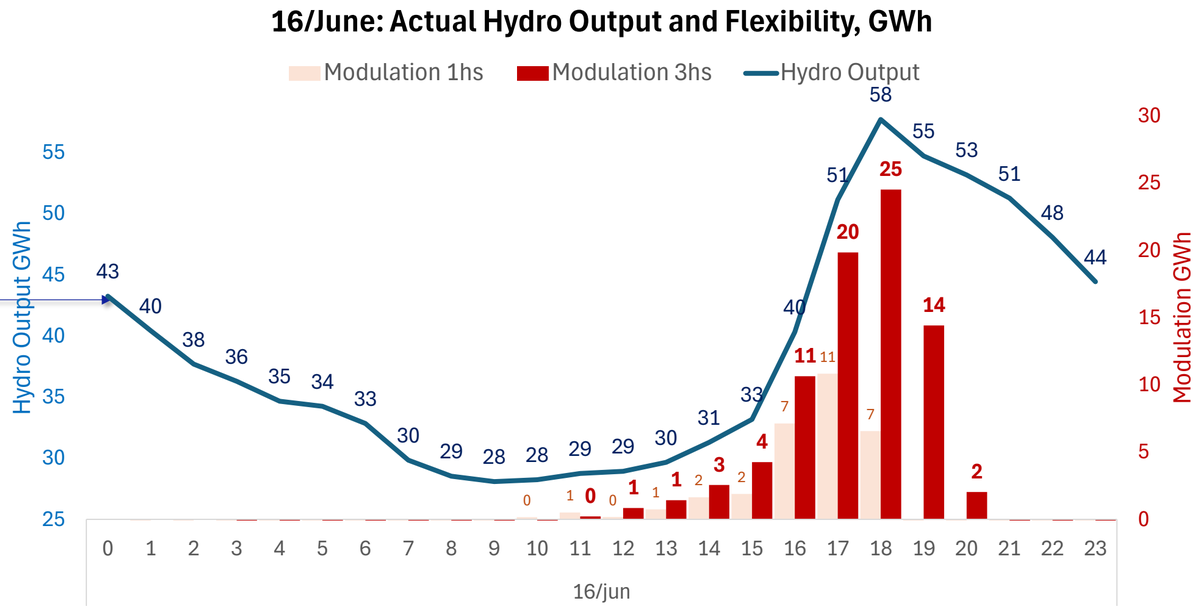
Average spot price from Jul 1st until Nov 25th is R$ 223/MWh.

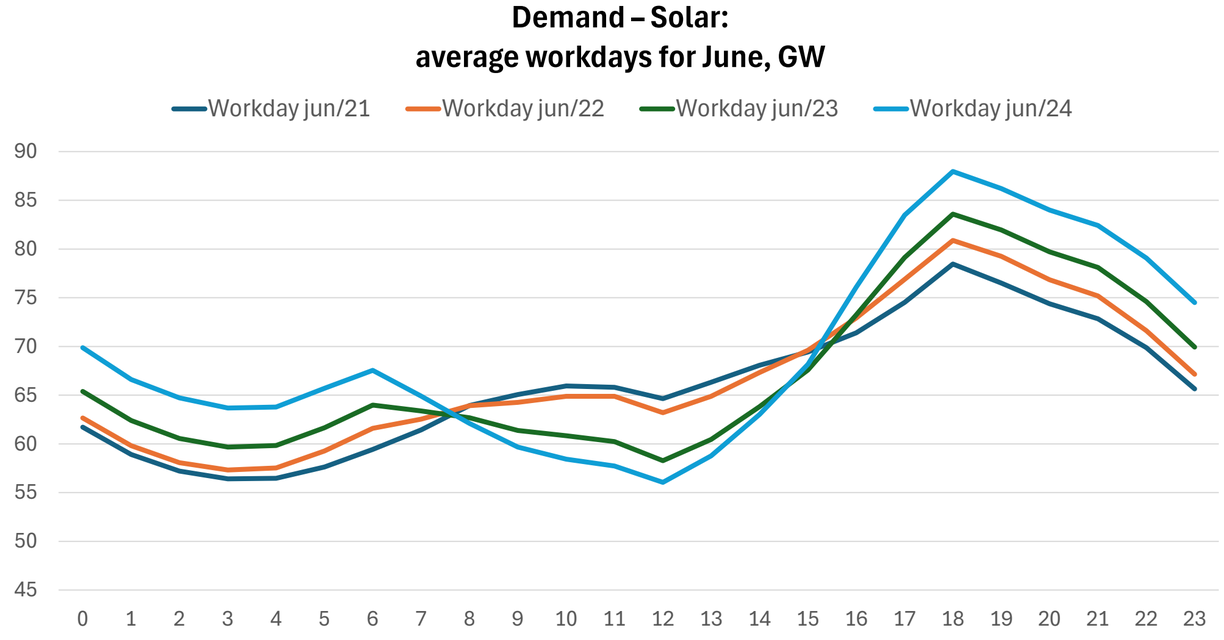
Market Prices Maturity (Conventional Energy, Southeast)

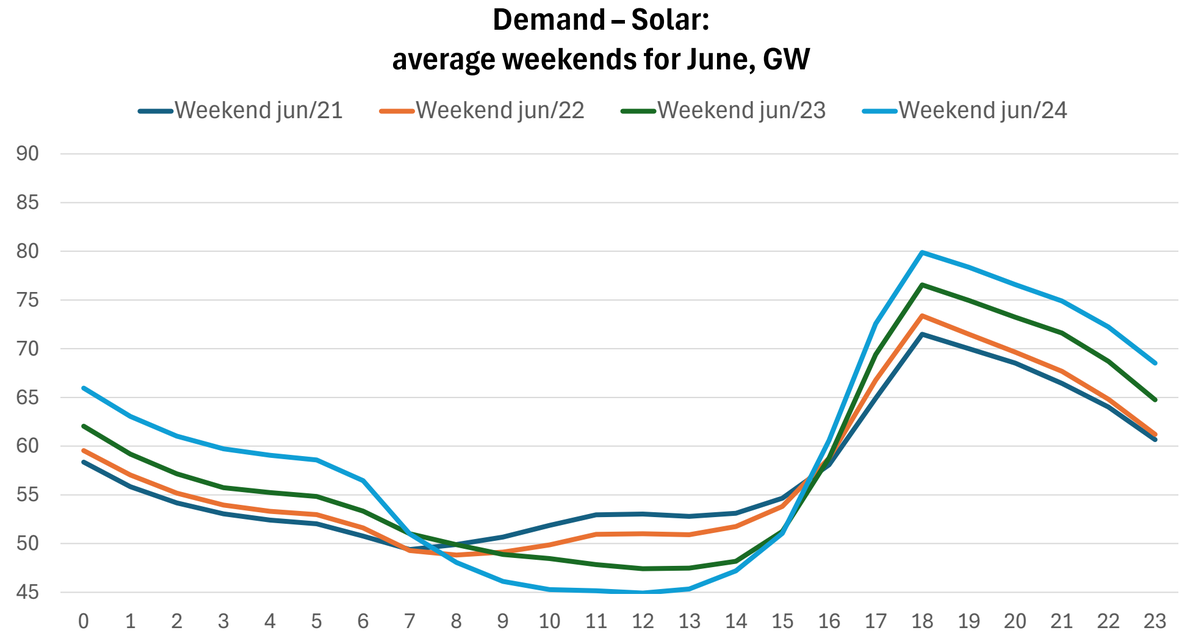


Duck Curve & Flexibility Requirements (June/2024 as an example)











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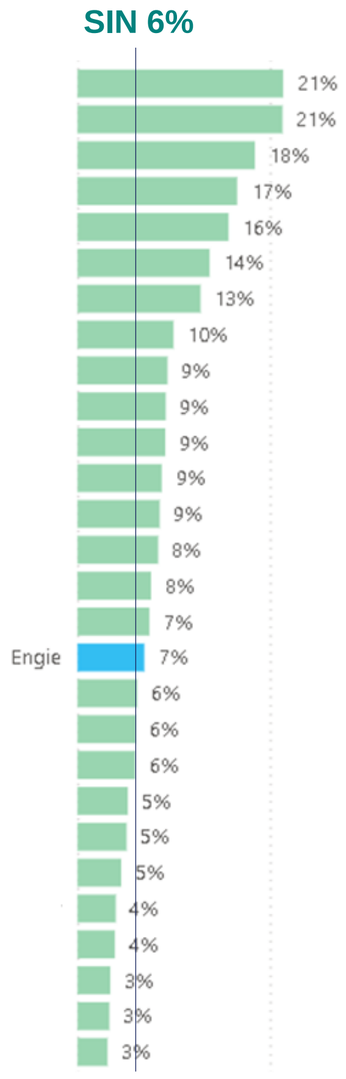
Curtailment

Ranking Curtailment

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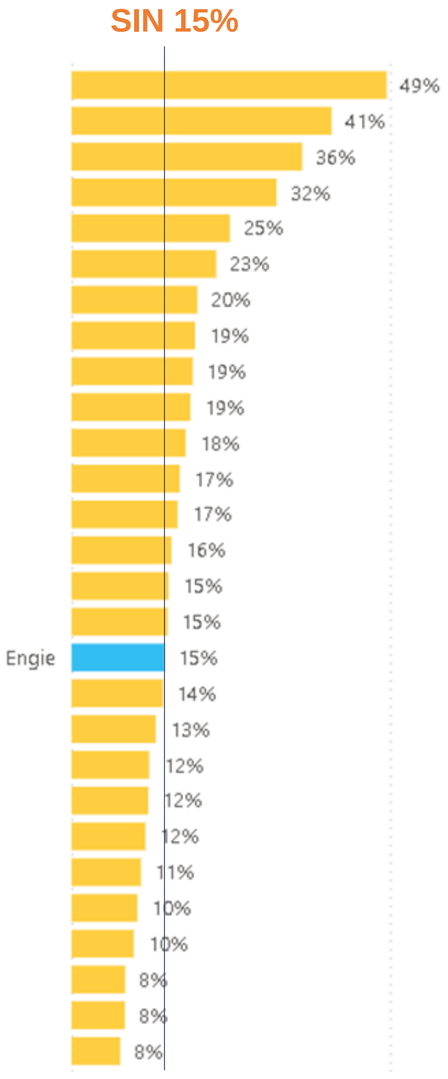
Wind Curtailment %Output

Average November/23 to October/24



Solar Curtailment %Output

Average April/24 to October/24



Curtailment

Three reasons for curtailment:

1) Energy

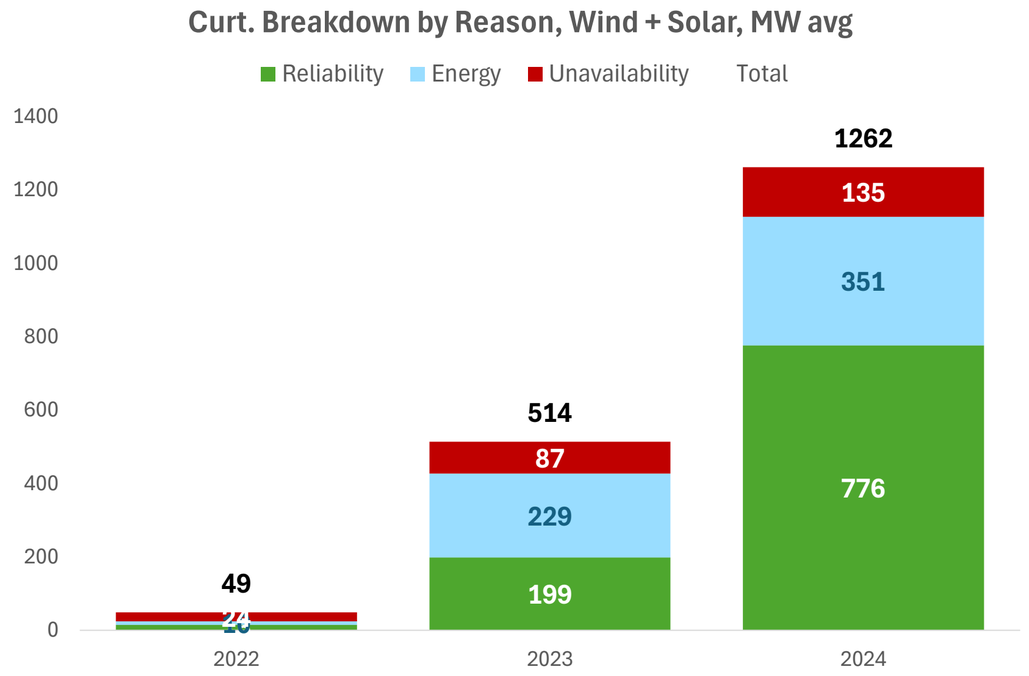
When the **Generation** supply **is higher than Demand.**

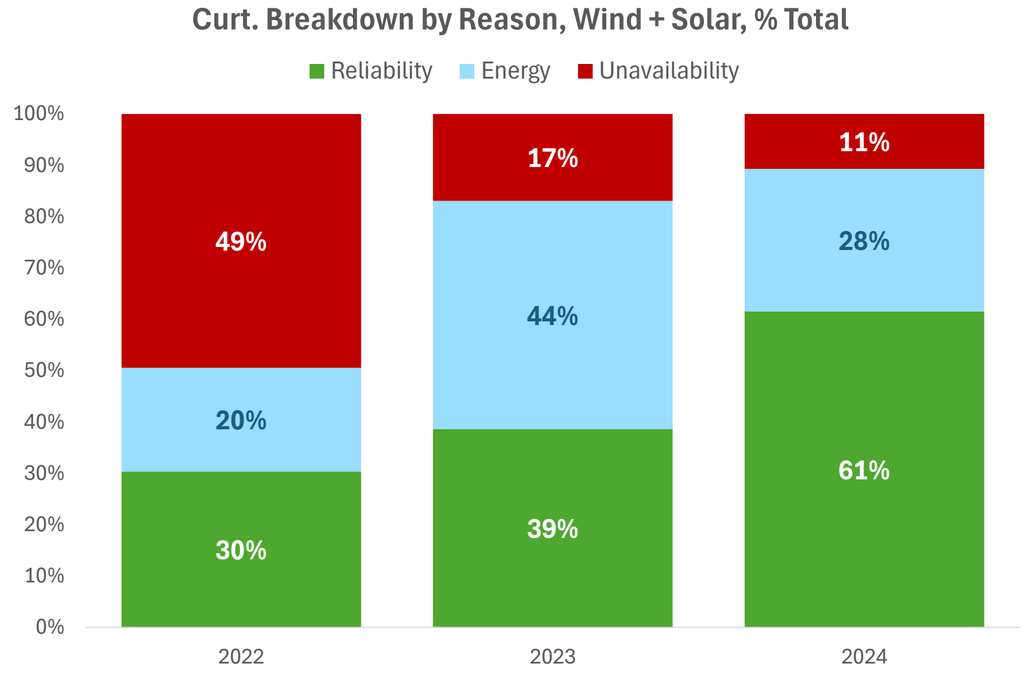
2) Electrical Reliability

When there are grid constrains or risk averse operation (strong increase after 2023 Blackout).

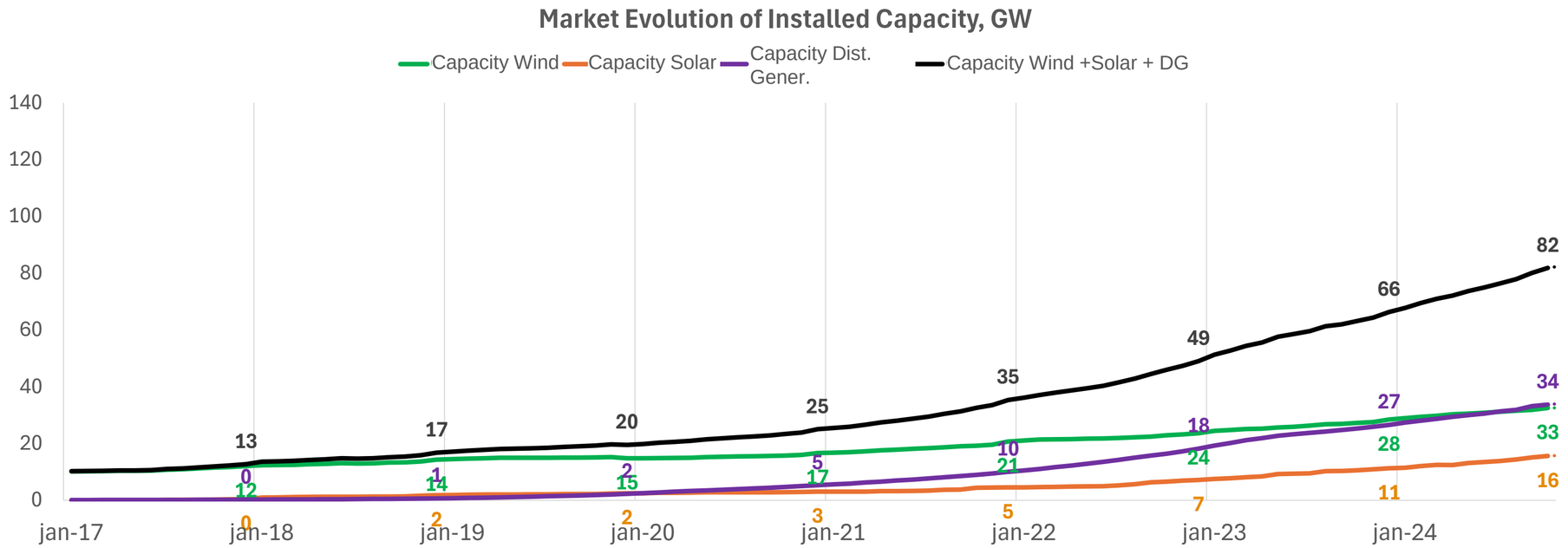
3) Electrical unavailability

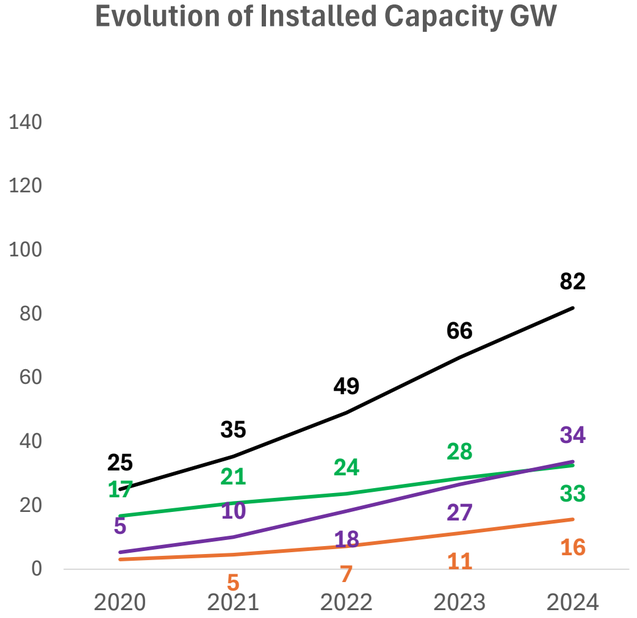
When there is **unavailability in some transmission equipment.**
Regulatory compensation only for this reason.

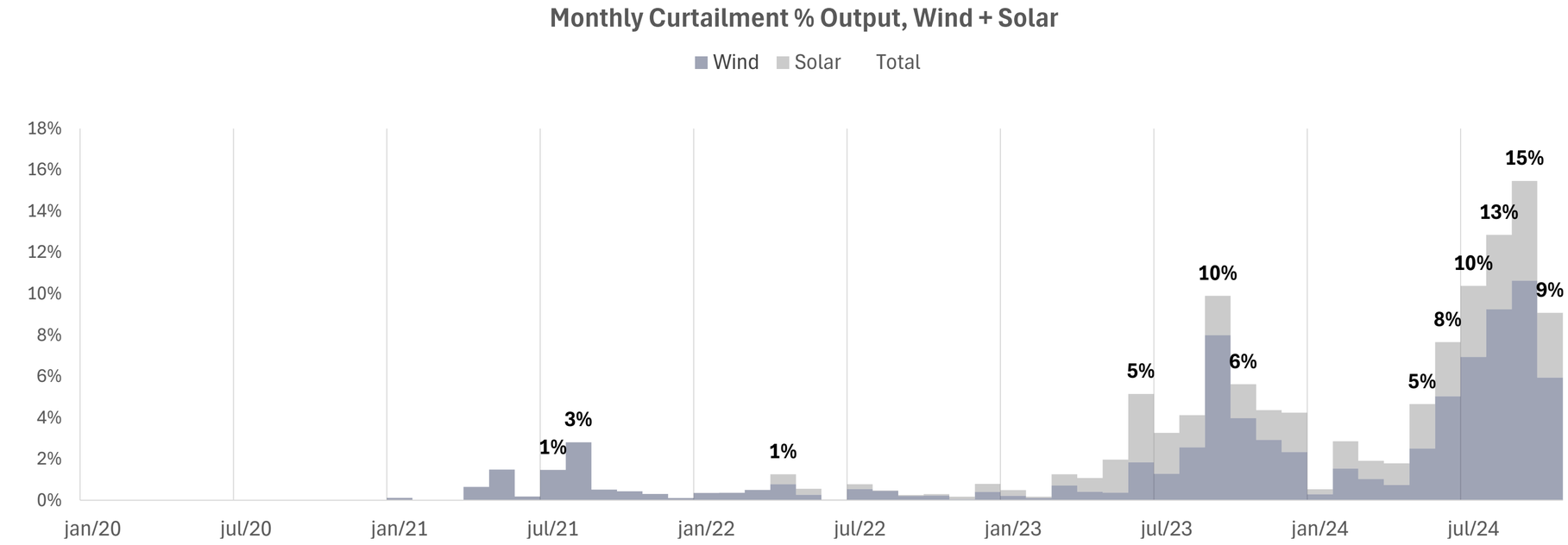


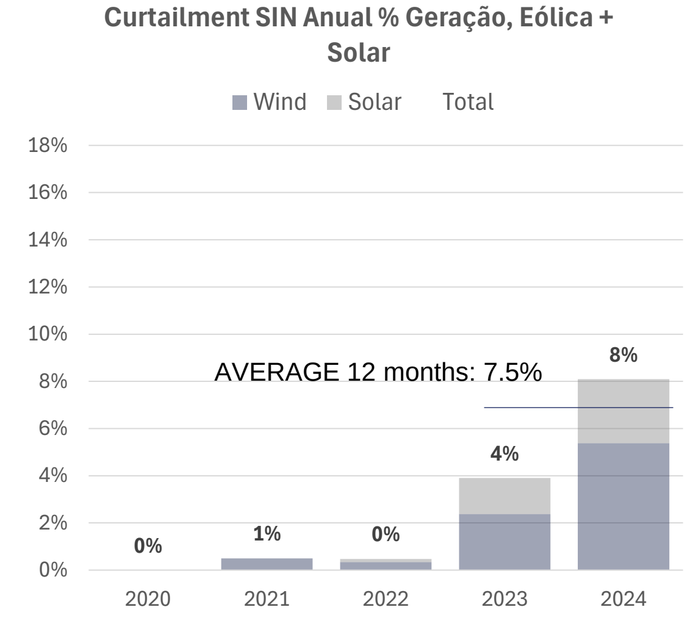


Evolution of Installed Capacity: Wind, Solar and DG





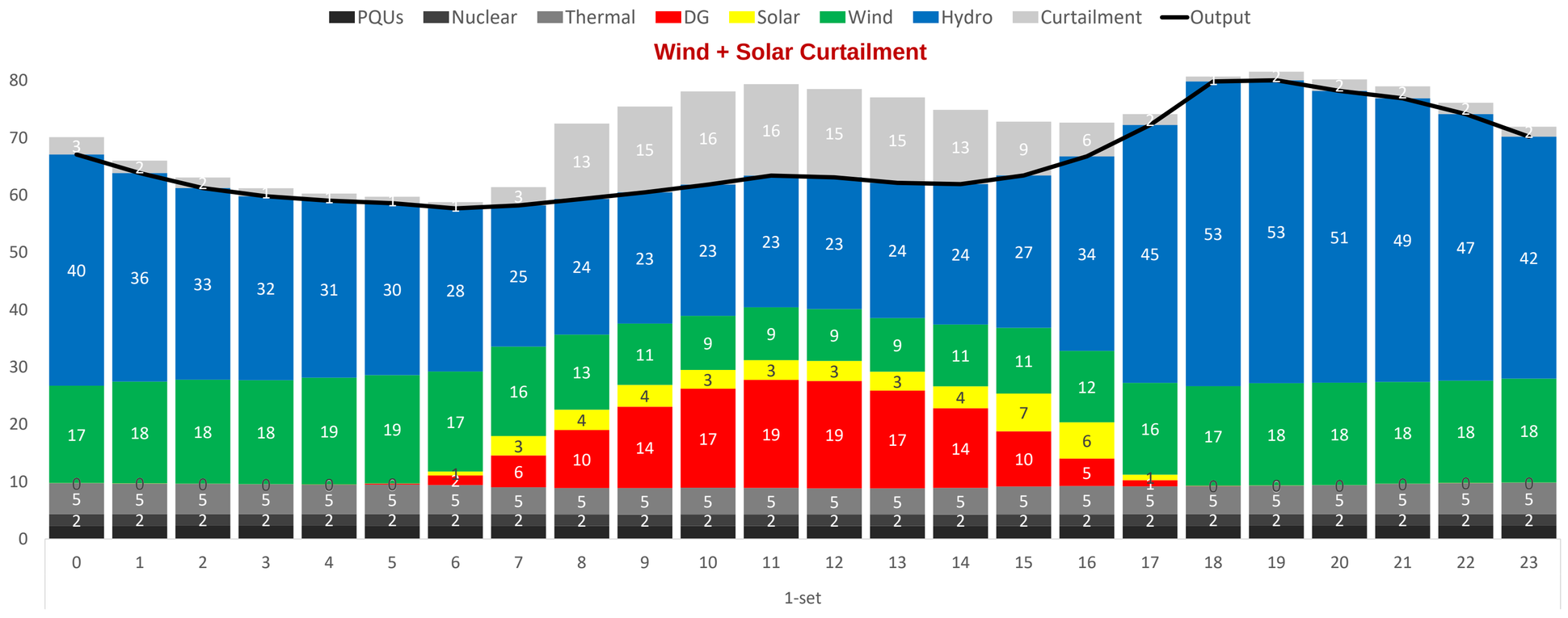




Energy Balance and Curtailment (example 01/09/2024)

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Energy Balance, GWh



Gross Demand

Hydro

If oversupply condition:
Minimum output

Wind

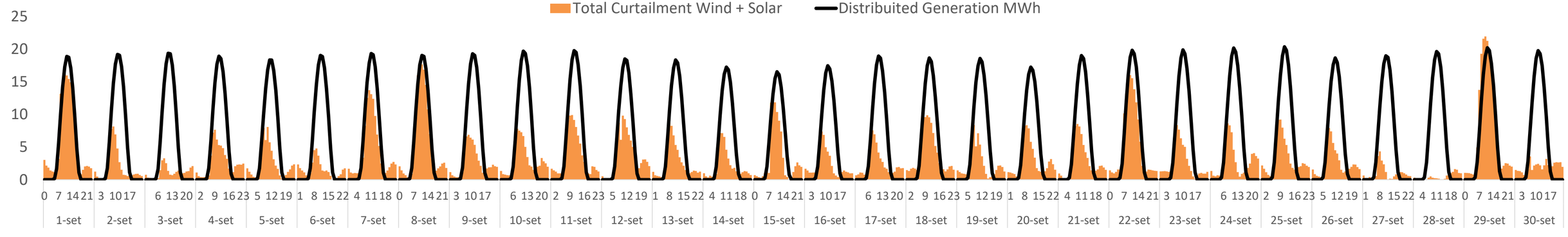
Solar

Distributed Generation

Nuclear and Thermal Base Load

Non-simulated plants

Hourly Total Curtailment (Energy + Reliability) x DG Generation, MWh. September 2024

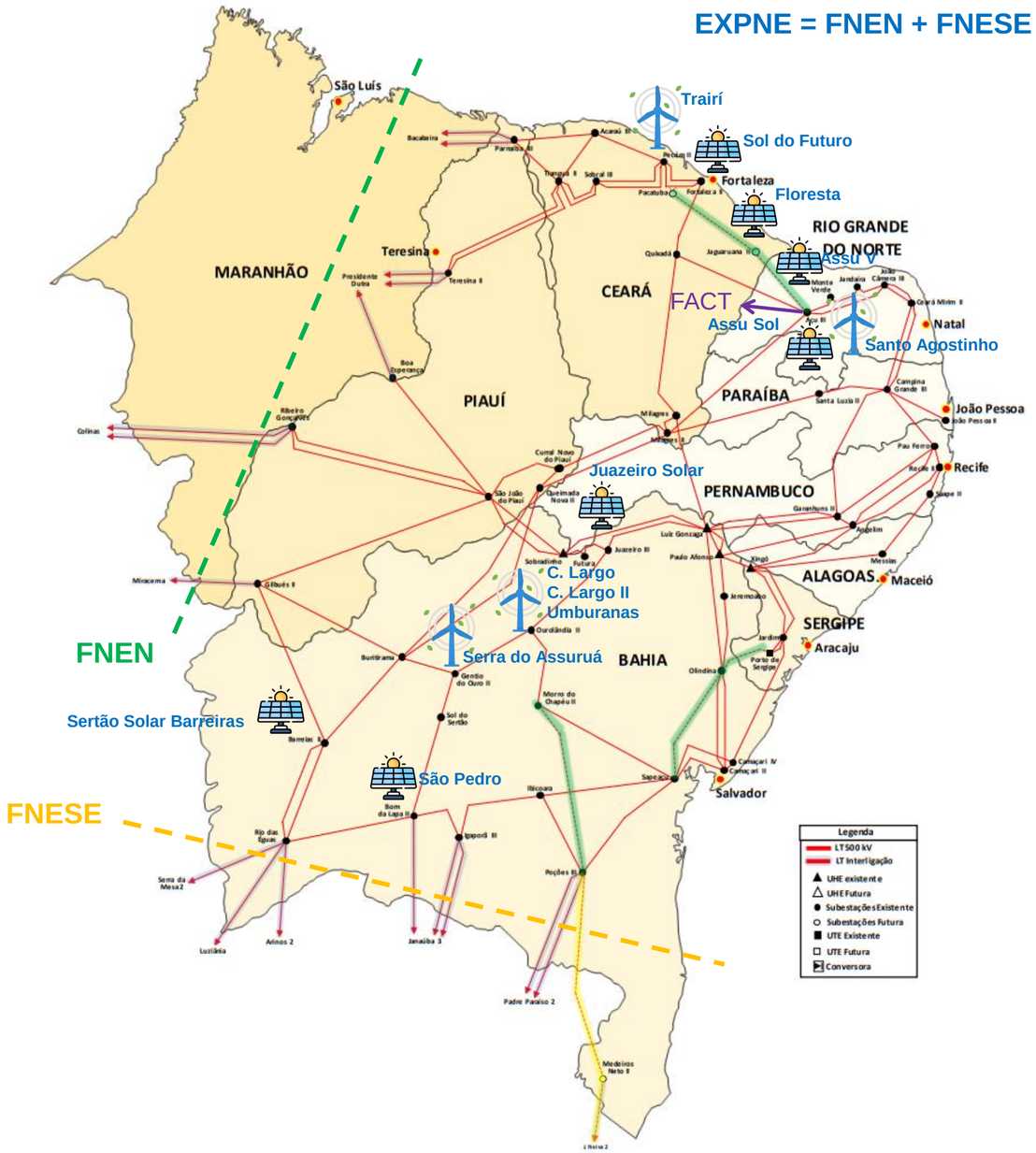


Transmission Works

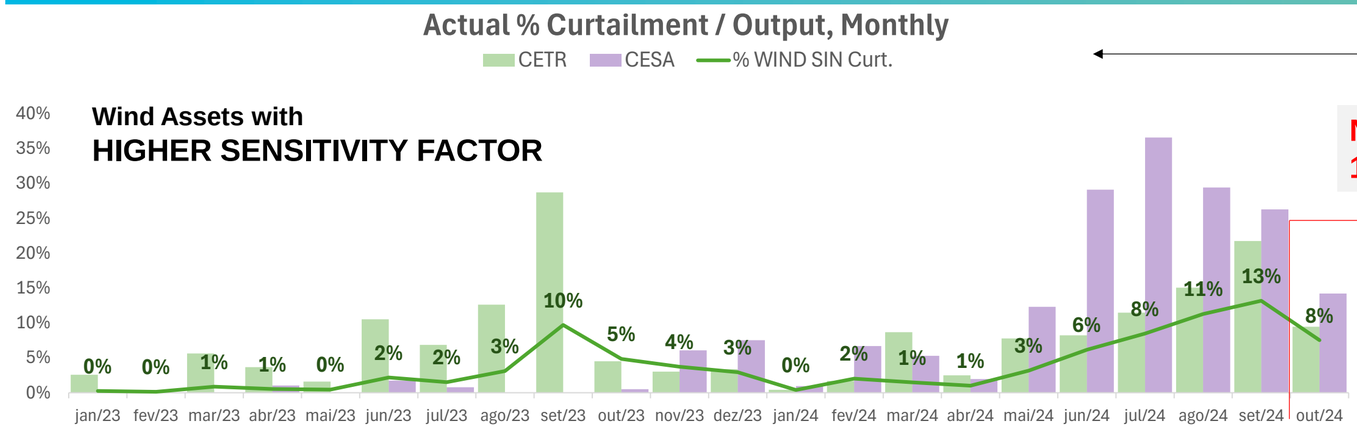
- **Integrated Transmission Works:**
  - Ceará and Rio Grande do Norte
    I. TL 500 kV Jaguaruana II – Açu III (5/15/2024)
    II. TL 500 kV Jaguaruana II – Pacatuba (10/16/2024)
  - Bahia
    I. TL 500 kV Morro Chapéu II – Poções III (5/12/2024)
    II. TL 500 kV Porto de Sergipe – Olindina (10/09/2024)
    III. TL 500 kV Olindina – Sapeaçu (10/26/2024)
- **Planned Transmission Works:**
  - Bahia
    I. TL 500kV Poções III - Medeiros Neto II (12/31/2024)
    II. TL 500 kV Medeiros Neto II - João Neiva 2 (2/28/2025)

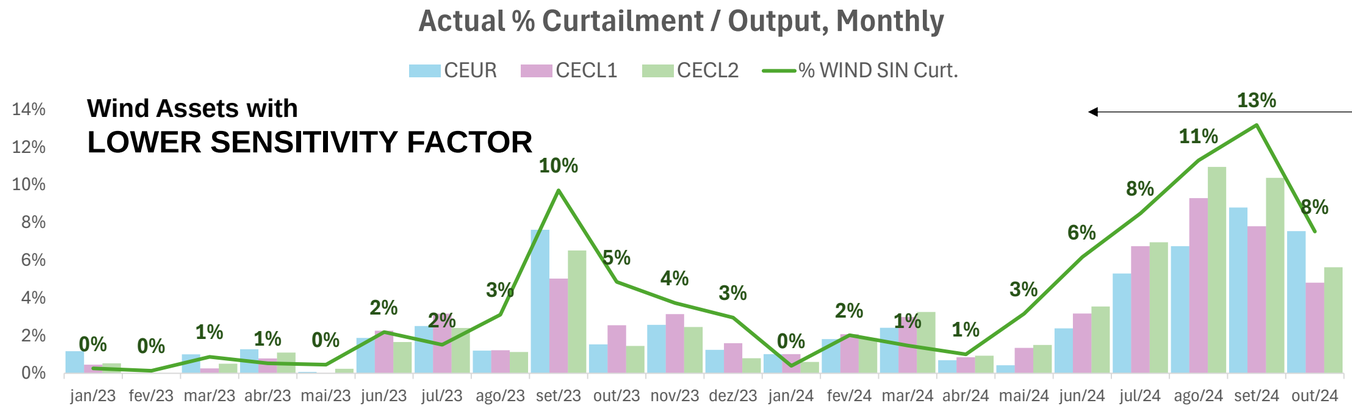
*Note: Legal date 3/31/2026

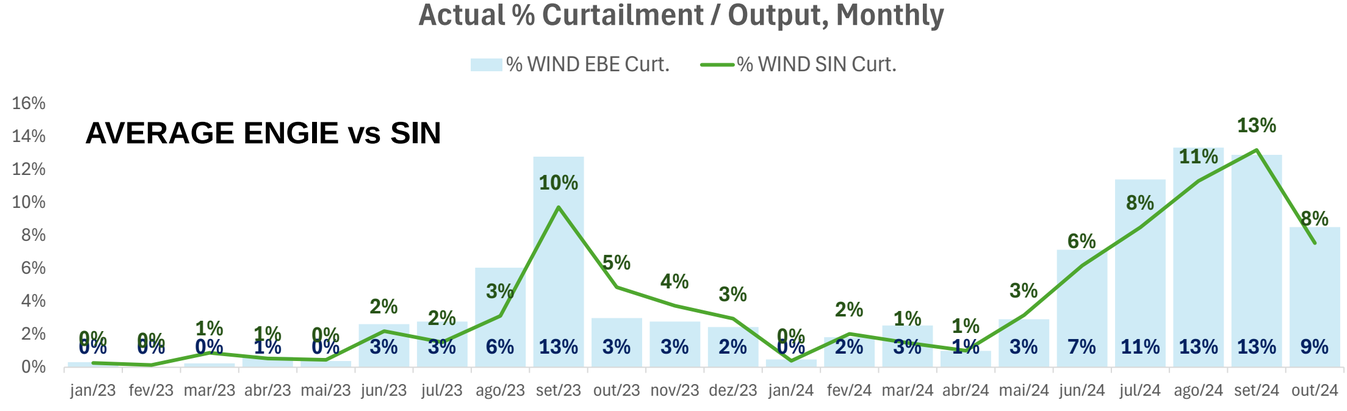
	Pre BO	Actual	Actual s/ BO	2025	GR-AR
EXPNE	13	13.8	14.7	14.5	22.5
FNESE	7.2	8.5	8.5	9.1	14.4
FNEN	6.4	6.2	6.9	6.2	9.5
FACT	-	2.4	-	2.4	?

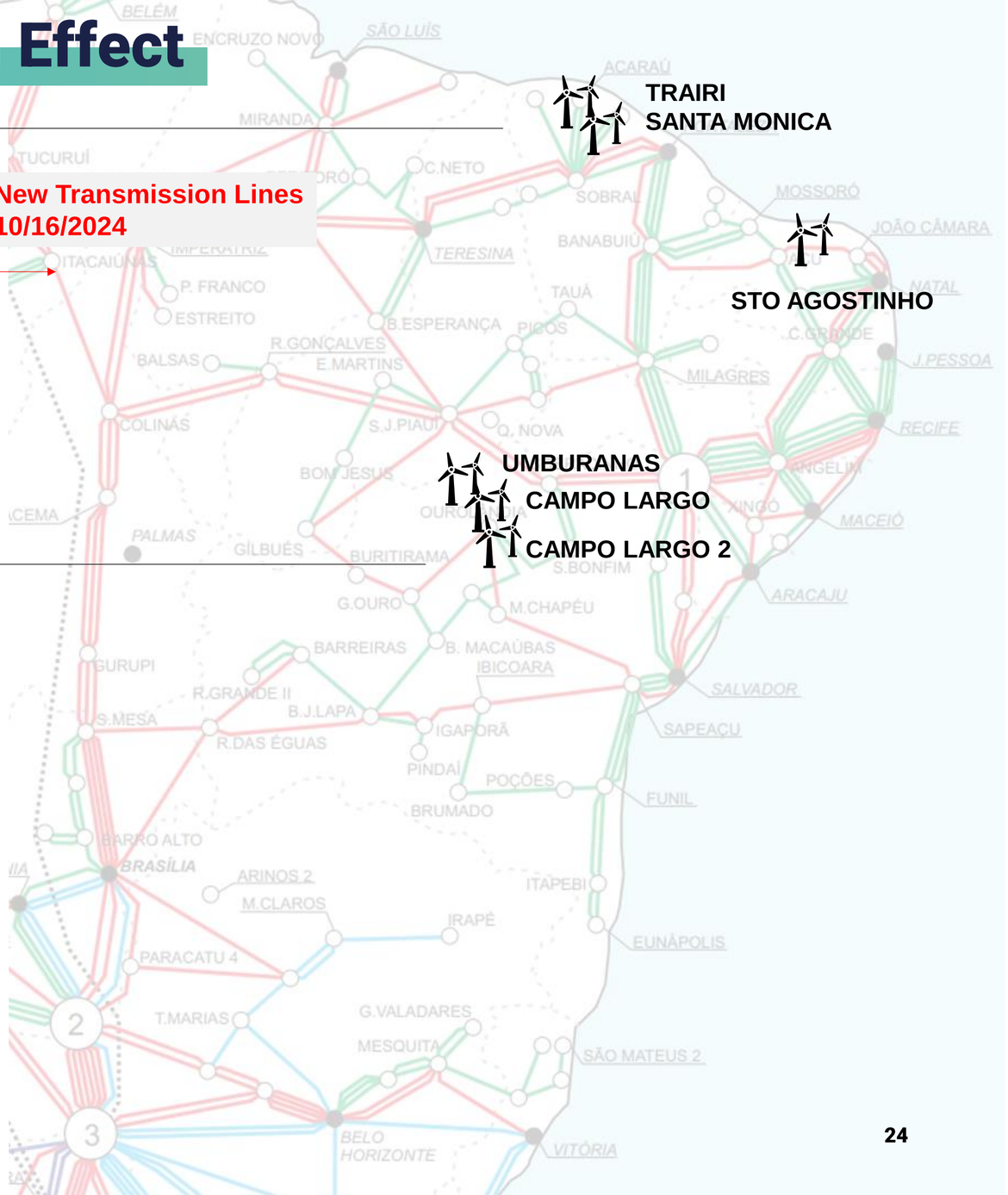


ENGIE Wind Curtailment: Localization Effect

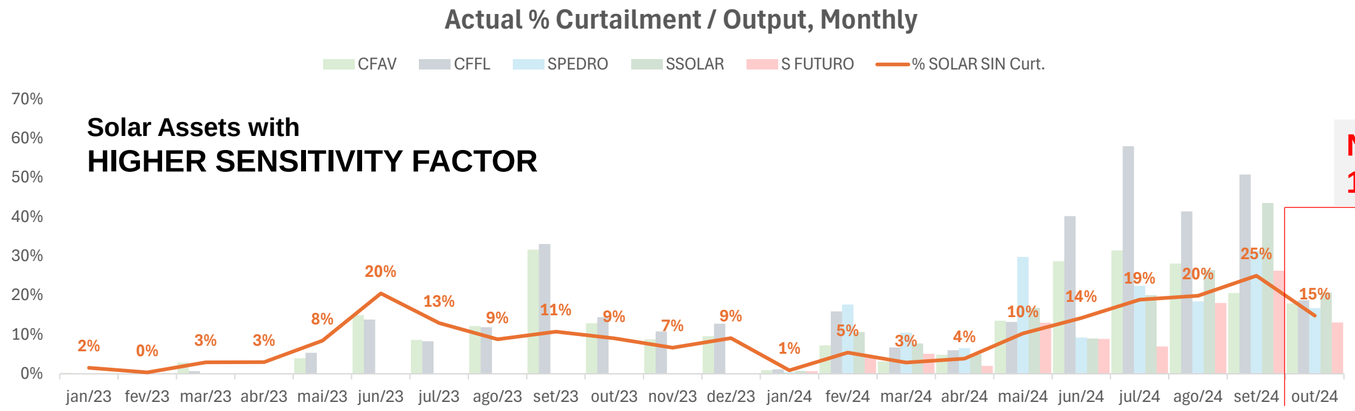








ENGIE Solar Curtailment: Localization Effect



New Transmission Lines
10/16/2024

SOL DO FUTURO
FLORESTA
ASSU V

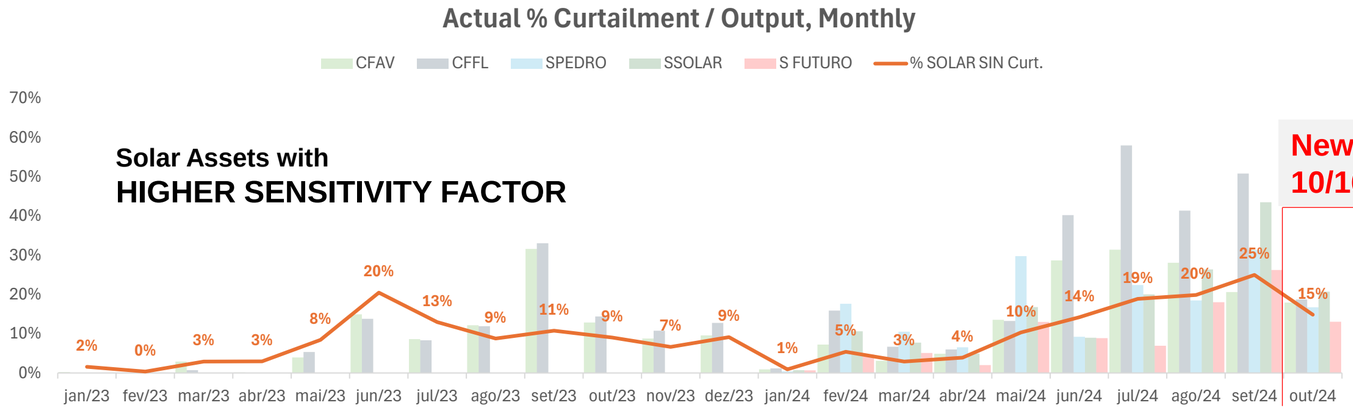
JUAZEIRO SOLAR

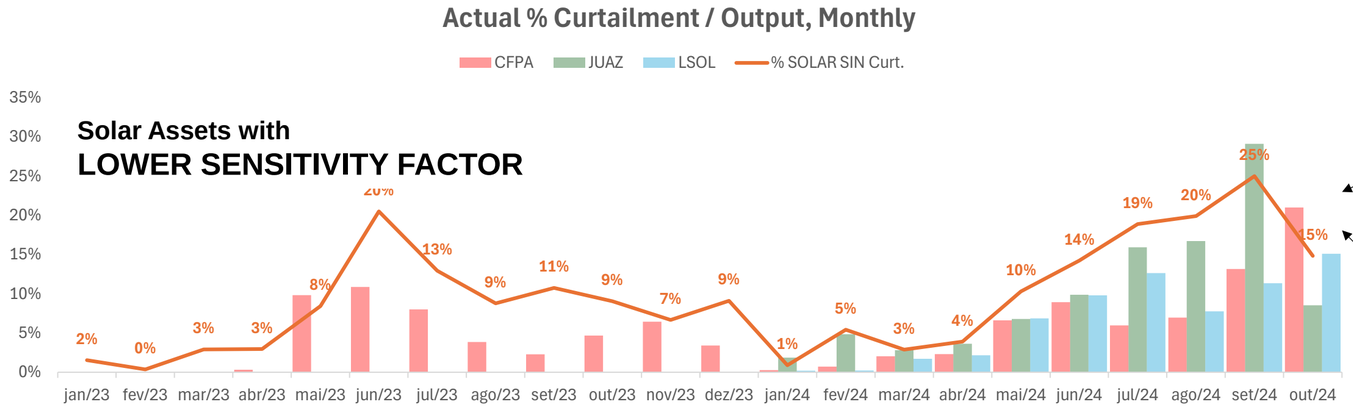
SERTÃO SOLAR
SÃO PEDRO

PARACATU

LAR DO SOL

ENGIE Solar Curtailment: Localization Effect

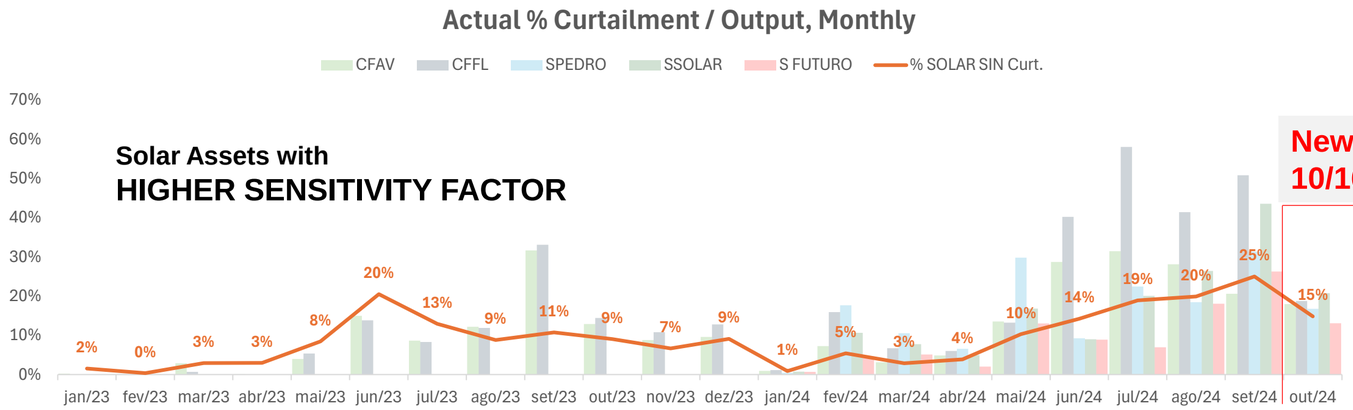


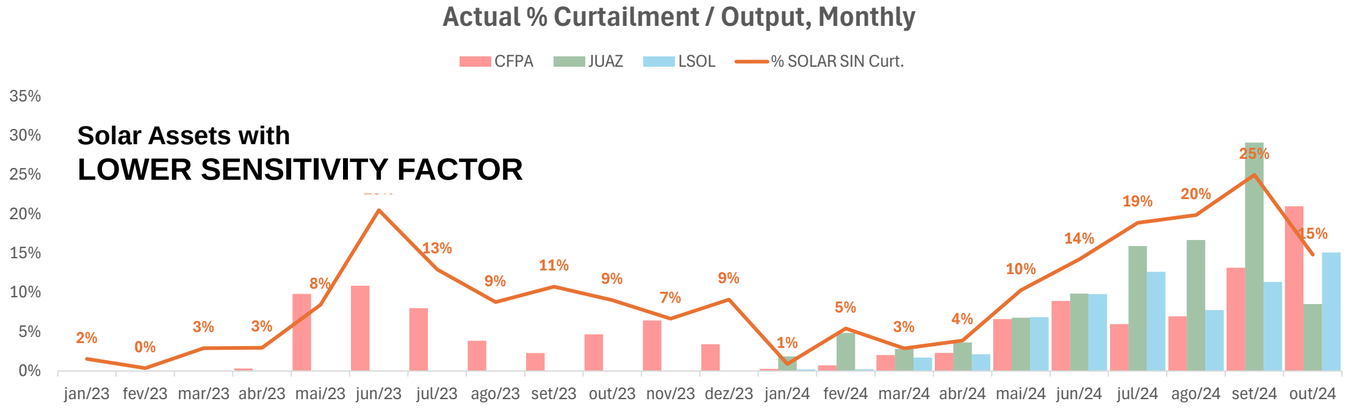


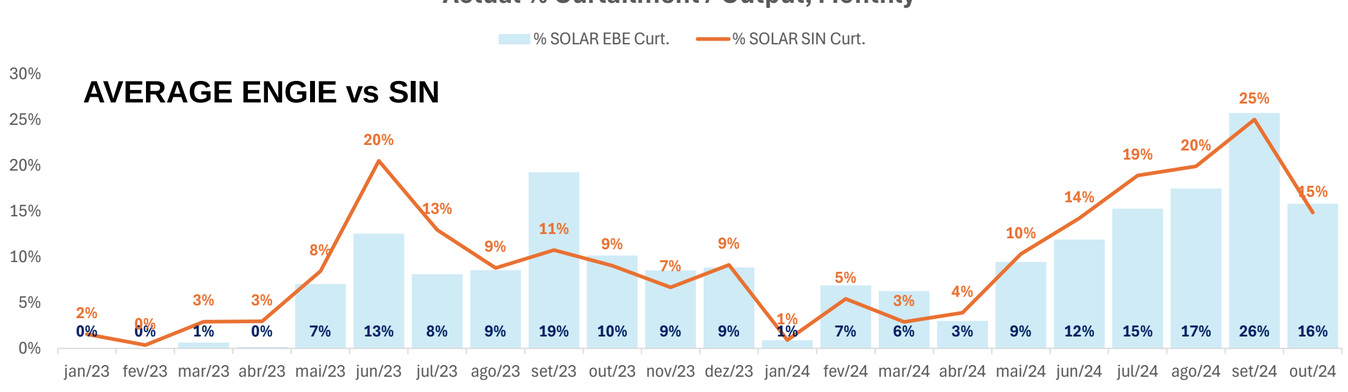
New Transmission Lines
10/16/2024

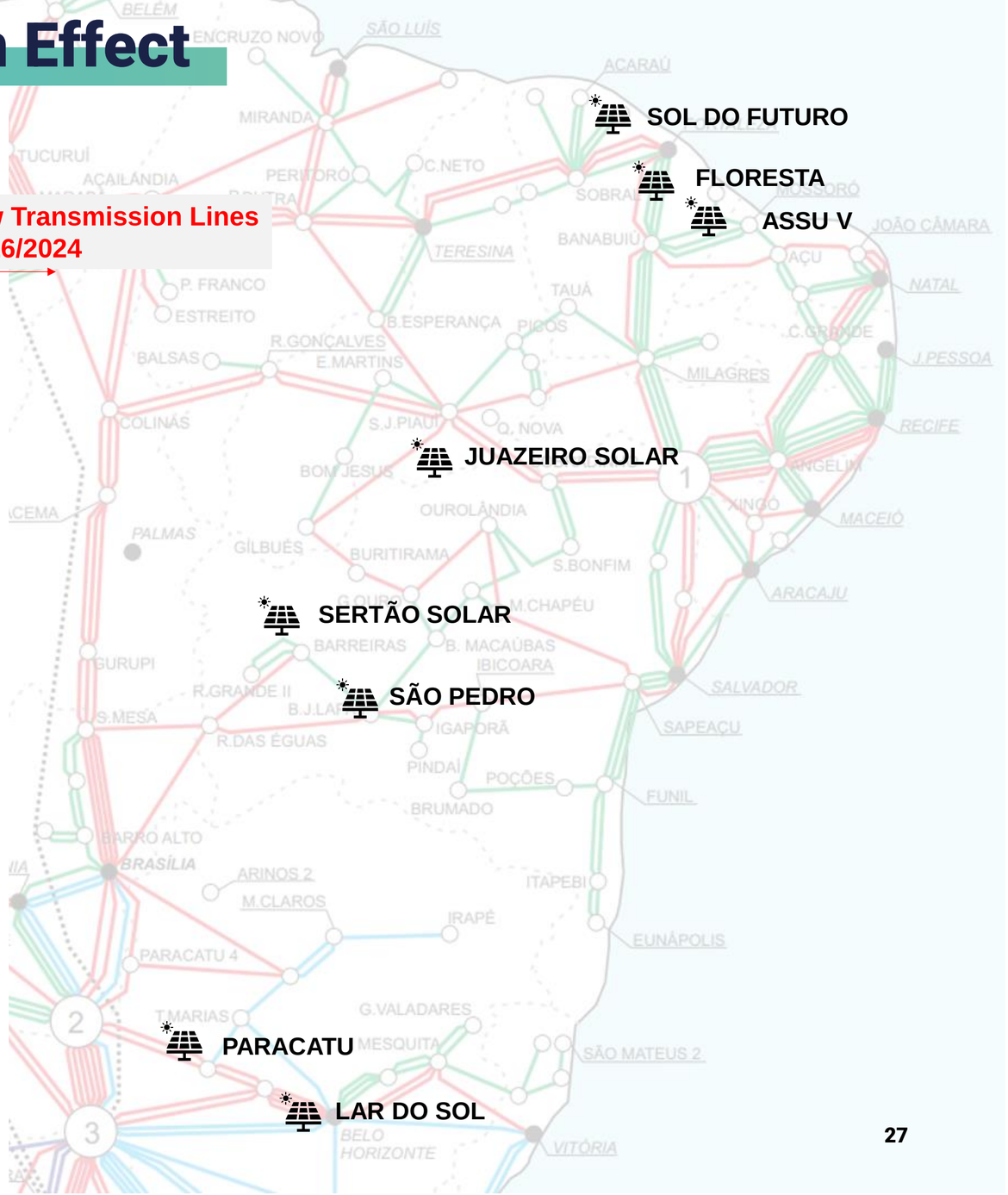
- SOL DO FUTURO
- FLORESTA
- ASSU V
- JUAZEIRO SOLAR
- SERTÃO SOLAR
- SÃO PEDRO
- PARACATU
- LAR DO SOL

ENGIE Solar Curtailment: Localization Effect



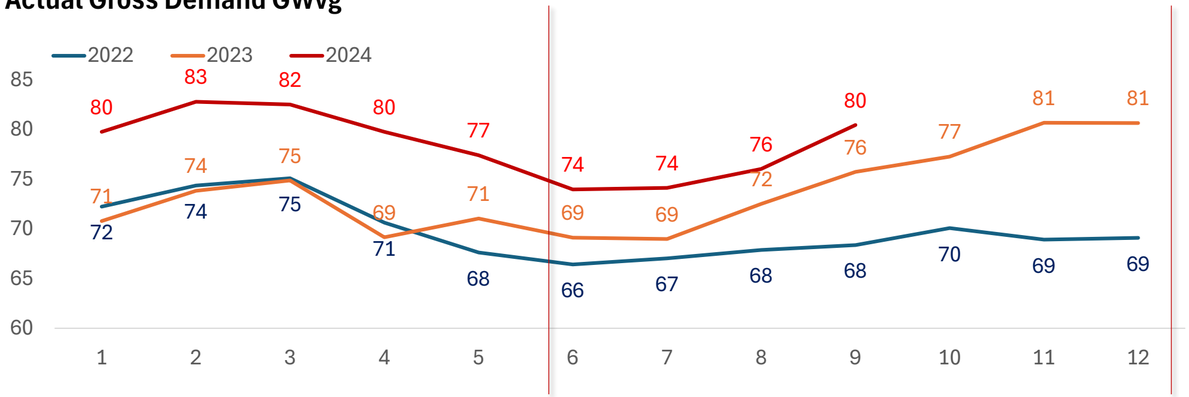




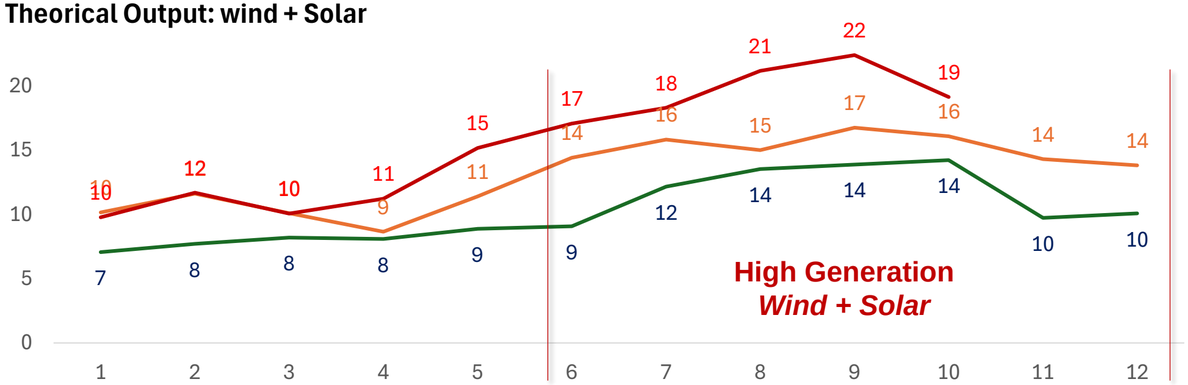


Seasonal Effect

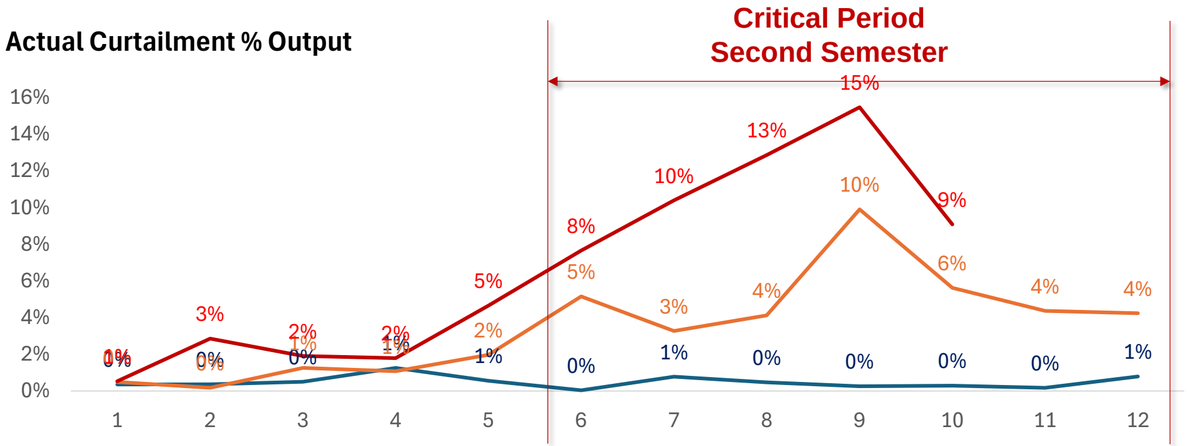
Actual Gross Demand GWvg



Theorical Output: wind + Solar

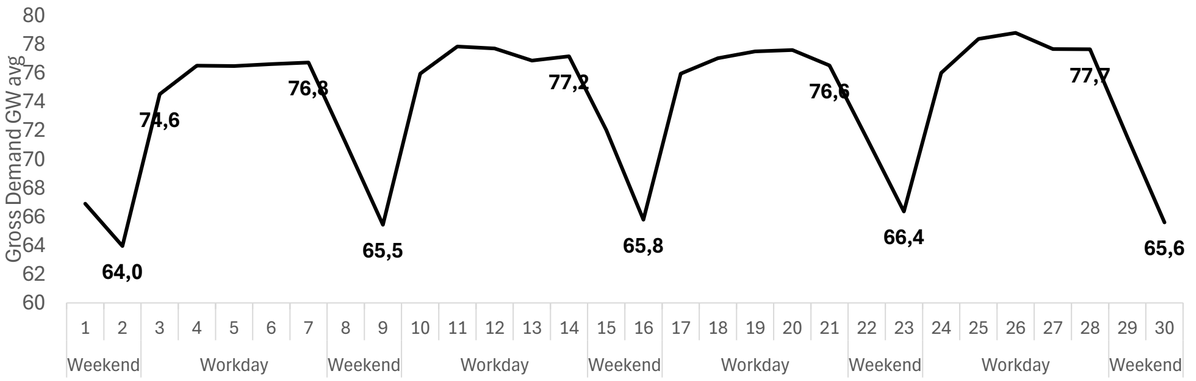


Actual Curtailment % Output

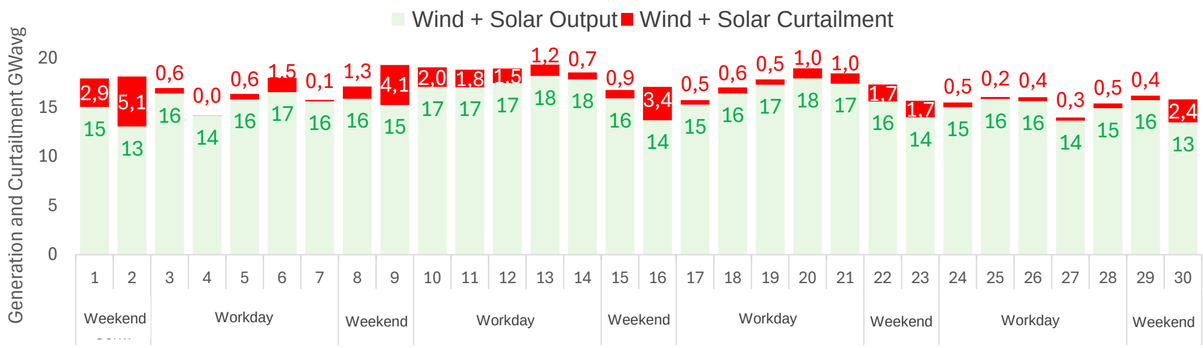


Weekend Effect

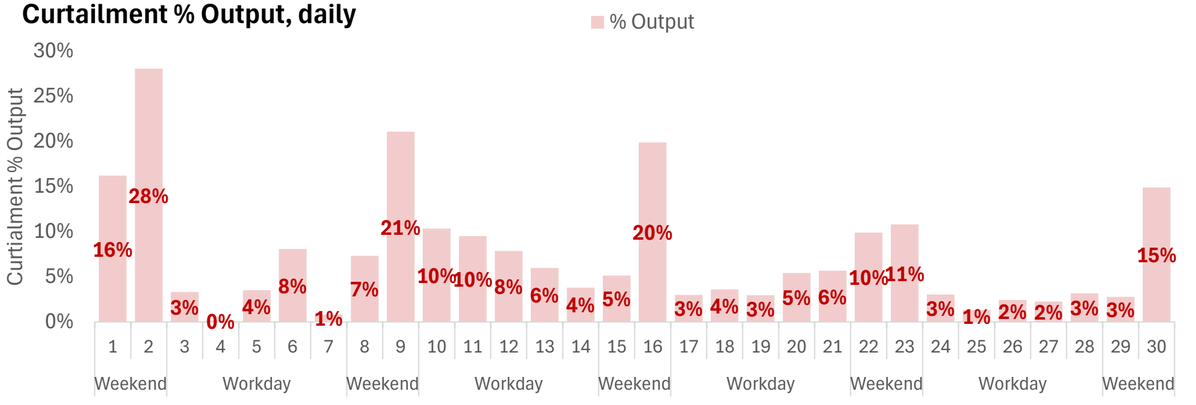
Gross System Demand in Jun/24, GW daily avg



Generation Wind + Solar and Curtailment, GW daily avg



Curtailment % Output, daily



Curtailment: Mitigation Plan

1) Reclassification of curtailment events due to transmission line delays, enabling generators to receive some cost reimbursement.

- There are some important transmission lines in the Northeast that can reduce the reliability curtailment, but they are delayed more than 1 year

2) Task force for delivering more reliable models to the Grid Operator (ONS), aimed at making the risk aversion criteria in system operation more flexible.

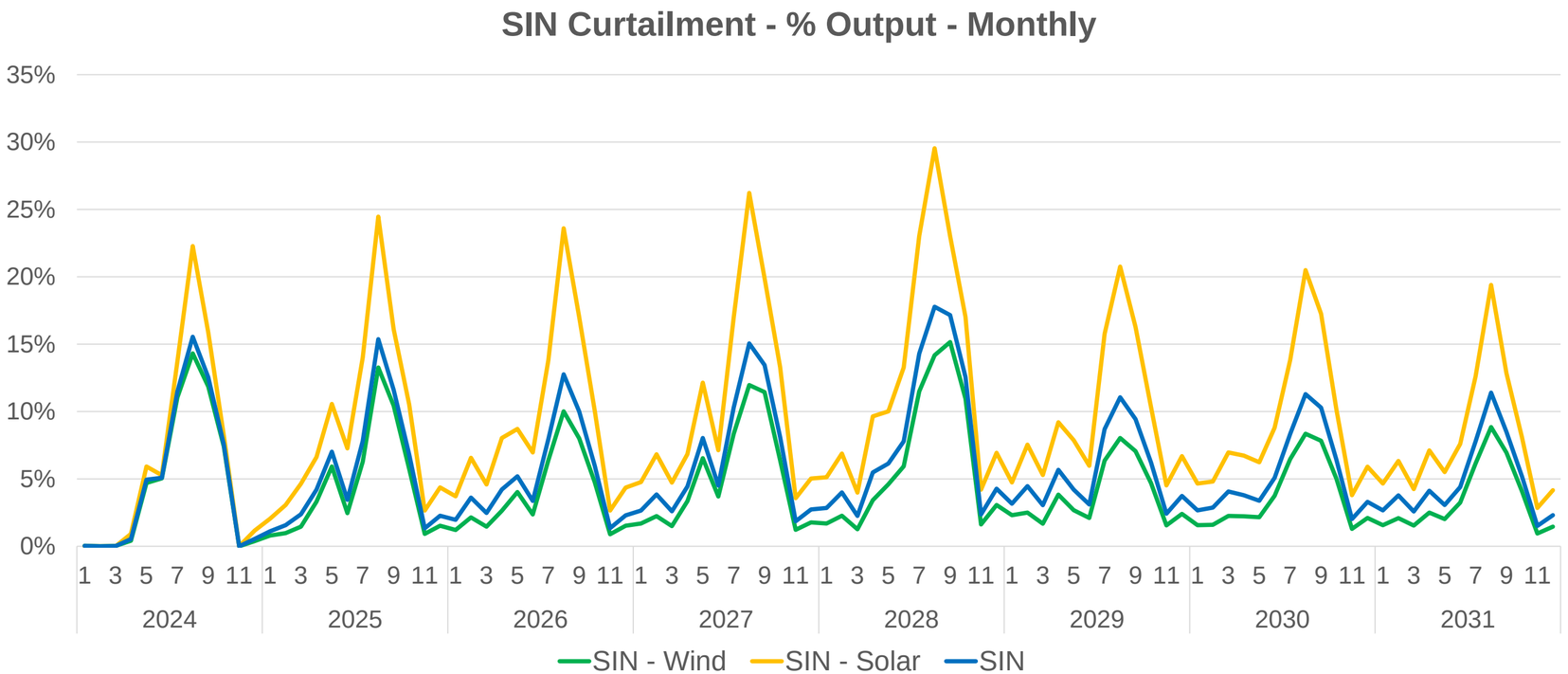
- Dynamic response for Wind and Solar power plants during last blackout was not as expected (dynamic voltage response models). System Operator (ONS) asked for all W&S power plants to resend new modeling

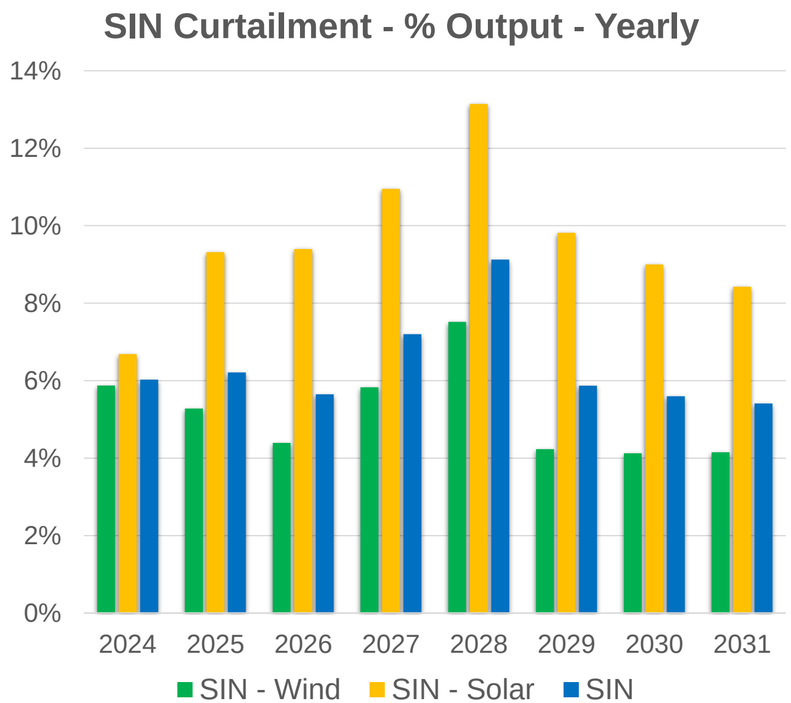
3) Negotiation with Ministry of Mines and Energy for the Grid Operator to export energy curtailment to Argentina and Uruguay.

4) Legal/Regulatory change to share curtailment costs with Distributed Generation (economic curtailment for DG).

5) New technologies: Synchronous Condenser and Batteries

Curtailment Forecast







3

Regulatory Update

Main Opportunities and Challenges

Subject	Status
Curtailment	It is expected to increase due to oversupply. There isn't a solution yet, but players/associations are working together to reduce economic impact.
RBSE	Depends on Aneel’s board to vote.
PDL 365 (against location sign of tariff)	It's been analyzed by senate committee.
Self-production subsidy	It depends on Ordinance of the minister.
Subsidies mitigation for DG or NCRes	There are many actions to avoid new subsidies.
Capacity Auction	Public hearing results not disclosed yet.
Regulatory improvement to create more value to hidro	The main stakeholders are studying some proposal to price flexibility.
Low voltage market opening	Main players presented a proposal to the government.

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GABRIEL MANN

CHIEF ENERGY COMMERCIALIZATION OFFICER

Commercialization

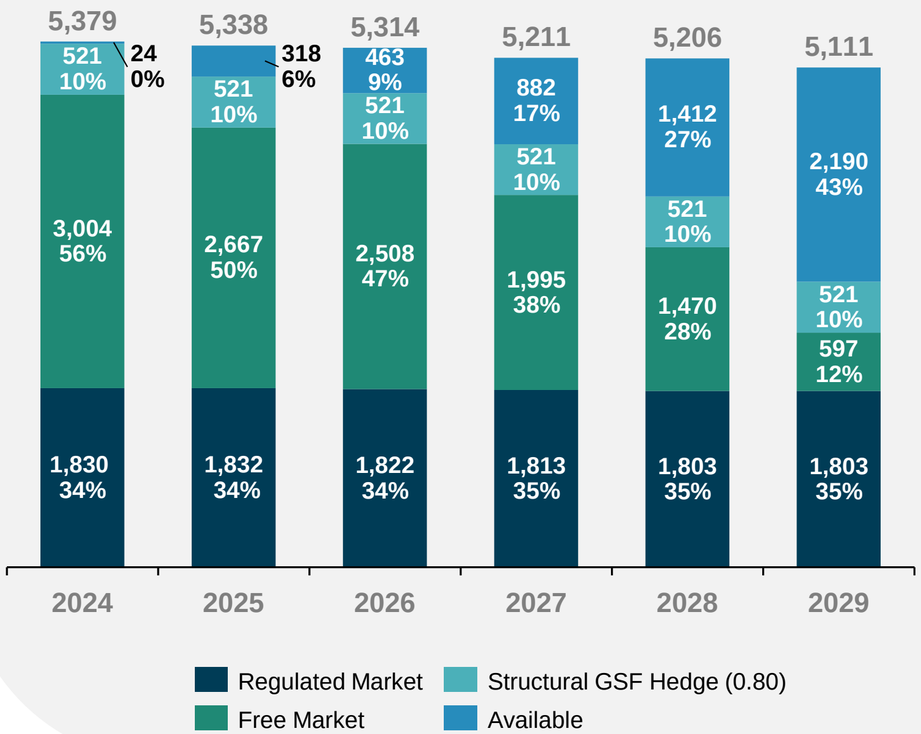
- Free Market opening
- Commercial strategy ENGIE Brasil Energia
- Challenges for the future – opening of low voltage.

Energy Commercial Strategy

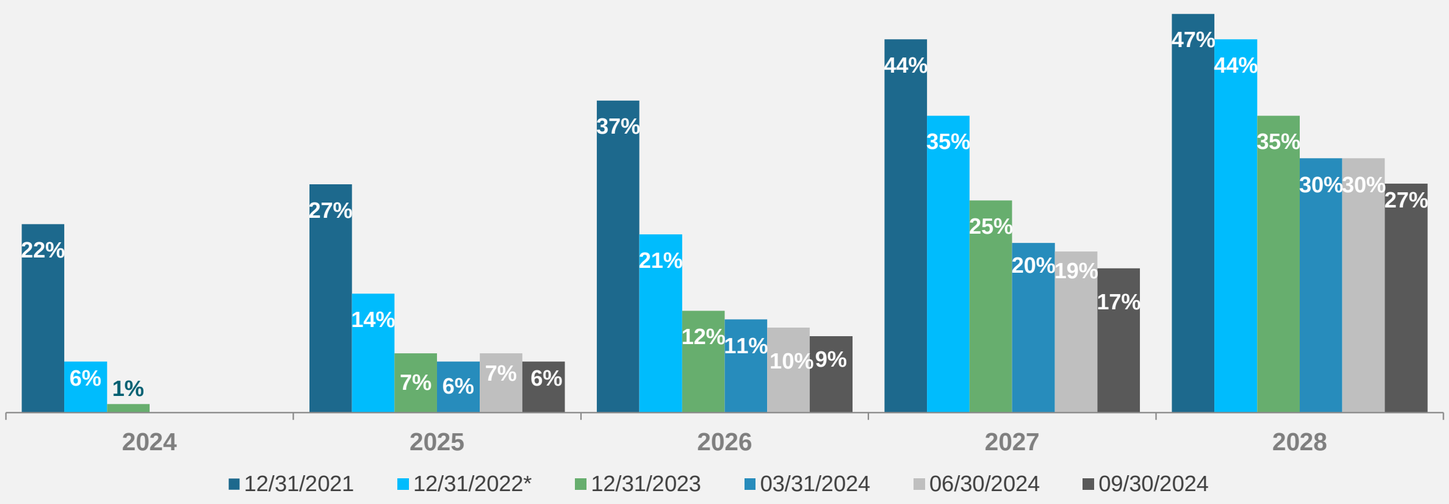
Gradual sale of future availability, with reserve for protection against hydrological risk

Energy Balance (% of total; in aMW)

as of September 30, 2024



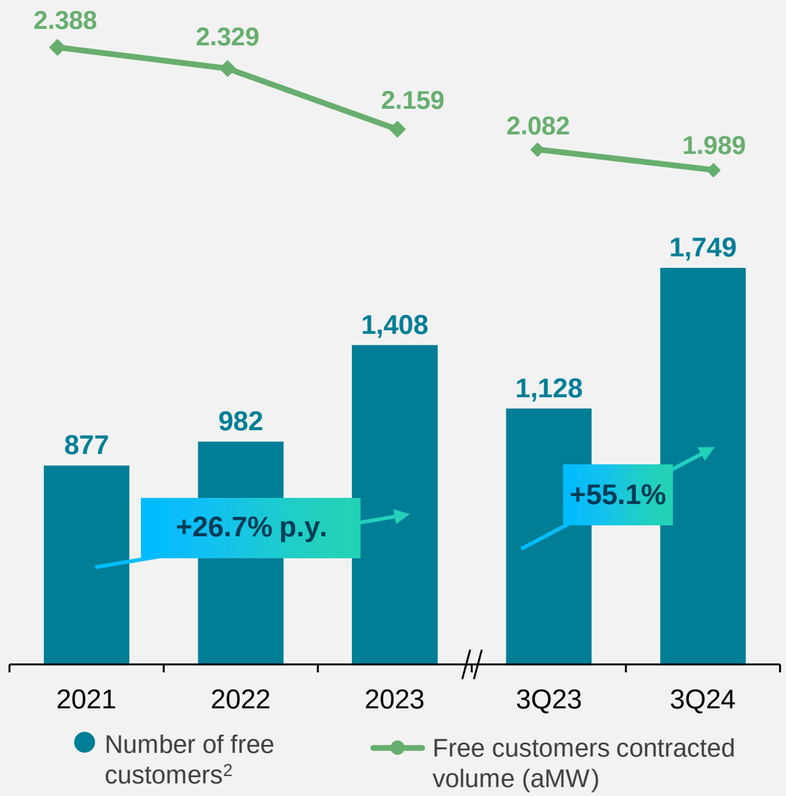
Uncontracted energy compared to the availability of a given period



*Note: * As of December 31, 2022, balance available net of structural GSF Hedge*

Energy Commercial Strategy

Evolution of free customers[1]



Notes:
[1] Net of trading operations.
[2] Considers consumers units with exiting agreements.



3,712
(+26.8% compared to 3Q23)
Consumer Units served in 3Q24[2]

7.5%
(-1.1 p.p. compared to 3Q23)
Market share ACL in 3Q24 (of total energy in Free Market)

36%
Participation of Free Clients out of the generation segment net operating revenue in 3Q24

40%
Participation of Free Clients out of total physical sales in 3Q24

12.4 thousand tCO2
CERs sold in 9M24
(Certified Emission Reduction)

3.9 thousand GWh
RECs sold in 9M24
(Renewable Energy Certificates)

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2024



INSIDE EGIE3 2024



PAULO MULLER

CHIEF IMPLEMENTATION OFFICER

- Implementation challenges
- Synergy between projects
- Partnership between implementation and operation
- Commitment to safety and legacy.

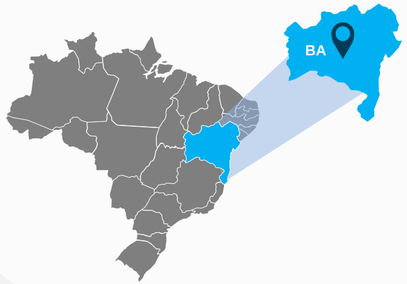
Wind Project Under Implementation

Serra do Assuruá Wind Complex









Gentio do Ouro (BA)

- Total installed capacity: **~846 MW**
- Start of construction: **2023**
- Commercial capacity: **410.2 avgMW**
- Operation: **Gradual 3Q24-2Q25**
- Investment (R$ mm)[1]: **~R$ 6,000**
- Nº of wind turbines: **up to 188 (4.5 MW each)**

24 wind farms in a single phase.

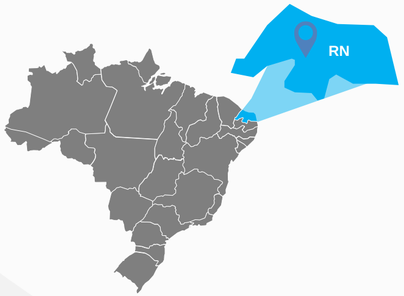
Note:
[1] Value as of May 2022.

Photovoltaic Project Under Implementation

Assú Sol Photovoltaic Complex







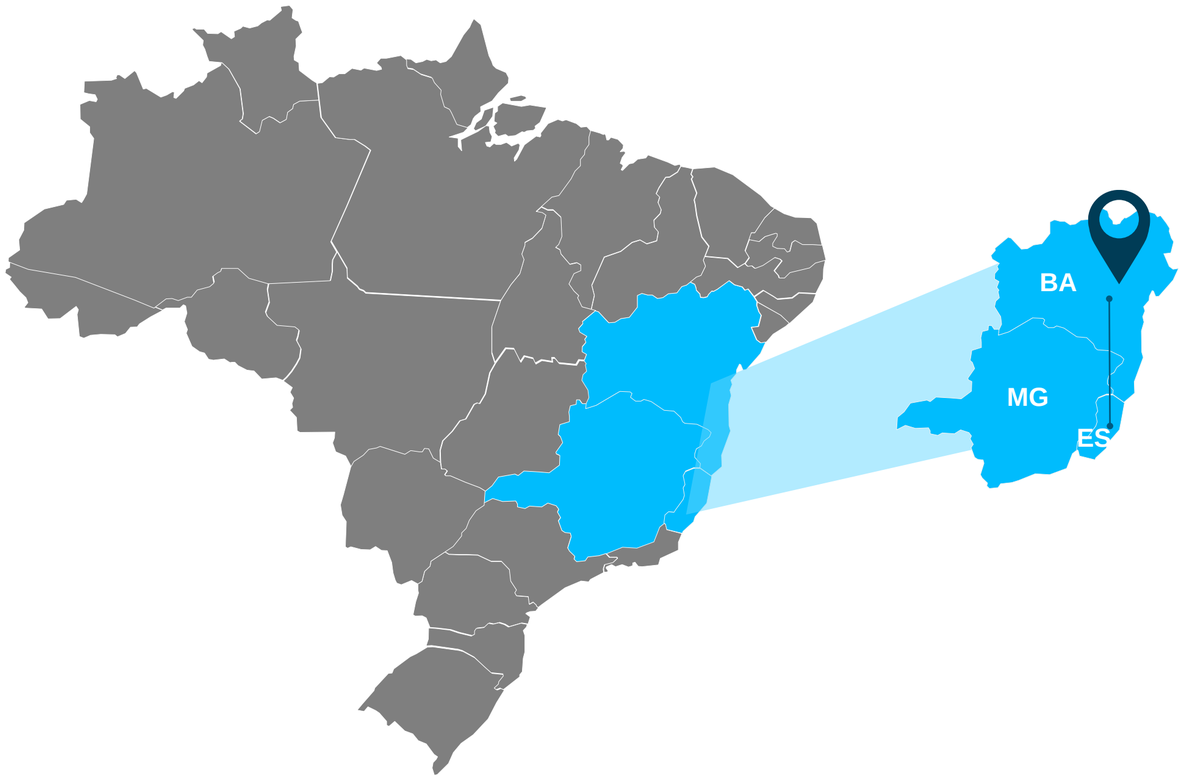
Assú (RN)

- Installed Capacity: **~752 MWac (~895 MWp)**
- Start of construction: **3Q23**
- Commercial Capacity: **~228.7 MWm**
- Operation: **Gradual 4Q24-4Q25**
- Investment (R$ mm)[1]: **~R$ 3,300**
- **2.3k** - inverters
  13.6k - trackers
  1.5M - modules

Nota:
[1] As of January 2023.

Transmission Project Under Implementation

Asa Branca Transmission System



Contracted RAP[1]:
R$ 268.4 million

Concession period:
30 years

Capex Aneel[2]:
R$ 2,667 million

Deadline:
Mar/2029
(66 months)

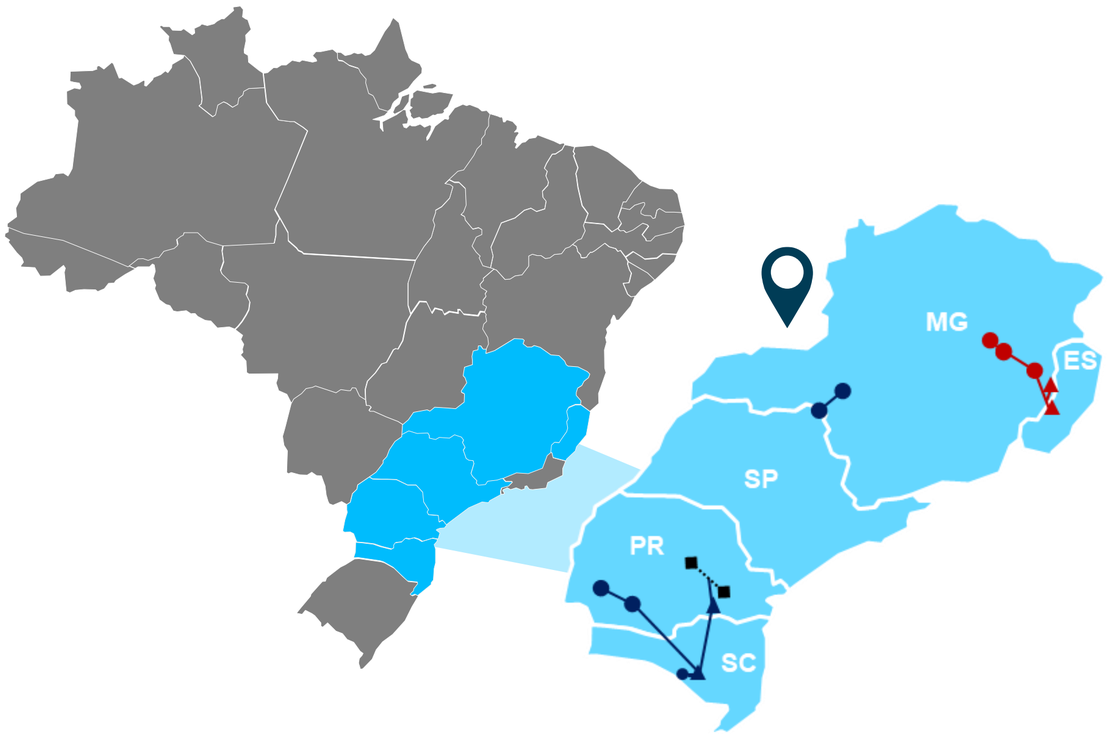
Technical features:

- Estimated length of 1,000 Km;
- 4 transmission lines of 500 kV single-circuit;
- 60 municipalities.

Notes:
[1] Value as of July/24.
[2] Valor base Dec/22.

Transmission Project Under Implementation

Graúna Transmission System



Contracted RAP[1]:
R$ 252.2 million

Capex Aneel[1]:
R$ 2,933.6 million

Concession period:
30 years

Deadline:
Dec/2029
(60 months)

Technical features:

- Construction of ~780 km length (6 new transmission lines) and 2 new substations;
- Operation of 4 existing lines (163 km) and 2 own substations;
- 47 municipalities.

Nota:
[1] Value as of March/24.

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LUCIANA NABARRETE

CHIEF PEOPLE, PROCESSES AND SUSTAINABILITY OFFICER

- Building a sustainable legacy
- Climate Journey – challenges of decarbonizing the supply chain
- Advances in promoting Diversity, Equity & Inclusion
- Strengthening the Partnerships for Good program – 3 years
- Challenges for the future.

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GUILHERME FERRARI

CHIEF NEW BUSINESSES OFFICER

- Portfolio diversification
- Growth opportunities
- Challenges for the future.

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2024

