



The Electric Power system

ROMANIA



cigre

For power system expertise

Contents (1/2)

1. Country basic facts
2. Global map of the grid and its interconnections
3. Grid facts and characteristics
4. Structure of the electrical power system
5. Map of the high voltage grid
6. Information on TSO(s)
7. Information on DSO(s)
8. Installed capacity with reference to primary resources - Development
9. Energy production with reference to primary resources
10. Consumption per customer groups



Contents (2/2)

11. Location of renewable energy sources
12. Development of wind power
13. Development of photovoltaic power & concentrated solar power
14. RES installed capacity and production per annum
15. Development of storage
16. Electricity price development for industry consumers
17. Electricity price development for households
18. Electricity market organisation
19. Power balance in 2025 / 2024
20. Energy exchanges in 2025 / 2024
21. Specific aspects of the electricity market



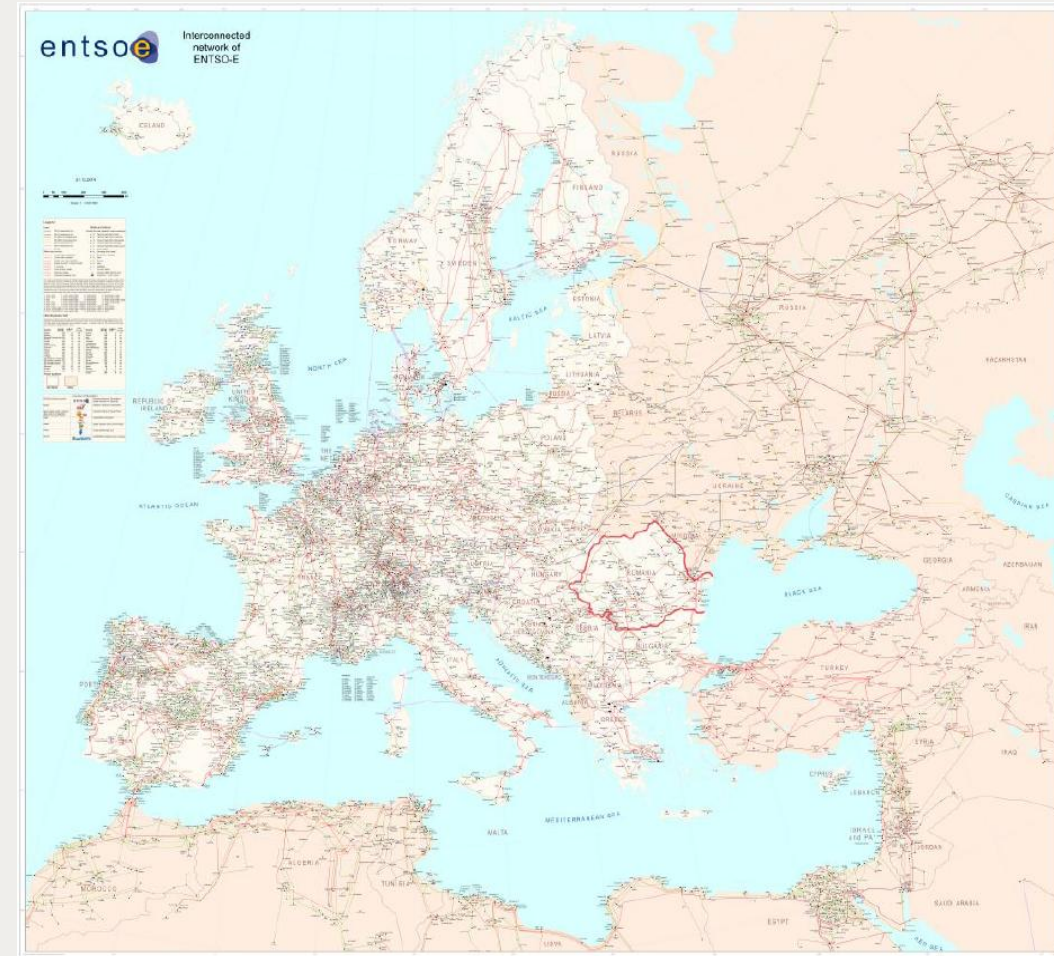
1. Basic facts

- Area: 238 397 km²
- Population: 19,71 mil
- Number of electricity consumers: 9,15 mil
- Number of TSOs: 1
- Number of DSOs: 8
- Peak load: 9 555 MW
- Average interruption of electricity: 1 127 min/year

2. Global map of the grid and of its interconnections

- Interconnectors with:

- Ukraine
- Hungary
- Serbia
- Bulgaria
- Republic of Moldova



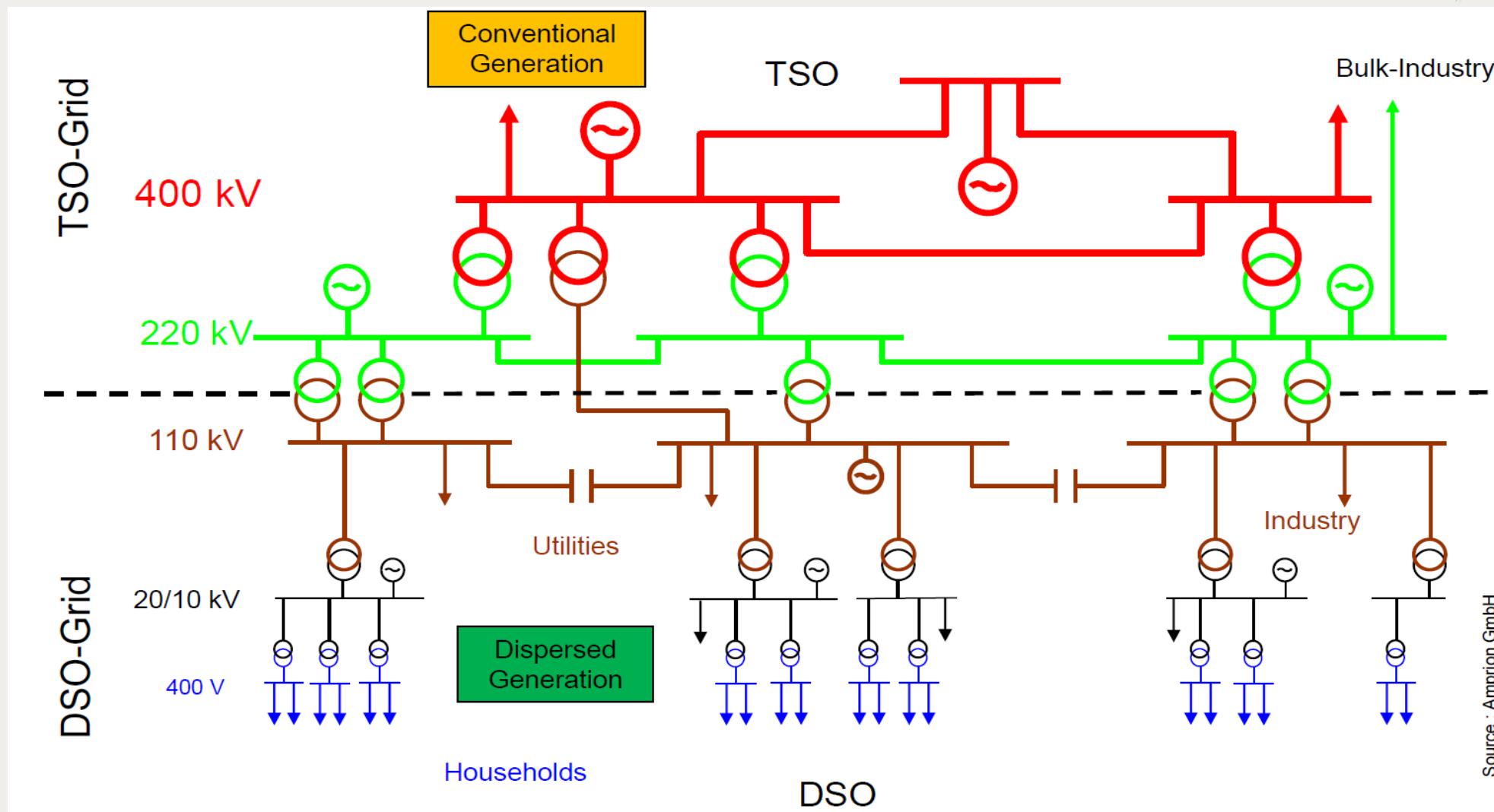
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3. Grid facts and characteristics

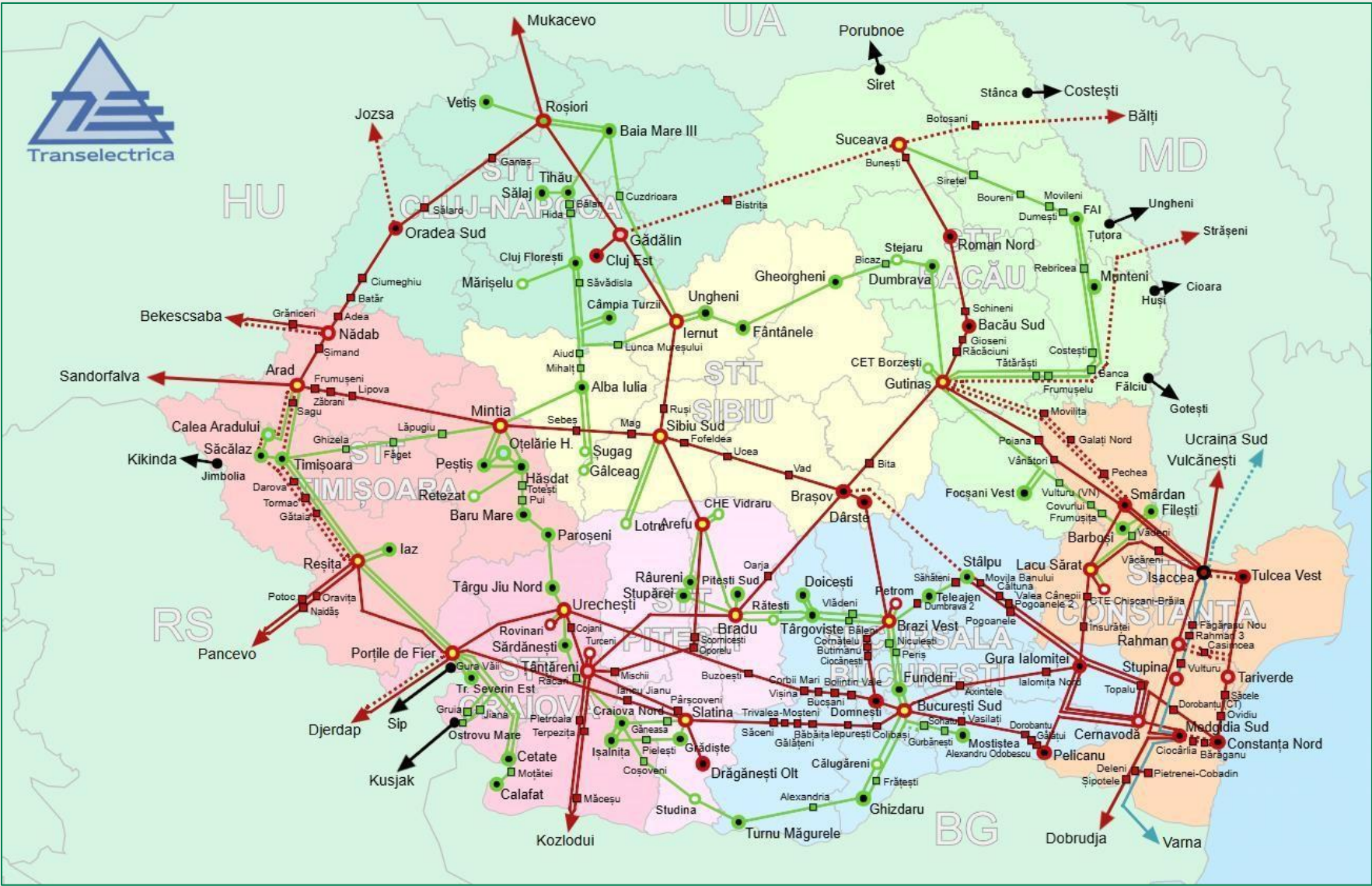
- The power grid in Romania is divided into transmission grids (maximum voltage) and distribution grids (high, medium and low voltage).

Responsibility	Voltage Level	Total length (approx.)
TSO	750 kV	3,1 km
TSO	400 kV	4 915,2 km
TSO	220 kV	3 875,6 km
TSO	110 kV	40,4 km
DSO	≤ 110 kV	337 500 km

4. Structure of the electrical power system



5. Map of the high voltage grid



6. Information on TSO(s)

- Name: C.N.T.E.E. Transelectrica S.A.
- Network length (km): 8 834
- Served area (km²): 238 391
- Annual transmitted energy (TWh): 44 468
- website: <http://www.transelectrica.ro>

7. Information on DSO(s)

- Name: **Delgaz Grid S.A.**
- Network length (km): ~25,000 km
- Served area (km²): ~50,000 km²
- Annual distributed energy (TWh): ~15 TWh
- Coverage (counties): Bacău, Botoșani, Iași, Neamț, Suceava, Vaslui
- website: <https://www.delgaz.ro/>

- Name: **Distribuție Energie Oltenia S.A.**
- Network length (km): ~87,000 km
- Served area (km²): ~29,000 km²
- Annual distributed energy (TWh): ~14 TWh
- Coverage (counties): Argeș, Dolj, Gorj, Mehedinți, Olt, Teleorman, Vâlcea
- website: <https://www.distributieoltenia.ro/ro>

- Name: **Distribuție Energie Electrică România S.A. (DEER)**
- Network length (km): ~198,000 km
- Served area (km²): ~100,000 km² Annual distributed energy (TWh): ~40 TWh
- Coverage (counties): Bihor, Bistrita Năsăud, Cluj, Maramureș, Satu Mare, Zalău, Alba, Brașov, Covasna, Harghita, Mureș, Sibiu, Buzău, Dâmbovița, Galați, Prahova, Vrancea
- website: <https://www.distributie-energie.ro/>

- Name: **Rețele Electrice România S.A.**
- Network length (km): ~134,000 km
- Served area (km²): ~78,000 km²
- Annual distributed energy (TWh): ~44 TWh
- Coverage (counties): Arad, Caraș-Severin, Hunedoara, Timiș, Călărași, Constanța, Ialomița, Tulcea, Giurgiu, Ilfov, Bucharest
- website: <https://www.reteleelectrice.ro/>

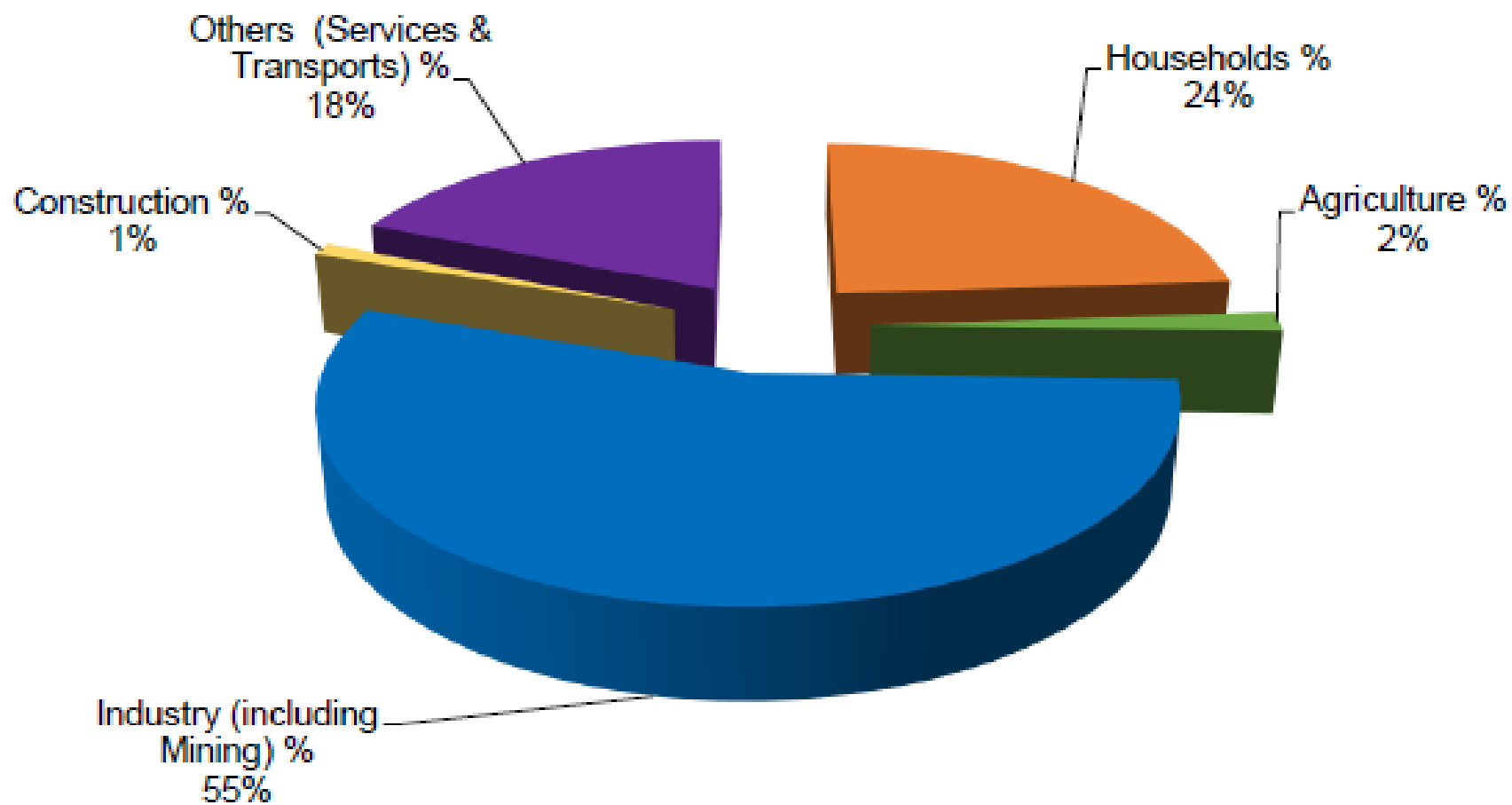
8. Installed capacity with reference to primary resources

- Installed capacities (GW), year 19,617 GW, in 2025
 - Biomass: 139 MW
 - Coal: 2762,2 MW
 - Gas: 2744,67 MW
 - Hydro power: 6687,92 MW
 - Coal: 1647 MW
 - Nuclear: 1413 MW
 - Oil&Gas: 1006 MW
 - Solar power: 2779,18 MW
 - Wind power: 3091,11 MW
 - Others: 36 MW

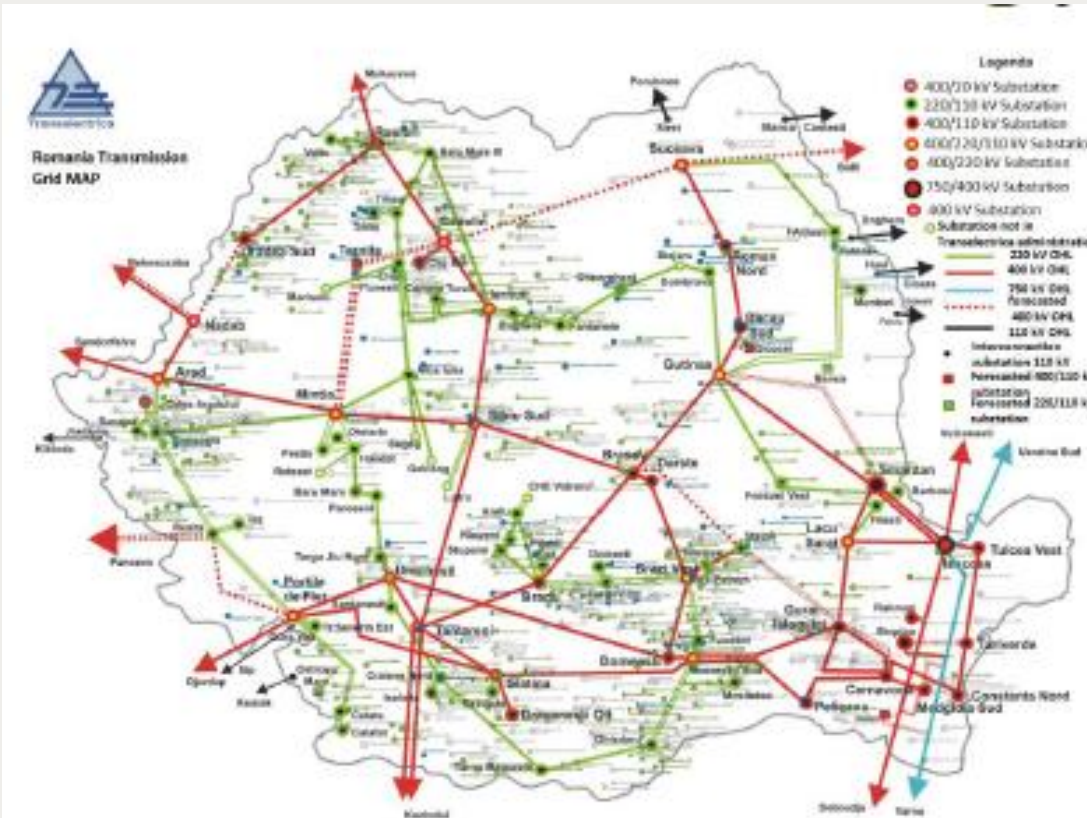
9. Energy production with reference to primary resources

- Electricity generated 48.8 TWh in 2025
 - Coal and Gas: 9.8 TWh
 - Nuclear: 10.7 TWh
 - Hydro: 12.7 TWh
 - Renewables: 21.5 TWh

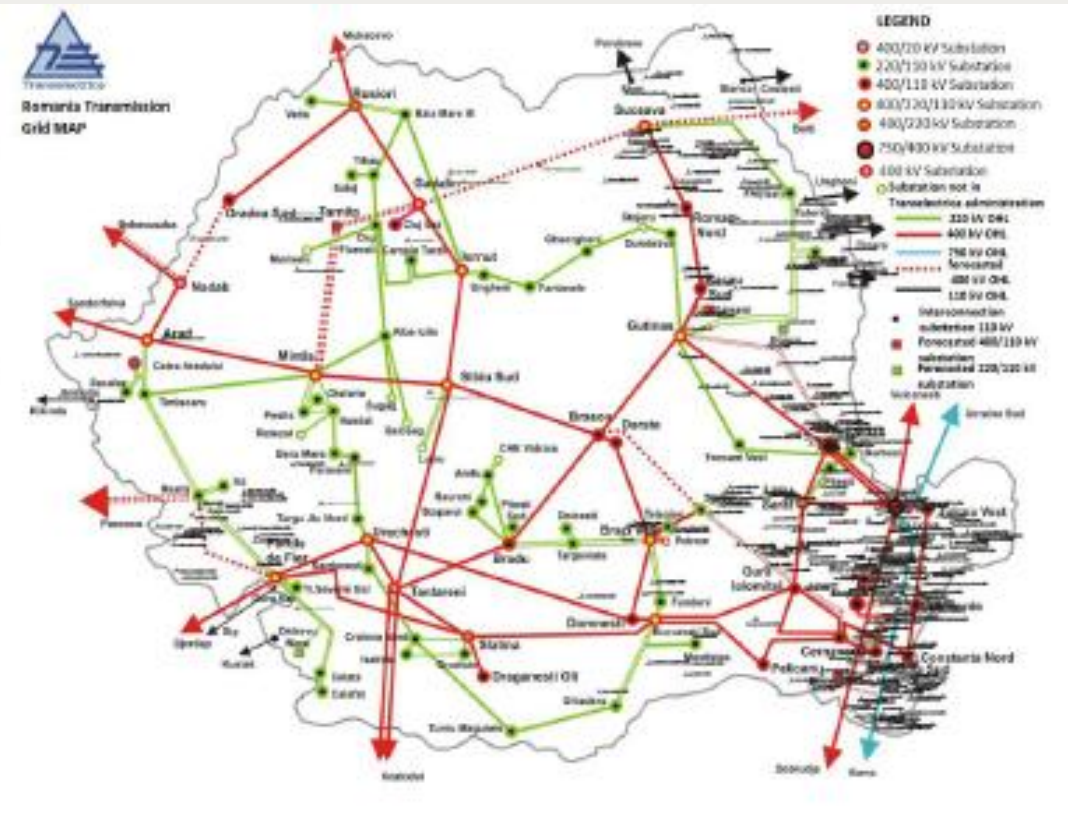
10. Consumption per customer groups



11. Location of renewable energy sources

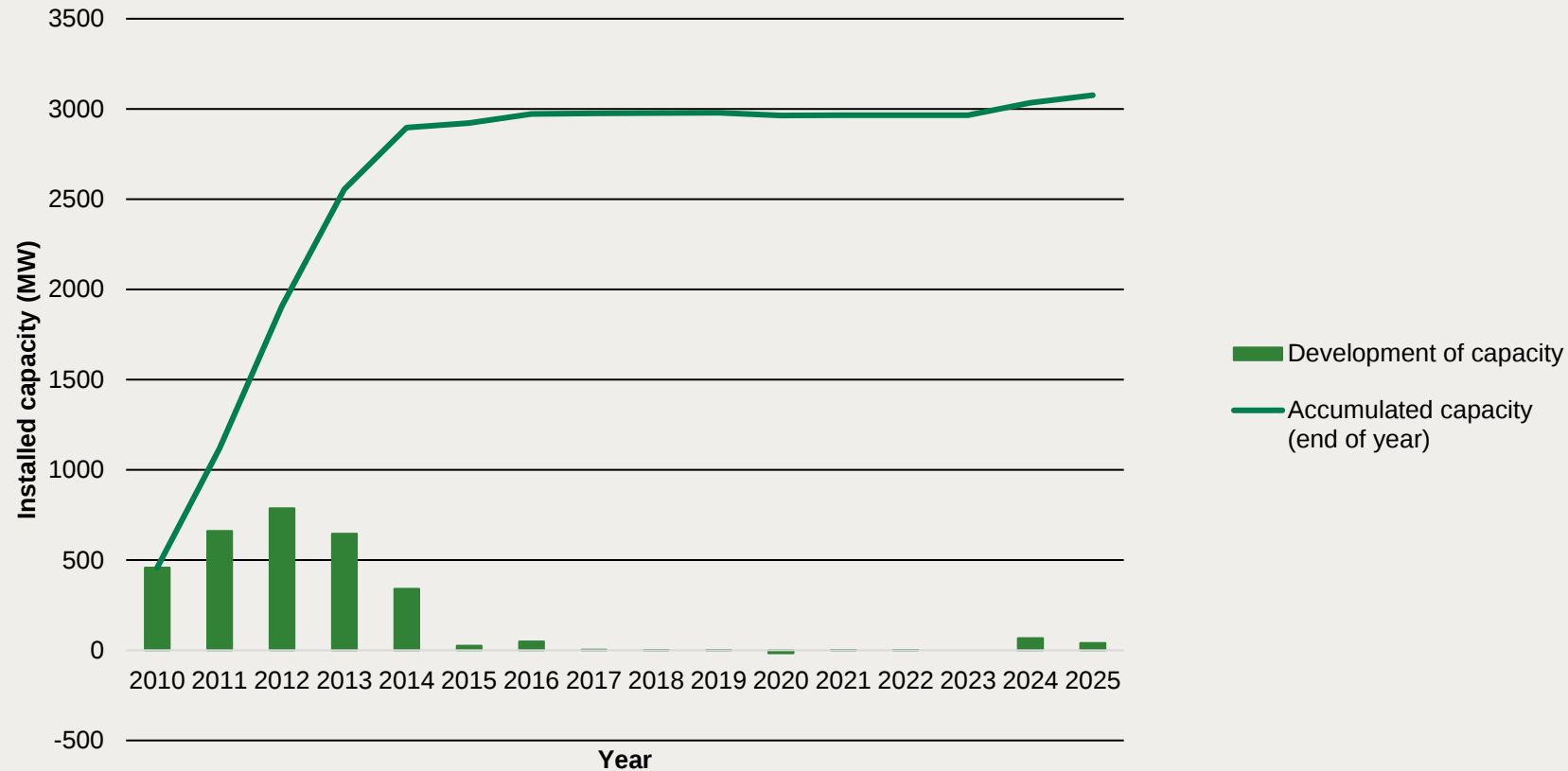


Installed PV panels

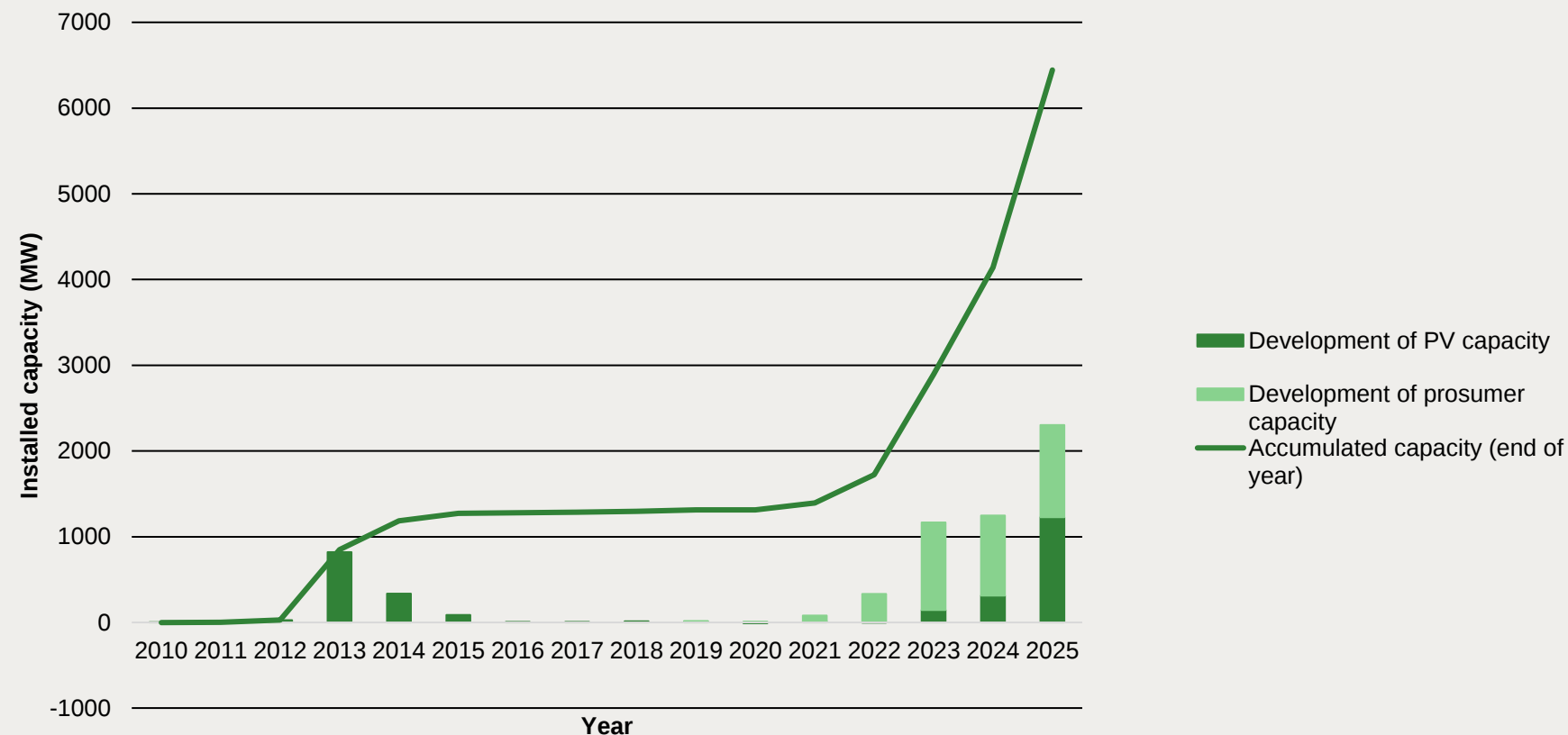


Installed Wind turbines

12. Development of wind power



13. Development of photovoltaic power & prosumers



14. RES installed capacity and production per annum

48787,07 MWh

2025		
Source	Share of Total Generation (%)	Estimated Generation (GWh)
Hydro	25.98%	~12,675
Wind	12.97%	~6,330
Solar	4.34%	~2,120
Biomass	0.81%	~395
Total RES	~44%	~21,520

50231,24 MWh

2024		
Source	Share of Total Generation (%)	Estimated Generation (GWh)
Hydro	29.19%	~14,662
Wind	13.29%	~6,675
Solar	2.39%	~1,200
Biomass	0.74%	~377
Total RES	~46%	~22,914

14. RES installed capacity and production per annum

56034,13 MWh

2023		
Source	Share of Total Generation (%)	Estimated Generation (GWh)
Hydro	33.47%	~18,755
Wind	14.13%	~7,918
Solar	1.88%	~1,053
Biomass	0.56%	~314
Total RES	~50%	~28,040

53540 MWh

2022		
Source	Share of Total Generation (%)	Estimated Generation (GWh)
Hydro	26.47%	~14,165
Wind	13.71%	~7,336
Solar	1.76%	~942
Biomass	0.39%	~209
Total RES	~42%	~22,652

15. Development of storage

Year	Share of Total Generation (%)	Estimated Energy (GWh)
2025	0.3%	~147
2024	0.14%	~70
2023	0.01%	~6
2022	0%	0

16. Price development for industry consumers

Year	Average Total Price (RON/MWh)	Competitive Market Price (RON/MWh)
2025	782.56	779.73
2024	795.45	797.04
2023	1119.93	1133.75

17. Price development for households

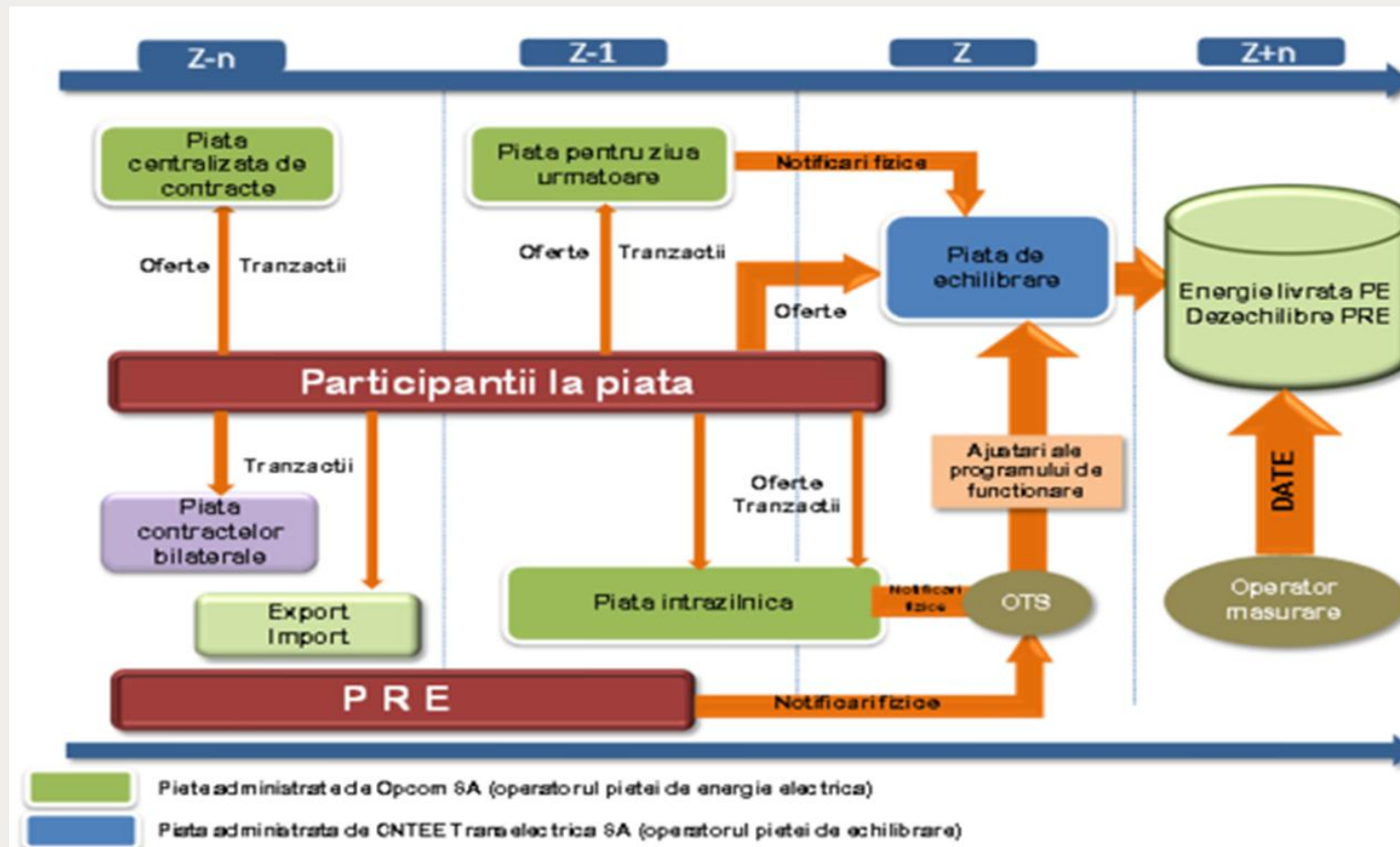
Year	Average Total Price (RON/MWh)	Competitive Market Price (RON/MWh)
2025	1045.87	1030.91
2024	1014.57	1038.46
2023	1513.19	1542.93

18. Electricity market organisation

OPCOM (since December 2001) and BRM (since March 2022).

Markets: Day-Ahead Market (DAM) coupled within SDAC (European), Intraday Market (IDM) coupled within SIDC, bilateral contracts, and balancing market.

The BRM Day-Ahead Market (DAM-BRM) has been operational since November 2024.



19. Power balance in 2025/2024

Indicator (TWh)	2024	2025
Generation	50.2	48.8
Delivered to grid	47.6	46.1
Commercial import	15	19.1
Commercial export	12	15.3
Domestic consumption (SEN)	55.3	55.1
Transmission losses	0.95	0.9
Distribution losses	4.8	4.6

20. Energy exchanges in 2025/2024

(GWh)	2024	2025
Commercial export	6,759	11,332
Commercial import	9,786	15,073
Net import (balance)	+3,027	+3,741

21. Specific aspects of the electricity market



Market coupling (SDAC / SIDC)

The Romanian electricity market is integrated at European level through coupling mechanisms:

- Day-ahead market (DAM) via SDAC
- Intraday market (IDM) via SIDC

Day-ahead market (DAM)

Main short-term market where electricity is traded one day before delivery, based on auction mechanisms and price matching.

Bilateral contracts (OTC & centralized)

Electricity is traded via:

- negotiated
- bilateral contracts centralized contract markets (PCCB, OTC platforms)

Market splitting

When cross-border transmission capacity is limited, the coupled market separates into price zones, leading to different prices between countries or areas.

Intraday market (IDM)

Continuous trading close to real time, allowing participants to adjust positions and manage imbalances.

Balancing market

Operated by the TSO (Transelectrica) to maintain real-time system balance through activation of reserves