

European Energy Market 4

Electricity Trade – POLPX S.A.

**Studia niestacjonarne II stopnia
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Władysław Mielczarski

Instytut Elektroenergetyki, Politechnika Łódzka

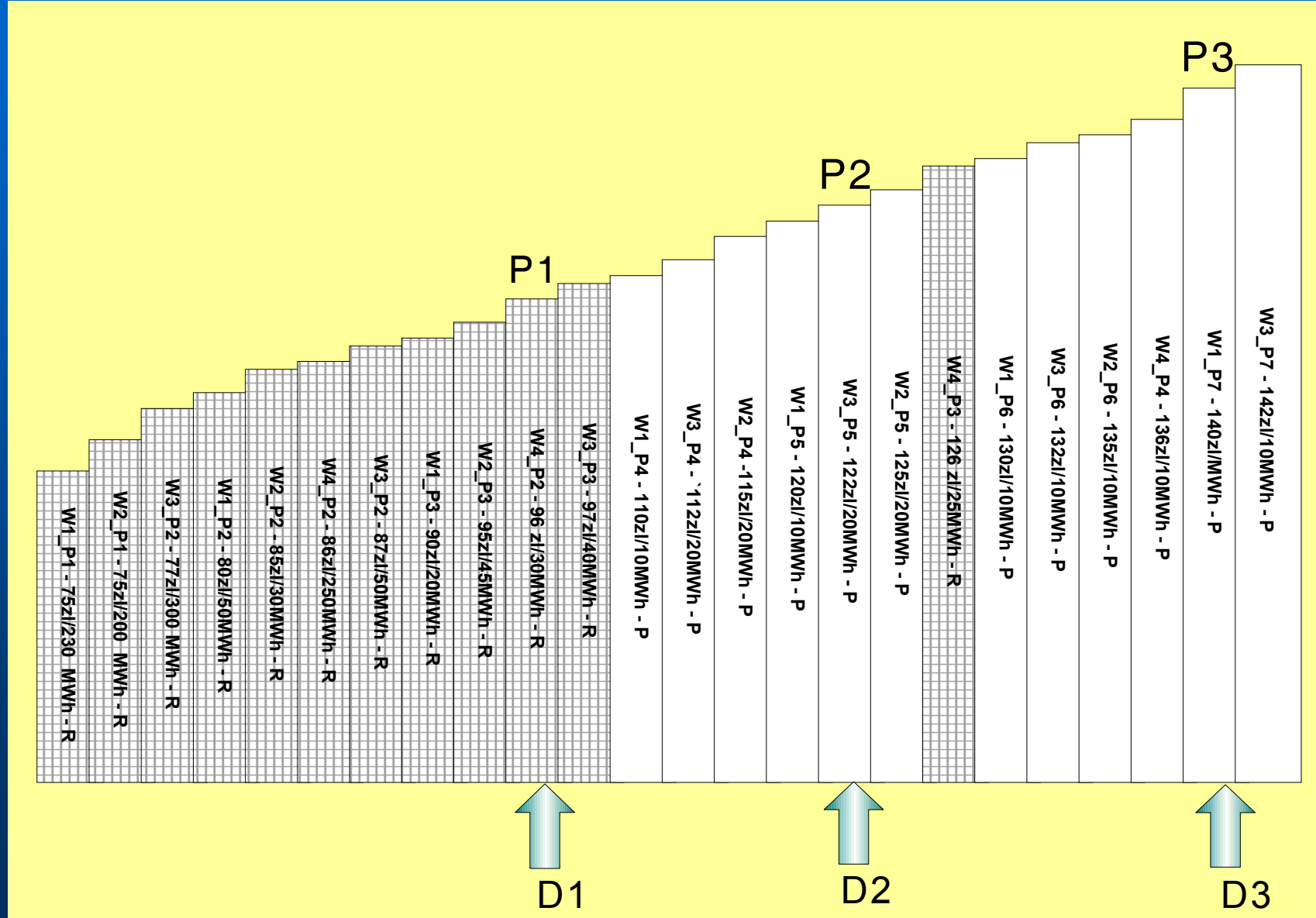
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Lp	List of lectures
1	European Energy Markets
2	Polish Power System
3	Main Market Rules - Balancing
4	Electricity Trade - Power Exchange
5	Customers - TPA
6	Subsidized Markets
7	Cost of Electricity
8	Energy Mix
9	EU Emission Trade System
10	Cross border trading

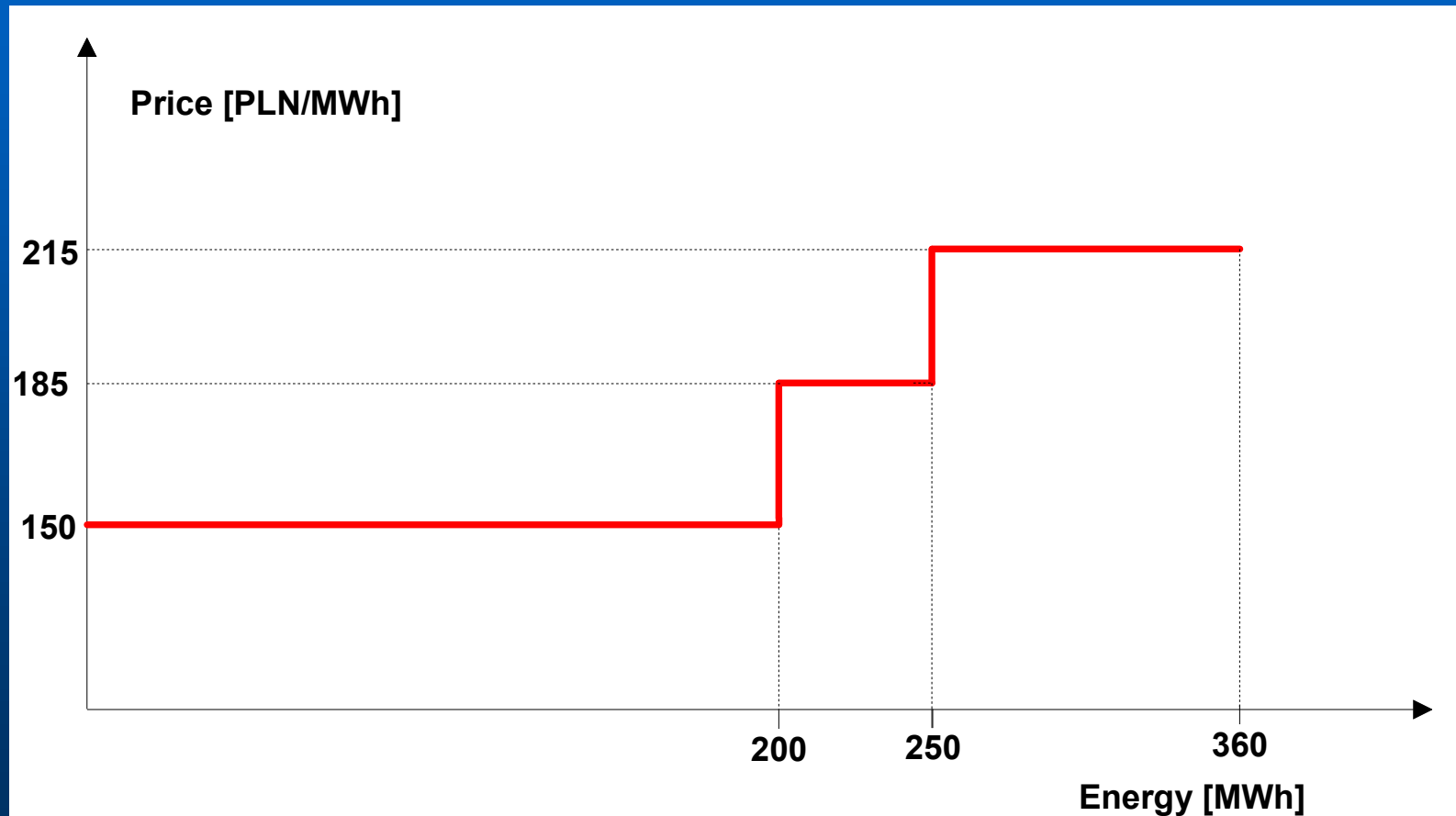
Pricing systems

- There are two main pricing systems used in electricity markets.
- **Marginal price** – the cost of generation of the next energy unit.
- The marginal price is set by the last bid accepted.
- All bids accepted (on left side) are paid the same price.
- **Pay-as-bid** – bidders are paid the prices offered in their bids.

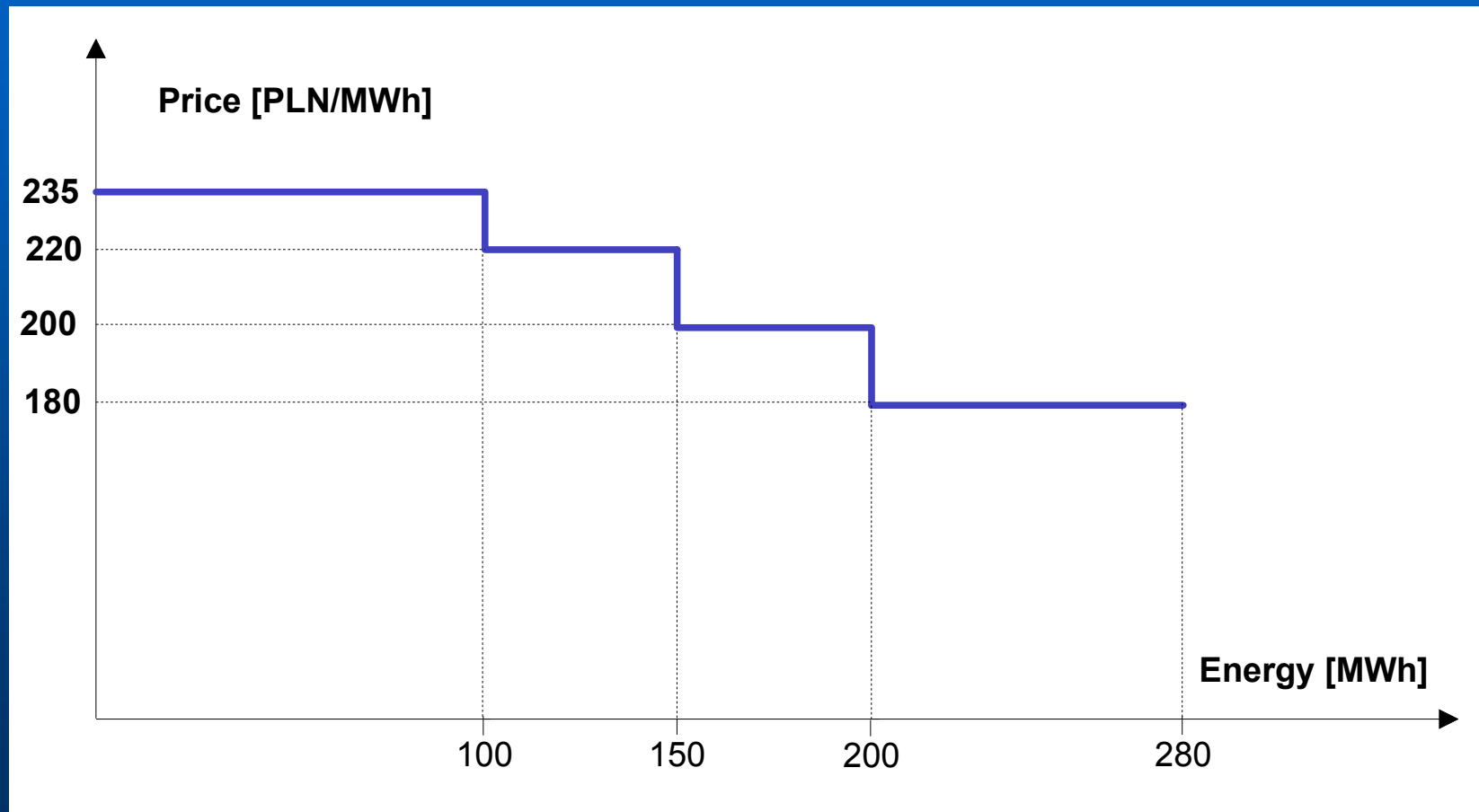
Merit order



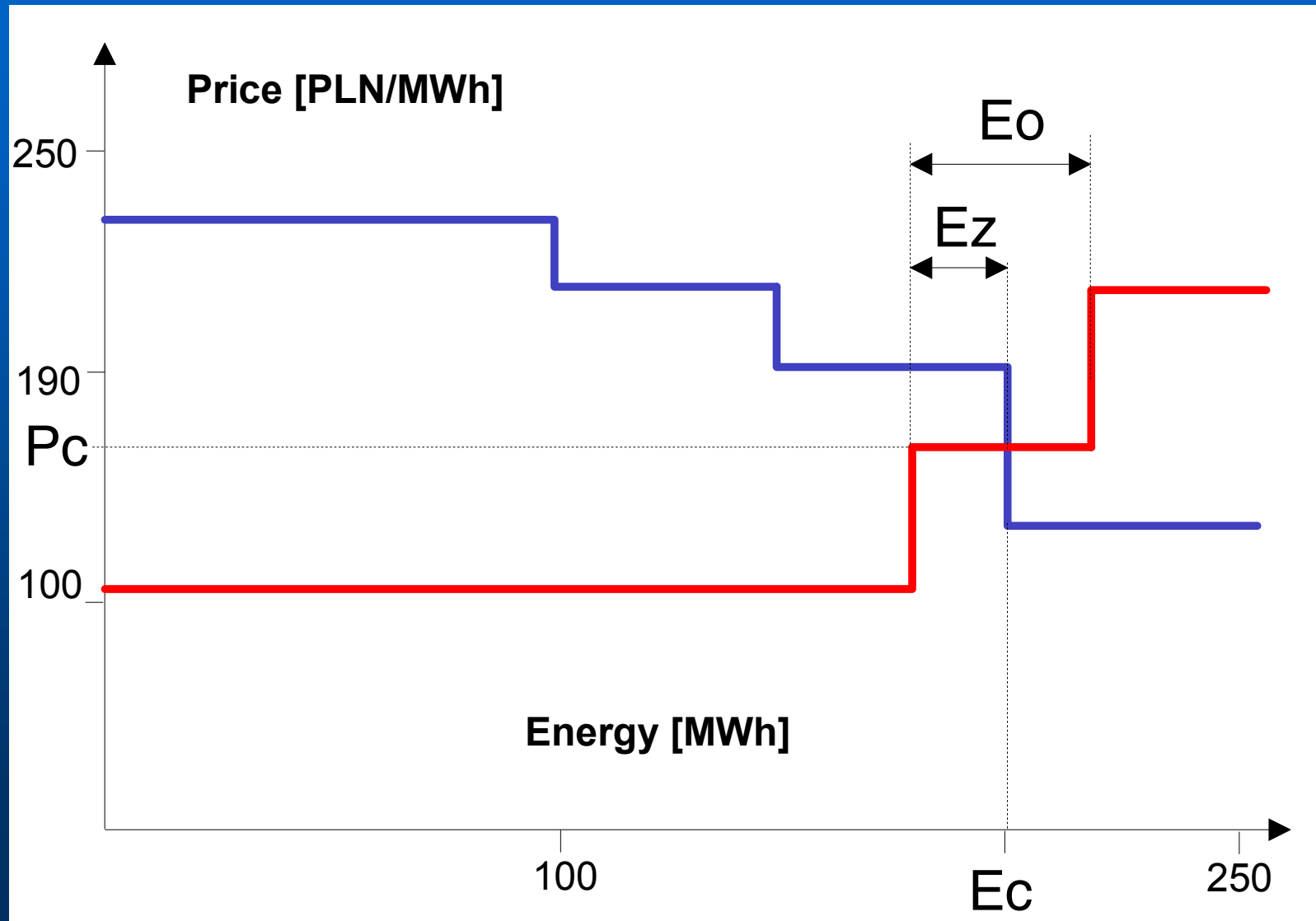
Production (sale) bids in merit order



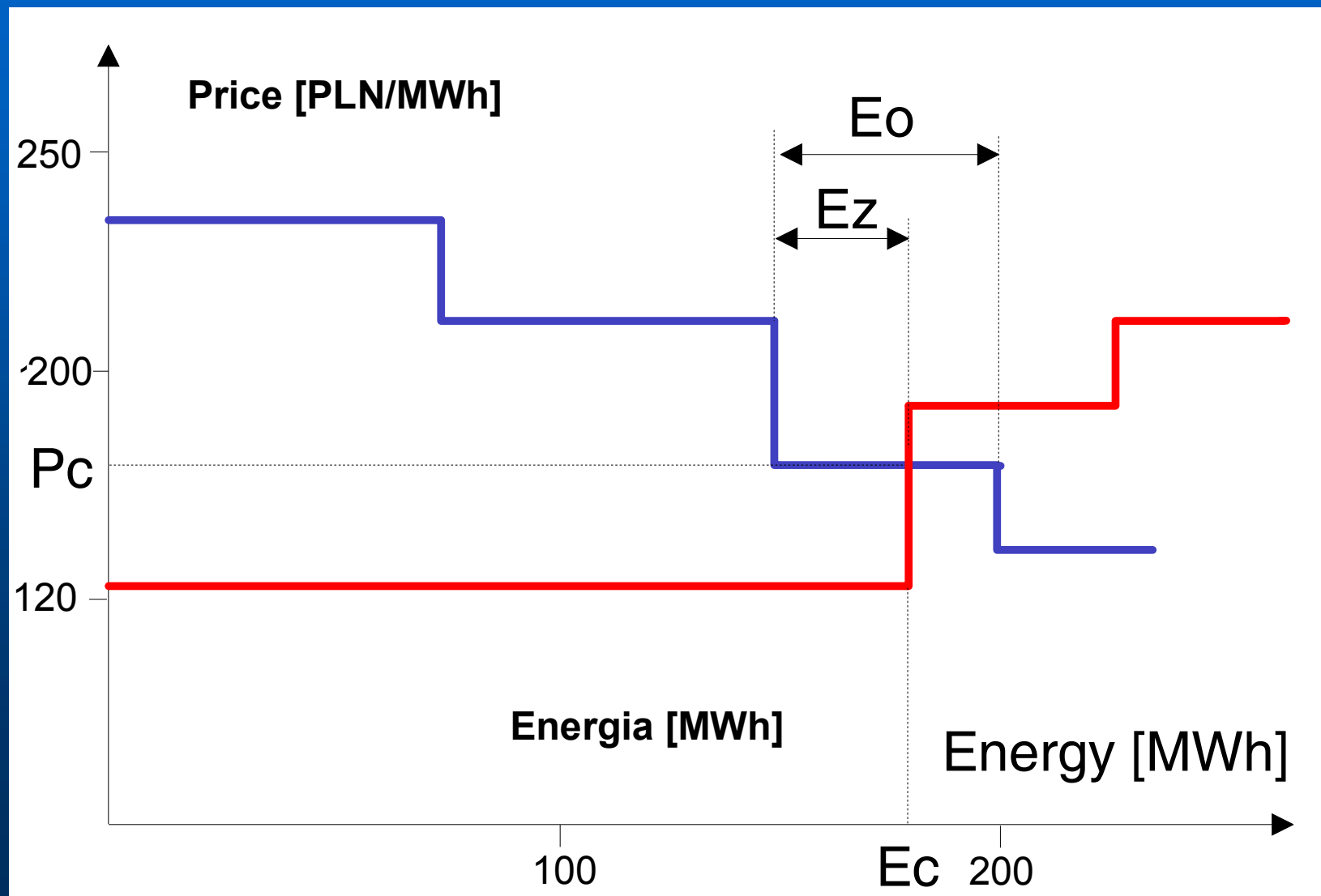
Purchase bids in merit order



Clearing price and pro rata split



Clearing price and pro rata split



Polish Power Exchange

- Towarowa Giełda Energii SA (currently: POLPX S.A.) was established at the end of 1999.
- In the first six months, from registration of its business operations, it has launched the Day Ahead Market (electricity spot market).
- In 2003, POLPX was the first and so-far only entity to obtain a license to run a commodity exchange market from the Financial Supervision Commission (KNF).

Main Trading Floors

- Day Ahead Market (DAM)
- Commodity Derivatives Market (CDM),
- Intraday Market (IDM)
- Property Rights Market for Renewable Energy Sources and Co-generation, (PRM)
- CO2 Emission Allowance Market (EAM).

Day Ahead Market

- The Day Ahead Market of POLPX is composed of 24-hour markets, quoting one type of hourly contract each.
- Additionally, the DAM market is quoting three block contracts:
- PASMO - contract with delivery of 1 MWh of power in each hour of the 24h day
- Euroszczyt - contract with delivery of 1 MWh of power in each peak hour between 8:00 and 22:00,
- Offpeak - contract with delivery of 1 MWh of power in the demand low hours - 23:00 to 7:00)

Day Ahead Market – August 2012

Miesięczne średnioważone ceny dla 24 godzin doby / Monthly Weighted Average Rate for Particular Hours (PLN/MWh)



Day Ahead Market – August 2012

Średnioważone indeksy Weighted Averages Indexes	08-2012	07-2012	Zmiana Change
Mies. kurs BASE (PLN/MWh)	185,66	178,20	↑ 7,46
Monthly Base (EUR/MWh*)	45,36	42,54	↑ 2,81
Mies. kurs PEAK (PLN/MWh)	194,24	188,29	↑ 5,95
Monthly Peak (EUR/MWh*)	47,45	44,95	↑ 2,50
Mies. kurs OFFPEAK (PLN/MWh)	164,55	157,21	↑ 7,34
Monthly Offpeak (EUR/MWh)	40,20	37,53	↑ 2,67

Commodity Derivatives Market

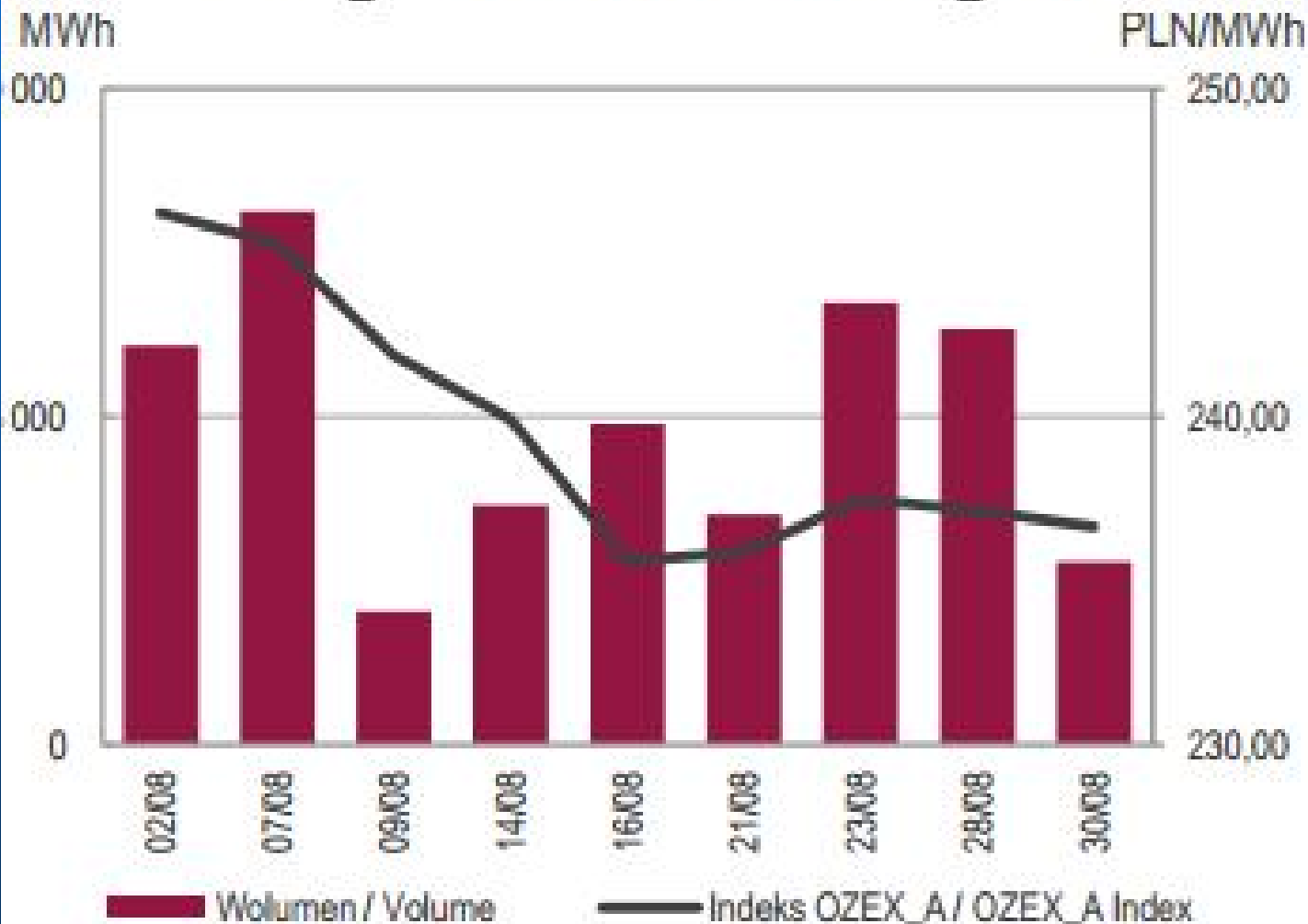
- **Weekly** (BASE_W), (PEAK5_W), (PEAK7_W), (OFFPEAK_W)
- **Monthly** (BASE_M), (PEAK5_M), (PEAK7_M), (OFFPEAK_M)
- **Quarterly** (BASE_Q), (PEAK5_Q), (PEAK7_Q), (OFFPEAK_Q)
- **Yearly** (BASE_Y), (PEAK5_Y), (PEAK7_Y), (OFFPEAK_Y)

Property Rights Market

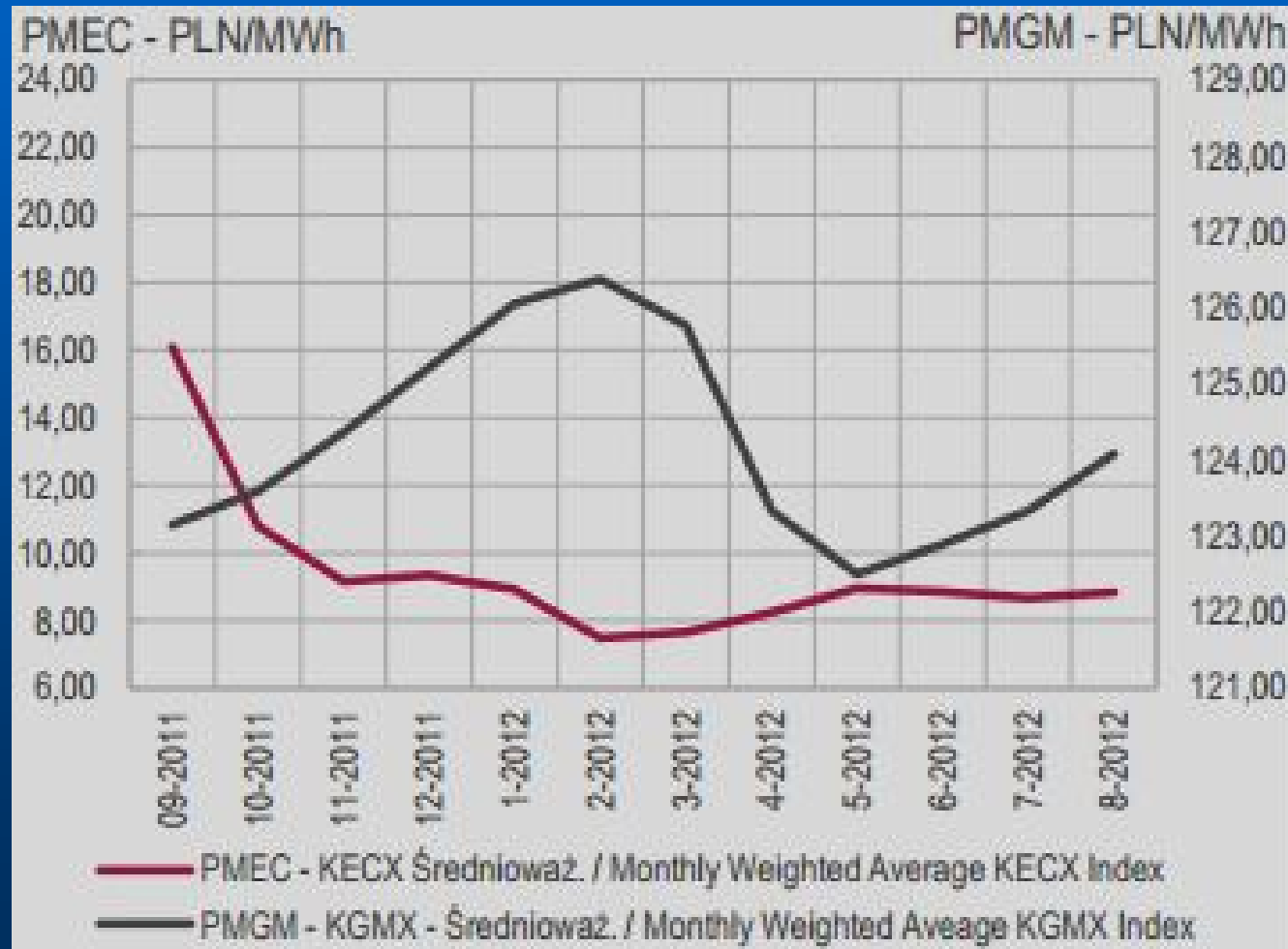
- **Green certificates** - renewables:
PMOZE, PMOZE_A
- **Yellow certificates** – cogeneration
gas: PMGM
- **Red certificates** – cogeneration
coal: PMEC
- **Violet certificates** – cogeneration
methane: PMMET

Green certificates - PMOZE

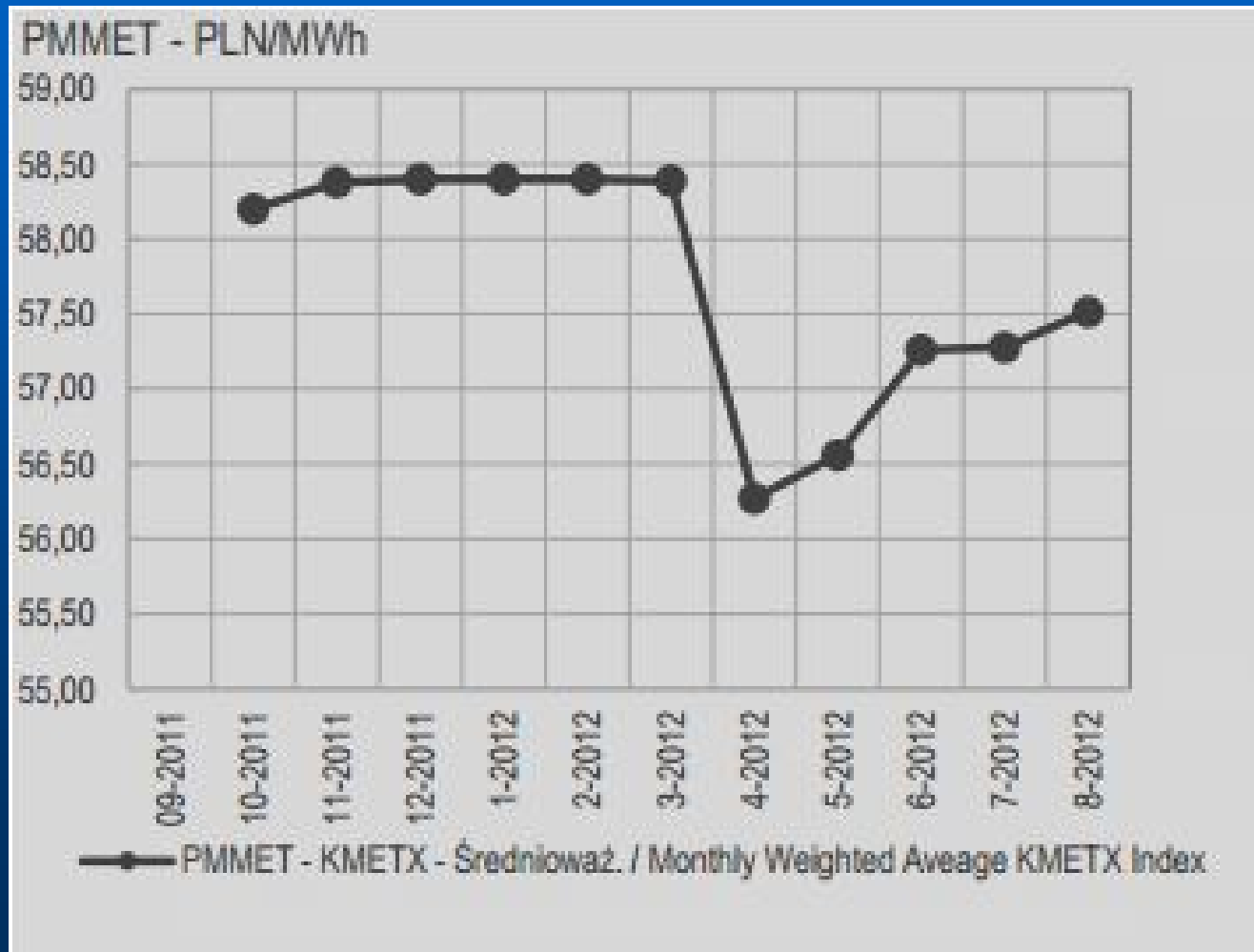
Sesje PMOZE_A - Wolumen i indeks OZEX_A / Trading Sessions for PMOZE_A contract - Volumes and OZEX_A Index



Red (PMEC) and Yellow (PMGM) certificates



Violet certificates - PMMET



Emission Allowances Market - (CO2 Spot)

- The Emission Allowances Market (CO2 Spot) is an integral part of the national and European CO2 Emission Allowances Trading System.
- It has been in place since September 19, 2006.
- It is dedicated to installations participating in the European system of CO2 emission certificate trading and all entities interested in such trading.

Prices of CO2 in Europe

Price of allowances for CO2 emission in Euro/Mg

