

European Energy Market 6

Subsidized Markets

Studia niestacjonarne II stopnia
Rok akademicki 2012/2013

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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

Subsidized technologies

- **Renewables:**

1. Wind: onshore & off-shore

2. Solar: PV & thermal

3. Biomass & biogas

4. Tides & waves

5. Land fill gas & Sewage treatment plant gas

- **Co-generation:** coal, gas, methane

Two systems of subsidies for RES

- **Feed-in-Tariffs** – fixed prices of electricity for the predefined period: usually 15-20 years – Germany.
- Level of tariffs is determined by Energy Regulatory Authority
- **Green Certificates** – financial rights additionally to the income from market trade on competitive prices – Poland.
- **Guarantees of Origin** as Green Certificates but can be traded in all EU countries.

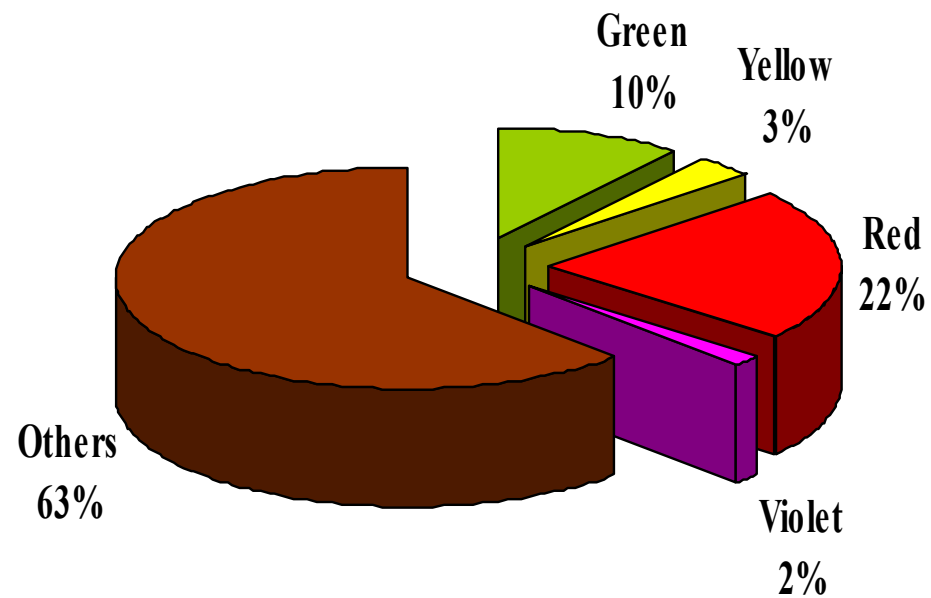
Subsidies for Co-generation

- Co-generation receives subsidies in a form of certificates:
 - **Red certificates** for coal
 - **Yellow certificates** for gas
 - **Violet certificates** for methane
- Similarly as green certificates they are financial rights – additional income to the trade in energy markets.

Trading certificates

- Demand for certificates is created by the obligation imposed on energy traders to possess in their portfolio determined amount of certificates.
- Obligation is formulated in percentage (%) of the energy trade.
- In 2011: green – 10,4%; red – 22,2%; yellow – 3,3%; violet – 1,6%.

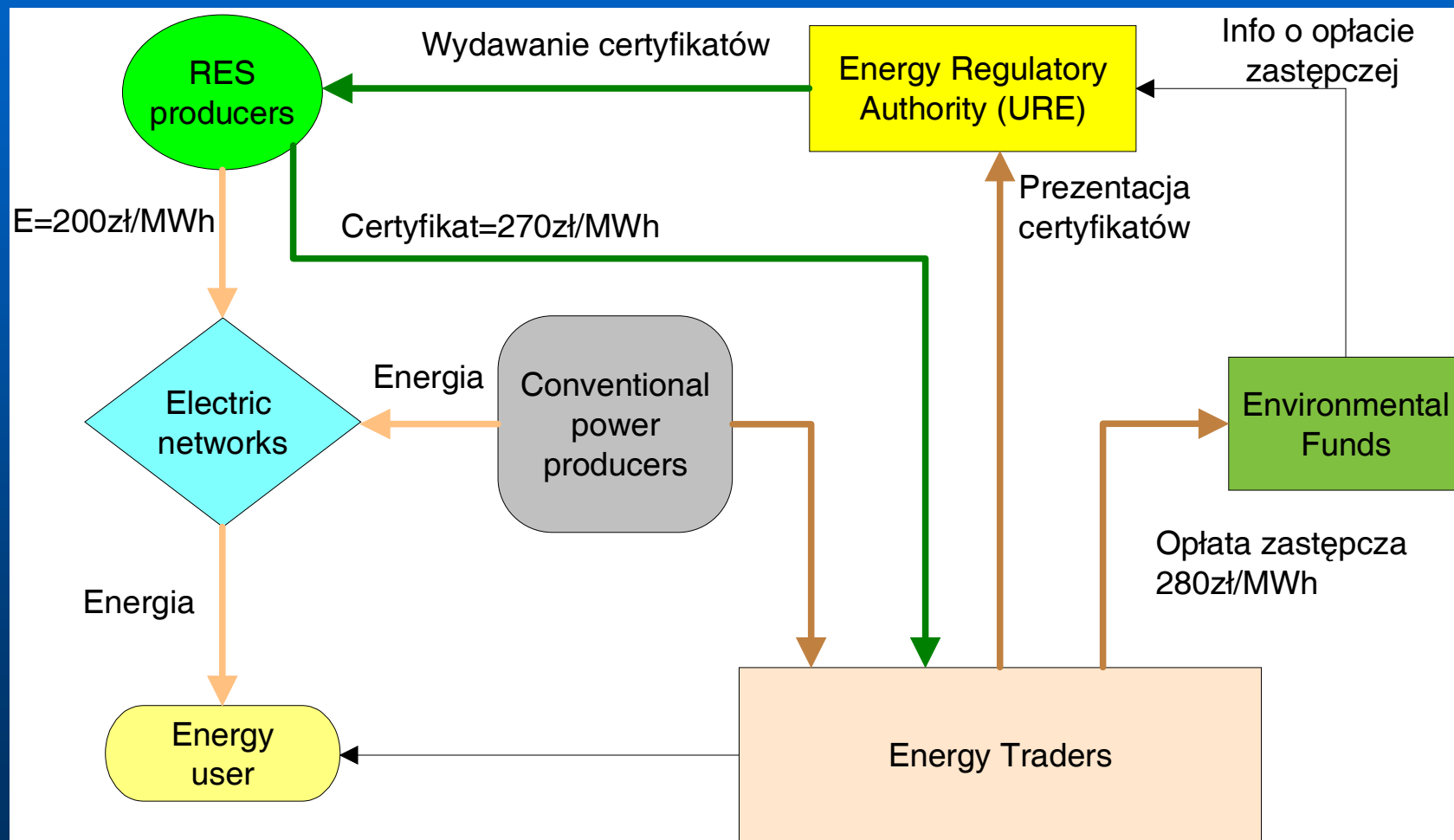
Shares of subsidized and competitive market production in 2011 roku



Substitute Fee for certificates

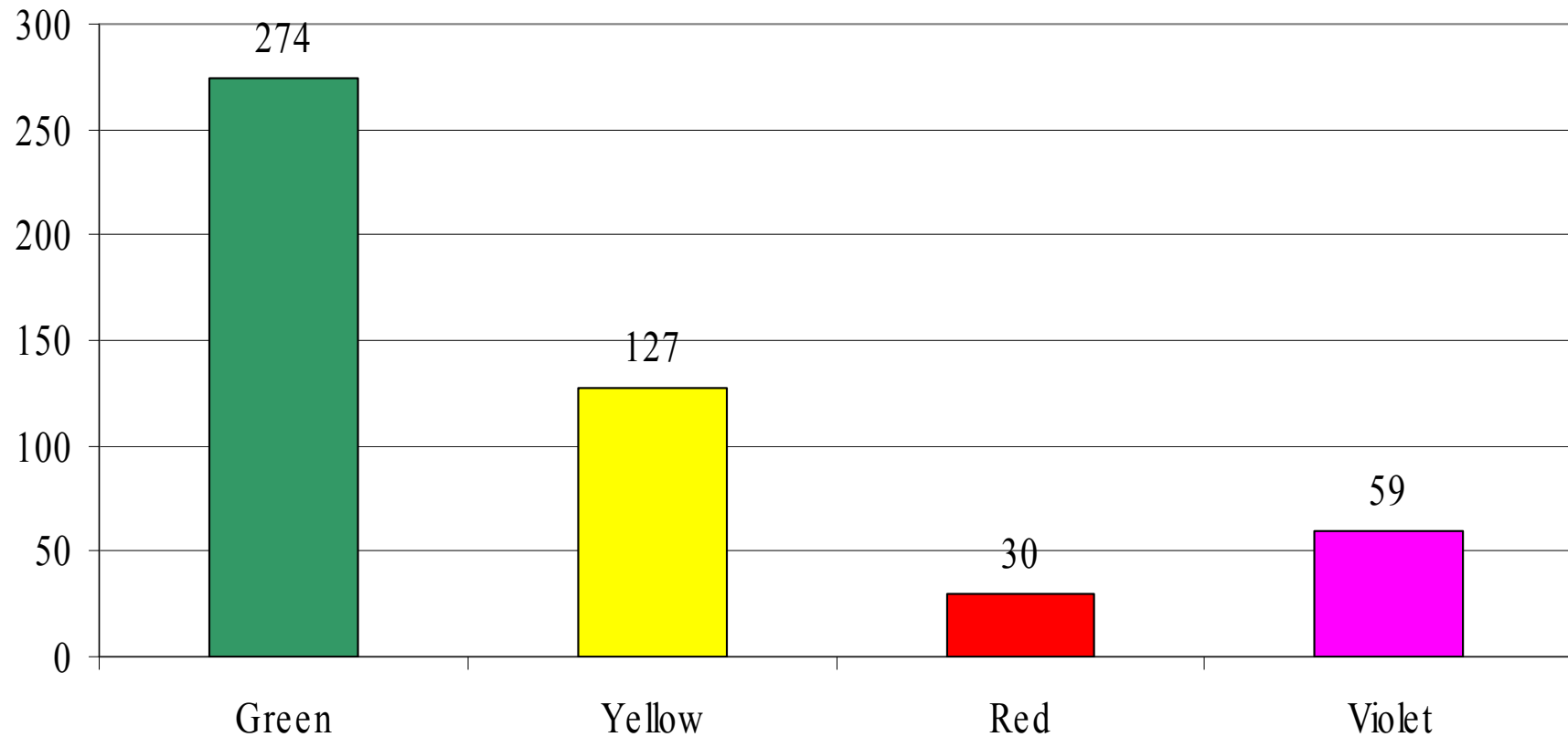
- Each energy trader should have the prescribed amount of certificates in his portfolio.
- If not, he is subject to penalties.
- Penalties can be avoided if the trader pays a substitute fee in value determined by Energy Regulatory Authority to Environmental Funds.
- Level of substitute fees decides on certificate prices.

System of certificates

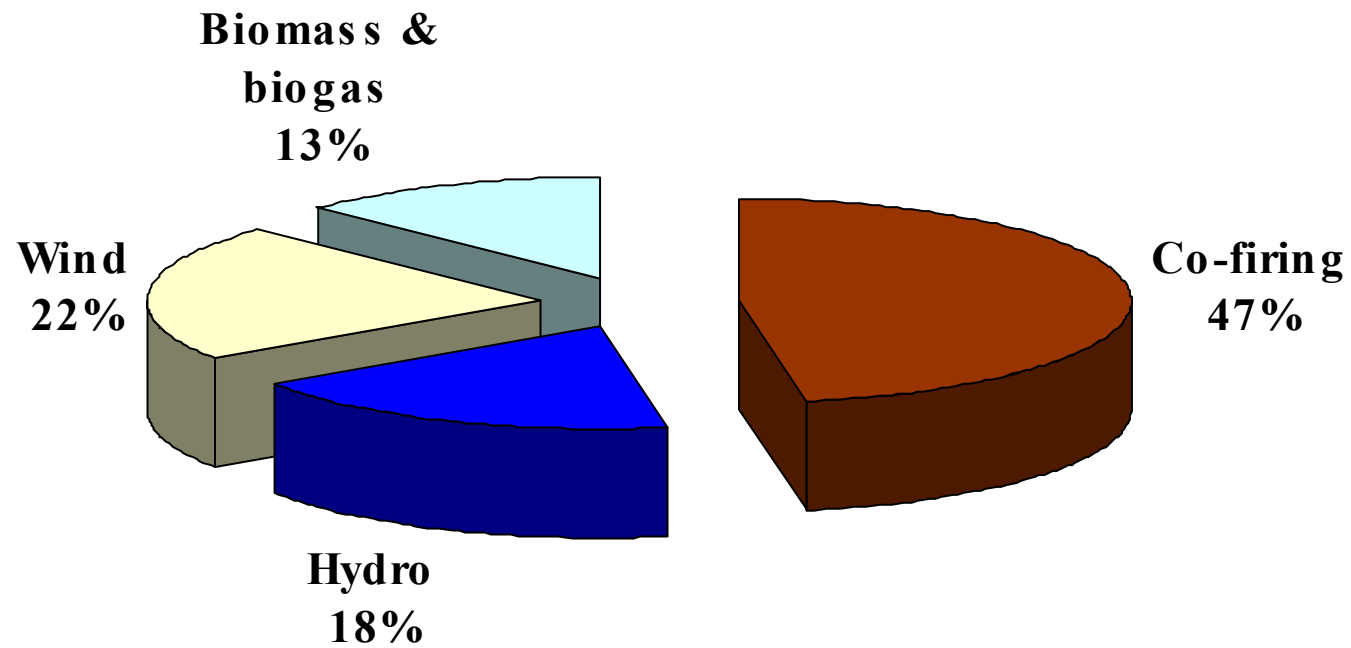


Substitute Fee for certificates in 2011

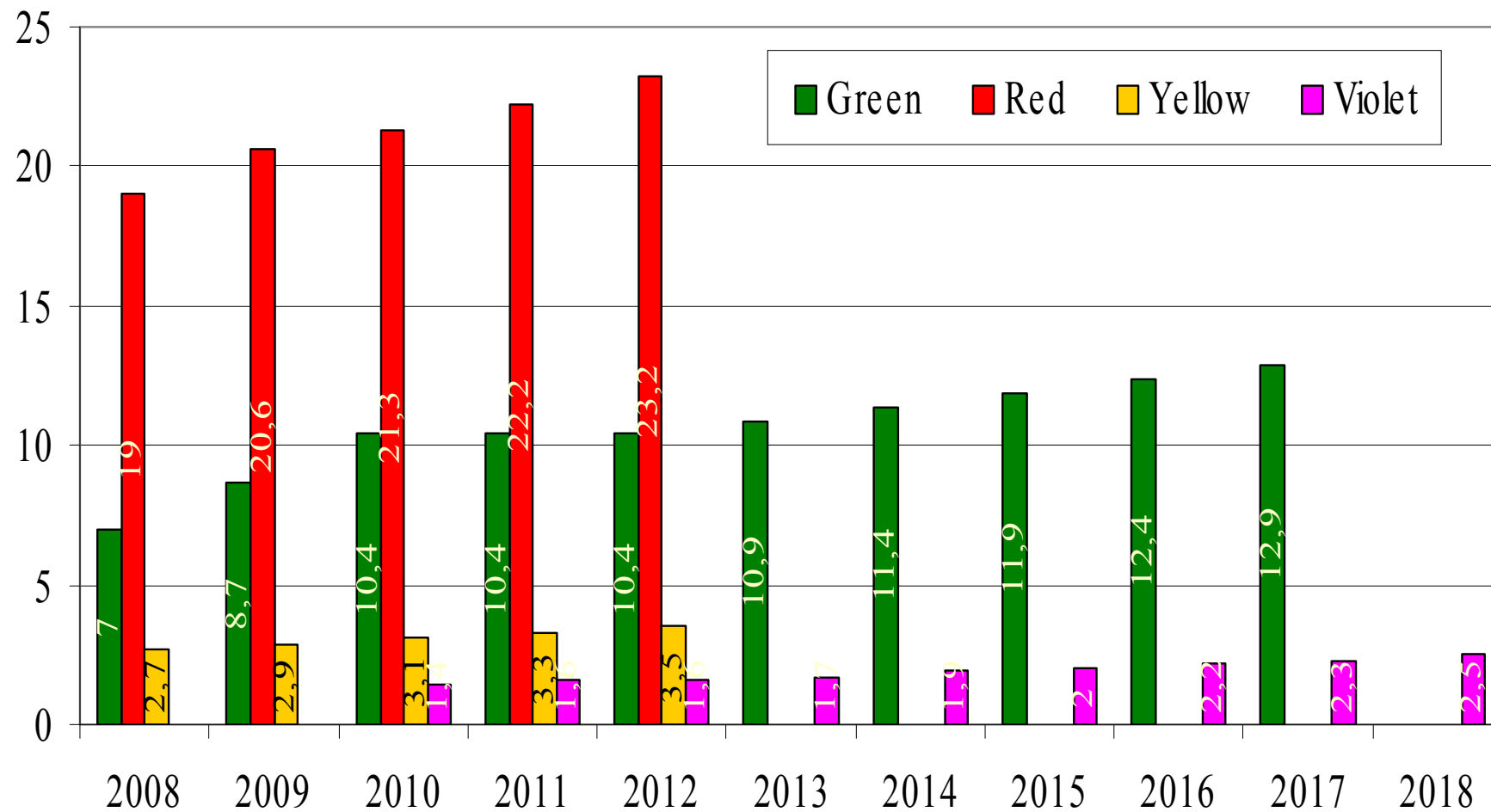
Substitute Fees for certificates in z/MWh in 2011



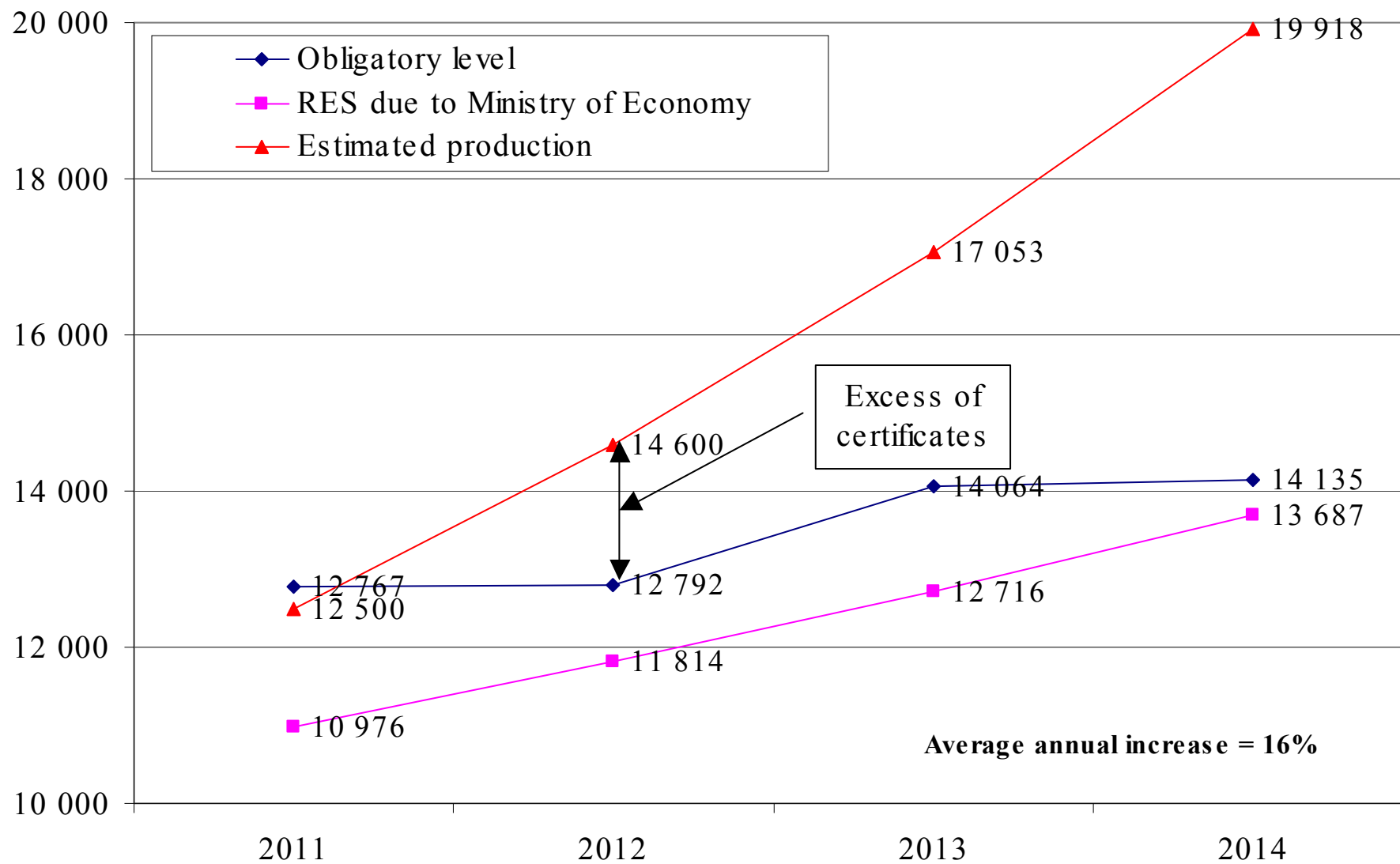
Shares of RES technologies in %in 2011



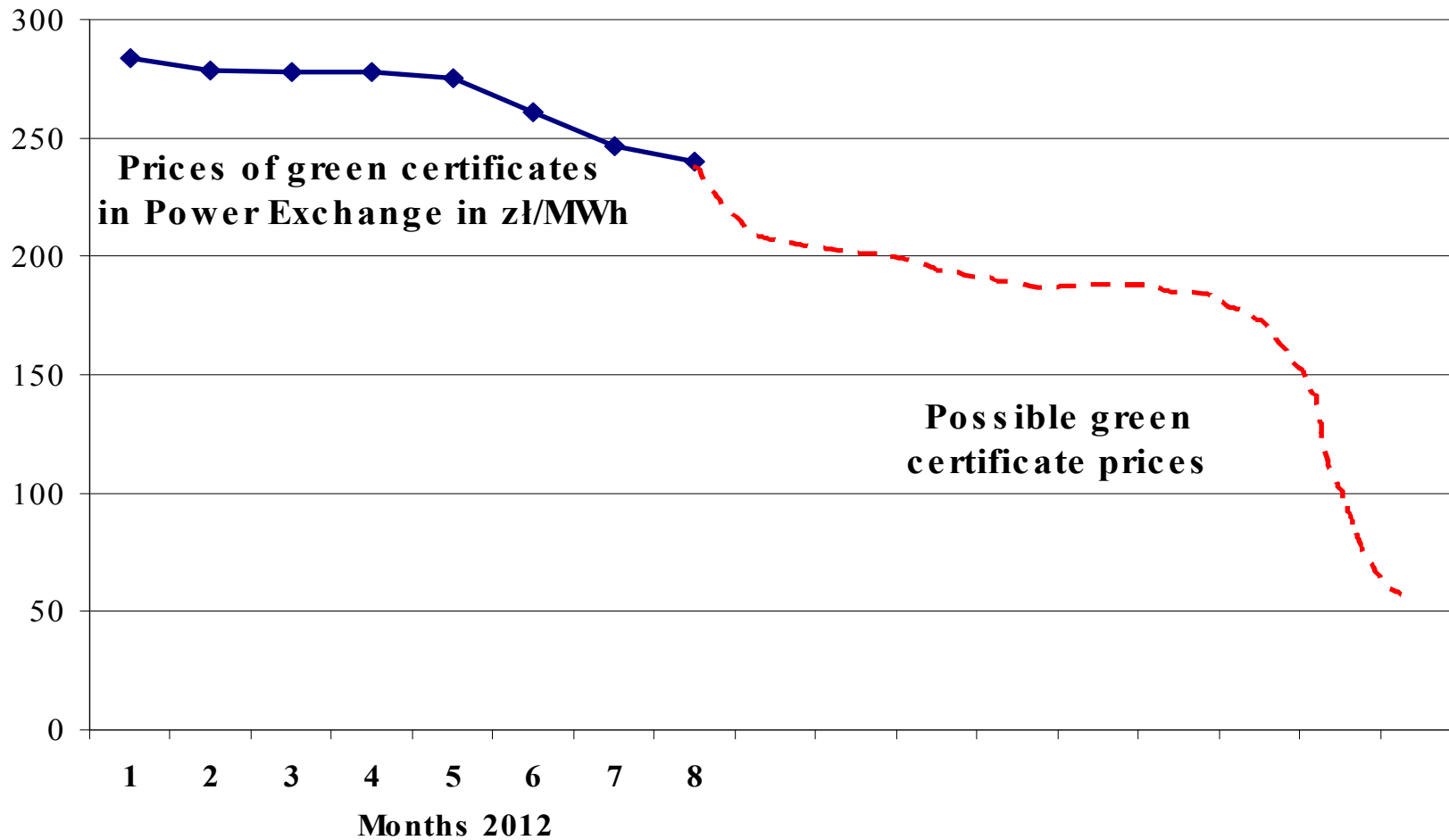
Obligatory shares of certificates in traders' portfolio in % of energy traded



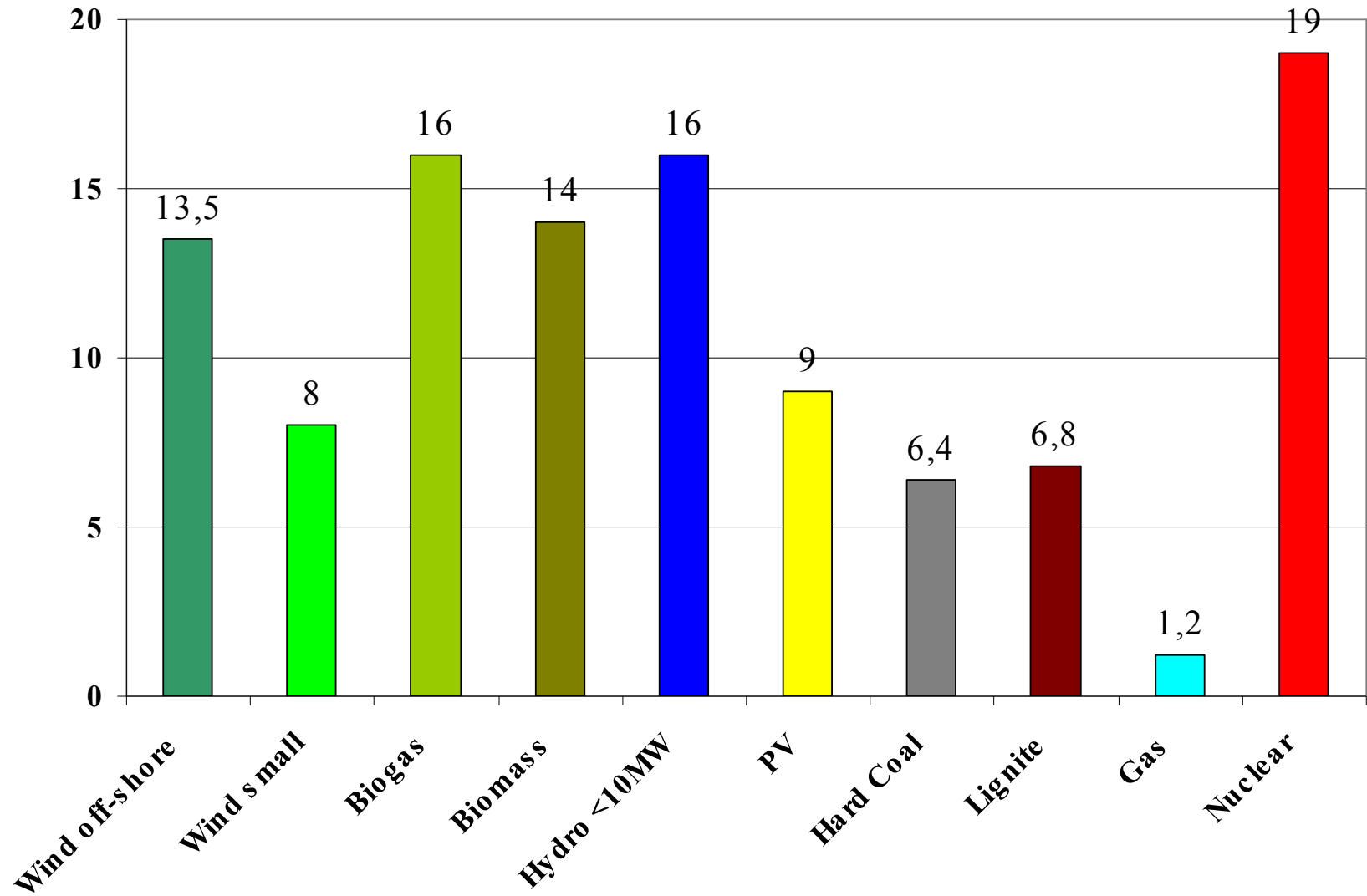
RES production and obligatory purchase levels w GWh



Possible collapse of green certificate prices in zł/MWh



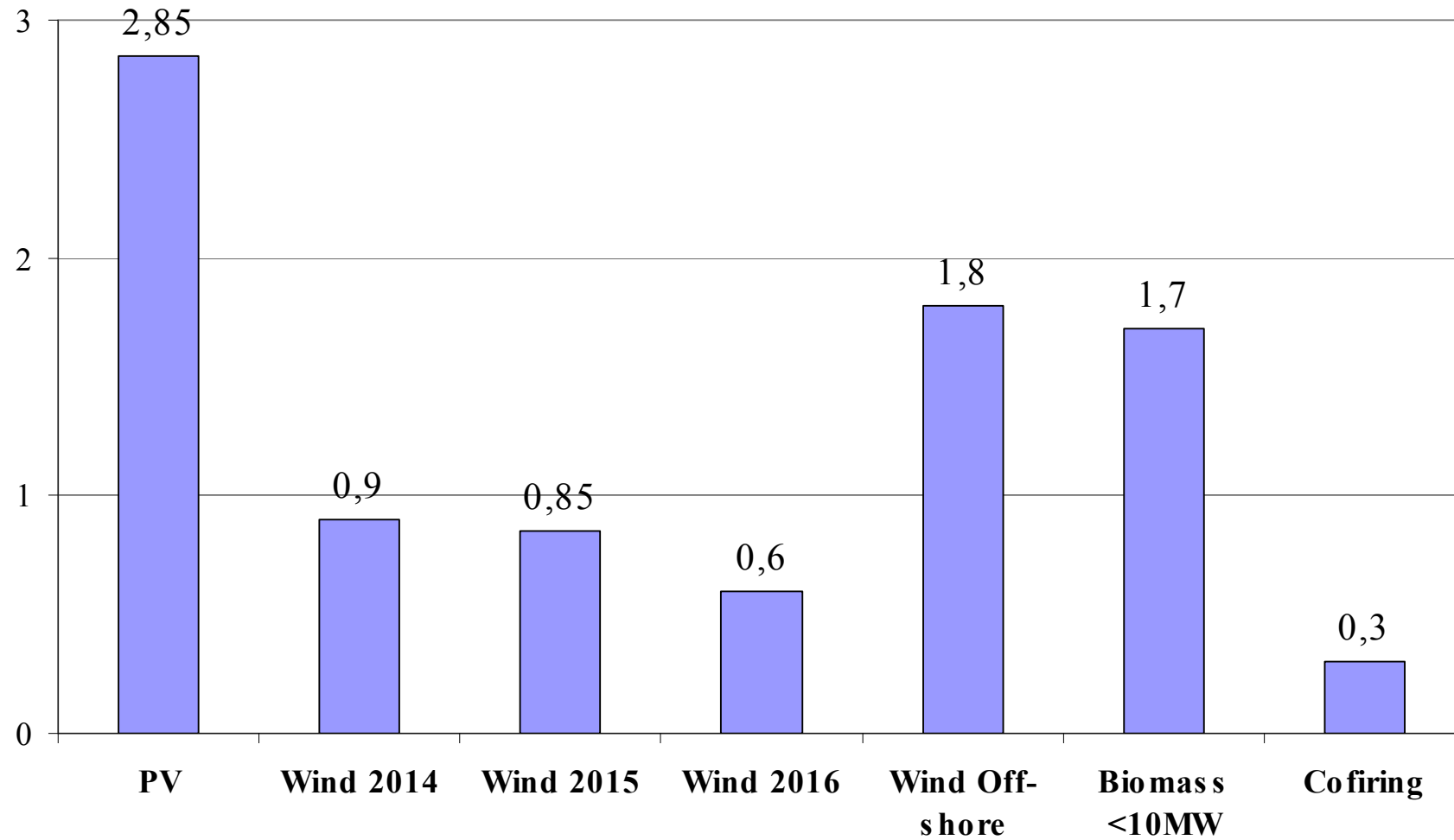
Investment cost in mln zł/MW



New RES law in Poland

- RES producers will receive income from two sources
- **Electricity trade** – 198,9zł/MWh
- **Green certificates** with correction factors
- Substitute fee is set up to – 286zł/MWh

Correction factors for RES technologies



Further reading

- European Commission published the Communication (271) final on the 6th of June 2012 relating to Renewables as a major player in the internal energy market.
- Need for changes in renewables subsidies is presented:
http://energetyka.wnp.pl/w-mielczarski-oze-potrzebujazmian,180366_1_0_0.html