



Outline

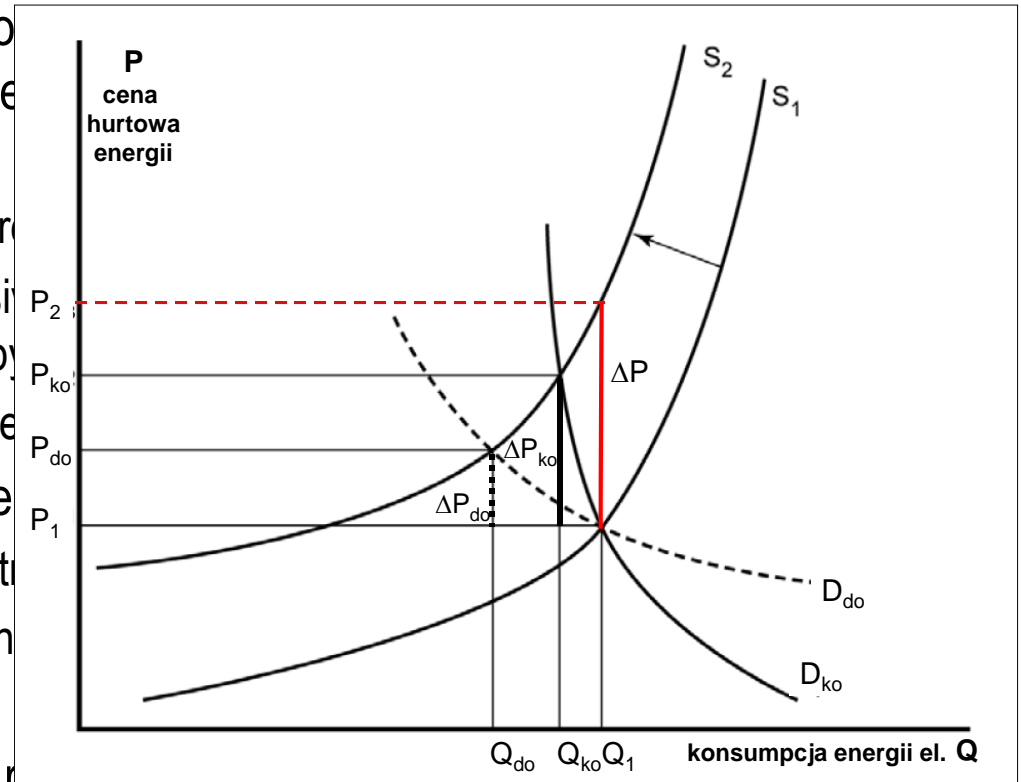
1. Introduction - inevitable increase of the cost of electricity production
2. What is the scale of poverty in Poland against the EU?
3. Households in Poland against EU households
4. The share of energy and fuels in households expenditure
5. Energy and fuel prices
6. Energy poverty
7. How to measure poverty and energy poverty?
8. Summary and conclusions



1. Introduction

- inevitable increase in the cost of electricity production

- The introduction of CO₂ emission allowance with decreasing allowable emission level increases production costs:
 - directly through the purchase of increased allowances
 - indirectly, by replacing highly-emission technologies with less expensive, eg. substitution of coal by gas
 - implementation of expensive CCS technologies
- In the future, we face costly investments in power generation:
 - renovation and expansion of aging thermal power units
 - upgrading or replacing old units with new ones
- The increase of production costs will lead to higher electricity prices, especially for households due to the rigid demand (inelastic demand)





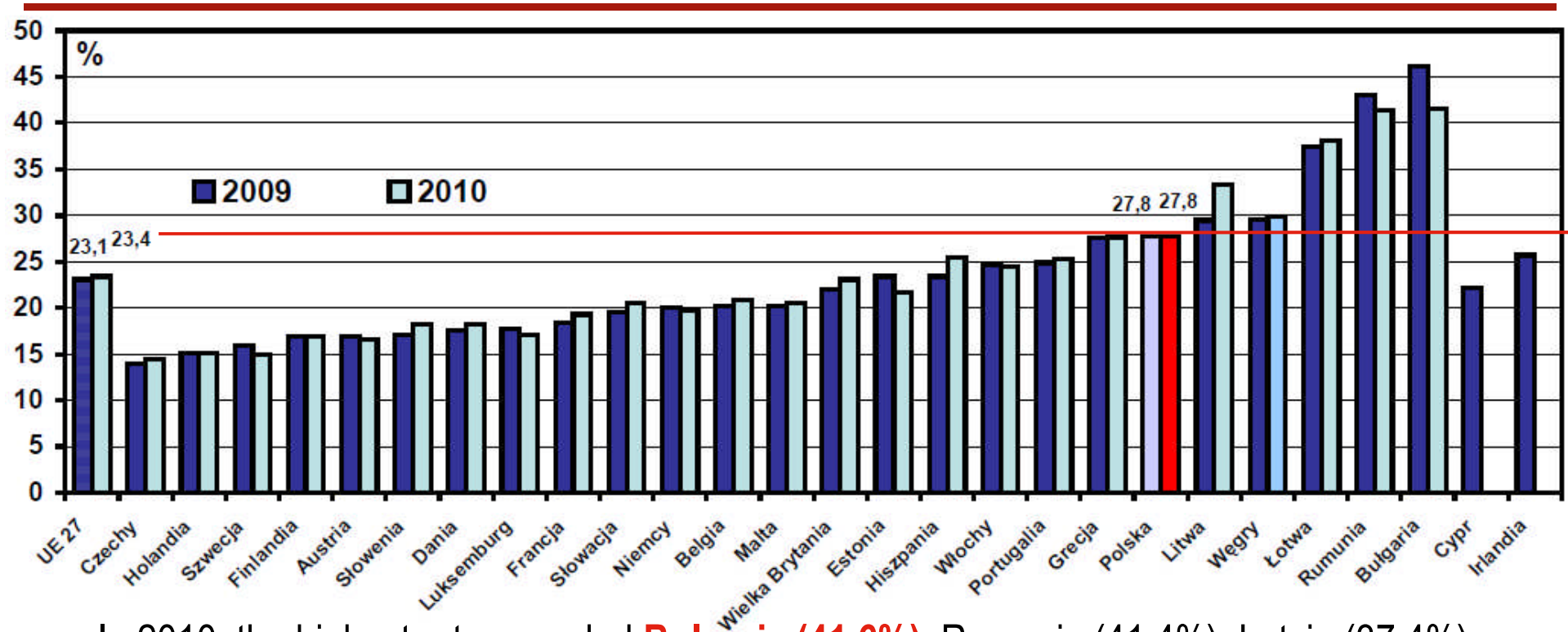
2. What is the scale of poverty in Poland against EU ?

- The annual equivalent disposable income was used for measuring households income and poverty – it is a measure used in such analysis by Eurostat
- Disposable income is the amount of money households can dispose, spending it on consumption, investment or savings
- Using this amount it is possible to compare real purchasing power of households due to it does not interfere with different levels of taxation and insurance costs and social transfers are included in income



2. What is the scale of poverty in Poland against EU?

Risk of poverty or social exclusion in 2009 and 2010 (source: GUS, 2012)



- In 2010, the highest rate recorded **Bulgaria (41.6%)**, Romania (41.4%), Latvia (37.4%), Lithuania (33.4%), Hungary (29.9%) and **Poland (27.8%) - 6 position (10.4 million inhabitants)**
- The lowest rates had the **Czech Republic (14.4%)**, Sweden and the Netherlands (15.0% and 15.1%), Austria, Finland and Luxembourg (about 17%)



2. What is the scale of poverty in Poland against EU ?

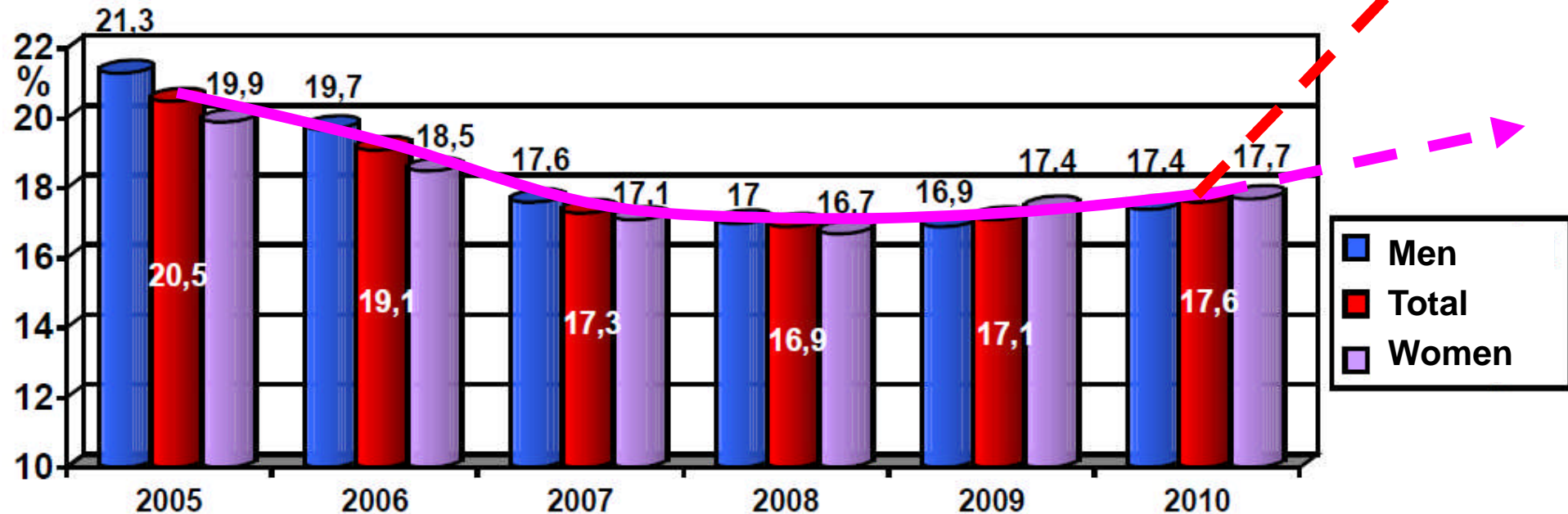
Relative income poverty rate - 60% of the median household disposable income

- **Relative income poverty thresholds in Poland (17.6%):**
 - **2 643 EUR / person per year** - **5 551 EUR / family with 2 children**
4 540 PPS / person per year - 9 534 PPS / family with 2 children
(purchasing power = x 1.7)
 - **Number of people at risk of income poverty: 6.6 million people**
 - **Lower thresholds had:**
 - Hungary (2 544 EUR / person and 5 343 EUR / family) and Lithuania (2 436 and 5 115) and
 - **Romania (1 222 EUR/person., 2 566 EUR / family) and Bulgaria (1 810 and 3 801)**
 - **Czech Republic** had the lowest rate of relative poverty and social exclusion in the EU (14.4%) and **the relative income poverty threshold in euros is 1.6 times higher than in Poland (x1.3 in PPS)** - only 9% of the population (0.9 million people), has not reached it
 - In 2010, the relative poverty threshold in Germany was more than 4.3 times higher (2.3 times in PPS) than in Poland
 - The relative poverty threshold for Greece plunged in crisis was in 2010 2.7 times higher than in Poland in euro and 1.7 times higher in PPS
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2. What is the scale of poverty in Poland against EU ?

Changes in income poverty rate in Poland in recent years

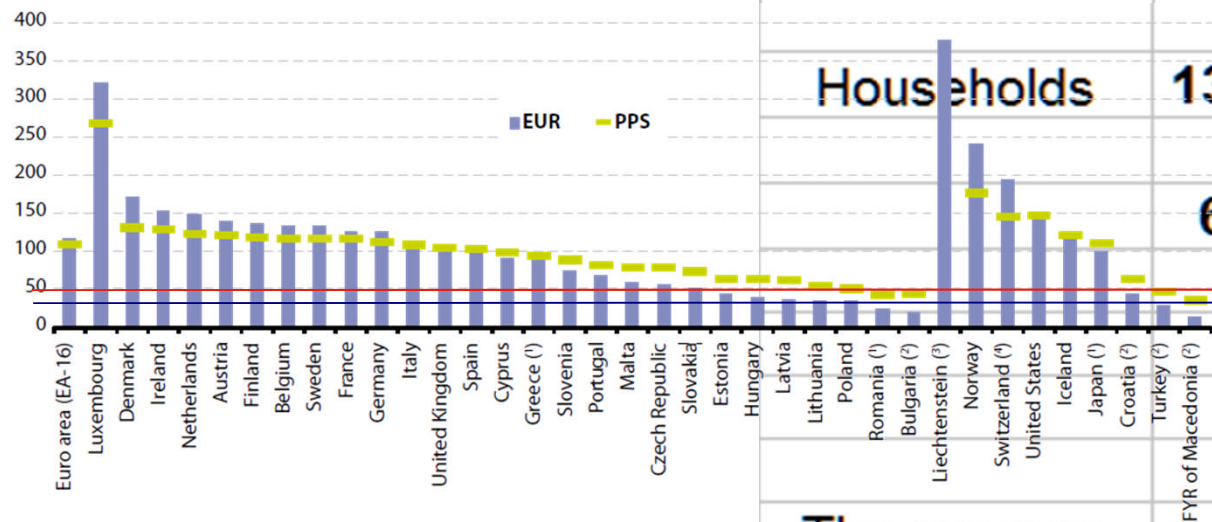


- The lowest level of income poverty was in 2008, and then it's rate has rosed steadily until 2010
- Last year households disposable income (PPS) was **1.4%** lower than in 2010
- Another trend has been also changed: before and in 2008 men were at higher risk of poverty - after 2008 women were at greater risk



3. Households in Poland against the background of EU households

GDP per capita at current prices and PPS, 2009 (EU-27 = 100)

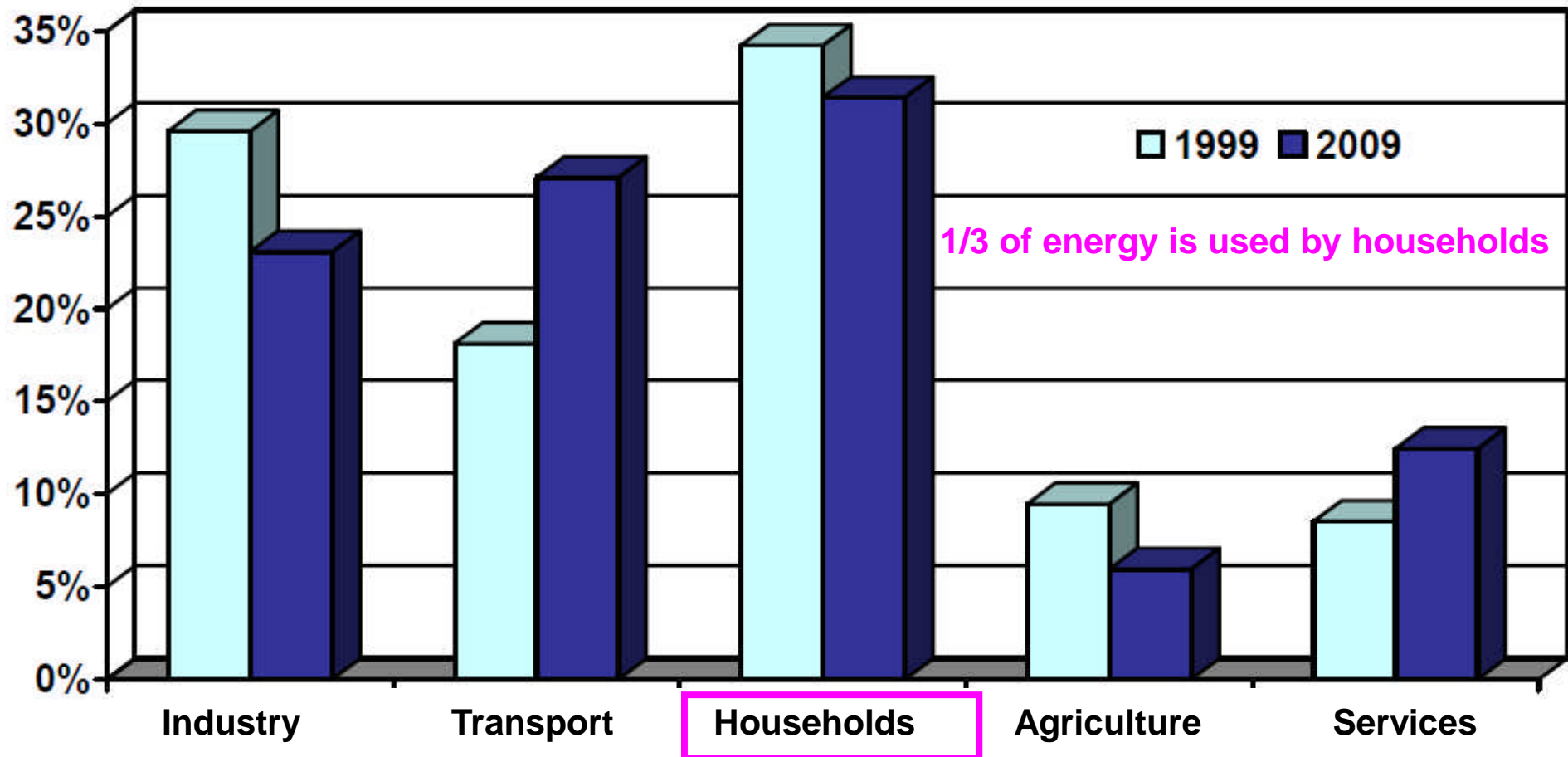


	Poland	UE
Population	38.2 million	502.6 million
	7.60%	100%
	6th place	Germany (16.4%)
		France (12.9%)
		UK (12.3%)
		Italy (12%)
		Spain (9.2%)
Households	13.3 million	207.8 million
	6.40%	100%
	6th place	Germany (18.9%)
		France (13%)
		UK (12.9%)
		Italy (11.8%)
		Spain (8.2%)
The average number of persons per household	2.9	2.4
	Malta	Sweden (2)
	Romania	Germany (2.1)
	Cyprus	Denmark (2.1)



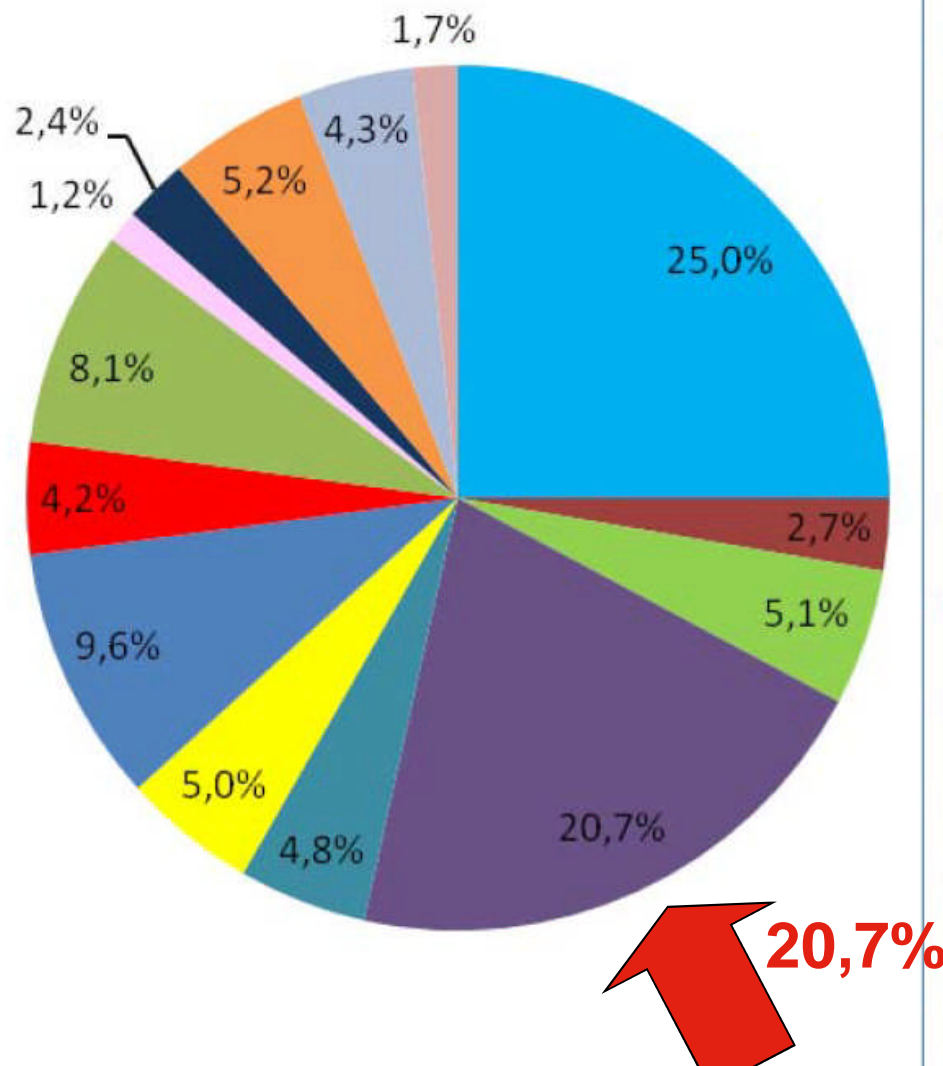
3. Households in Poland against the background of EU ones

The structure of final energy consumption by sector in Poland





4. Share of fuels and energy in households expenditures



Food and non alcoholic drinks

Alcoholic drinks and tobacco

Clothing and footwear

Housing, and energy

Home furnishings and household

Health

Transport

Communication

Recreation and culture

Education

Restaurants and hotels

Other goods and services

Other expenses

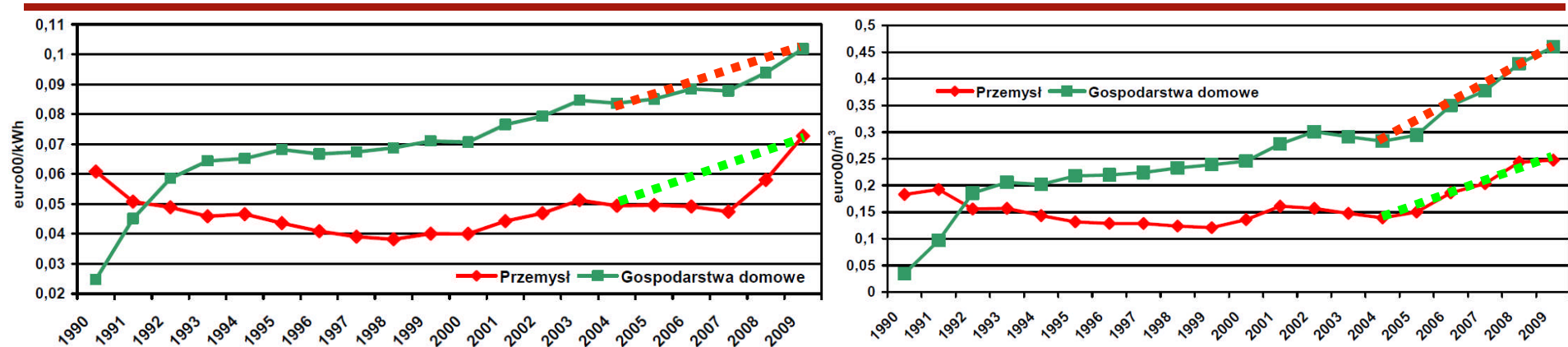
**56.8% expenditures
on housing went
on energy purchase**

**Households in Poland
today spend
12.2%
of their
disposable income
on energy**



5. Energy and fuel prices

The price of electricity and gas for households



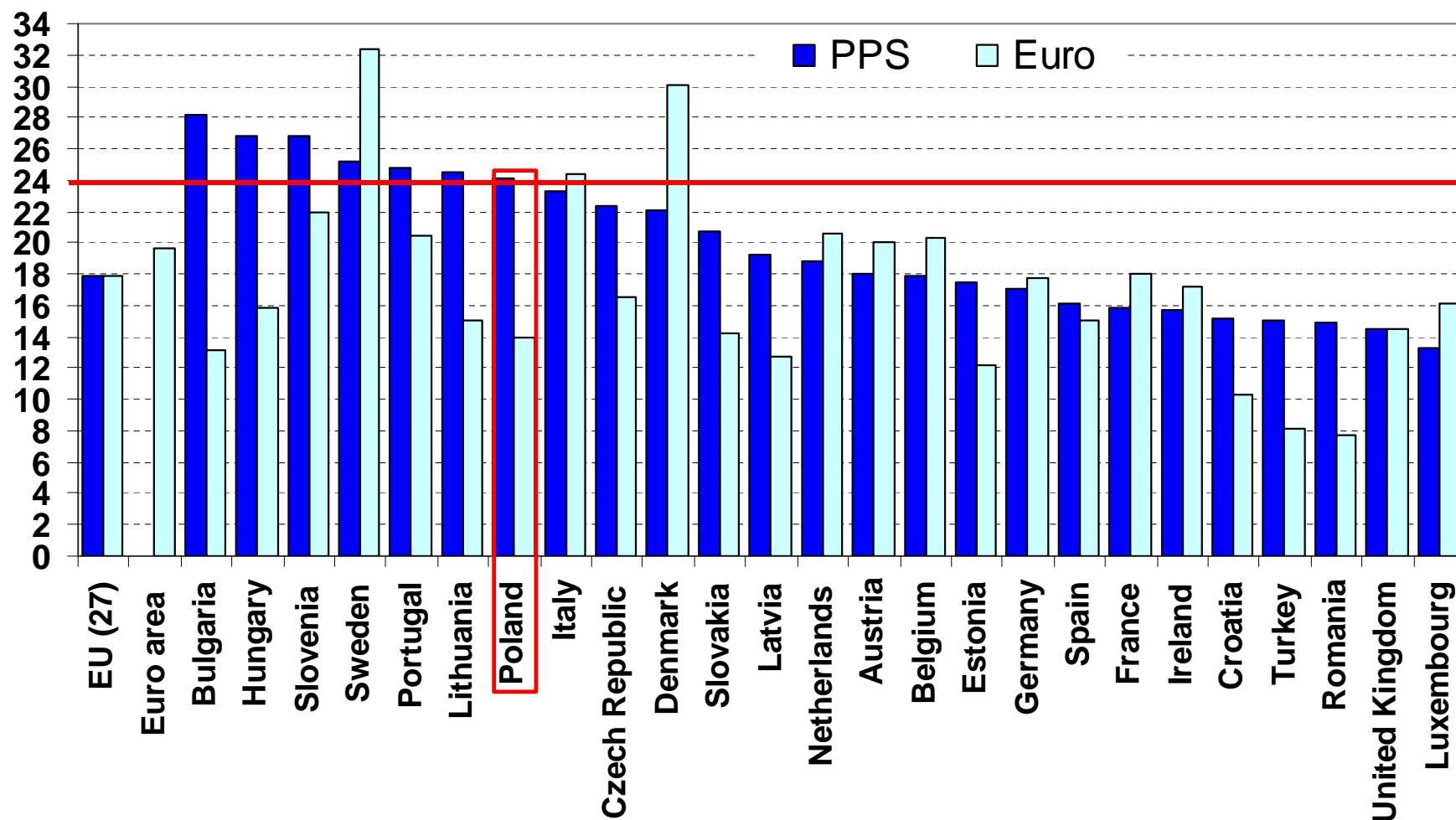
- The annual rate of increase in electricity prices for households in 2005 amounted to about 5% per year
- Similar growth of energy prices was noted for businesses
- Both prices do not differ by less than 0.035 cents per 1 kWh (more than 140 zł / MWh)
- The annual rate of increase in gas prices since 2005 has reached the highest level of all energy - **12.3%**



5. Energy and fuel prices

Gas prices in PPS per 1 GJ of energy for households inclusive of all taxes

PPS or Euro / GJ



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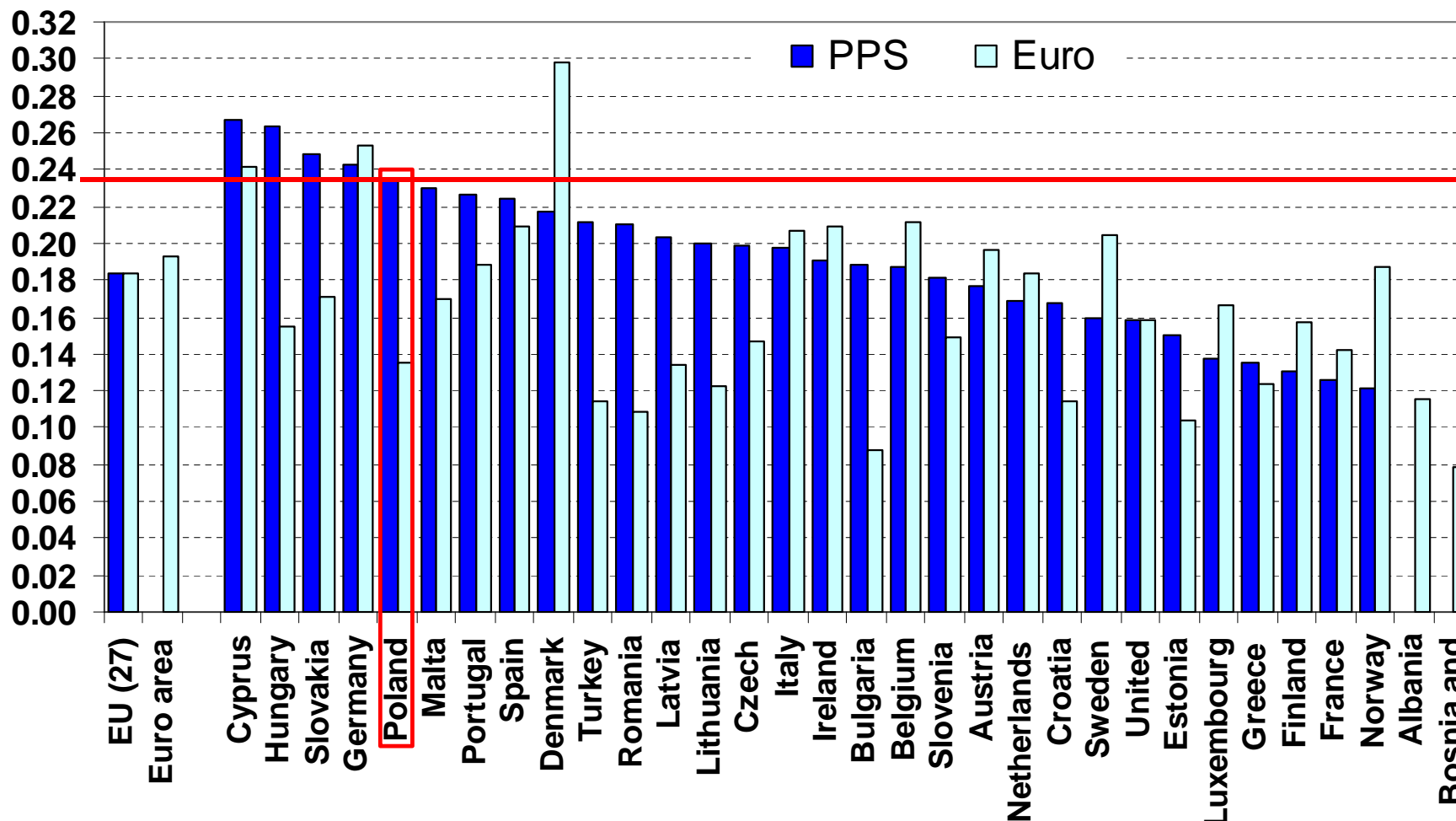
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5. Energy and fuel prices

Electricity prices in PPS per 1 kWh for households inclusive of all taxes

PPS or Euro / kWh



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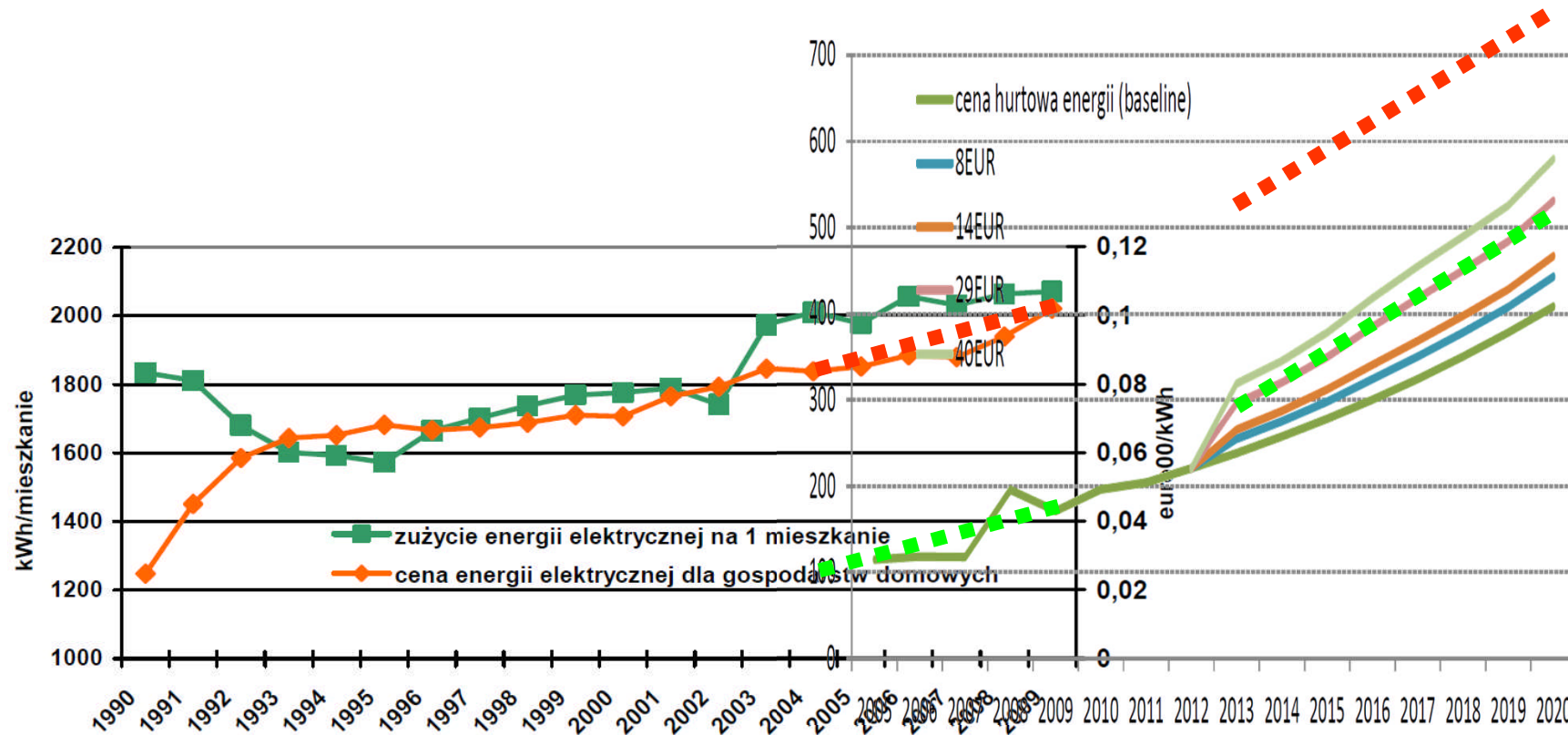
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5. Energy and fuel prices

Electricity prices for households with forecasts to 2020

- The wholesale prices of electricity with their growth forecast prepared by NBP till 2020





6. Energy poverty

- **Energy poverty (ue = ubóstwo energetyczne/fuel poverty)** will be narrowly understood as a lack of funds for energy purchase to meet the basic needs of the household to the necessary extent to sustain its normal functioning
- The **energy-poor household** spends more than 10% of itsr disposable income for purchasing of electricity, gas and other fuels
- This limit should not be relative
- Due to the diversity of energy needs, which largely depend on the size and thermal efficiency of apartment and the number of people inhabiting it is difficult to give one absolute value
- For the first time EU authors focused attention to fuel poverty on the occasion of the oil crisis and problems in meeting the transport needs

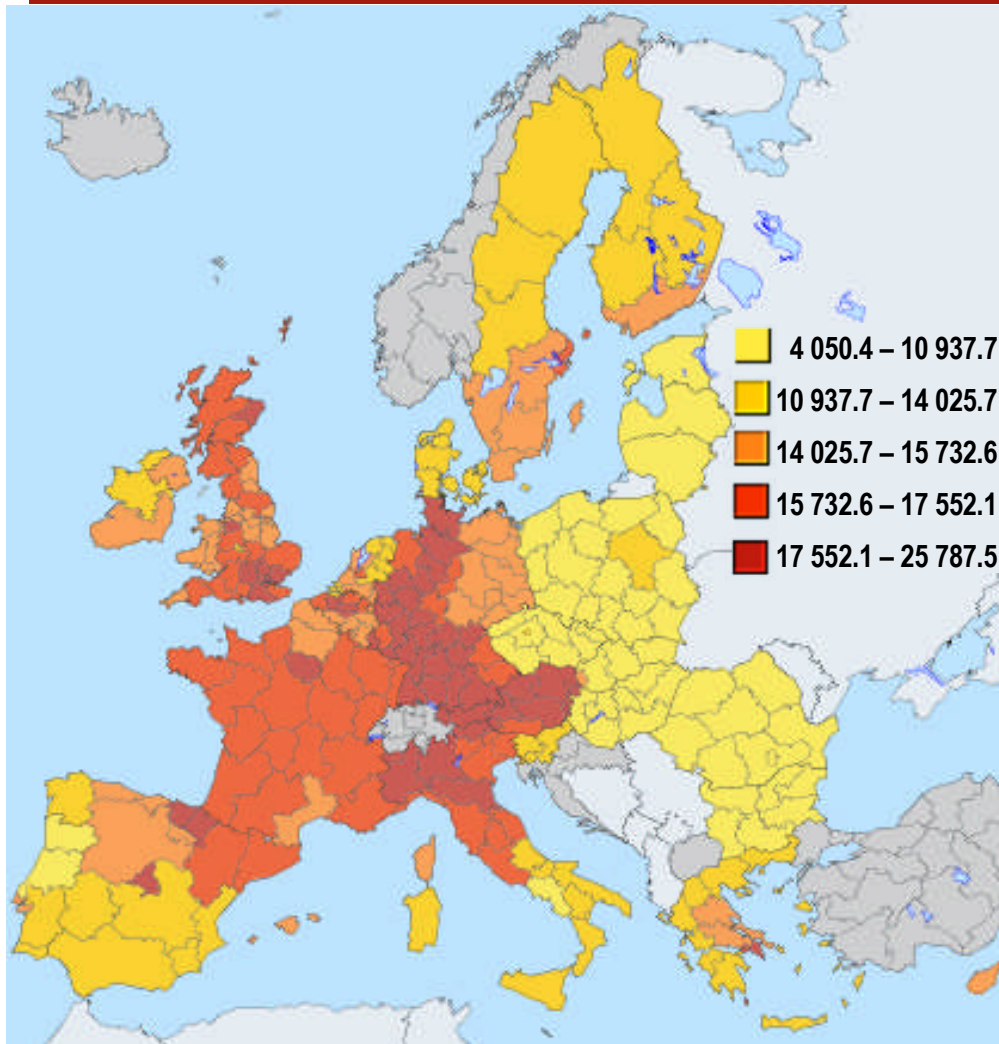


6. Energy poverty

- This time the theme of the EU's policy provoked the fight against "global warming" which results in:
 - increase in energy prices,
 - replacing cheap coal by expensive gas
 - problems with balancing supply and demand of electricity due to the increasing share of RES and
 - large uncertainty associated with the cost of CO₂ emission permits purchase what delayed the expected energy investment
- The consequences of EU policy primarily will affect poor households in absolute terms and these are mainly located among the new EU members
- Analysis of energy expenditure of households in Poland shows that now they qualify for energy-poor group



7. How to measure poverty and energy poverty?



- Relative poverty rates are misleading
- Energy consumption per capita is much lower in Poland than in other EU countries
- The share of the cost of purchasing energy in the total expenditure in excess of 10% may not represent the actual standard of housing and heating energy use
- **Income poverty threshold** should be defined by measuring in PPS value of purchased minimum basket of goods to allow family to survive for a year
- **Energy poverty threshold** should be determined by the value in PPS of amount of energy needed to survive in the minimum heating standard for typical homes/flats after applying whether corrections

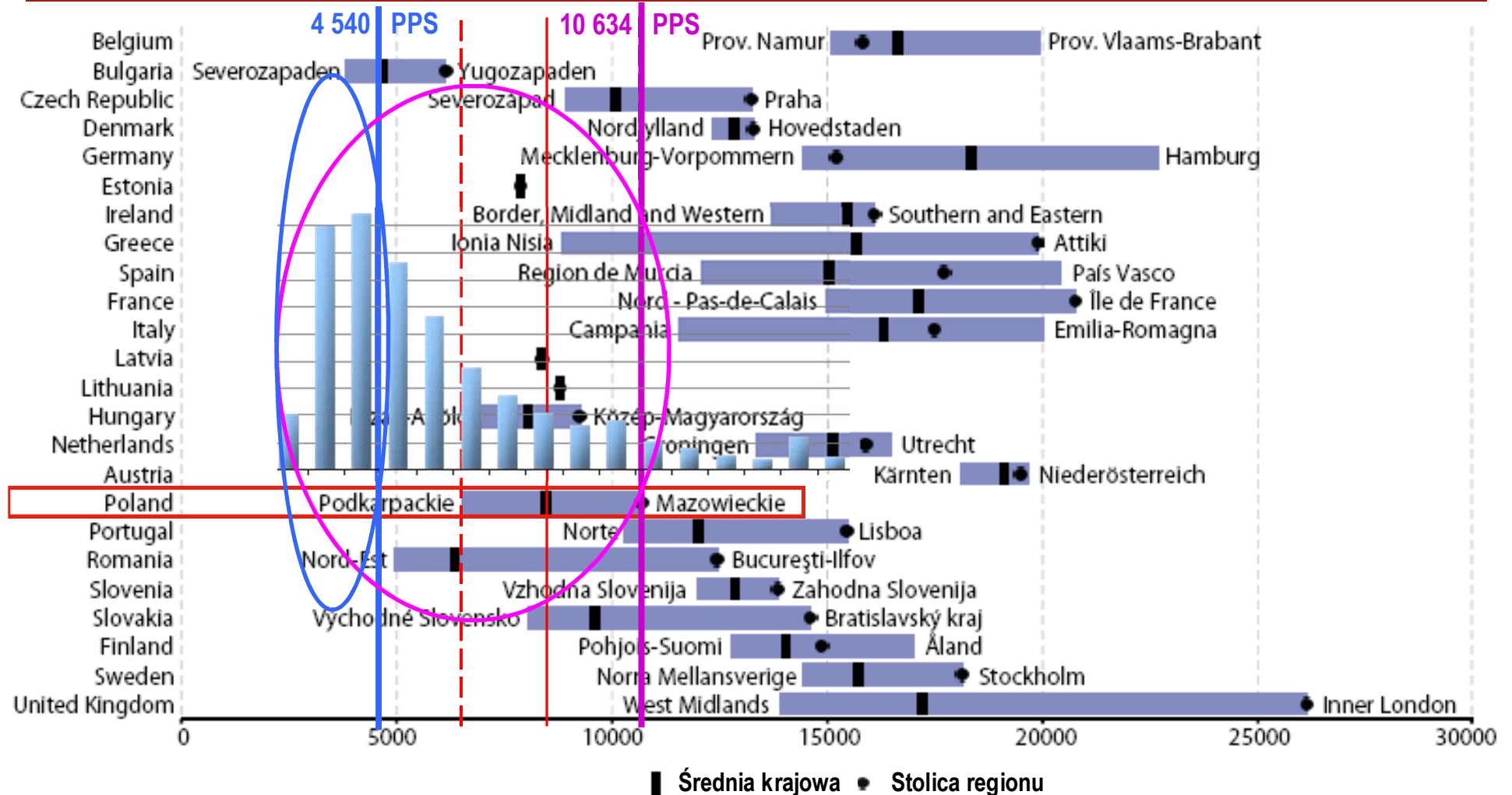
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7. How to measure poverty and energy poverty?

Disposable household income per capita (PPC), by region (source: Eurostat)



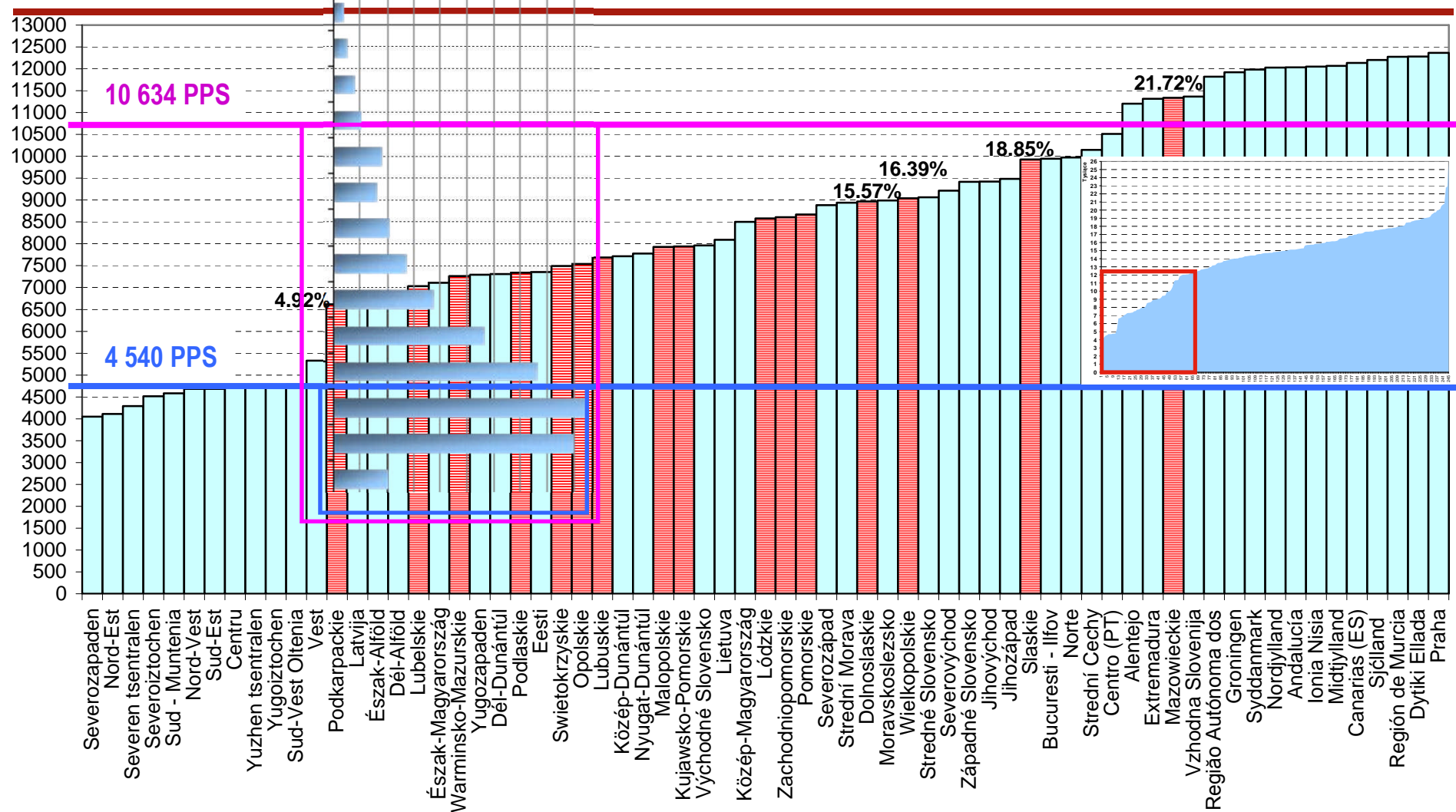
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7. How to measure poverty and energy poverty?

Disposable income of households per capita (in PPS), by region (source: Eurostat)



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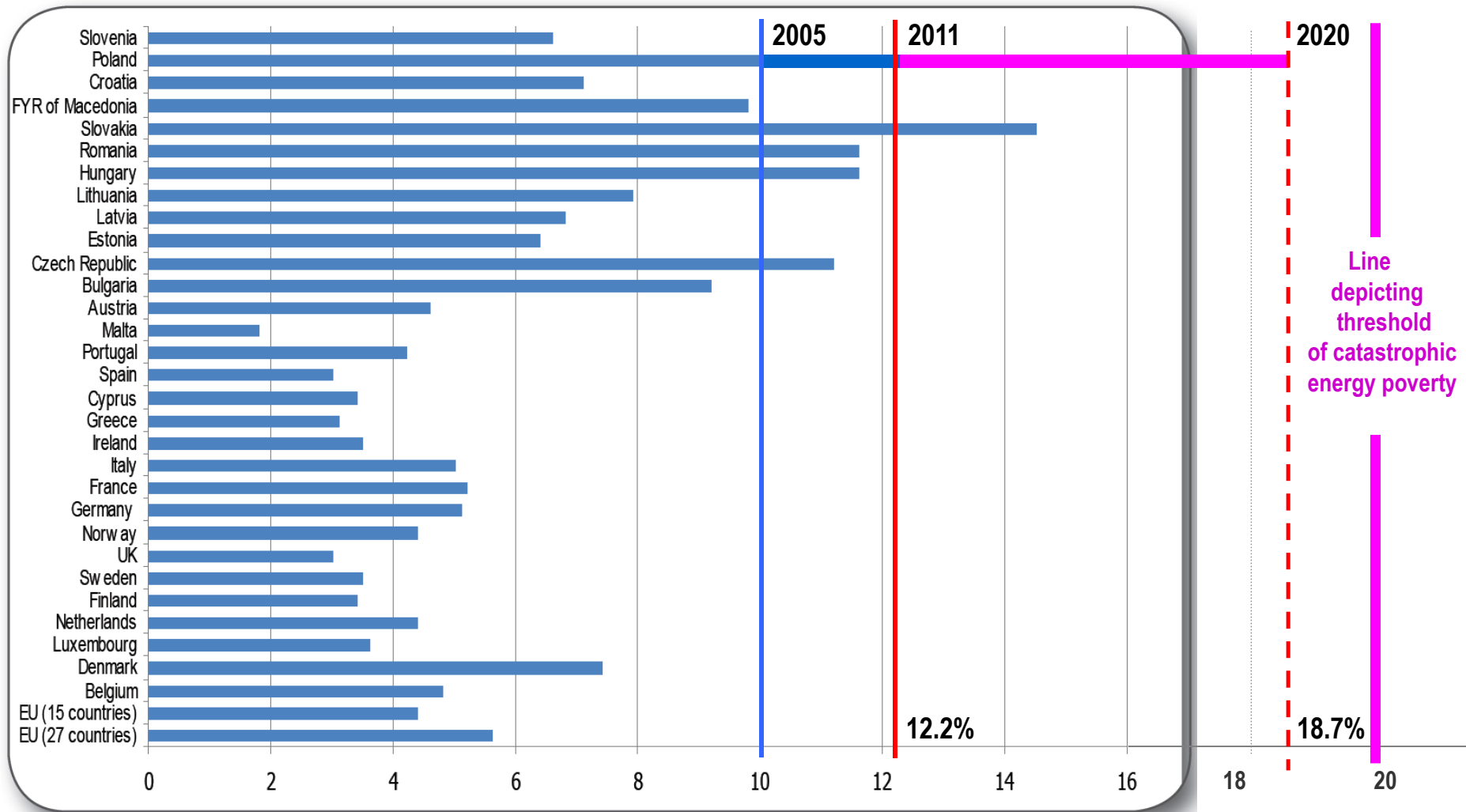
8. Summary and Conclusions

- Any EU action affecting the level of prices and taxes on the entire area should be analysed in terms of the effects they cause in different social groups and regions
- According to the magnitude of these effects should be designed social transfers from EU budget to compensate the negative impact of Community policies
- the activities should be discontinued if the scale of negative effects are too high and the benefits are small or raise doubts
- To the sphere of Community decisions that have a significant negative impact on the poorest households spending we can include the fight against "global warming"
- At present in Poland households spend 12.2% of their disposable income for energy, and this share could rise up to **18.7% in 2020**



8. Summary and Conclusions

The share of energy costs in the budgets of households in the EU (in 2005)



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8. Summary and Conclusions



- Spending nearly 20% of disposable income by households for energy is more **"collapse of civilization"** than **"civilization leap"**
- **Cheap energy sources are at hand** (we have several billions tons of lignite near Legnica and Gubin and there is a vast amount of shale gas potential) and we are forced to put a high carbon tax on them or replace them by expensive imported fuels or expensive renewables
- The uneven scale of carbon tax paid by different regions in EU creates a very difficult situation for households in Poland due to expected increase of energy prices
- The ecological outcome could be very worse due to a lot of households will use waste as a source of energy and burn in home furnaces everything what is possible without any control of emissions





Energy Vulnerabilities in Europe



WORLD ENERGY COUNCIL

CONSEIL MONDIAL DE L'ÉNERGIE

For sustainable energy.

Politechnika Wroclawska

Is Poland threatened by energy poverty? Analysis of the potential effects of EU policy against global warming for households in Poland

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