

# Energy Efficiency as an instrument to combat Energy Poverty



Image Source: The Telegraph

**Mihailo Mihailovic – Energy Expert, Serbia**  
**Nikola Tomasovic – World Energy Council FEL**

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# Phenomena of Energy Poverty

- Access to energy is a prerequisite of human development
- Energy Poverty reflects to the inability of having essential energy services to provide healthy living conditions at an affordable price
- (In) Capacity to afford heating, cooling, lighting and use of communication devices
- It could be estimated that 50-125 million people in Europe live under energy poor conditions\*
- It is estimated that around 16 % of the population in SEE lives in an energy poor situation\*
- Energy Poverty has been rarely analyzed in the energy sector reforms in transition countries

\* Helena Stadtmüller (2014)

# Energy Poverty Dimension(s)

## Definitions

- There is no universal, international or EU definition of Energy Poverty
- Still different determination of criteria and definitions at national level

## Three dominant concepts

- Energy Poverty (EU - electricity and gas)
- Fuel Poverty (UK - all energy sources including wood)
- Vulnerable customers (EU - electricity and gas)

## Energy Poverty Drivers

- Household income
- Energy prices
- Energy efficiency (mostly in buildings and appliances)

## Measuring

- Difficult task due to the lack of reliable data and statistics

## Energy Poverty in the EU and the Clean Energy Package \*

- Energy poverty has been recognised as an energy policy issue
- Member States have been required to identify and protect vulnerable consumers
- Energy poverty to be addressed in the vulnerable consumer context
- "Adequate warmth, cooling, lighting and the energy to power appliances are essential services to guarantee a decent standard of living and citizens' health" \*\*
- "Energy poor households are unable to afford these energy services due to a combination of low income, high energy expenditure and poor energy efficiency of their homes" \*\*
- According to Article 29, Member States shall define a set of criteria for the purposes of measuring energy poverty and will continuously monitor the number of households in energy poverty and shall report on its evolution and actions taken to prevent it
- Reporting energy poverty prevention measures should be part of **the Integrated National Energy and Climate Progress Reports**

\* Energy Poverty in Clean Energy Package, DG ENER

\*\* Electricity Internal Market Directive Corrigendum – Recital 40

# Energy Poverty in the EU and the Clean Energy Package \*

## Targets:

- Prioritising Energy Efficiency Measures
- Accomplishing global leadership in RES
- Providing a fair deal for consumers

3 dimensions for consumers

### **Empowerment:**

Active consumers,  
Demand response, Local  
Energy Communities

### **Better information:**

On billing, Switching  
suppliers, Price  
comparison tools

### **Protection:**

Energy poverty and Data  
protection

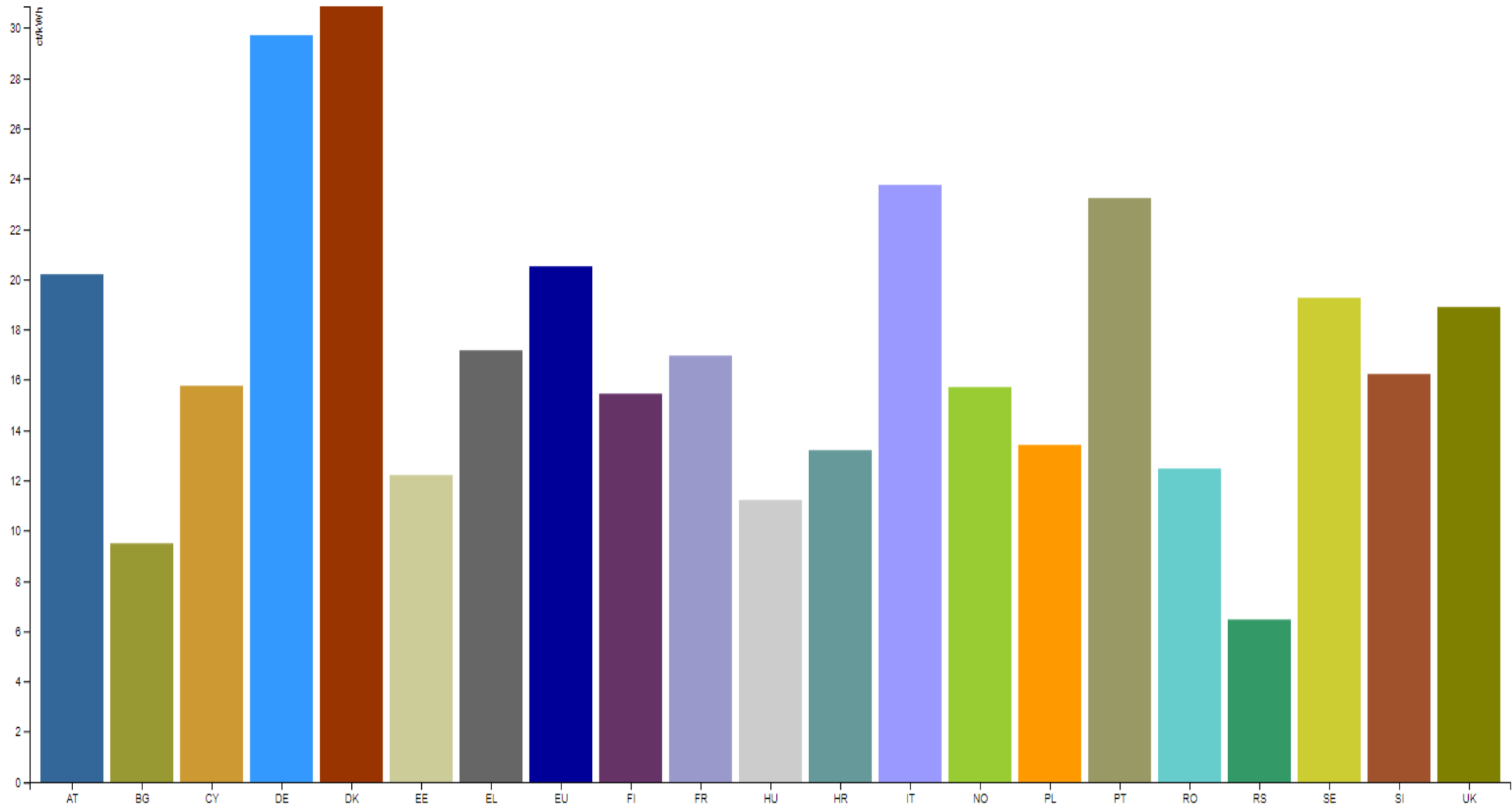
\* Energy Poverty in Clean Energy Package, DG ENER

## Serbian Case – objectives, pattern and situation

- ❑ The GDP per capita in Serbia (€4500) is less than one fifth of the EU average (€27700) in 2017
- ❑ According to data from EU statistics on income and life conditions (SILC) in 2016, in Serbia every fourth citizen above 18 years old was exposed to poverty risk\*
- ❑ Dramatic demographic changes - country's ageing population, brain drain, migration to cities
- ❑ Energy prices in the households are regulated (electricity and gas ) and the lowest in Europe
- ❑ The electricity prices for households are lower than for industry consumers (different than in the EU)
- ❑ Less than 40% of households in Serbia use the district heating system. More than 50% are still using wood and lignite as their major heating source
- ❑ Around 15% of total population cannot provide adequate heating temperature in their apartments\*
- ❑ Specific tariff system for electricity consumption in households – higher consumption, higher unit price
- ❑ Delay in public utility liability settlement reflects to 34,8% of the total population\*
- ❑ Between 550,000 and 600,000 households are facing the risk of exposure to energy poverty\*
- ❑ By the Energy Law and Government Decree, social protection of energy vulnerable customers was established according to their monthly income and household sizes

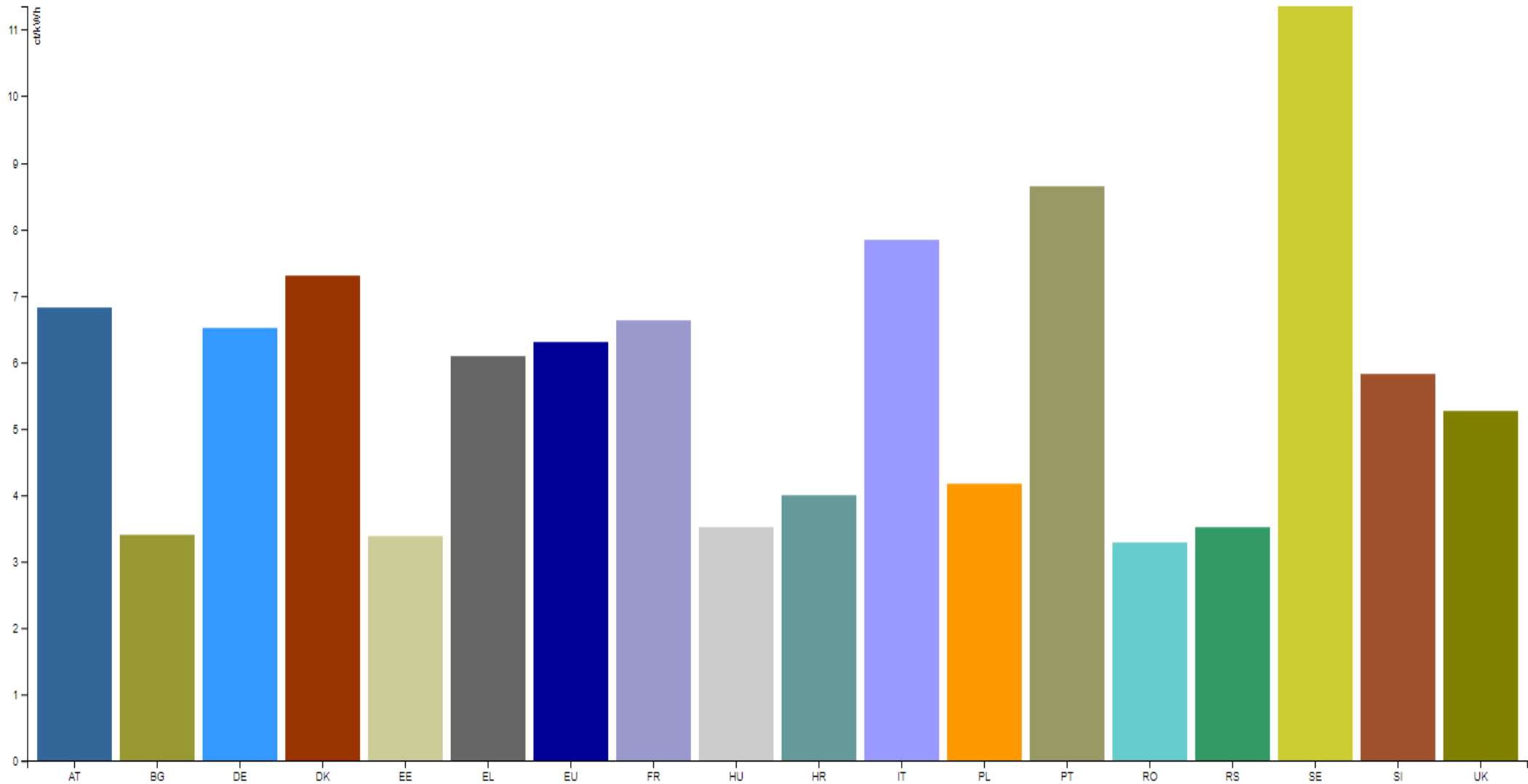
\* source: AERS Serbian Energy Agency

# Households' electricity prices for selected countries \* (2016)



\* EU Energy Poverty Observatory

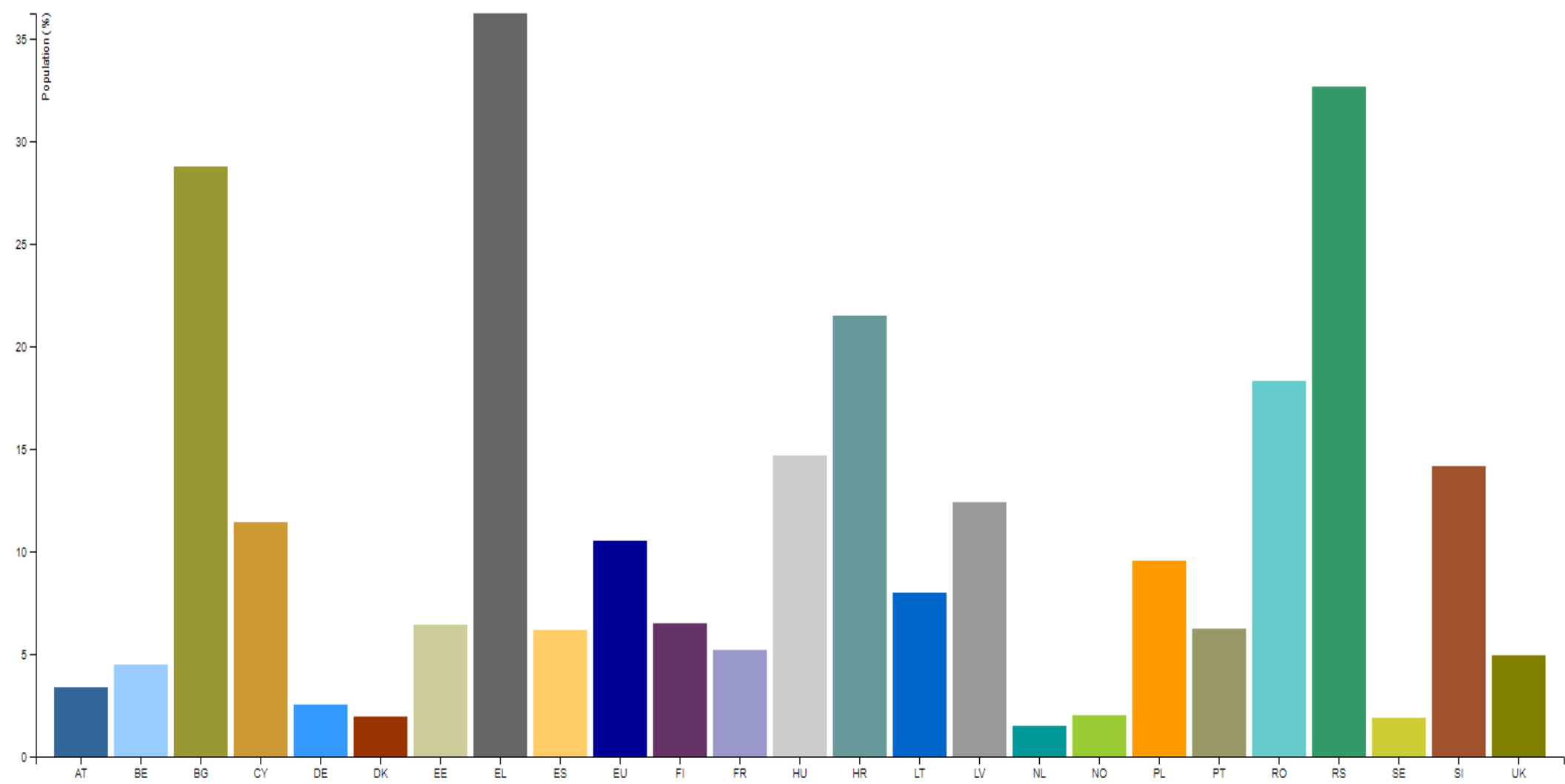
# Households' natural gas prices for selected countries \* (2016)



\* EU Energy Poverty Observatory



# European National Energy Affordability - Arrears on Utility Bills 2016\*



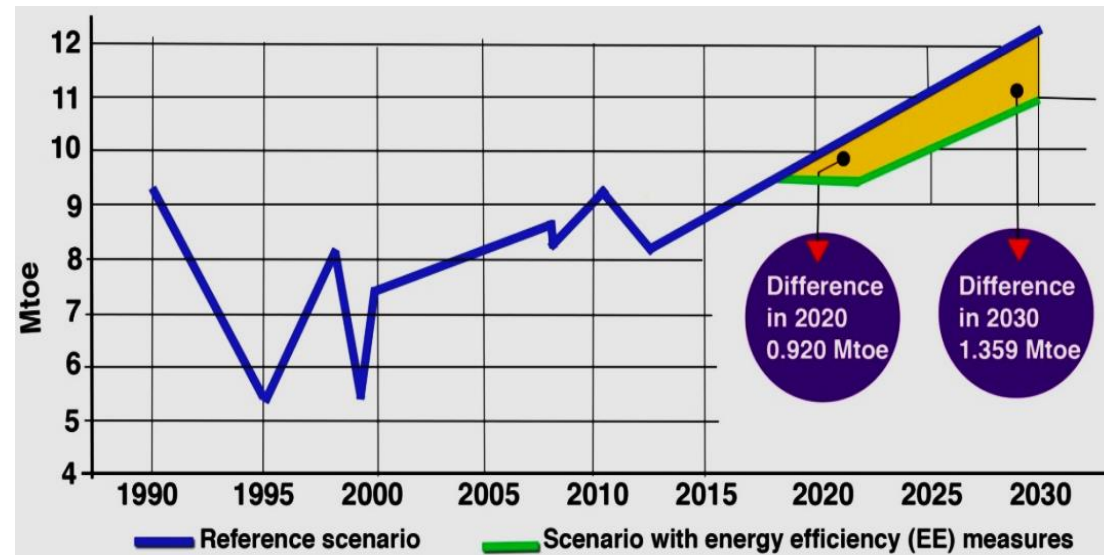
\* EU Energy Poverty Observatory

# SERBIA - Energy Efficiency

❑ Energy efficiency needs further implementation and acceleration

❑ Practical implementation through:

- ❖ Three National Action Plans (NEEAP)
- ❖ National EE Fund
- ❖ Energy Management System
- ❖ Energy performance building certificates  
– Energy Passports



Source: Serbian Energy Strategy

- ❑ Lack of auditing and detailed data, rising Budget financing, low recognition of energy savings, need for strengthening capacity development and awareness raising
- ❑ Challenge especially from the financial perspective: Lack of incentives, high upfront project development cost, limited ability to pay, vendor credit, ESCOs
- ❑ Energy efficiency is mainly implemented to improve energy security

## Main Energy Efficiency Measures in Serbia \*

Measure	Expected savings in 2018	Estimated cost (million)
Improvement of energy efficiency in the residential sector	58,6 ktoe	9300 (RSD)
Promotion of energy efficient appliances in households	116,9 ktoe	
Improvement of energy efficiency in the public and commercial sector buildings	47,4 ktoe	17550 (RSD)
New regulations in the construction sector and certificates in households	102,1 ktoe	
Improvement of Energy efficiency in the industrial sector	72,6 ktoe	1698 (RSD)
Incorporation of the energy management system (EMS) in industrial capacities	36,9 ktoe	
Modernization of the public lighting system in municipalities	8,9 ktoe	126 (RSD)
Introduction of the coal quality management system	10,7 ktoe	1778 (RSD)
Installation of smart meters	4,8 ktoe	1078 (RSD)

\* Source: Third National Energy Efficiency Action Plan

## Serbia – Vulnerable Customers \*

- ❑ The Energy Law defines conditions of award of special modes of protection of “energy vulnerable” customers from the household category
- ❑ The Law also recognizes the category of “energy protected” customer which is a broader term than the “energy vulnerable” customer since it covers, apart from customers entitled to social care, customers who need not to be members of this category but still may have their lives or health endangered in case of electricity or natural gas supply delivery suspension
- ❑ The updated Decree on Energy Vulnerable Customers entered in Force on the 1st January 2016
- ❑ The main criteria for obtaining the status of the energy protected customer are the following:
  - ❖ total monthly income of the household
  - ❖ number of household members
  - ❖ financial status
- ❑ The funds necessary for customers protection are provided from the budget of Republic of Serbia

\* Source: AERS – Energy Agency of the Republic of Serbia

# Serbia – Vulnerable and Protected Customers

## Maximum rights to discount for monthly bill for consumed quantities \*

For a household with the following number of members	Maximum rights to discount for monthly bill for consumed quantities (MPU)	
	Electricity for all months	Natural gas for: January, February, March, October, November and December
	kWh	m <sup>3</sup>
1	120	35
2-3	160	45
4-5	200	60
6 and above 6	250	75

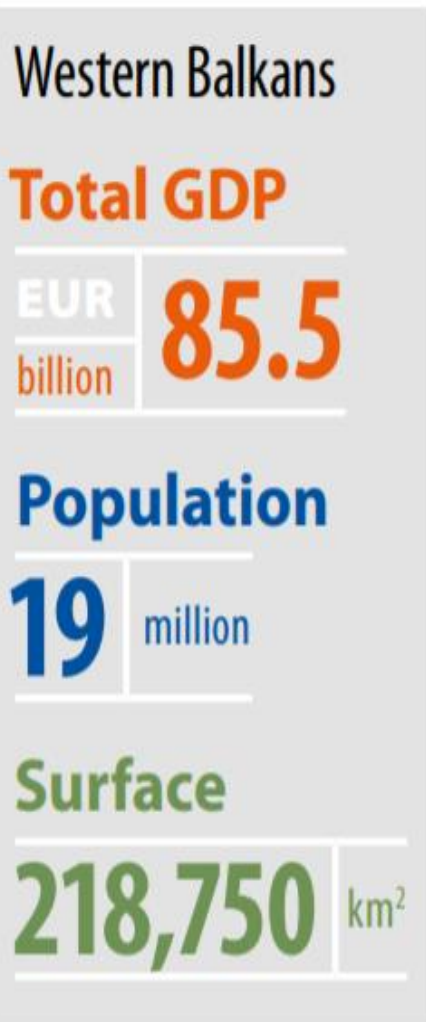
## Exercised right to bill discount in 2017\*

	Customers entitled to reduction	
	Number of customers	Annual amount 000 RSD
Electricity	73.561	829.997
Natural gas	68	339
Total	73.629	830.336

- ❑ The annual amount is provided by the State Budget, and reflects to about 7 mil €

\* Source: AERS – Energy Agency of the Republic of Serbia

# The Western Balkans case



\*This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Independence Declaration

## Candidate Countries

**Albania**

**The former Yugoslav Republic of Macedonia**

**Montenegro**

**Serbia**

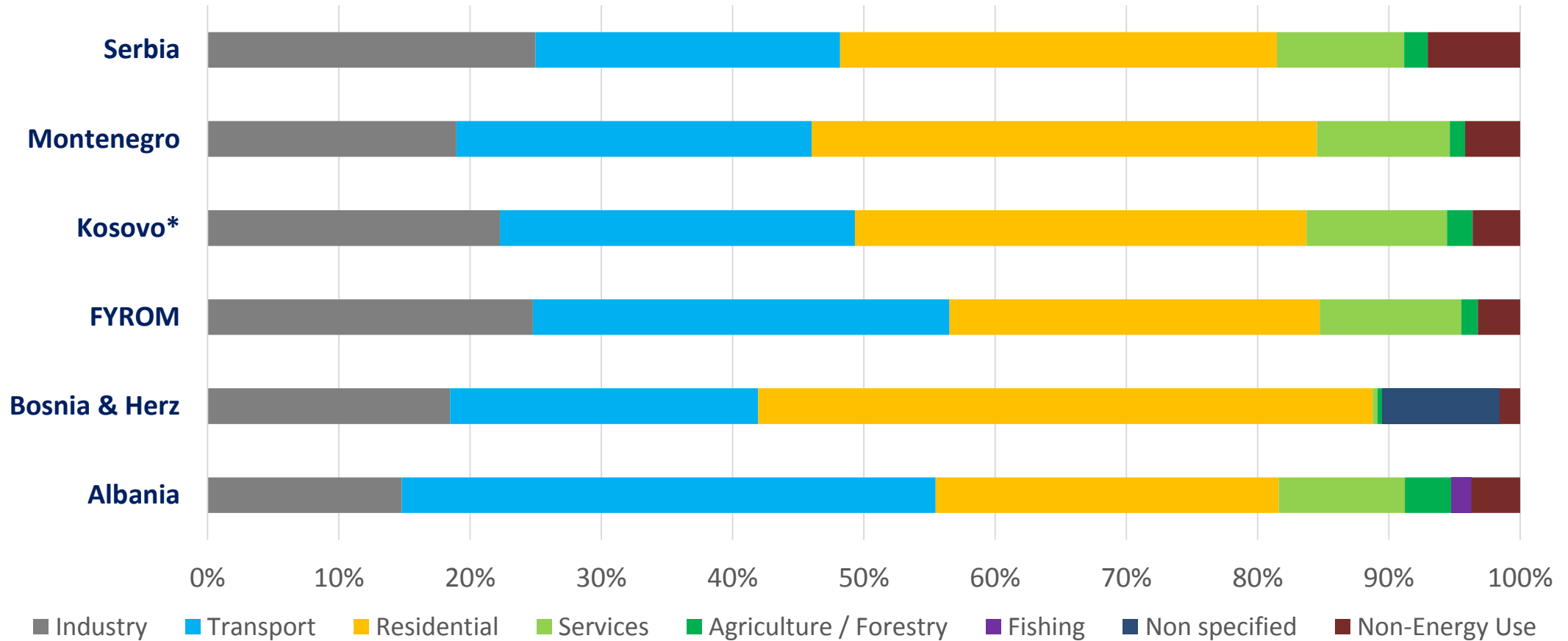
## Potential Candidate Countries

**Bosnia and Herzegovina**

**Kosovo\***

Image Source: European Investment Bank

# Energy Consumption in the Western Balkans \*\*



□ The energy savings potential in the WB6 reflect up to \*\*\*:

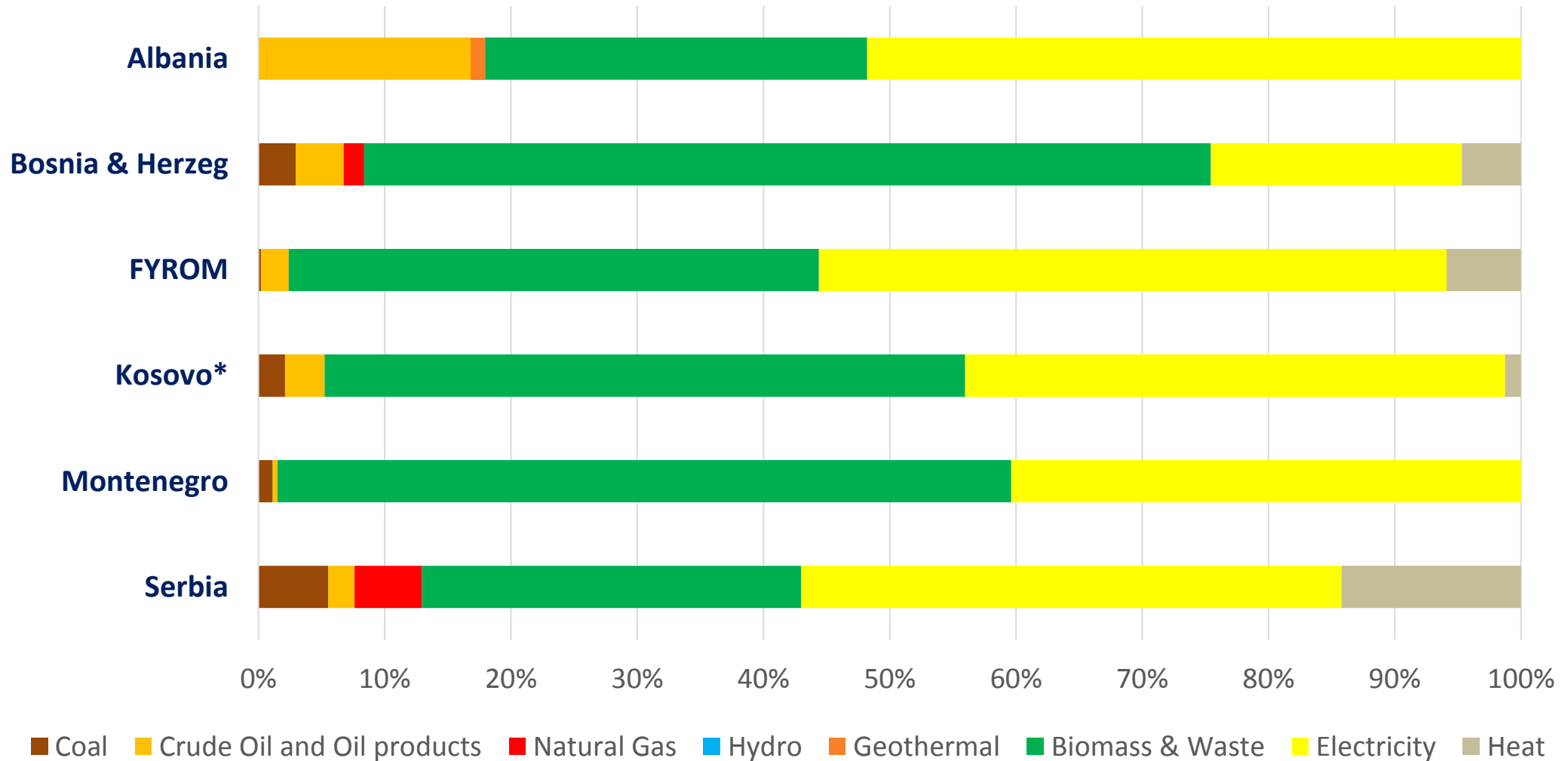
- 10% in the transport sector,
- 10-35% for households,
- 35-40% in the public sector,
- 10-30% in services
- 5-25% in industry and commerce

\*This designation is without prejudice to positions on status and in line with the United Nations Security Council Resolution 1244 (1999)

\*\*Data source: 2015 International Energy Agency balances

\*\*\* Financing Energy Efficiency Investments in the Western Balkans, Western Balkans Investment Framework

# Households' Consumption per fuel \*\*



\*\* Data source: 2015 International Energy Agency balances

- Oil and its products, electricity and biomass dominate in TFEC
- Further electrification of transport, heating and cooling sectors will raise several challenges in terms of investments and infrastructure development



- ❑ **Access to financing**, and in a wider context projects' bankability, has been considered as a major concern in the Western Balkan economies

**Western Balkans' Ranking according to the Global Competitiveness Index 2017**

Index	Country	Albania	Bosnia & Herzegovina	FYROM *	Montenegro	Serbia
	Availability of financial services		79	122	-	119
Affordability of financial services		72	114	60	106	116
Ease of access to loans		94	83	45	84	86

- ❑ Other factors: Lack of consumption-based billing in heating and absence of adequate legal structures supporting loans for the renovation of multi-owner buildings
- ❑ **Subsidised energy prices** are often considered as major dis-incentive to investments in energy efficiency, and are accompanied with delayed bill payments
- ❑ Limited political support for energy efficiency projects in the region, as frequent political changes do not facilitate the necessary commitments for long-term policies

\* Financing Energy Efficiency Investments in the Western Balkans, WBIF

\* Access to finance in the Western Balkans, Occasional Paper Series, European Central Bank

## Financing of Energy Efficiency Projects and Investments / Sources, Donors \*

- ❑ The contribution of donors has been valuable regarding the opening and establishment of the Energy Efficiency market during the past decade, especially via the provision of long - term funding, technical assistance and incentives
- ❑ Development institutions like the European Union, UNDP, GIZ, USAID, Scandinavian donor etc provide official funding and technical assistance
- ❑ Two main funds that have been established and developed based on the initiative of the main European International institutions are the following :
  - ❖ **Green for Growth Fund (GGF):** it was invested by the EIB and KfW. It has invested a total of 249 million € in energy efficiency and renewable energy projects in South Eastern Europe, including 93 million € in the Western Balkans.
  - ❖ **Regional Energy Efficiency Programme (REEP):** it has been developed and funded by the EBRD and the European Commission and implemented jointly with the Energy Community Secretariat. REEP Plus has been expected to deliver €140 million of loans to 20,000 households and housing associations for EE and RES projects
- ❑ The main international active donors in the region are EBRD, EIB, KfW, and the World Bank

\* Financing Energy Efficiency Investments in the Western Balkans, Western Balkans Investment Framework

# International Donors in the Western Balkans\*



- **REEP/REEP Plus**: the main EE and RES tool in the region
- Investor in the **Green for Growth Fund**
- Operates the Kosovo\* Sustainable Energy Project (**KoSEP**)



Has invested close to **€ 2 billion** in green projects in the WB, the past decade

- The leading international financier in the WB
- Founder and the second largest investor in the **Green for Growth Fund**
- Active in the sectors of **EE** and **RES** regarding: credit lines to financial intermediaries, direct financing of projects, and through its global loans



Since 2007, the Bank has financed projects totalling **€ 7 billion**

- **Targets for RES and EE potential**: public buildings, district heating facilities, renewable energy (primarily small hydro plants, wind farms, biomass facilities) and the private sector (commercial and residential) through intermediaries
- Founder of and the largest investor in the **Green for Growth Fund**



Current operating facilities amount to approximately **€ 130 million**

- **Bosnia and Herzegovina - (BEEP)**: EE Project, **€27mil.**
- **Kosovo\* - (KEEREP)**: EE and Renewable Energy Project **€26 mil**
- **Montenegro - (MEEP)**: EE Project (€11.5 million)
- **Serbia - (SEIES)**: Enhancing Infrastructure Efficiency and Sustainability **€100 million** (€40 million for EE)



Current EE investment portfolio of **€ 105 million**

# Energy Efficiency Retail Markets in the Western Balkans \*

## Albania

- Credins Bank
- Fondi Besa
- NOA
- Microfinance
- SocGen Albania
- Union Bank

## Bosnia & Herz.

- NLB Razvojna Banka
- Partner MKF
- Unicredit Bank Banja Luka

## Kosovo \*

- AFK,
- BPB Banka
- KRK,
- TEB Bank
- NLB Prishtina
- Procredit Bank

## Mont/gro

- Atlas banka
- Hypo Alpe-Adria
- Alter Modus
- Investiciono Razvojni Fond CG

## FYROM

- Halkbank,
- Komercijalna Banka,
- NLB
- Tutunska Bank,
- Ohridska Banka SG
- Unibank

## Serbia

- Banca Intesa
- Čačanska banka
- Halkbank,
- Komercijalna Banka
- Procredit Banka
- Unicredit Banka



Households

- Procredit Bank

- NLB Razvojna Banka
- Raiffeisen Bank
- Unicredit
- Procredit

- AFK,
- BPB Banka
- KRK,
- TEB Bank
- NLB Prishtina
- Procredit Bank

- Hipotekarna Banka
- Komercijalna Banka Budva
- Alter Modus
- Investiciono Razvojni Fond CG

- Halkbank
- Ohridska Banka SG
- Procredit Bank

- Čačanska Banka
- Raiffeisen Banka
- OTP Banka



SMEs

\* Financing Energy Efficiency Investments in the Western Balkans, Western Balkans Investment Framework

## Conclusions

- ❑ How will the energy markets and national policies interact in to support vulnerable groups at risk of energy poverty?
- ❑ How will the combination of energy access, price, choice and affordability be integrated into modern energy services?
- ❑ Energy Efficiency framework needs further strengthening in order to become an effective instrument to tackle energy poverty in SEE
- ❑ Energy poverty has gained high recognition in the EU
- ❑ Europe's energy transition including energy poverty has a distinctively regional dimension
- ❑ Citizens and civil society have to be involved in designing national and EU energy policy
- ❑ In the long-term, the energy sector will have to face three major challenges: security of supply, climate change and energy poverty

**Thank you for your  
Attention**