

REVIEW OF THE CURRENT ENERGY POLICY IN THE REPUBLIC OF SERBIA WITH THE DEVELOPMENT PERSPECTIVES

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INTRODUCTION

- By its position on the Balkan Peninsula, Southeastern Europe, Serbia is known as the crossroads of the Europe, but also as the crossroads between the two continents - Europe and Asia.



- The country of Serbia is characterized by an energy deficit, which continues to grow.
- Total dependence of around 40%.
- Energy intensity is 0.33 ktoe/US\$

THE MOST IMPORTANT DOCUMENTS WHICH REGULATE ENERGY ISSUES:

- **Energy Law (2004)**
- **Law on Environmental Protection (2004)**
- **Amendments to Annex B of the Kyoto Protocol (2007)**
- **Different by-laws on renewable electricity**

- **The Strategy of Long-Term Energy Development by 2015 (2005)**
- **Program for implementing The Strategy of Long-Term Energy Development**
- **National Program for Environmental Protection**
- **National Program for Integration of Serbia into the EU**
- **Sustainable Development Strategy**
- **Introducing Cleaner Production Strategy**

CURRENT ENERGY POLICY OF SERBIA

SERBIAN ENERGY POLICY SETS OUT **THREE CRUCIAL ELEMENTS** OF SUSTAINABLE DEVELOPMENT :

- **Competitive energy markets**
- **Environment protection**
- **Energy efficiency and use of renewable**

SERBIAN ENERGY POLICY PRIORITIES :

- **Programs of continuous technology modernization of energy factories/resources in oil, gas and coal sector**
- **Programs for rational use of energy and energy efficiency**
- **Programs of selective use of new renewable energy sources and efficient production technologies and appliances**
- **Program for exceptional investments into new electro energetic and heat sources**
- **Programs of intensive capital investments into new sources/objects and the participation in strategic (regional/ Pan-European) energy infrastructure projects.**

ENERGY POLICY INSTRUMENTS

THERE ARE FIVE DIFFERENT TYPES OF POLICY INSTRUMENTS:

- **Legislation/regulation:** laws, by-laws, standards, codes;
- **Economic measures:** taxes, subsidies, tariffs;
- **Research and development:** targeted efforts to develop more energy efficient technologies as well in connection with energy production as end-use sectors. Development of improved strategies in connection with change of behavior might also be within the scope of research and development activities;
- **Information and education:** information and education of energy users on how to use energy more efficiently;
- **Data and statistics:** energy data and energy statistics to develop strategies and to monitor the development including estimation of potentials for energy savings.

ENERGY SUPPLY

ENERGY SUPPLY SECTOR:

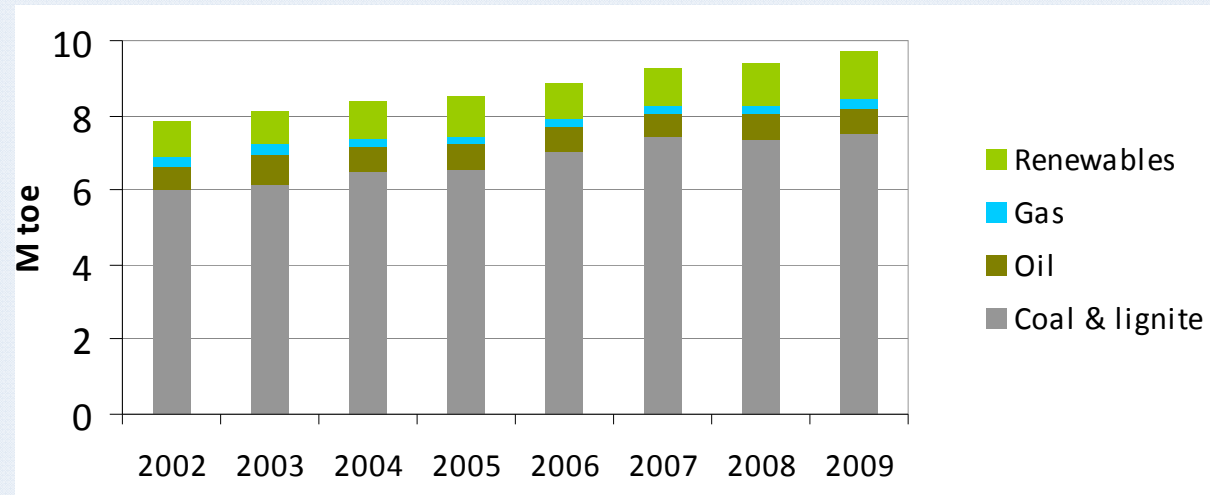
- **Coal extraction,**
- **Oil and gas production,**
- **Imports of crude oil, oil products and gas,**
- **Coal and hydro electricity generation,**
- **District heating systems and industrial energy systems.**

EXISTING CAPACITIES FOR ELECTRICITY PRODUCTION INCLUDE:

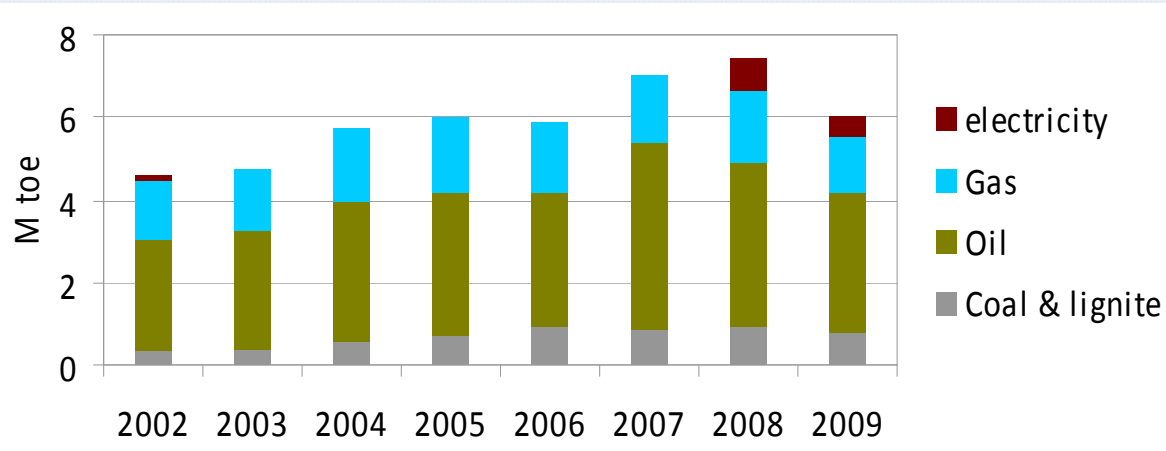
- **Hydro power plants,**
- **Thermal power plants (coal, heating oil, natural gas),**
- **Combined heat and power plants,**
- **Small hydropower plants,**
- **Industrial power plants and district heating.**

PRODUCTION OF ENERGY AND ENERGY IMPORT

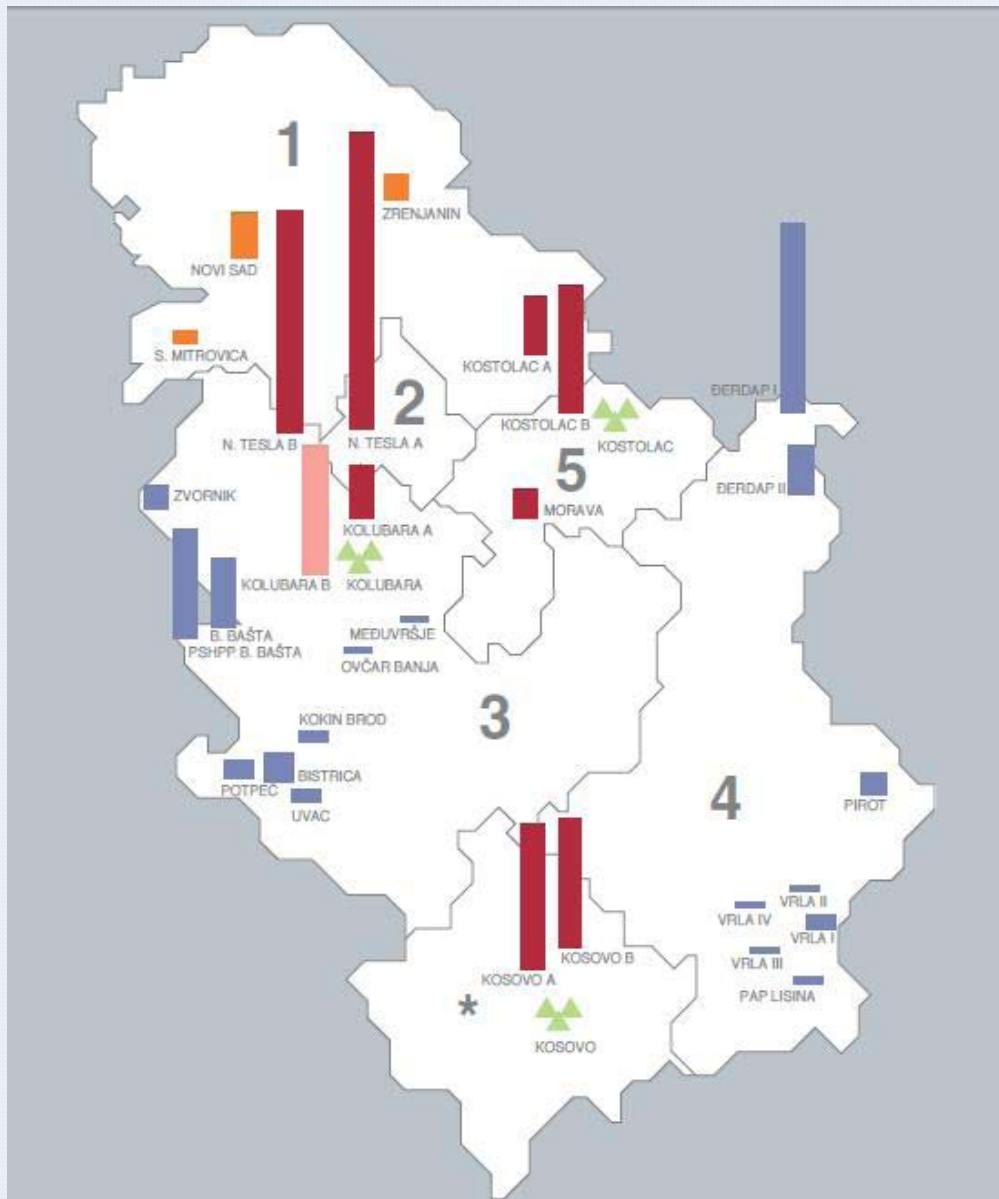
Production of primary energy



Energy import



ENERGY PRODUCTION CAPACITIES



Geographical distribution of existing power plants in Serbia

Power Plant	Net Output Capacity (MW), 2008
TPP Nikola Tesla A	1.502
TPP Nikola Tesla B	1.160
TPP Kolubara	245
TPP Morava	108
TPP Kostolac A	281
TPP Kostolac B	640
TPP Kosovo A	617
TPP Kosovo B	618
<i>Thermal Power Plants</i>	5.171
TPP-HP Novi Sad	208
TPP-HP Zrenjanin	100
TPP-HP Sremska Mitrovica	45
<i>Thermal Power Plants – Heating Plants</i>	353
HPP Djerdap I	1058
HPP Djerdap II	270
HPP Vlasina	129
HPP Pirot	80
HPP Bajina Basta	364
PUMPED-STORAGE PP Bajina Basta	614
HPP Zvornik	92
HPP Elektromorava	13
HPP Limske	211
<i>Hydro-Power Plants</i>	2.831
<i>Power Plants Owned by EPS</i>	8.355
<i>Other Power Plants</i>	377
Total	8.736

June, 2011.

NEW PRODUCTION FACILITIES AND REHABILITATION OF EXISTING FACILITIES

CONSTRUCTION OF NEW THERMAL POWER PLANTS IS IN PROGRESS:

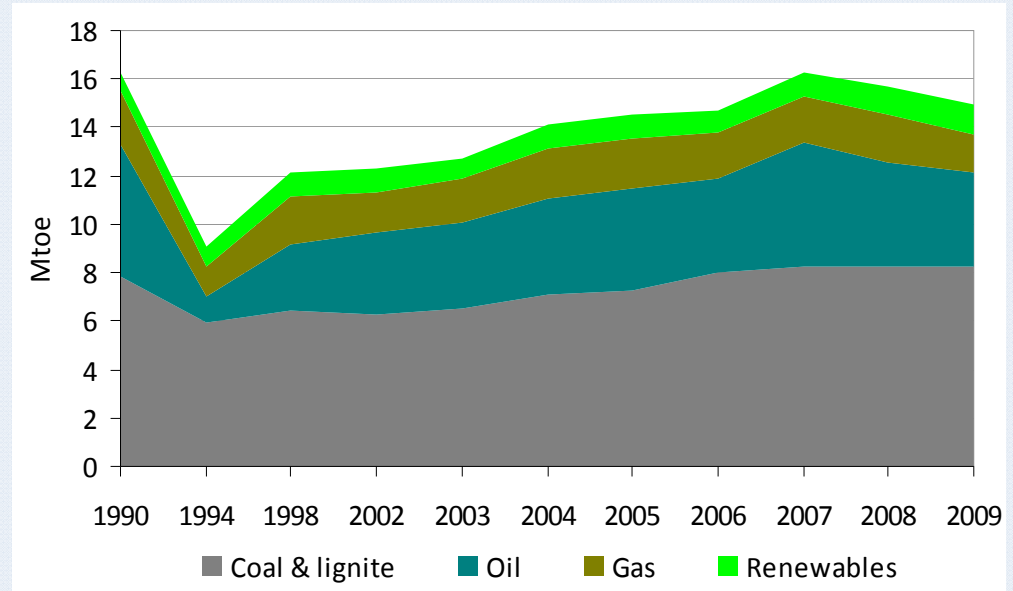
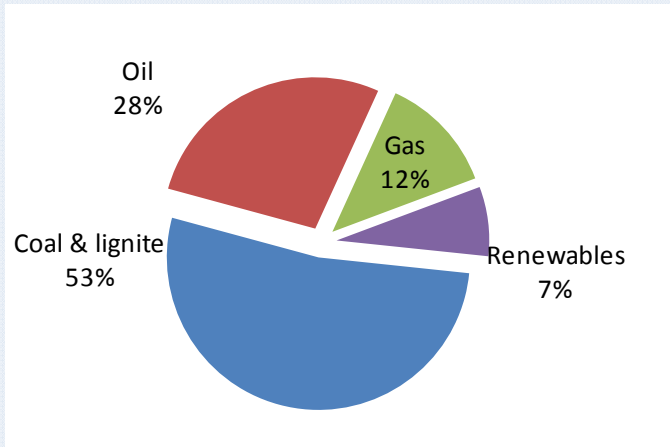
- **TPP Kolubara B (2 x 350 MW),**
- **TPP Nikola Tesla B3 (new 744 MW unit in existing TPP Nikola Tesla B)**
- **TPP that will use low caloric lignite with circulating fluidized bed boilers.**
- **TPP Novi Sad: construction of natural gas fired CHP plant is foreseen.**

FOLLOWING REHABILITATION AND MODERNIZATION ACTIVITIES ARE FORESEEN BY 2012:

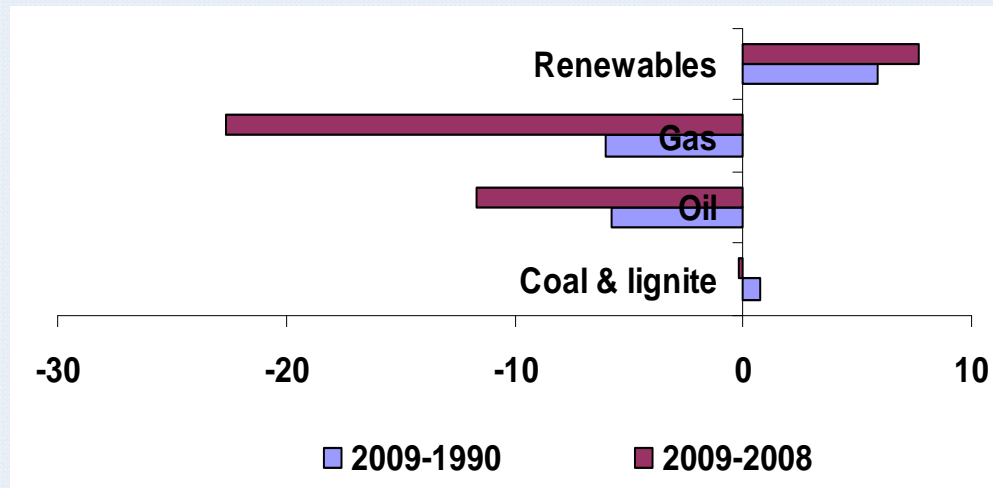
- Rehabilitation and modernization of TPP Nikola Tesla A6 (continuation of started activities)
- Rehabilitation and modernization of TPP Kostolac B (largely completed in 2010)
- Non-standard repairs on TPP Nikola Tesla B2, TPP Kolubara A3, TPP Kolubara A5, TPP Nikola Tesla A3-A5 and TPP Kostolac A

The oldest TPPs will be removed from normal operation (Kolubara A1, A2 and A4) from environmental and operation costs reasons, after 2012.

PRIMARY ENERGY CONSUMPTION BY FUEL

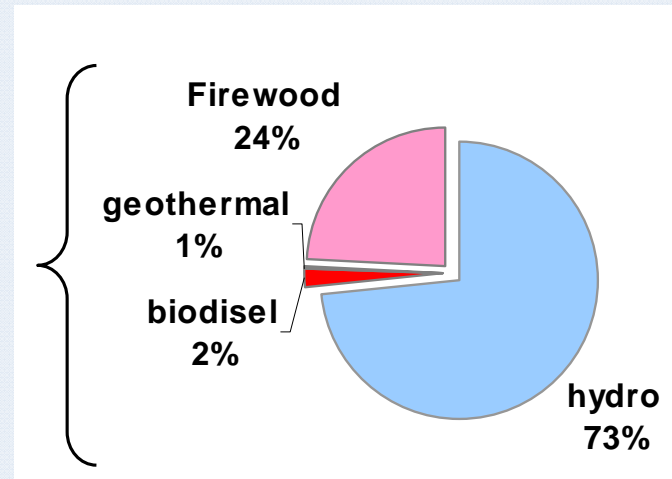
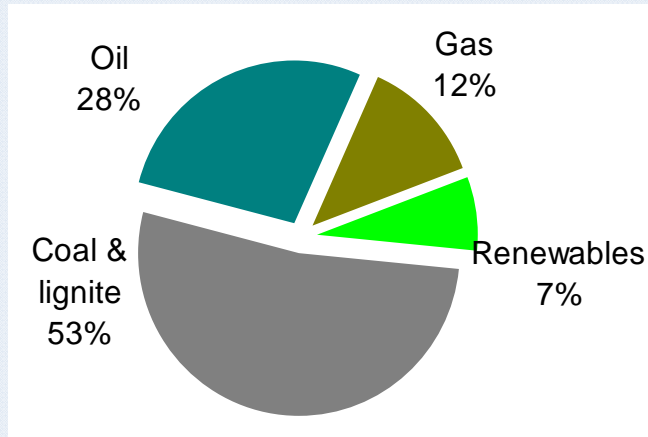


Primary energy consumption by fuel



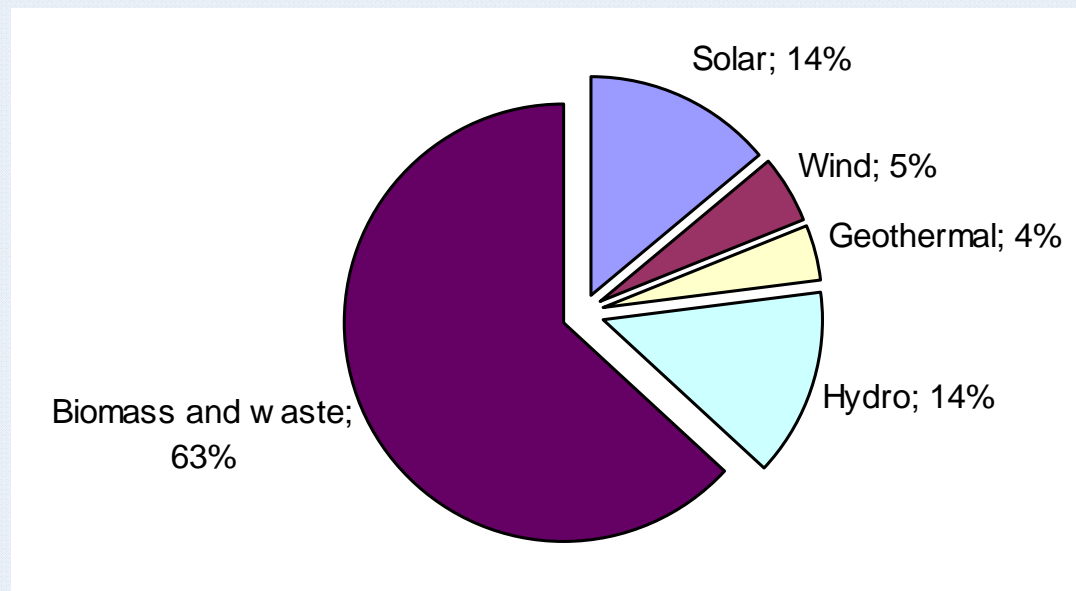
Average annual growth rates for different fuels

RENEWABLE PRIMARY ENERGY CONSUMPTION AND POTENTIALS of RES



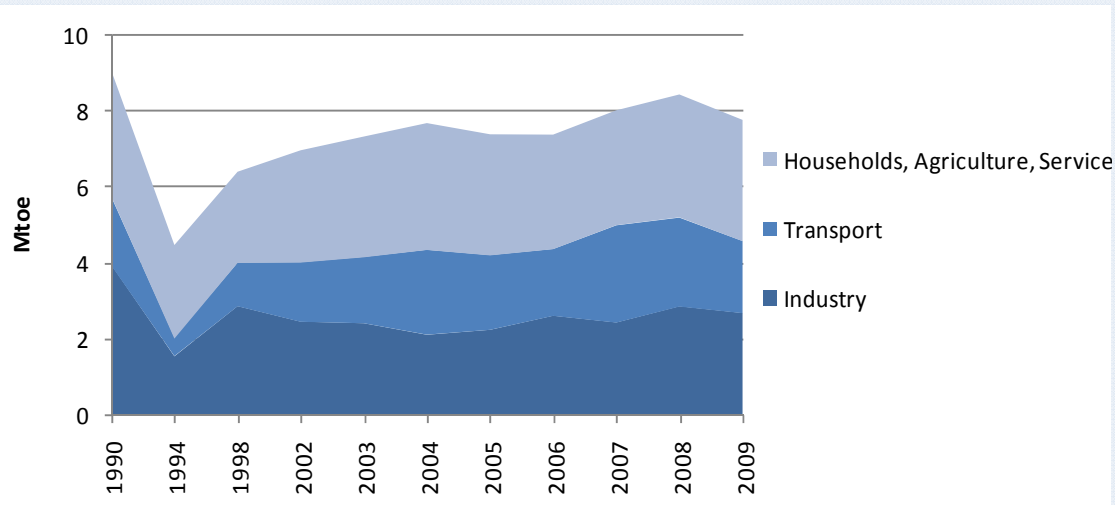
Total primary energy consumption by energy source in 2009

The potentials of RES

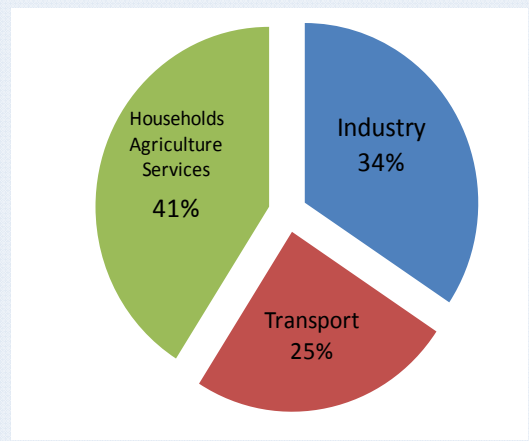


June, 2011.

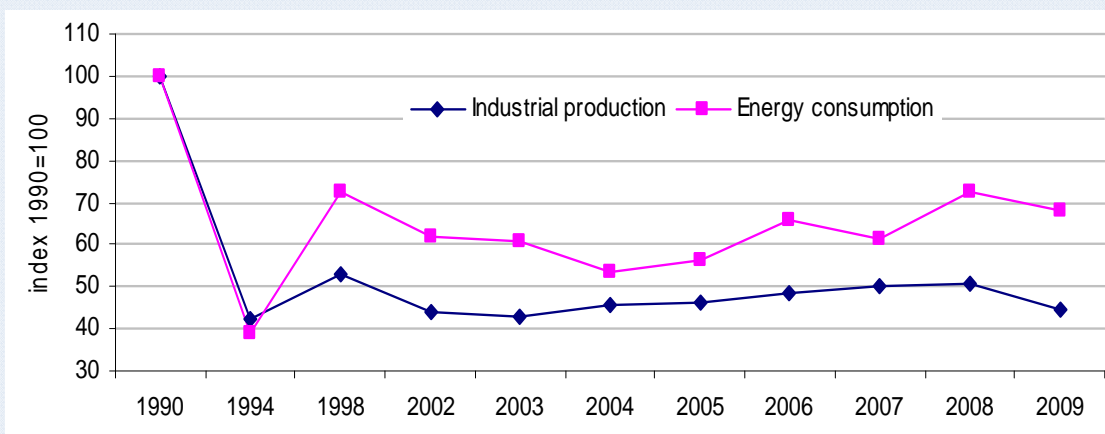
FINAL ENERGY CONSUMPTION BY SECTOR



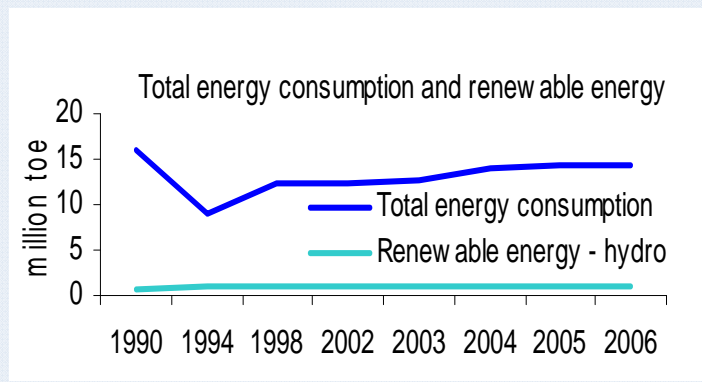
Shares in 2009



Households, Agriculture, Public and commercial activities are presented as aggregated.



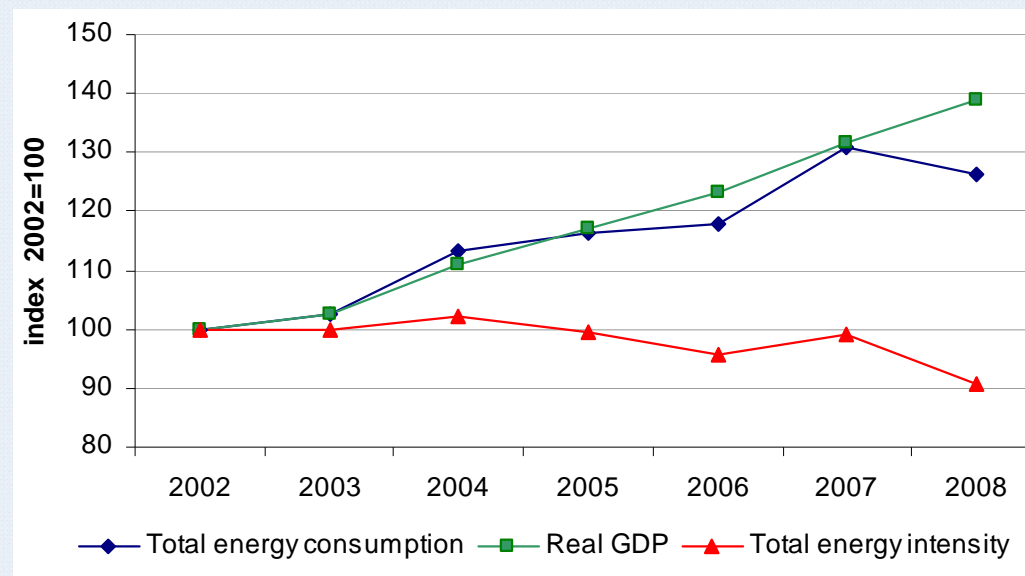
Final energy consumption in the industry sector



TOTAL PRIMARY ENERGY INTENSITY

The Western Balkan region is characterized by relatively high energy intensities: levels range up to 2.5 times higher than the average for OECD Europe (which is 0.15 toe per thousand USD of GDP). According to the *Energy in the Western Balkans study*, there are three main factors:

- the degraded state of the energy infrastructure;
- high energy losses in transformation, transmission and distribution; and
- inefficiency in the end-use sector.



Trends in total energy intensity, gross domestic product and total energy consumption

CURRENT ENERGY CHALLENGES IN SERBIA

- High energy consumption in buildings with large share of use of electricity for heating
- Low energy efficiency in industry with out-dated energy-intensive manufacturing technologies
- Technically deteriorated, energy inefficient and polluting municipal energy supply services
- Low exploitation of the available potential of renewable energy sources
- Unsustainable financial operation of energy supply companies due to energy prices not reflecting actual production costs
- Need for large investments in the energy sector to improve and modernize energy infrastructure
- Need to develop and implement a comprehensive policy designed to improve energy efficiency and the utilization of renewable energy sources

LIMITATIONS:

- **Economic** limitation due to slow recovery of industrial branches
- **Economic/energy** limitation due to inadequate prices of power and thermal energy
- **Energy/sector** limitation due to uncoordinated development of the whole energy system
- **Sector/environmental** , in the sense of the need to establish the legislative and institutional frameworks
- **Technological/developmental** limitations the consequences of irreparable delay in science and technology

THANK YOU FOR ATTENTION

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