

UN Economic Commission for Europe

Policy Reforms to Promote Energy Efficiency  
and Renewable Energy Investments in **Bulgaria**

Seminar on Policy Reforms to Promote  
Energy Efficiency and Renewable Energy Investments

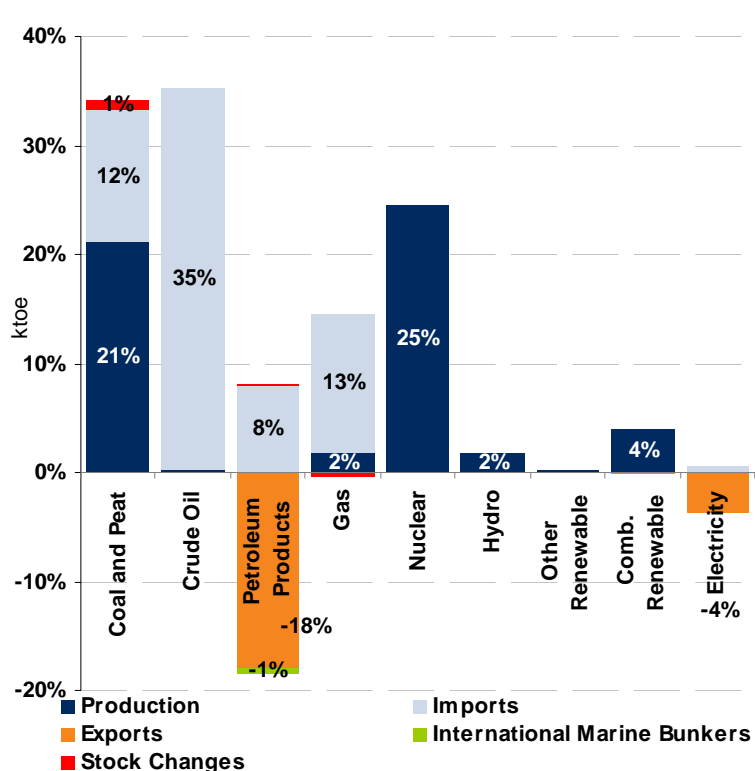
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Geneva, October 7.-8., 2009

# Energy Balance of Bulgaria

**Bulgaria shows a moderate energy import dependency of 46% and has an overall balanced fuel mix**

## Energy Balance



Source: IEA 2006

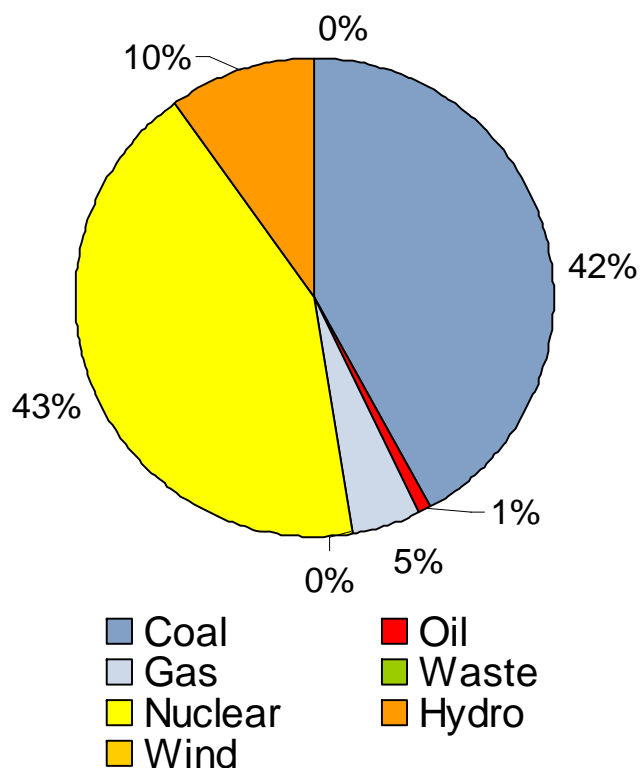
## Comments

- Bulgaria's overall dependency from primary energy imports is 46%
- The main domestic fuel sources are coal and nuclear power
- Oil, natural gas and coal are imported from the Russian Federation
- Bulgaria is an exporter of petroleum products and electricity
- Renewable energy sources play a minor role in the energy balance (6%)

## Power Generation in Bulgaria

**Bulgaria has an electricity surplus and a balanced power generation mix; however, security of energy supply is highly dependant upon political decisions regarding nuclear generation.**

### Energy Sources for Power Generation



### Comments

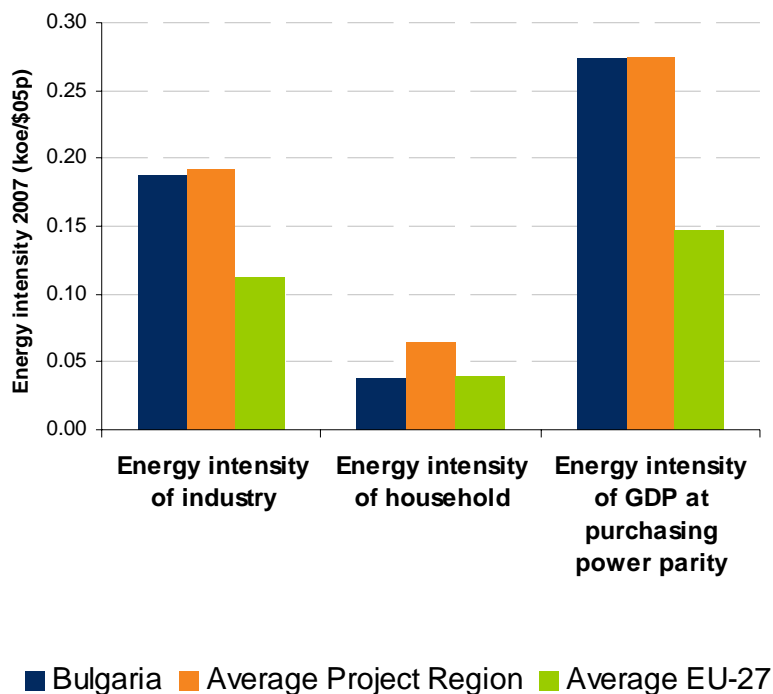
- Nuclear power provides the majority of power generation in Bulgaria; however, the Kozloduy NPP is to be decommissioned by the end of 2009 and the next NPP, Belene, will not start operations until 2013, thus exposing Bulgaria to possible electricity shortages
- Hydro power provides for 10% of the total electricity generation (1'800 MW installed capacity)
- Wind power has seen a strong development in the last few years, but amounts to only 1.7% of electricity production from RES

Source: IEA 2006

## Energy Intensity in Bulgaria

**Bulgaria's overall energy intensity is almost double the EU-27 average, but in line with the average of the project region**

### Energy Intensity



### Comments

- Energy intensity of households in Bulgaria is lower than the project region and comparable with EU-27 average
- Energy intensity of Bulgarian industry is very high, showing the necessity for increased efforts in this sector
- Since 1997, the overall energy intensity decreased by 35% - this trend is common throughout the entire project region

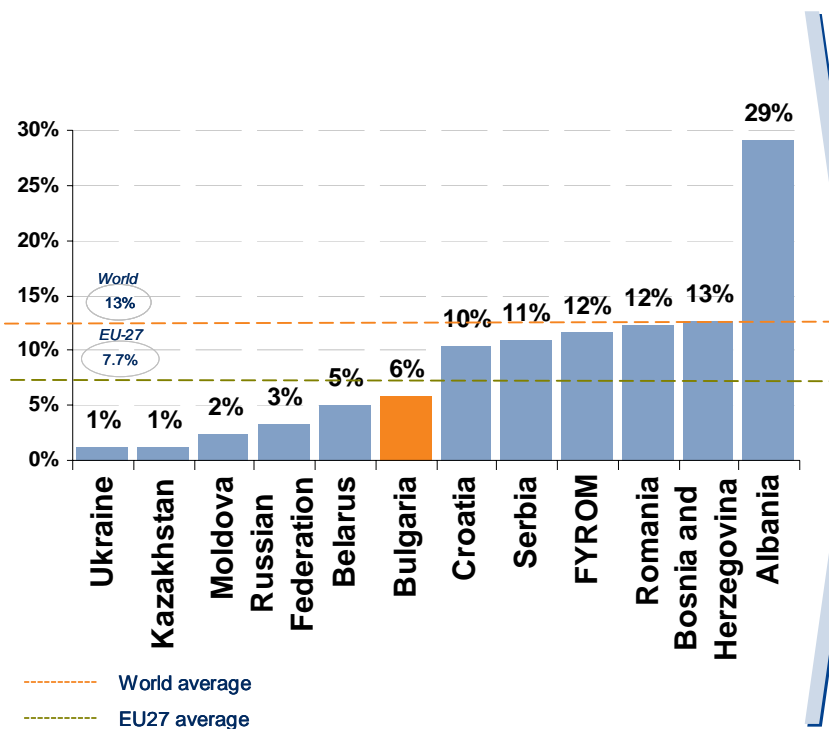
Source: Enerdata 2007

# Renewable Energy Sources in Bulgaria

## Deployment of renewable energy sources should be strongly increased in Bulgaria

### Renewable Energy Sources

### Comments



- Bulgaria has a modest share of renewable energy sources of 6%
- Fuelwood for decentralized heating amounts to over 65% of total RES; however, there is still unexploited potential
- Hydropower accounts for 10% of the total electricity generation, 80% of it being produced by large plants and pump storage plants
- New renewable energy sources have a negligible impact on the electricity generation and the total primary energy supply

Source: IEA 2006

## Barriers for Investments in EE and RES in Bulgaria

**One barrier for the further development of energy efficiency is the lack of sanctions regarding the noncompliance of energy audits**

**Legal,  
institutional  
and  
administrative  
barriers**

- **Lack of sanctions or penalties for companies which do not conduct energy audits or implement measures**
- **Lack of an agency dedicated to RES policy**
- **Fragmentation of home and land ownership is an obstacle for both EE and RES projects**

**Economic and  
financial  
barriers**

- **No significant economic and financial barriers identified**
- **Low energy prices for final customers – however, in Bulgaria, the customers have the highest tariffs in the entire project region**

**Lack of  
awareness,  
human  
capacities and  
professional  
skills**

- **Compliance to EU regulations is a strong motivation factor for the Bulgarian government; however, increased awareness and human capacity at the local level are necessary for tangible improvements**
- **Local banks are not active in financing EE and RES projects: lack of awareness, of guidelines or of professional skills?**

## Successful Policy Reforms in Bulgaria

**One example of a successful policy reform in Bulgaria is the introduction of tax exemptions related to energy efficiency activities**

**THE ENERGY EFFICIENCY ACT OF 2008 INTRODUCED EXEMPTIONS ON PROPERTY TAX FOR OWNERS OF BUILDINGS IMPLEMENTING ENERGY EFFICIENCY STANDARDS**

**Policy Instrument**

**Amendments to the Law on Local Taxes and Charges and the Law on Corporate Income Taxation following the adoption of the Energy Efficiency Act in 2008**

**Responsible Institution**

**Ministry of Finance of Bulgaria (implementation)**

**Implementation Timeframe**

**Tax exemptions are valid for 3-10 years**

## Energy Efficiency Act in Bulgaria

**The introduction of tax exemptions following the the Energy Efficiency Act will motivate owners of buildings to implement EE standards**

### Description

Owners of buildings, which possess an Energy Performance Certificate issued under the provisions of the Energy Efficiency Act, are exempted from the property tax for a period of three to ten years depending on the specific Certificate

### Beneficiaries

Beneficiaries of the tax exemptions are physical persons and legal entities, which engage in energy efficiency activities, as well trained energy auditors, which will conduct the energy audits

### Results

- Tax exemptions are a factor to increase awareness and to motivate building owners to invest in energy saving measures
- To ensure the success of the policy reform, adequate procedures and sufficient professional capacity for certification are necessary

### Long-Term Effects

- Development of a market for energy efficiency services
- Increased public awareness for EE
- Reduced energy consumption in the building sector and subsequent beneficial effect on climate change mitigation

# Recommendations to overcome barriers for investments in EE and RES in Bulgaria

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**Bulgaria has set up an extensive policy framework for EE and RES following EU standards, but monitoring of effective implementation is recommended**

**Legal, institutional and administrative barriers**

- **Monitoring of policy implementation**
- **Energy wood program**
- **Least-cost investment plan for district heating**
- **Transparent public procurement guidelines**

**Economic and financial barriers**

- **Adaptation of existing feed-in tariff for electricity from renewables**

**Lack of awareness, human capacities and professional skills**

- **National education, training and public awareness program**
- **Capacity building for policy makers**
- **Capacity building for local financing institutions**

# Recommendations to overcome barriers for investments in EE and RES in Bulgaria

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## Legal, institutional and administrative barriers (1/4)

### Monitoring of policy implementation

- **Bulgaria has advanced substantially with the introduction of a coherent set of medium- to long-term strategies, specific legislation, and concrete action plans in accordance with the EU Acquis Communautaire. However, frequent amendments of existing regulations, strong regulatory proliferation as well as lack of monitoring of policy implementation hamper effective and successful policy implementation.**
- **An institutionalization of regular energy policy monitoring aims at developing and clarifying policies, monitoring for compliance, continuous improvement and appropriate use of funds, and managing the dispute resolution process. The monitoring of energy policy instruments and progress should evaluate:**
  - **Implementation effectiveness,**
  - **Cost-effectiveness/cost-benefit-analysis, and**
  - **Impact analysis/socio-economic side effects.**
- **The Ministry of Economy and Energy shall assign one or more new or existing authorities or agencies for the overall control and responsibility for monitoring of policy implementation. The results of the monitoring and recommendations shall be summarized in an evaluation report.**

# Recommendations to overcome barriers for investments in EE and RES in Bulgaria

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## Legal, institutional and administrative barriers (2/4)

### Energy wood program

- **The lack of a plan for optimal management of forest resources has so far restricted the utilization of wood residues for electricity and heat generation in Bulgaria. The implementation of an Energy Wood Program shall mobilize so far unused wood energy resources, increase and accelerate the availability of wood for energetic use in Bulgaria.**
- **The Energy Wood Program should evaluate current energy wood use and future potential, indicate targets for energy wood use, describe measures to accelerate sustainable use of energy wood (e.g. promotion of enhanced co-operation and information exchange between market players, data collection on wood energy demand and supply, observation of price development and capacity building), and indicate a time schedule for implementation, monitoring and program reporting.**

# Recommendations to overcome barriers for investments in EE and RES in Bulgaria

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## Legal, institutional and administrative barriers (3/4)

### Least-cost investment plan for district heating

- **The degradation of district heating systems in Bulgaria points out the need for further action and support to investments by the municipal entities. A least-cost investment plan for district heating should be developed regularly and become the basis for development and refurbishment of the heating sector.**
- **The least-cost investment plan should evaluate costs and benefits of measures such as:**
  - **optimization of heat supply systems (e.g. housing modernization program),**
  - **heat load redistribution,**
  - **improvement of efficiency of heat supply companies,**
  - **loss reduction,**
  - **balancing centralized and de-centralized heating,**
  - **combined heat and power (CHP) development, and**
  - **metering.**
- **The outcome of this investment plan should be a ranking of least-cost investment including a budget estimation, as well as an evaluation of suitable financing instruments.**

# Recommendations to overcome barriers for investments in EE and RES in Bulgaria

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## Legal, institutional and administrative barriers (4/4)

### Transparent public procurement guidelines

- **Corruption and diffused criminality remain a widespread problem to foreign investment in energy efficiency and renewable energy in Bulgaria.**
- **Transparency in public procurement transactions involves: transparency of procurement opportunities and that of contract evaluation and award procedures. Among other things, procurement notices should present exact details regarding the procurement method being sought, specifications of the required goods, works or services, recommended time frame for bid submissions, a clear indication of the closing date and time for receiving bids and opening date and time of the same, any fees required to be paid to receive tender documents (this is meant for administrative and production costs of bidding documents).**
- **For the benefit of both the procurers and the suppliers, the Standard Bidding Documents provide a guide to such information. Therefore, for public procurement of energy efficiency and renewable energy services or goods transparent Standard Bidding Documents should be elaborated applying sustainable energy criteria.**
- **Once implemented, those Standard Bidding Documents will contribute to attract foreign investors and increase the market share of energy efficiency and renewable energy in Bulgaria and thereby increase the public awareness for these projects.**

# Recommendations to overcome barriers for investments in EE and RES in Bulgaria

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## Economic and financial barriers

### Adaptation of existing feed-in tariff for electricity from renewables

- **The feed-in-tariff in Bulgaria is perceived as rather complicated in its definition; furthermore, it should be made sure that the reference retail prices are published and available to potential investors in order to avoid intransparency and discrimination risks. Additionally, the feed-in-tariff mechanism might lead to investment uncertainty for project developers since they lack clear long-term price guarantees and are exposed to yearly changes in the feed-in-tariff.**
- **Therefore, an adaptation of the existing tariff scheme in terms of simplification and streamlining of application procedures is highly recommended**

# Recommendations to overcome barriers for investments in EE and RES in Bulgaria

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## Lack of awareness, human capacities and professional skills (1/2)

### National education, training and public awareness program

- **Energy efficiency and renewable energy will benefit from an exchange of information, experience and best practice at all levels, including, in particular, the public sector.**
- **The awareness on energy efficiency and renewable energy appears to be high in Bulgaria, compared to most other countries in the project region. However, the current degradation state of district heating infrastructures is an indicator for lack of awareness and/or lack of professional capacities at the municipal level.**
- **Therefore, a follow up and nationwide implementation of the UNDP pilot project “Energy Efficiency Demonstration Zone in Gabrovo” is highly recommended. Several demonstrations in the fields of street lighting, district heating and buildings retrofit have translated capacity building to reality. The project should enhance energy efficiency planning and management as well as the integration of renewable energy systems at municipal level and raise public awareness for energy efficiency and renewable energy.**
- **Activities could comprise diffusion of results from Gabrovo to other municipalities, capacity building, including training of municipal offers and project developers, development of municipal programs for sustainable energy, design of energy saving and renewable energy projects and use of the relevant financial mechanism.**

# Recommendations to overcome barriers for investments in EE and RES in Bulgaria

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## Lack of awareness, human capacities and professional skills (2/2)

### Capacity building for policy makers

- In order to ensure successful monitoring of policy implementation, it is necessary to provide adequate funding and training for the staff of ministries, regulators and other governmental or municipal agencies with responsibilities in the energy sector

### Capacity building for local financing institutions

- The Bulgarian Energy Efficiency and Renewable Energy Credit Line (BEERECL) was developed by the European Bank for Reconstruction and Development (EBRD) in 2004 in close cooperation with the Bulgarian Government and the European Union. The facility extends loans to participating banks for on-lending to private sector companies for industrial energy efficiency and small renewable projects. Since April 2004, the EUR 100 mln BEERECL facility has developed 149 sustainable energy projects, disbursed loans of EUR 81.4 mln and provided incentive grants of EUR 13.7 mln to project developers.
- Apart from the participating banks, local commercial banks lack awareness on potential financial benefits as well as technical understanding for evaluation of energy efficiency and renewable energy projects. Therefore, in order to increase the number of participating banks and BEERECL funded projects, assistance and training in refining, standardizing and evaluating loan applications and appraisal procedures to local banks is recommended.

## Conclusions

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**While the RES sector still needs major improvements, a strong commitment to EE issues is present in Bulgaria**

- **Bulgaria faces the issue of increased dependency from energy imports, depending on the future developments of the national nuclear activities**
- **Policy developments in the EE and RES are mainly driven by implementation of EU directives**
- **Renewable energy sources only have a minor share in the national energy balance: only 10% of electricity is produced by RES and of this, 80% by large hydro. Contribution from RES other than hydro and fuel wood is negligible.**
- **The commitment on the increase in EE is strong, with the establishment of a dedicated agency as well as the implementation of dedicated programs**
- **The introduction of tax exemptions for the implementation of energy efficiency standards will lead to a decrease of the energy intensity and push the development of a market for EE services**
- **Bulgaria has set up an extensive policy framework for EE and RES following EU standards, but monitoring of effective implementation is recommended**

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The background of the slide features a close-up, artistic photograph of a sailboat's rigging. A small, glowing globe of the Earth is positioned where a rope or wire crosses over a metal pulley or sheave. The lighting is dramatic, with strong highlights and deep shadows, creating a sense of depth and texture. The overall color palette is dominated by dark blues, greys, and greens. At the bottom of the slide, the word "PÖYRY" is written in a large, bold, sans-serif font. The letters are light grey and semi-transparent, allowing the background image to be seen through them. The "Ö" has a distinctive double-dot accent.