

# CURRENT STATUS OF REGULATION IN BULGARIA: ENCOURAGING INVESTMENT IN AND UTILIZATION OF RENEWABLE ENERGY SOURCES (RES)

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- Hydro- and geothermal energy, energy extracted from biomass, wind, and solar energy have played an important role in Bulgaria's energy industry.
- Water is currently the main and most widely used source of energy RES. Its technical potential is estimated at 15 billion kWh.
- Energy produced by smaller Hydropower Plants (up to 10 MW) and Geothermal Plants are still limited and their number is not expected to grow significantly and impact the country's energy balance. The potential for growing the share of used RES is associated with expanding the use of biomass, wind, and solar energy.

## **Renewable Energy Sources (RES)**

The use of renewable energy sources (RES) in Bulgaria is encouraged through preferential pricing.

There is a special section in the Energy Act (EA) (December 9, 2003., State Gazette (SG), issue 107, amend. SG. issue 74/08 September, 2006) *Producing energy from renewable energy sources*.

The national guiding objectives to encourage the consumption of power from RES are set by the Council of Ministers based on recommendations from the Minister of the Economy and Energy.



The national guiding objectives set to encourage the consumption of RES-produced power are defined as a percent of the annual gross consumption of electricity for the next ten years and are updated every 5 years.

According to the national guiding objectives the RES-based power production is encouraged considering:

- key principles of the energy market;
- ➤ the characteristics of the various RES and power production technologies;

➤ the provision of incentives for energy producers that are at least equivalent to the cost of switching production mechanisms and adopting the use of RES.

**Priority inclusion** – the transaction company and the distribution company are required to include in the distribution network all power plants using REC, as well as Hydropower Plants (HPP) of up to 10 MW.

#### Required purchase, preferential pricing

➢ Public utilities and licensed distributors of electrical power are required to purchase the entire energy produced by RESbased plants holding a certificate, except the amount for which the producer has signed agreements with other parties or with which the producer participates on the market.

➤ The public utility and the distributors are required to purchase power from RES-based plants including HPPs of up to 10 MW at preferential prices as described in article 36, section 3 of the EA.



#### **Preferential prices**

Currently the preferential prices for the production of electrical power are the following:

- ➢ HPP 80 BGL/MWh (without VAT), given the following conditions:
- a) With top equalizer, which allows for uninterrupted plant operation at nominal capacity more than two hours for a 24-hour period;
- b) With bottom equalizer, which allows for uninterrupted plant operation at nominal capacity more than two hours for a 24-hour period, and an HPP with bottom equalizer which follow a provided by the Minister of Environment and Water monthly schedule for utilizing water from large dams;
- c) Retail price for electricity produced by HPP of up to 10 MW excluding HPP described in points a) and b) in 2005: 79.44 BGL/MWh
- From wind power plants with capacity up to 10 MW 120 BGL/MWh (without VAT)
- From wind power plants with new installations produced after 01 Jan. 2006 as of 01 Jan. 2007:
  - For wind-power generators with full annual capacity of up to 2 250 hours including –175 BGL/MWh
  - For wind-power generator with full annual capacity over 2 250 hours 156 BGL/MWh

The prices of RES-generated electrical power cannot be less than 70% of the average price for the previous year as offered by public utilities or distributors plus a supplemental fee set by the Commission in accordance with the Regulation on Pricing of Electrical Power.

RES-based power energy production is encouraged by the 12-year period of preferential pricing (draft law for encouraging the use of renewable energy sources, alternative energy sources, and bio-fuel).

The energy produced by HPP under 10 MW for 2004 and 2005 equals respectively 1.05% and 1.71% of the total production.

#### Current Status of RES in Bulgaria

- Significant experience in the utilization of hydro-based RES (micro-, small and medium HPP < 10 MW).</li>
- Interest among Bulgarian and foreign companies in the development of wind-power installations for a total of 1,700 MW. There are individual installations in several places throughout the country, which are with very small capacity and are mostly experimental.
- Significant capacity for a new method using biomass and producing electrical and heat energy simultaneously.
- Potential for geothermal-based energy production, currently utilized for greenhouses, resorts, healthcare but with potential for household use.
- Significant potential for solar power, currently solar thermal systems are used for water heating by residential, business, and industrial facilities.

Investment proposals for electricity production using photovoltaic elements, biomass and biogas.

There are investment programs for the installation of small HPPs but the potential for small HPP is limited (they have similar average production capacity as wind power plants), which is why they are not expected to have significantly larger impact in meeting Bulgaria's requirements.

According to the EU Accession Treaty, Bulgaria is required to produce 11% of its gross domestic energy consumption using RES before 2010. The gross domestic energy consumption in 2005 was 32 billion kWh.

The actual installation of wind-power plants can begin in 2008.

The current prices for electricity production in EU countries are 7.12 – 11.9 €c/kWh.



SCEWR considers the importance of providing institutional support and encourage the development of RES-based electricity production technologies on national level based on the following:

- The implementation of EU Parliament Directive 2001/77 and European Council from 27 Sept. 2001 for the encouragement of RES-based energy production as an important public priority and the security of energy supply, environment protection and socio-economic harmonization;
- The development of RES production is included in the requirements that Bulgaria has committed to by signing the Kyoto protocol on climate change;
- The guaranteed investor confidence in the planning and implementation of RES projects, as well as national-level financial support for the utilization of RES;
- The achievement of the main objectives of AE according to article 2, section 1, item 5, i.e. the development of prerequisites for sustainable development and nature protection by encouraging the utilization of RES.

SCEWR has adopted national financial mechanisms to support the utilization of RES using wind power and hydro power with the following licenses:

- for the production of electricity from HPP – 7. One of the licenses is help by the National Electrical Company "NEC" SA, including 14 HPP and 3 Pumping & Accumulating HPP (PAHPP) with total annual capacity of 3 544 GWh for 2005. The rest of the licenses are issued for private companies;

- for the production of electricity from wind power plants (WPP) – 1 (with installed capacity of 33 MW). Two licenses are currently being processes and will be issued in the future (with total installed capacity of 100 MW).

According to the Energy Act RES will be regulated by the "Regulation on the certification for origin of electrical power produced from renewable energy sources and/or by combined sources", which will set the rules and procedures for the issuing of certificates for origin.

The role of the regulating agency is to:

- register the producer using RES or combined sources for electricity production;

- issue a certificate for origin in electronic and non-transferable format proving that the producer is producing a certain amount over a certain period;

- cancels certificates in case of false information provided by the producer;

- develops a registry of all certificates for origin;
- monitors the production of RES.

To set preferential pricing SCEWR has adopted national-level financial mechanisms supporting the use of RES including through direct pricing support.

The regulating agency introduces a cost-oriented price (costs+) when setting preferential prices for RES.

The main elements guiding the RES energy market are:

- investment costs;
- return on capital;
- production of electrical power.

Investment programs for WPP-based electricity production.



#### Energy price per kWh generated by wind-power plants



\*-capital costs in the Bg project of 1250€ /kW include all costs including expenditures for maintenance and utilization. \*\* capital costs in the EU projects of 900 € /kW and 1100 € /kW do not include expenditures for maintenance and utilization.

Technology	Technical potential for RES-based energy production in GWh	
	before 2010	before 2015
Biomass	4420	6514
Biogas	57,84	1764
Fluid bio-fuel	166,3	650
HPP	2813	3248
Wind power	2134	4468
Geothermal energy	408	3145
Photovoltaic installations	7	43
Solar thermo collectors	71,4	779





# Thank you for your attention!

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