Wood energy: definition, objectives and challenges in South East Europe

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» Primary energy production in SEE countries: current situation and RES participation

» Potentials of the South East European countries for the production of energy-generating products based on wood biomass

» Market of wood based energy-generating products in the selected SEE countries - current situation

» Wood energy: objectives and challenges in SEE countries
Surveying countries

» Albania
» Bosnia and Herzegovina
» Croatia
» Macedonia
» Montenegro
» Serbia
I. Primary energy production in SEE countries: current situation and RES participation

Serbia, 2008.
- Coal: 79%
- Natural Gas: 9%
- Oil: 8%
- RES: 2%

Macedonia, 2008.
- Coal: 52%
- Natural Gas: 3%
- Oil: 28%
- RES: 6%

Bosnia and Herzegovina, 2006.
- Coal: 60%
- Natural Gas: 9%
- Oil: 22%
- RES: 3%

Workshop on “Policy options for wood energy”, Dubrovnik 17 - 20 November 2009
I. Primary energy production in SEE countries: current situation and RES participation

Croatia, 2007.

- Natural gas: 51%
- Hydro power: 22%
- Oil: 19%
- RES: 8%


- Hydro power: 24%
- Natural Gas: 2%
- Oil: 53%
- Coal: 1%
- RES: 20%


- Hydro power: 62%
- Coal: 32%
- RES: 5%
- Other: 1%
- Oil: 1%
II. Potentials of the South East European countries for the production of energy-generating products based on woody biomass

<table>
<thead>
<tr>
<th>Country</th>
<th>Forest area (1000 ha)</th>
<th>% of total land area</th>
<th>Ownership</th>
<th>Per hectare (tonnes/ha)</th>
<th>(million tonnes)</th>
<th>Growing Stock (Million m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>1,044</td>
<td>36.3</td>
<td>99.1</td>
<td>0.9</td>
<td>129.7</td>
<td>135</td>
</tr>
<tr>
<td>Bosnia and Hercegovina</td>
<td>2,709</td>
<td>53.0</td>
<td>81.0</td>
<td>19.0</td>
<td>160.6</td>
<td>435</td>
</tr>
<tr>
<td>Croatia</td>
<td>2,689</td>
<td>47.0</td>
<td>78.4</td>
<td>21.6</td>
<td>179.9</td>
<td>484</td>
</tr>
<tr>
<td>Macedonia</td>
<td>906</td>
<td>35.8</td>
<td>78</td>
<td>22</td>
<td>45.3</td>
<td>41</td>
</tr>
<tr>
<td>Montenegro</td>
<td>710</td>
<td>51.0</td>
<td>67.3</td>
<td>32.7</td>
<td>27.8</td>
<td>20</td>
</tr>
<tr>
<td>Serbia*</td>
<td>2,252</td>
<td>29.1</td>
<td>53</td>
<td>47</td>
<td>87.9</td>
<td>198</td>
</tr>
<tr>
<td>Total SEE (6)</td>
<td>10,310</td>
<td>/</td>
<td>/</td>
<td>/</td>
<td>/</td>
<td>1,313</td>
</tr>
<tr>
<td>TOTAL EUROPE</td>
<td>1,001,394</td>
<td>44.3</td>
<td>/</td>
<td>/</td>
<td>87.7</td>
<td>87,509</td>
</tr>
</tbody>
</table>

* Without Kosovo

Sources: State of the Worlds Forests 2007., FAO, Ministry of Environmental, Forestry and Water Administration of Albania, Ministry of Agricultural, Forestry and Water Management of Montenegro, USIT Bosnia and Herzegovina, Croatia forests, Ministry of Agricultural, Forestry and Water Management of Serbia
ALBANIA

Potential sustainable production of wood and wood residue in Albania intended for energy production on annual level

<table>
<thead>
<tr>
<th></th>
<th>Fuelwood [m³/annually]</th>
<th>Logging and wood processing residue [m³/annually]</th>
<th>Residue from forest spacing</th>
<th>Total amount of wood biomass for energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total potential production [m³]</td>
<td>319 388***</td>
<td>645 749*</td>
<td>35 000</td>
<td>1 000 137</td>
</tr>
<tr>
<td>Potential annual energy production from wood biomass [toe]</td>
<td>68 545</td>
<td>100 788</td>
<td>3 821</td>
<td>173 154</td>
</tr>
<tr>
<td></td>
<td>2.87</td>
<td>4.22</td>
<td>0.16</td>
<td>7.25 (22.35***</td>
</tr>
</tbody>
</table>

* 53% from forest logging, 31.9% primary sawn and 15.1% from final wood processing
** 1 milion m³ solid wood= 7.19 PJ (40% m.c); 1toe=41.87x10⁻⁶ PJ
*** including estimation 2 million m³ of fuelwood (officially+illegal logging)

Source: Dr. Elvin Toromani, Agricultural University of Tirana-Albania/Faculty of Forestry Sciences

The biggest part of fuelwood is used in rural areas where about 400,000 families live, which is 55% of the population in Albania (3.1 million). Fuelwood comprise 45% of total energy demand, while today only fuelwood for heating comprise 36% of total energy demand (EESDC, 2008).
So far only 17 PJ/annually of biomass has been used, mostly as fuelwood and briquettes for heating in households.

Unused wood potential is estimated at about 1 million m³ of wood residue annually, which can be used for heating 130 000 flats or 300 000 citizens.

**BOSNIA AND HERZEGOVINA**

Potential sustainable production of wood and wood residue in Bosnia and Herzegovina intended for energy production on annual level

<table>
<thead>
<tr>
<th></th>
<th>Fuelwood</th>
<th>Logging and wood processing residue</th>
<th>Total amount of wood biomass for energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total potential production [m³]/annually</td>
<td>1,464,706 *</td>
<td>1,740,649</td>
<td>3 205 355</td>
</tr>
<tr>
<td>Potential annual energy production from wood biomass</td>
<td>[toe] 314 306</td>
<td>242 417</td>
<td>556 723</td>
</tr>
<tr>
<td></td>
<td>[PJ]** 13.16* (31.13)***</td>
<td>10.15</td>
<td>23.31 (41.28)***</td>
</tr>
</tbody>
</table>

*illegal logging is not included
** 1 milion m³ solid wood= 7.19 PJ (40% m.c); 1toe=41.87x10⁻⁶ PJ
*** including estimation 3.46 million m³ of fuelwood (officially+illegal logging)

## CROATIA

Potential sustainable production of wood and wood residue in Croatia intended for energy production on annual level

<table>
<thead>
<tr>
<th></th>
<th>Fuelwood [m$^3$/annually]</th>
<th>Bark and wood processing residue [m$^3$/annually]</th>
<th>Residue from forest</th>
<th>Total amount of wood biomass for energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total potential production [m$^3$]</td>
<td>2,100,000</td>
<td>1,700,000*</td>
<td>700,928</td>
<td>4 500 928</td>
</tr>
<tr>
<td>Potential annual energy production from wood biomass [toe]</td>
<td>450 686</td>
<td>249 104</td>
<td>75 233</td>
<td>775 023</td>
</tr>
<tr>
<td>[PJ]**</td>
<td>18.87</td>
<td>10.43</td>
<td>3.15</td>
<td>32.45</td>
</tr>
</tbody>
</table>

* 207,306 m$^3$ is bark,
** 1 milion m$^3$ solid wood= 7.19 PJ (40% m.c); 1toe=41.87x10$^{-6}$ PJ

Sources: Dalibor Salopek dipl. ing., 2007. Strategija korištenja šumske biomase Hrvatske u proizvodnji energenata; Croatia forests;
CROATIA

Heating plants Croatia forests:

- GOSPIĆ - 1 MW - 2005.

Current installed capacities and production of heating energy from biomass in Croatia is 512 MW (only industrial heating plants) and 16,230 TJ (in total, including fuelwood for heating in households).
CROATIA

Heating plants using WOOD RESIDUE in Croatia

<table>
<thead>
<tr>
<th></th>
<th>Belišče</th>
<th>din NOVOSELEC</th>
<th>SLADOŠNJICA</th>
<th>SPAČVA</th>
<th>spin valle</th>
<th>Oak</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSTALLED POWER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[MW]</td>
<td>6,0</td>
<td>6,5</td>
<td>6,0</td>
<td>16,0</td>
<td>12,0</td>
<td>4,0</td>
</tr>
<tr>
<td>HEATING ENERGY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRODUCTION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[MWh/annually]</td>
<td>53.000</td>
<td>22.920</td>
<td>21.000</td>
<td>61.000</td>
<td>20.000</td>
<td>14.000</td>
</tr>
<tr>
<td>BIOMASS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONSUMPTION - OWN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[t/annually]</td>
<td>16.000</td>
<td>12.000</td>
<td>11.000</td>
<td>20.000</td>
<td>10.000</td>
<td>5.000</td>
</tr>
<tr>
<td>(bark)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MACEDONIA

Potential sustainable production of wood and wood residue in Macedonia intended for energy production on annual level

<table>
<thead>
<tr>
<th>Fuelwood [m³/annually]</th>
<th>Wood processing residue [m³/annually]</th>
<th>Residue from forest</th>
<th>Total amount of wood biomass for energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>650 000</td>
<td>56 800*</td>
<td>37 000</td>
<td>743 800</td>
</tr>
<tr>
<td>139 479</td>
<td>8 837</td>
<td>4 060</td>
<td>152 376</td>
</tr>
<tr>
<td>5.84</td>
<td>0.37</td>
<td>0.17</td>
<td>6.38</td>
</tr>
</tbody>
</table>

** 1 milion m³ solid wood= 7.19 PJ (40% m.c); 1toe=41.87x10⁻⁶ PJ
Sources: FAO; Country report of Macedonia; Energy Balance od Macedonia.

Pursuant to the classification of primary energy sources done by the Macedonian State Energy Balance (SEB), about 800,000 m³ of wood annually ensures about 2660 GWh of energy on annual level. It is 8.9% of the total primary energy sources in Macedonia.

Calculations based on the information provided estimate that wood waste from forests can substitute approximately 58.000 tons of heavy fuel oil. Out of this potential about 18.000 tons of heavy fuel oil could be substituted from wood waste from wood processing industry and saw mills.
Wood is traditionally used for heating mostly in households and less in public and commercial sector. According to the projection of final energy consumption, decrease of the participation of fuelwood and biomass and slight increase of the participation of other renewable energy sources is expected.
Since the consumption of final energy in Serbia in 2008 was 8.516 Mtoe, the participation of energy obtained from wood based energy-generating products (1.17 Mtoe) was 13.7%.

Regarding the fact that the total amount of consumed wood based energy in 2008 was 1.17 Mtoe, the contribution of wood based energy to the decrease of Serbian import dependence only on natural gas was 653.96 million US$.

**Potential sustainable production of wood and wood residue in Serbia intended for energy production on annual level**

<table>
<thead>
<tr>
<th></th>
<th>Fuelwood [m³/annually]</th>
<th>Wood processing residue [m³/annually]</th>
<th>Logging, residue from forest and outside forests</th>
<th>Total amount of wood biomass for energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total potential production [m³]</td>
<td>5 521 380</td>
<td>645 500</td>
<td>560 100</td>
<td>6 726 980</td>
</tr>
<tr>
<td>Potential annual energy production from wood biomass [Mtoe]</td>
<td>1.18</td>
<td>0.10</td>
<td>0.06</td>
<td>1.34</td>
</tr>
<tr>
<td>Potential annual energy production from wood biomass [PJ]**</td>
<td>49.62</td>
<td>4.22</td>
<td>2.52</td>
<td>56.36</td>
</tr>
</tbody>
</table>

** 1 milion m³ solid wood = 7.19 PJ (40% m.c); 1toe=41.87x10⁻⁶ PJ

Source: TCP/FAO project
Consumption of wood based energy in Serbian households

2008.

Based on the obtained consumption of wood based energy-generating products and the consumed amounts of other energy-generating products in households in Serbia from the energy balance for 2008, the following participation of certain energy-generating products for heating households in Serbia is obtained (graph):

- Firewood and other woody biomass: 27%
- Coal: 7%
- Gas: 7%
- Petroleum derived: 2%
- District heating system: 28%
- Electrical power: 29%
Potential sustainable production of wood and wood residue in SEE countries intended for energy production on annual level.

<table>
<thead>
<tr>
<th>Country</th>
<th>PJ/annualy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montenegro</td>
<td>3,38</td>
</tr>
<tr>
<td>Macedonia</td>
<td>6,38</td>
</tr>
<tr>
<td>Albania</td>
<td>7,25</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>23,31</td>
</tr>
<tr>
<td>Croatia</td>
<td>32,45</td>
</tr>
<tr>
<td>Serbia</td>
<td>56,36</td>
</tr>
</tbody>
</table>

Including illegal logging.
Huge amounts of sawdust

- In some SEE countries there are many locations with huge amounts of sawdust. Some of those locations are presented on this photo.

This is a big environmental problem and simultaneously a significant source of raw material for potential investors.
III. Market of wood based energy-generating products in the selected SEE countries-current situation

III. 1. WOOD PELLETS

ALBANIA

According to the available data, so far there are no plants for the production of wood pellets in Albania.
In Bosnia and Herzegovina there are 7 plants for the production of wood pellets with capacities ranging from 3,000 - 40,000 tons/annually. Beside these plants, there is a certain number of smaller producers with the production of 1000-2000 t/annually so that the total capacity is estimated at about 150,000 tons-annually.

There is no significant domestic market yet, since only about 10-15% of the produced pellets is sold on the territory of Bosnia and Herzegovina according to rough estimations, and the biggest part is exported onto the markets of Italy and Slovenia.

Among the installed plants, the year of 2008 was test year for most plants, so that about 10-15% of the production of 150,000 t/annually was realized.

<table>
<thead>
<tr>
<th>Company name</th>
<th>Place</th>
<th>Capacity (t/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitales</td>
<td>Nova Bila</td>
<td>25000</td>
</tr>
<tr>
<td>Panensa</td>
<td>Srbac</td>
<td>35000</td>
</tr>
<tr>
<td>Enernovi</td>
<td>Novi Grad</td>
<td>40000</td>
</tr>
<tr>
<td>SwissEco pellet RS</td>
<td>Zvornik</td>
<td>12000</td>
</tr>
<tr>
<td>Fis</td>
<td>Vitez</td>
<td>3000</td>
</tr>
<tr>
<td>Gracanica</td>
<td>Gracanica</td>
<td>10000</td>
</tr>
<tr>
<td>EU pelet</td>
<td>Pale</td>
<td>10000</td>
</tr>
</tbody>
</table>
BOSNIA AND HERZEGOVINA

PELLETS PLANT IN BOSNIA AND HERZEGOVINA

Enernovi, Novi Grad, Bosnia and Herzegovina, September 2008
The biggest installed capacities for the production of wood pellets in SEE are situated in Croatia, where 8 bigger factories operated in 2009 with the capacities ranging from 7,500 - 40,000 tons/annually and the total capacity was 172,500 tons/annually (2009).

Raw material for pellet production mostly consists of beech and maple, spruce and fir species.

Currently about 60,000 tons is produced!!!
CROATIA

PELLETS PLANT IN CROATIA

SISARKA, Croatia, September 2009
MACEDONIA

According to the available data, there is no wood pellet production at the moment in Macedonia.

MONTENEGRO

In Montenegro, there is only one plant for pellet production at the moment situated in Podgorica with the capacity of 25 000 tons/annually, and sawdust from nearby sawmills is used as raw material in the production process. Wood pellets are used for selling to households as well as for the needs of the company itself.
Pellet production started at the end of 2006 in a company with Italian capital in the western part of Serbia with annual production capacity of 10,000 tons/annually. In this factory, pellets are mostly produced from wood residue originating from own production of sawn wood and furniture elements of beech and they are exported to Italian market.

Currently, there are 6 factories for wood pellet production in Serbia with capacities ranging between 5,000 and 35,000 tons/annually, and their total capacity is about 100,000 tons/annually.

Currently about 40,000 tons is produced.
SERBIA

PELLETS PLANT IN SERBIA

BIOENERGY POINT, Serbia, November 2009
SERBIA

Domestic market of pellets is not well developed and only a few supermarkets in Novi Sad and Belgrade offer this product. Reasons why households in Serbia do not use pellets for heating are numerous:

- Inadequate promotion of this product and effects obtained from pellet usage.
- Stoves and installations for pellets are still very expensive for most population.
- There are no strong companies which would offer proper boilers and systems for heating by using pellets.

Additional reason for practically inexistence of the requests for using wood pellets in Serbia is that until 2009 there were no domestic producers of furnaces and boilers for burning this energy-generating product. Equipment for using wood pellets consisting not only of a furnace or boiler but also of the system for automatic dozing of fuel could be obtained only from the developed countries such as Austria and Italy. However, their equipment is expensive for a typical consumer in Serbia.
III. 2. Wood briquettes

ALBANIA

According to the available data, there are no facilities producing wood briquettes in Albania, and they are imported so that they can be found on the market at the price between 100 – 110 €/ton.

For the replacement of only 20% of annual needs for fuelwood with the products made of wood residue, 28 000 tons of briquette or pellets would be necessary.

Increased prices of fuelwood, as a traditional energy-generating product in Albania, and its low availability on the market will require higher demand for the products from wood residue in future.
According to the study done by GTZ in Bosnia and Herzegovina, potential briquette production was estimated at 55,000 tons annually.

Currently about 30,000 tons is produced.

The biggest producers of wood briquettes are:

- Interbriket-Banja Luka-cca 10,000 t/ annually
- ASA-company- Pale-cca 10,000 t/ annually
- Vitales-Ripač-cca 10,000 t/ annually

Other producers in Bosnia and Herzegovina have capacities significantly below 10,000 tons on annual level.
Annual production of briquettes in Croatia is 35,000-40,000 tons.

Three companies produce briquettes in large quantities (several thousand tons annually) and beside them there is a group of producers with smaller capacities.

The biggest briquette producers are SPAČVA - Vinkovci, ITC-Varaždin, Belišće, Drvoproizvod (Jastrebarsko) and Galekovic (Velika Gorica).
MACEDONIA

» Production of wood briquettes is not so significant in Macedonia. It is done in two companies with more than 20 years old technology.

» Total production is estimated at about 2,500 tons/annually.

» There are studies which propose the production of briquettes from vine residue in places Kavadarci and Veles, but the production has not started yet.
MONTENEGRO

Briquette production in Montenegro occurs on several locations among which those in Nikšić and Bijelo Polje are significant. These plants are located near sawn wood producers from which they obtain raw material.

Total annual production is estimated at about 3,000 tons.
Production of wood briquettes in Serbia occurs in many companies out of which three are specialized and wood briquette production is their main field of activity while in others it is a by-product.

Annual production is about 30,000 tons out of which over 60% is produced in 3 factories.
Among all SEE countries, wood chips is produced only in Croatia and Serbia (in september 2009).

Kronospan is big consumer of wood chips in Serbia!!!

With the wish for the increase of forest biomass usage and for the creation of economic benefit for the enterprise „Hrvatske šume“ d.o.o. (Croatian Forests), a society for trading called „Šumska biomasa“d.o.o. (Forest Biomass) was established with the primary task to produce wood chips.

Annual production of wood chips is about \textbf{200,000 tons} and increases year after year thus following the increase of capacities for using wood chip as energy and export to Hungary and Austria. Second reason is more and more private companies as chips producers.
III. 3. Export/Import of woody biomass (logs/briquettes/pellets/similar forms)

2008.

US$
IV. Wood energy: objectives and challenges in SEE countries (incentives for investments)

ALBANIA

- One of the main directions and priorities of energy policy in Albania is energy efficiency and promotion of renewable energy sources.

- Law No. 8987, adopted on 24.12.2002 on the construction of new facilities for the production of electric power sets the conditions for those facilities which use renewable energy sources in such a manner that all equipment and machines necessary for the production of electric power are duty free.

- The other incentive is direct support for renewable energy sources in the sense of defining fixed price for selling electric power based on the import price from the previous year.

- Having in mind that about 30% of state budget deficit is caused by the import of energy, the stated objectives gain even more importance.

- Currently, studies assisted by foreign organizations on energy efficiency are being done, as well as the proposals of incentives for investors in the area of renewable energy sources.
In 2008, first draft of energy strategy was worked on in Bosnia and Herzegovina, but this work is not finished yet.

At the moment there are mechanisms for supporting renewable energy sources.

Decision on methodology of determination of level of purchase prices of electric power from RES with installed power up to 5 MW was adopted (Of. Gazette FB&H 32/2002, Of. Gazette RS 71/2003).

Two power utility companies in B&H and one in RS are obliged to take over the electricity produced from RES. According to decisions, the tariff systems for RES electricity:

- Small Hydro plants: 3.96 € cents/kWh
- Landfill biogas and biomass plants: 3.81 € cents/kWh
- Wind and geothermal plants: 4.95 € cents/kWh
- Solar power plants: 5.44 € cents/kWh
When the national energy program BIOEN (Biomass and waste energy use program) started in 1997, the future of bioenergy in Croatia got the new look.

The vision of BIOEN program is that at least 15% of energy needs in Croatia is produced from biomass and waste by 2030.

Privileged rates for electric power from renewable energy sources are established according to energy sources it is obtained from.

Rating system for electric power produced from biomass in Croatia [€c/kWh]

<table>
<thead>
<tr>
<th>Source of Biomass</th>
<th>&lt; 1 MW</th>
<th>&gt; 1 MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomass from forestry and agriculture</td>
<td>16.0</td>
<td>13.9</td>
</tr>
<tr>
<td>Residue from wood industry</td>
<td>12.7</td>
<td>11.4</td>
</tr>
</tbody>
</table>
Also the “feed-in tariffs” are defined for the cogeneration of biomass (combined production of thermal and electric power - CHP), where these are differed depending on delivery time.

### Feed-in tariffs for cogeneration in Croatia

<table>
<thead>
<tr>
<th>Plant size</th>
<th>Higher tariffs</th>
<th>Lower tariffs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro CHP up to 50 kW</td>
<td>0.61 kn/kWh (≈ 0.08 €)</td>
<td>0.32 kn/kWh (≈ 0.04 €)</td>
</tr>
<tr>
<td>Small CHP of total output power from 50 kW to 1 MW</td>
<td>0.51 kn/kWh (≈ 0.07 €)</td>
<td>0.26 kn/kWh (≈ 0.04 €)</td>
</tr>
<tr>
<td>CHP from 1 MW to 35 MW</td>
<td>0.44 kn/kWh (≈ 0.06 €)</td>
<td>0.22 kn/kWh (≈ 0.03 €)</td>
</tr>
<tr>
<td>CHP bigger than 35 MW</td>
<td>0.30 kn/kWh (≈ 0.04 €)</td>
<td>0.15 kn/kWh (≈ 0.02 €)</td>
</tr>
</tbody>
</table>

1 € is approximately 7.2773 HRK (as of Oct. 1st 2007, according to OeNB)

Source: Austrian energy agency; Energy Profile Croatia, Supply: Energy Sources
MACEDONIA

» In Macedonia, regulations for stimulating production and usage of renewable energy sources is being worked on at the moment.

» There are numerous obstacles for implementing European directives in practice so that it is uncertain when the support measures will be finished and implemented in practice.

» No direct subsidies or taxes, only feed-in tariff for sale of electricity produced and delivered by power facilities which as operating fuel use biogas got from biomass.

MONTENEGRO

» In 2007 the Government of Montenegro adopted the Strategy of Energy Development until 2025.

» This strategy anticipates the existence of cogeneration facilities of 5 MW installed capacity (2 MW in 2020 and 3 MW in 2025) so that there is enough space for private investors to show their interest.

» Foreseen investment costs until 2025 will be 7.5 million €. Regulations for feed-in tariffs and other subsidies measures are being produced.
In Serbia, the adoption of “feed-in” tariffs is expected as a price mechanism for supporting production and usage of energy from renewable sources, and the deadline for their adoption is December 2009.

Pursuant to the Government proposal, all producers of electric power from renewable sources will be stimulated with the price of 11.7-13.4 €c/kWh depending on the plant power in the period of 12 years.

Production of the National Action Plan for Renewable Energy Sources is ongoing in cooperation with the Government of the Netherlands. Deadline for its completion is January 2010.
THANK YOU FOR YOUR ATTENTION

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