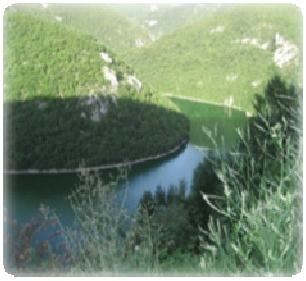
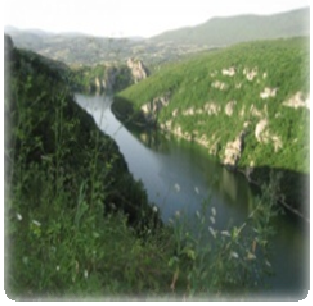
AER PEER REVIEW IN REPUBLIKA SRPSKA





...evaluating the region's potential for the development of biomass energy...

Report drafted by Adina Dumitru, Adrienn Buday-Malik and Marius Pascu
in collaboration with Justyna Podralska
and with financial support of the Central European Initiative

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Maramures County Council

CEI CENTRAL EUROPEAN INITIATIVE

NORRIA North Hungarian Regional Innovation Agency

ÉSZAK-MAGYARORSZÁGI RÉGIÓ

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AER peer review team with the representatives of the host region in front of the building of the Ministry of Energy, Industry and Mining of Republika Srpska

Please note that the report was drafted by non-native English speakers

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Strasbourg, 2009

SECTION 1: OVERVIEW

Context of the peer review

Energy landscape

Republika Srpska is one of the two entities which are part of the state of Bosnia and Herzegovina. The region extends over an area of 25,000 square kilometres, namely 49% of the territory of Bosnia and Herzegovina.

In what concerns its energy landscape, Republika Srpska produces around 500 Gwh of electricity per year. 55% of electricity comes from thermoelectric power plants and 45% from hydroelectric power plants. 20% of electricity produced in the region is exported. The largest consumers are households (around 50%) and distribution losses account for around 17%. The overall consumption of energy per capita is definitely higher than the EU average, and it is probably the field in which further improvements are mostly needed.

The share of renewables in the total energy production is around 42%, most of this coming from hydro-accumulation. The region has an undeniably high potential in producing energy from hydro resources and plans to build several new small hydroelectric plants, especially through investments from private-public sector, which is regulated by the Law on Concessions. Over recent years, the government of Republika Srpska has offered more than 100 concessions to construct such installations. In what concerns thermal energy, power plants are rather out of date and their urgent rehabilitation will soon be needed.

Political commitment to developing clean energy sources

Given the above, the following priorities are being considered by the representatives of the Republika Srpska with regard to its energy policies[1]:

- Need for quick completion of a regional energy strategy.
  The public tender to select the most competitive proposal has been recently closed and preparation activities are about to start. The establishment of such a strategy will help the region set up priority directions for the development of its energy sector and choose the most appropriate instruments for their implementation

- Full liberalisation of the energy market, as the development of sustainable forms of energy cannot be expected without finalisation of the privatisation process

- Harmonisation of Republika Srpska's domestic laws with EU directives and regulations

[1] According to the energy questionnaire filled-in by the region prior to AER peer review

- Improvement of energy efficiency in the entire life cycle, from the primary energy production up to the final energy consumption by private households and industry

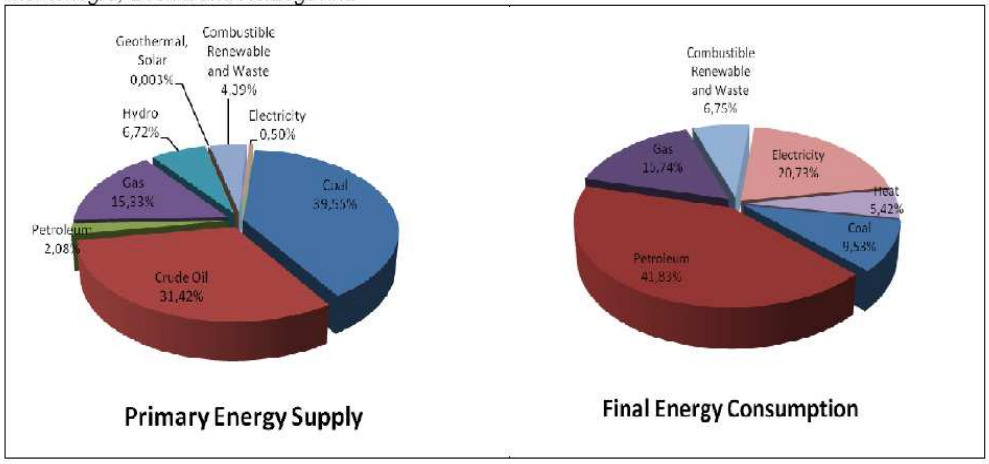
- Building new capacities for energy production

As a region lacking important gas resources, yet covered by many rural areas (50% of the territory) and forests (47% of the territory), Republika Srpska seeks to diminish the extensive use of electricity by developing alternative energy productions technologies. As mentioned above, the share of RES in the global energy mix is already high, but the region recognizes that the diversification of energy sources is not developed enough. There is an urgent need for gradual transition to other unconventional sources. Recent analyses show possibilities for further investment in the area of alternative and environmentally acceptable types of energy. Some feasibility studies with regard to solar and wind energies have already been conducted; however potential to produce thermal and electrical energy from biomass resources has not been sufficiently explored yet. It is estimated that some 800 000 m3 of wood might generate approx. 100 GWh of green power a year. However, this potential is not harnessed in a proper manner. A great deal of the biomass waste is exported instead of being used in a domestic market. These frequent exports give evidence of inadequate usage of the region's own production capacities.

The ratification of the UNFCCC in September 2000 and Kyoto Protocol in May 2008 opened up a new window of opportunity for Bosnia and Herzegovina. The Kyoto Protocol is meant to be an effective means to ensure a more environment-friendly and sustainable development of the region. It should also give necessary political impetus for the reduction of GHG emissions and mobilisation of new resources for low-carbon technologies. However, despite one year that has already passed since its ratification, the Kyoto Protocol has not been properly endorsed. Its transposition into domestic laws requires important financial and technological capacities that the state of Bosnia and Herzegovina has just started to develop.

The representatives of Republika Srpska believe that the establishment of a regulatory framework supporting the development of biomass market in their region should be considered as a matter of urgency and will undoubtedly send a strong signal to international stakeholders and potential investors that the country of Bosnia and Herzegovina is ready for implementing the Kyoto Protocol.

Figure 1: 2005-Share of energy sources in energy supply and consumption in Croatia, Serbia and Montenegro, Bosnia and Herzegovina



Sources: International Energy Agency, Serbian Energy Balance

Needless to say that the B-H potential membership to the European Union will also strongly depend on the progress made towards the implementation of the EU environmental acquis. The Treaty of Maastricht signed in 1992 pushed the protection of the environment to the forefront of the EU key priorities. Since then, the effective management of environmental resources has become a core element of the European policies. Moreover, the environmental protection constitutes one of the chapters of the negotiations that the European Commission undertakes with each candidate country prior to its accession. If the country of Bosnia and Herzegovina obtains a status of candidate country, state representatives will have to set up effective measures to take up EU environmental standards. The region of Republika Srpska will be expected to contribute to this effort. Unfortunately, current legal and institutional framework is still not strong enough for adequate approach to the environmental problems.

Objectives of AER peer review

While filling out the preliminary energy questionnaire, the representatives of the Republika Srpska pointed out two main areas of difficulties that can prevent them meeting EU environmental standards, namely

- Weak investment in RES technologies
- Administrative barriers preventing energy from renewable sources being integrated into the Republika Srpska electricity market

With regard to this context, AER peer review aimed to help the representatives of Republika Srpska have a better understanding of their energy problems and find possible solutions to speed up the production of alternative energy sources. The overall purpose of the audit was to bring clear and concise insight into the energy supply and consumption in Republika Srpska and analysing how to give boost to the development of biomass-based energy. AER experts examined the following issues:

- Determination of biomass resources that are likely to be used for further energy production
- Political and financial incentives for introduction of biomass-based energy technologies
- Cost-effectiveness of the energy production from biomass resources (investment cost versus potential profits, access to electrical grids, structure of heating system)
- Forest management schemes and possibility to produce energy from wood resources:
    - Effectiveness of regional forestry legislation, including legal obligation to clean the forest
    - Accessibility of the woods / transportation decisions to convey wood to the respective plants and wood processing facilities
    - Compliance of the local wood industry with the EU standards
    - Optimal design for a wood-based energy production process

- Waste Management in Republika Srpska
    - Compliance of the existing dumping sites with the EU criteria
    - Separation of dumped waste and maintenance of the landfills
    - Selection of the waste that can be reutilized
    - Awareness of the citizens regarding the separation of waste
- Data availability and reliability
- Possibility to develop further trainings and education actions concerning the development of a biomass-based energy market
- Possibility to develop further projects in the field covered by AER study

The experts' report is meant to offer an incisive and reliable overview of the energy sector in Republika Srpska with a focus on opportunities to develop a biomass-based energy market. It is believed that the region can generate a high income in producing this type of energy. The present report aims at highlighting how these opportunities can be realised.

Peer review methodology and data collection

At the end of July 2009, the Assembly of European Regions conducted a four-day energy audit in the Republika Srpska, with the aim of assessing the region's potential to produce electrical and thermal power from biomass resources, including wood, as well as municipal and agricultural waste. Through a series of meetings with actors concerned with energy matters, namely market regulators, private investors and government officials, the peer review team tried to identify factors that may hamper the development of biomass-based energy production in the Republika Srpska. The energy experts were selected from the countries belonging to the Central European Initiative, the project's co-founder. The audit was based on AER peer review methodology, established in 2006. This methodology is meant to provide the region with a set of step-by-step directions on how to conduct a successful energy audit.

What it is an AER energy peer review?

An energy peer review is a mentoring visit undertaken by a group of international experts to a region interested in improving its energy situation. Its overall aim is to analyse how energy is used by the region. Peer reviews help local authorities understand how well their energy policies work and support them in making concrete improvements. During the visit, peer reviews perform a number of field inspections and hold meetings with a variety of stakeholders concerned with the issue of energy, such as energy legislators, market operators, representatives of local development agencies and business sector, and consumer associations. AER energy audits provide a good opportunity for regional representatives to exchange their experience and learn from one another.

Types of energy audits

There is a wide spectrum of energy peer reviews ranging from a quick walk through an energy facility to more comprehensive studies regarding the overall energy situation in a given region. The duration of the peer review is up to one week. AER peer reviews usually last four days.
Energy audits cover a wide variety of themes. Typically, an energy peer review is conducted to make an overall performance assessment of the region's energy sector. However, a peer review can also seek opportunities to reduce energy intensity in public buildings and public transport or to suggest regional authorities how to develop a certain type of alternative energy sources, i.e. biomass-based energy; solar or wind power. The role of peer reviewers can also consist of recommending regional authorities how to draft effective energy strategies that would accurately depict changing trends in the energy market, such as energy demand, energy supply and energy cost.

Selection of AER peer review's topic

It is upon to the peer review team and host region to choose a topic for their energy audit. While selecting the most appropriate theme, the region should take into account its specific energy needs, previous feasibility and pilot studies that were conducted over its territory, as well as time, human and financial resources allocated to the project. The peer review' objectives should comply with these requirements. If peer review's targets are not properly defined, it can be disastrous for the whole project's cycle. The expert team should know well in advance what is to be evaluated so to come with appropriate conclusions and recommendations.

As thoroughly explained in the section 1a and 1d of the present report, AER peer review in Republika Srpska was dedicated to the overall analysis of opportunities to develop a biomass-based energy market in this region. The topic was set up during the preparatory meeting that took place on 30 June 2009 in Banja Luka. The time frame of 4 days was chosen by AER peer review team as being the most relevant regarding the project's scope and assigned resources. As described in the point 1a of the report, the potential to produce energy from biomass resources in Republika Srpska has not been properly explored yet. As other sources of energy, namely solar and wind power had already been covered by previous feasibility studies, the experts' team considered irrelevant to address this issue during AER peer review.

Preparatory activities

According to AER peer review methodology, prior to the visit, the expert team receive the most relevant pieces of regional energy legislation. The host region is also requested to fill-in an energy questionnaire the aim of which is to provide experts with comprehensive background information on current and planned energy-related policies. These pre-review activities are of crucial importance, since they reduce time required for basic descriptive information during the visit and increase time available for peer review-related issues.

In case of AER peer review in Republika Srpska, the regional Ministry of Energy completed and returned the questionnaire in June. Furthermore, the representatives

of the region have provided the expert team with the following pieces of legislation (see annexed documents):

- Law on Energy
- Republika Srpska in figures (overview of official statistical data concerning demographic, social and economic development of the Republika Srpska's territory)$

Energy checklist

It is also important to stress that the peer review methodology is based around a checklist. The checklist describes what an 'ideal' regional authority would do in terms of supporting energy policies. It provides a way to measure progress towards sustainable energy goals. The checklist is derived from global best practice in the field of regional energy.

The checklist provides a set of standards by which all the review teams can make a consistent judgement about the effectiveness of energy policy, and thereby ensures a certain amount of objectivity in the reviews. The team's members make use of this checklist in undertaking the reviews. The evidence collected in the preliminary questionnaire, completed by the host regions prior to the review process, is meant to assist the reviewers in making a primary assessment of energy performance against the checklist. The peer review team also uses the checklist to structure the interviews that it undertakes with stakeholders in the host regions.

The review teams' final report should also be based upon this checklist. In the report, the review teams indicates in which areas of energy the host region demonstrates strengths and in which ones certain challenges still need to be addressed. In assessing the host regions' performance against the checklist, the reviewers give clear justifications for their assessment and identify their sources of evidence.

In designing an energy checklist that can be used throughout Europe, it has to be recognised that different regions have different competences and approaches to energy. There is no 'one-size-fits-all' model. Making use of a checklist does not infer that there is a perfect approach that all regions should use to address energy issues. However, there are a number of underlying factors which can contribute to developing successful sustainable energy policies in all European regions, no matter what their shape or size.

It should be also reminded that different regions have different political competences and financial possibilities available to them. The peer review teams must be careful to understand where the region has executive authority to act in an area, and where it shares this with other levels of government, or has no competence at all. This will obviously affect its ability to make any improvements.

Final report

After the visit the review team prepares a report with a series of recommendations on how bring the region's energy sector up to the current standards. The host region

then considers the conclusions and prepares an action plan, setting out how it intends to implement experts' recommendations.

The outcomes of the final report from the peer review in Republika Srpska and further steps to be taken were discussed with the representatives of the region on 7 October 2009 in Brussels. The document is available at http://www.aer.eu/main-issues/economic-development.html

The implementation of the final report by the Republika Srpska's representatives will be evaluated by AER by March 2009.

General economic situation

Historical background

In 1991, BiH was one of the six republics of the then Federal Republic of Yugoslavia. War broke out in 1992 and ended with the signing of the Dayton Peace Agreement on December 14, 1995. The Peace Agreement established BiH as a country of two entities, the Federation of Bosnia and Herzegovina and the Republic of Srpska; and one District – the Brcko District.

The frontiers of Republika Srpska have been defined by the internationally recognized border with Yugoslavia and the Republic of Croatia and the inter-entity boundary with the Federation of Bosnia and Herzegovina. Both these lines were established with no regard to basic principles of delineation between peoples (ethnic, historical, natural-geographic, functional-economic, and military-strategic.

Political system

Republika Srpska is a parliamentary Republic with limited international subjectivity. Under its constitution RS has its own parliament, government, supreme and lower courts, customs service and postal office. It also has its own coat of arms, flag and national anthem. Members of the National Assembly are elected directly, as is the President of the Republic. The Prime Minister is elected by the members of the National Assembly.

Currency

The national currency is Convertible Mark (BAM/KM).

Territory

Republika Srpska covers an area of 25.053 square kilometers. According to official estimates from 2004, the Republic of Srpska has a population of 1.471.529.



Map of Bosnia and Herzegovina provided by the representation of Republika Srpska in Brussels

Natural resources

The main natural resources in Republika Srpska are:

- the agricultural land
- forestry land
- hydro climate conditions
- ore-mineral resources

Economy

During the period 2000 – 2005 GDP of RS increased 1.71 times or averagely 11.3% annually. GDP per capita has increased from 1.914 KM in 2000 to 3.156 KM in 2005.

In terms of foreign investment, there are many tax exemptions in RS. Foreign investors are exempted from paying tax on import of working capital as a share of foreign investor. Foreign persons may open a bank account and transfer money abroad without any limitations and have the same rights as citizens of the Republic when it comes to investments in the economic sectors defined by specific legislations. Foreign investors may transfer their profits abroad without restrictions.

General Impression

Given outstanding achievements in the field of sustainable energy and energy efficiency, and its strong involvement in the MORE4NRG project, the Maramures region was invited by the Assembly of European Regions (AER) to participate in a peer review project in the Republika Srpska (BiH) submitted under the Central European Initiative's Know-How Exchange Programme (KEP) funded jointly by the CEI Trust Fund and the European Bank for reconstruction and Development.

The other partner in the project is the North Region of Hungary represented by the North Hungarian Regional Innovation Agency (NORRIA).

The project started with a preparatory meeting held in Banja Luka Luka on June 30, 2009 in the premises of the Ministry of Industry, Energy and Mining and was presided by Mr. Dr Ljubo Glamocic, Deputy Minister - Ministry of Industry, Energy and Mining. The meeting was attended by the representatives of the AER peer review team and representatives of the host region from the following institutions: Ministry of Industry, Energy and Mining, Ministry for Agriculture, Forestry and Water Management, Ministry for Spatial Planning, Civil Engineering and Ecology, „ Elektroprivreda Republike Srpske“ (public company for electricity), Regulatory Commission for Electricity of Republika Srpska.

The purpose of the preparatory meeting was to define the peer review theme based on the needs of the host region which has already conducted studies in various energy sectors and also on the time and human resources available for this project. Pursuant to the discussions the following theme was selected for the peer review:

“Development of a study on the assessment of the potential for the production of electricity and heating from biomass in the region of Republic Srpska (forest, agricultural and municipal waste)”

Republika Srpska is relatively rich in these resources, although there are no reliable statistics.

The actual peer review started on 21 July 2009 and ended on 24 July 2009.

1st day: Opening conference

The first day was dedicated to a conference type event which offered the opportunity for the team of experts and local stakeholders to meet and discuss the concept and purpose of the peer review.

The event was structured on three sections: first section comprised presentation of best practices delivered by the members of the peer review team (experts from Maramures (RO) and North Hungary), followed by a section dedicated to presentations provided by the relevant institutions of RS (i.e. Ministry of Industry, Energy and Mining, Ministry for Agriculture, Forestry and Water Management, Public Company “Sume RS”, Regulatory Commission for Energy of Republika Srpska and Ministry for Spatial Planning, Civil Engineering and Ecology). The third section comprised animated discussions between the peer review team and a wide range of stakeholders from the public and private sector of the host region.





2nd day: Visit to the Sume RS and local sawmill

The second day was dedicated to a field visit to one of the forestry companies within the Public Forest Company of RS (Sume RS) where the experts had the opportunity to have on site discussions on the forest exploitation and management and problems associated with the collection of wood waste.





A visit to a saw-mill was also organized. The facility has a good system for waste management with part of the waste used to cover the energy needs of the production process, while the balance goes into the production of briquettes also using additional waste from other wood processing companies in the area. This can be considered an integrated production flow with the economic valorization of the waste.





3 day: Other field visits

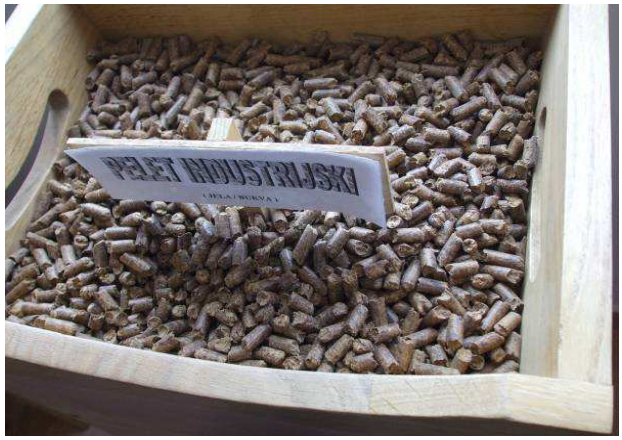
During the third day of the peer review, 4 sites were visited: a pellet company, a bio-fuel company, a cattle farm and a fruit orchard.

Pellet factory “PANEFIN”

“Panefin Group” was established on the foundations of a former State owned wood processing company and it is now owned by a Sloven investor. Panefin produces furniture parts and wood construction elements and spreads over 100.000 square meters.

Wood waste is used to generate steam for technological purposes. On the plant site there are large quantities of sawdust deposited in a stock pile directly on soil. Runoff water from this pile may cause local pollution of underground water table. The plant is also buying sawdust from other wood processing plants in the nearby area. Sawdust is processed to produce a variety of high quality pellets and the entire production is exported.





Biodiesel Plant (under construction)

The biodiesel plant was constructed with a modern so called cavitation technology. The plant is equipped with storage tanks and processing equipment. For the moment, the raw material is imported due to the higher price of the local raw material. However, the plant could process used oil from local sources if a collection system were in place.



Cattle Farm

The cattle farm is large and well organized. The food for the cattle is produced by the farm itself from crops raised on own land. Large quantities of manure are currently collected and sent to a large decant facility. Solid waste is stored near the decant and after drying it is used as fertilizer and spread on the fields.



The liquid part is also sprayed on the fields. The farm's management is aware of the energy potential of the manure and is planning to develop a biogas plant to produce heat and electrical power.

This will ensure a more efficient treatment of the manure, wastewater will have a reduced organic load and the mud will become a more environmental friendly fertilizer.

Orchard

The orchard generates significant amounts of waste from pruning operations which are currently burnt due to the fact that there is no organized collection system that could enable the valorization of this potential energy resource.



4 day: Visit to the orchard and final meeting

The fourth day of the peer review was divided into two parts, the first part involved a visit to the waste landfill of the Banja Luka region while in the second part a meeting was held for the peer review experts to present their preliminary assessments and have further discussions with the relevant stakeholders in the Republic of Srpska.

Banja Luka waste landfill

There are only 2 regional waste landfills in RS, but the plan is to have 8. The visited waste landfill currently covers an area of 29 ha and the proposal is to expand it to 44 ha and was rehabilitated using a World Bank loan. The landfill was constructed without a liner thus it cannot be classified as an ecological landfill. No selective collection and disposal is conducted, the organic municipal waste being also landfilled.



The leachate is drained but not treated while methane is collected through pipes and released into the atmosphere.

The afternoon session gave the peer review team the opportunity to present an outline of their first impression on the biomass potential and utilization in RS and on the main issues associated with the proper valorization of this significant renewable source of energy. The meeting was attended by a large number of stakeholders,

questions were asked and answered by both sides and this confirmed the general interest of the host region to share and learn from best practices and experiences of other regions that already adopted the EU environmental and energy legislation and have to meet the EU targets and comply with new standards in these fields.

SECTION 2: BIOMASS MANAGEMENT

Biomass resources that can be used for energy production

Biomass is the organic matter in trees, agricultural crops and other living plant material. It is made up of carbohydrates -organic compounds that are formed in growing plant life. Ever since the earliest inhabitants of the region burned wood in their campfires for heat, biomass has been a source of energy for meeting human needs.

Biomass is solar energy stored in organic matter. As trees and plants grow, the process of photosynthesis uses energy from the sun to convert carbon dioxide into carbohydrates (sugars, starches and cellulose). Carbohydrates are the organic compounds that make up biomass. When plants die, the process of decay releases the energy stored in carbohydrates and discharges carbon dioxide back into the atmosphere. Biomass is a renewable energy source because the growth of new plants and trees replenishes the supply.

The use of biomass for energy causes no net increase in carbon dioxide emissions to the atmosphere. As trees and plants grow, they remove carbon from the atmosphere through photosynthesis. If the amount of new biomass growth balances the biomass used for energy, bio-energy is carbon dioxide "neutral." That is, the use of biomass for energy does not increase carbon dioxide emissions and does not contribute to the risk of global climate change. In addition, using biomass to produce energy is often a way to dispose of waste materials that otherwise would create environmental risks.

Developing new biomass energy markets can provide alternatives to burning forest biomass residues from timber harvests, stand improvement activities, fuels treatments, and thinning. Agricultural and urban biomass wastes can be utilized as recycled material or fuel for energy facilities. Barriers to development include the lack of certainty in biomass outputs and the high cost of gathering and transporting biomass to energy conversion facilities. Investing in forest and other biomass conversion to energy will lead to multiple environmental, economic and social benefits.

The three main sources of biomass are: agriculture, forest and urban biomass.

The most common way to capture the energy from biomass is to burn it in order to produce heat, steam, and electricity. Advances in recent years have shown that there might be more efficient and cleaner ways to use biomass. It can be converted into liquid fuels or cooked in a process called "gasification" to produce combustible gases. The technology is still in an early phase of commercial development.

Types of Biomass

There are many types of plants and many ways they can be used for energy production. In general there are two approaches: growing plants specifically for energy use, and using the residues from plants that are used for other things. The best approach varies from region to region according to the local conditions such as climate, soils, geography, population etc.

Energy Crops

Energy crops, also called "power crops," could be grown on farms in potentially very large quantities, just like food crops. Trees and grasses, particularly those that are native to a region, are the best crops for energy, but other, less agriculturally sustainable crops such as corn tend to be used for energy purposes at present.

Trees

In addition to growing very fast, some trees will grow back after being cut off close to the ground, a feature called "coppicing." Coppicing allows trees to be harvested every three to eight years for 20 or 30 years before replanting. These trees, also called "short-rotation woody crops".
In the cooler, wetter regions, varieties of poplar, maple, black locust, and willow are the best choice.

Grasses

Grasses used to blanket the pastures or green areas within the towns that are not used to feed the animals can be used to produce biogas.

Other Crops

A third type of grass includes annuals commonly grown for food, such as corn and wheat. Since these must be replanted every year, they require much closer management and greater use of fertilizers, pesticides, and energy.

Oil Plants

Plants such as soybeans and sunflowers produce oil, which can be used to make fuels. Like corn, though, these crops require intensive management and may not be sustainable in the longer term.

Biomass Residues

After plants have been used for other purposes, the leftover wastes can be used for energy. The forestry, agricultural, and manufacturing industries generate plant and animal wastes in large quantities. City waste, in the form of garbage and sewage, is also a source for biomass energy.

Biomass potential in Republika Srpska

Forestry

Forestry wastes can be a significant source of heat and electricity. One large source of wood waste is tree tops and branches normally left behind in the forest after timber-harvesting operations. Some of these must be left behind to recycle necessary nutrients to the forest and to provide habitat for birds and mammals, but some could be collected for energy production. Other sources of wood waste are sawdust and bark from sawmills, shavings produced during the manufacture of furniture, and organic sludge (or "liquor") from pulp and paper mills.

Forest waste includes all parts of the tree that are not used in the process of cutting trees (waste from the log, small branches and rotten trees).

The entity in charge of forestry management is the Public Forest Company of Republic of Srpska (Sume Company) subordinated to the Ministry of Forestry, Agriculture and Water Management.

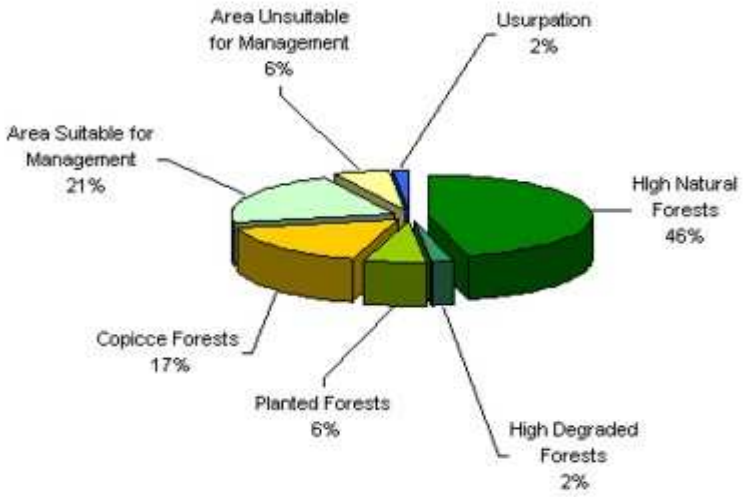
The organizational structure is as follows:

- 23 Forest management units
- 3 Research centers
- Nursery - seed production Centre
- Bare Mountainous Terrain Management Centre
- Main Office of Public Enterprise

The forest land covers approximately 1 million ha (47% of the total area of RS). Total wood stock is 183 million m^3.

	State owned forest	**Private owned forest**
Forestry Land (ha)	~ 791.000 (75%)	~ 267.000 (25%)
Volume of annual felling (mil.m^3)	2.5	0.4
Annual allowable felling (mil. m^3)	3.5	0.6
Annual growth (mil. m^3)	5.2	1.0
Fire wood (mil. m^3)	0.7	0.1
Wood waste (mil. m^3)	0.6	0.1

Forest land in Republic of Srpska by forest categories



Source: Sources: Public Forestry Company Sume RS

The primary source of income for the Public Forest Company comes from the selling of the wood. Also, the private forest owners have to pay Sume RS 10% of the value of the sold wood. In addition, each legal entity has to pay 0.07% of the turnover for general useful purposes for the forest. List prices for the wood products are defined by the Government.

The openness of forests and forest land in the state ownership of Republika Srpska is 8.9 meters/hectares, which makes the forest management very difficult and limits the collection of the wood waste. Currently, the waste generated from the cutting of trees (branches, leaves, material thinner than regular thickness, low quality materials) largely remains in the forest, the only obligation of Sume RS being to gather and pile up the waste material.

There are 470 sawmills in Republika Srpska that satisfy all minimal technical - technological requirements and employ approximately 9,000 workers.

All economic entities in charge of primary wood processing, i.e. sawmills, need to have technical-technological documentation defining, among others, the way of dealing with waste created in the production process.

Taking into consideration the quantity of logs that are annually cut, the total amount of waste in primary wood-processing amounts to 349,200 m^3.

Waste originating from primary wood-processing which is not used for the production of briquettes and pellets, is to be stored and buried in accordance with Law on the Protection of the Environment – Refined text (’The Official Gazette of The Republic of Serbian’, No. 28/07) and Law on the Protection of Nature (’The Official Gazette of Republika Srpska’, No. 50/02).

In conclusion, a significant amount of forest residues are unused, the reasons identified by the peer review team are as follows:

- low accessibility of forests
- lack of suitable hauling equipment
- high cost of transportation for wood waste
- cost-efficiency issues, separate cost-efficiency analysis should be conducted for specific situations
- lack of modern biomass recording system using digital and/or GIS databases
- No management or manual management of the wood logistical chain in RS
- Fragmentation of information on the forest resource and infrastructure among several stakeholders
- Little to no cooperation of stakeholders and coordination so far: Ministry, Public Forest Company Sume RS, Regulatory Authority, wood processors, pellet producers, consumers
- There is demand for fuel wood as confirmed by a manager of a 6.5 MW heating plant, however problems in terms of local supply are encountered
- No private forest owner associations which can lead to an improved management of the private forest and also create premises for the joint construction of a heating plant
- No consistent legislation and lack of subsidies for wood waste collection and valorisation or for the construction of heating plants or installation of new boilers for instance on pellets by private/public heat consumers
- Energy prices kept low by the State, therefore no interest or motivation of the private and public consumers to invest in new energy efficient technologies
- Majority of population uses traditional, inefficient heating systems while district heating companies use oil or gas and face a range of other major problems related to the poor condition of their installations and lack of individual measurement of the heat consumption
- No motivation and awareness raising programs for individuals or the industry which makes it difficult to change the heating infrastructure (and habits)
- No local market for pellets which are produced in Republika Srpska and exported

Agriculture

Similar to the forestry industry, most crop residues are left in the field. Some should be left there to maintain cover against erosion and to recycle nutrients, but some could be collected for fuel. Animal farms produce many "wet wastes" in the form of manure. These wastes are commonly spread on fields, not just for their nutrient value, but also to resolve disposal issues. Runoff from over fertilization material threatens rural lakes and streams and can contaminate drinking water. Processing crops into food also produces many usable wastes.

Agricultural resources identified by the authorities of Republika Srpska are:

- Straw, waste from maize, sunflower stems,
- Fruit, grape-vine and olive waste,
- Fruit stone and apple peel (from agriculture),
- Dung and waste from cattle raising.

Figures presented by Republika Srpska authorities:

- Agricultural land 1,298.619 hectares (50.8 %)
- Ploughs and gardens 671,599 hectares (56.9 %)
- Agricultural cultures 616,548 hectares (57.2 %)
- Orchards 54,358 hectares (56.8 %)
- Vineyards 693 hectares (11.5 %)
- Meadows 236,922 hectares (48.8 %)
- Pastures 358,734 hectares (41.7 %)
- Republic Agricultural Estate registered the total amount of 55,000 farms,
- The total amount of land registered with Republic Agricultural Estate is 278,273,73 hectares
- Arable agricultural land 218,646,77 hectares
- Maize 78,252,53 hectares
- Small grains 65,000,00 hectares
- Orchards 3,272,48 hectares
- Ploughs 161,074,62 hectares.

Cities and municipal waste

People generate biomass waste in many forms, including "urban wood waste" (such as shipping pallets and leftover construction wood), the biodegradable portion of garbage (paper, food, leather, yard waste, etc.) and the gas given off by landfills when waste decomposes. Even the sewage can be used as energy; some sewage treatment plants capture the methane given off by sewage and burn it for heat and power, reducing air pollution and emissions of global warming gases.

The waste management in the region is carried out on landfills. It is considered that the whole production of waste in the Republika Srpska amounts to 0.7-0.9 kg/st. daily, and it includes:

- Municipal waste
- Industrial (technological) waste

- Inert waste
- Secure waste

Municipal waste is buried in landfills.

There are two regional landfills on the territory of the Republika Srpska: Region of Banja Luka (Ramići) and Region of Bijeljina.

Pursuant to the Strategy for the management of solid waste in the Republika Srpska, spatial-planning documentation, as well as positive regulations defining the management of solid waste, three new regions have basic preconditions for the implementation of regional projects. These regions are Prijedor, Zvornik and Doboj.

Converting Biomass to Energy

The old way of converting biomass to energy practiced for thousands of years is simply to burn the biomass to produce heat. The heat can be used directly for heating, cooking, and industrial processes, or indirectly to produce electricity. The problems with burning biomass are that much of the energy is wasted and that can cause some pollution if it is not carefully controlled.

An approach that may increase the use of biomass energy in the short term is to burn it mixed with coal in power plants—a process known as “co-firing.” Biomass feedstock can substitute up to 20 percent of the coal used in a boiler. The benefits associated with biomass co-firing include lower operating costs, reductions of harmful emissions, and greater energy security. Co-firing is also one of the more economically viable ways to increase biomass power generation today.

A number of non-combustion methods are available for converting biomass to energy. These processes convert raw biomass into a variety of gaseous, liquid, or solid fuels that can then be used directly in a power plant for energy generation. The carbohydrates in biomass, which are comprised of oxygen, carbon, and hydrogen, can be broken down into a variety of chemicals, some of which are useful fuels.

This conversion can be done in three ways:

Thermo-chemical

When plant matter is heated but not burned, it breaks down into various gases, liquids, and solids. These products can then be further processed and refined into useful fuels such as methane and alcohol. Biomass gasifies capture methane released from the plants and burns it in a gas turbine to produce electricity. Another approach is to take these fuels and run them through fuel cells, converting the hydrogen-rich fuels into electricity and water, with few or no emissions.

Biochemical

Bacteria, yeasts, and enzymes also break down carbohydrates. Fermentation, the process used to make wine, changes biomass liquids into alcohol, a combustible fuel. A similar process is used to turn corn into grain alcohol or ethanol, which is mixed

with gasoline to make gasohol. Also, when bacteria break down biomass, methane and carbon dioxide are produced. This methane can be captured, in sewage treatment plants and landfills, for example, and burned for heat and power.

Chemical

Biomass oils, like soybean and rapeseed, can be chemically converted into a liquid fuel similar to diesel fuel, and into gasoline additives. Cooking oil from restaurants, for example, has been used as a source to make "biodiesel" for trucks

One persistent question about biomass is that it takes more energy to produce fuels from biomass than the fuels themselves contain. In other words, that it is a net energy loser.
An example that can prove otherwise is the use of corn to produce ethanol. Corn is one of the most energy-intensive crops, and current corn-based ethanol production uses just the kernels from the corn plant, and not even the entire kernel. By making ethanol from energy crops, we could obtain between four and five times the energy that we put in, and by making electricity we could get perhaps 10 times or more. In the future, to make a truly sustainable biomass energy system, we would have to replace fossil fuels with biomass or other renewable fuels to plant and harvest the crops.

Another important consideration with biomass energy systems is that biomass contains less energy per ton than fossil fuels. This means that raw biomass typically can't be cost-effectively shipped more than about 100 km before it is converted into fuel or energy. It also means that biomass energy systems are likely to be smaller than their fossil fuel counterparts, because it is hard to gather and process more than this quantity of fuel in one place. This has the advantage that local, rural communities, and perhaps even individual farms, will be able to design energy systems that are self-sufficient, sustainable, and perfectly adapted to their own needs.

Conclusions

In addition to the many environmental benefits, biomass offers many economic and energy security benefits. By growing fuels at home it reduces the need to import oil and reduces exposure to disruptions in that supply. Farmers and rural areas gain a valuable new outlet for their products.

Recommendations for Republika Srpska

Taking into consideration the facts enumerated above, the following recommendations can be made according to the specific conditions of the region.

Small communities and individual farms cover a big percentage of the territory. Heating is ensured by burning coal, wood or oil. Natural gas is available only in some parts of the region. There is a big potential for the use of biomass for energy needs.

Municipalities own district heating facilities use coal or oil. Forests cover a large area of Republika Srpska and the distance from the forests to the actual existing district heating plants is in a range that can raise questions about the economic viability of “co-firing”. In case of upgrading the district heating plants co-firing can be combined with cogeneration. Modern industrial plants designed to use wood waste significantly reduce emission of exhaust gases. A modern power plant that uses wood controls the combustion temperature, the moisture level, and the size of the wood particles, all of which reduce air pollutants. In addition, air emission control devices can capture and filter pollution. These processes greatly reduce the amount of pollution produced by the wood-burning facilities.

Wood processing facilities are found in the vicinity of forests. The wood waste is currently used inside the processing plants for own non - electrical energy needs (heating, steam production) or by some investors for the production of pellets and briquettes that are exported because in the region’s heating systems using this type of fuel are not widely spread probably due to the high cost involved to replace the existing systems.

Waste wood from utility line trimmings or from forest operations can be used to supply wood to - energy facilities so that additional trees are not harvested. Whenever trees are harvested, the branches, leaves and stumps unsuitable for pulp or lumber are left behind as waste. While leaves and stumps are generally not removed, the wood from branches and other residue can be collected and used as fuel in a wood-to-energy facility.

If a new facility is needed, the cost of construction is likely to be significant, as it would be for any energy generating complex. The annual operating cost associated with facilities that use wood depends largely upon the size of the facility, fuel sources and proximity of fuel wood available. By using wood waste, sizing the facility to match available resources and choosing a site that minimizes transportation costs, a wood-to-energy plant can be an attractive alternative to one that burns fossil fuels. Vast fluctuations in the cost of fossil fuels coupled with large increases in cost have also made alternative fuel sources, such as wood, economically attractive. There are additional costs and benefits of a wood bio-mass energy facility that are not often included in an economic analysis that, nonetheless, make a big difference in quality of life.

Across Republika Srpska, variations in topography, industrial forests, energy availability, harvesting practices, road networks, and population density affect projections about the possibility of using wood for energy. It is important to investigate local assumptions and factors in order to create a strategy that is best for each area.

It is possible to construct smaller decentralized units for the production of energy with relatively limited investments. The period for the return of investment is significantly shorter for these plants than for large facilities.

It is possible and recommendable to replace brown coal natural gas and oil, particularly as the extraction and use of these fuels have harmful effects on the environment.

The decision must weigh various factors such as existing energy sources, existing facility permits, air quality, available supplies of wood, the environment, and economics.

The appropriate political and economical strategy for energetic use of wood waste could result in new employment opportunities.

For rural areas it might be suitable to valorize all sources of biomass in order to produce biogas that can be used for heating or electricity production. This strategy can be applied for small communities, small farms and even individual houses in remote areas.

SECTION 3: SPATIAL PLANNING AND DEVELOPMENT

Key findings

The Ministry of Urbanism, Civil Engineering, Housing-Communal Activities and Ecology of the Republic of Srpska is, among others, in charge of managerial and other professional activities in relation with the development, enforcement and implementation of the Spatial Plan of Republic of Srpska, revision and approvals of municipal spatial plans, special areas and urbanism plans; revision of documents for spatial planning, developmental programs and investment-technical documents of special interest for Republic of Srpska.

The **Spatial Plan of Republic of Srpska until 2015** was prepared by the Institute for Urbanism of Republic of Srpska, j.s.c BANJA LUKA and adopted in September 2007. The plan is the strategic development plan of the space as the basis for the overall sustainable development of the Republic of Srpska.

The graphical part of the Plan includes a number of thematic plans developed based on updated geodetic plans at scales ranging from 1:200.000 to 1:500 depending on the size of the area for which the plan is made. The energy resources and facilities for energy production and transmission and the protection zones and belts are included in the Plan in text and graphical form.

The maps are drafted using computer aided computer-aided drafting. No GIS database was created even though the Institute for Urbanism started working with GIS (Geographic Information System) applications in 2002 within several projects funded by the European Commission.



Map showing the energy potential

Source: Ministry of Energy, Industry and Mining of Republika Srpska

Recommendations

GIS has become an important tool in spatial planning that can be successfully used in the planning process. There are numerous application areas of GIS in the various fields of planning, including local, regional, environmental and transportation planning. The GIS technology enables the planners to prepare plans and to research, develop, implement and monitor the progress of their plans. Through GIS project planners have possibility to search, interconnect, inspect and analyze data for expert studies. GIS can be used for environmental, location, land-use and infrastructure analysis.

Therefore, the development and integration of GIS technology in the Spatial Plan of Republic of Srpska is recommended.

SECTION 4: POLITICAL IMPETUS

Key findings and recommendations

Politicial answers to climate challanges

Motivating individuals and industry to use renewable energy sources is a strategic question while optimizing energy policies of a territory. As policy makers hold the responsiblity to rapidely react to the current energy and climate challenge, they should use different political strategies and instruments to promote RES.

Last year, the EU leaders unveiled a totally new energy policy landscape, which is likely to have tremendous impact on the renewable energy sector. The 'Climate Action Package' defines the directions for all European countries to tackle the issue of global warming, but there are no harmonised incentive schemes introduced. Notwithstanding, the Spanish and German practices of feed-in tariff systems seem to be the most successful.

According to the analysts, the biggest problem lies in the fact that bureaucracy and administrative burden still prevent hundreds of megawatts of renewable power from being established.

Situation in Republika Srpska

Compared to other European states, Republika Srpska has relatively low GDP (PPP, 2008: $6,934 - RoS/ $21,100 - EU average) and high potential in renewables. The infrastructural background of RES industry and utilization is moderately developed, there are business-based infrastructural investments (e. g.: pellet and briquette factories, bio-fuel semi-product plants, etc.), gridding for end-utilization is very limited.

Republika Srpska has already finished the harmonisation processes of regulation in the field of Energy. *The Law on Energy* came into effect in 2009. The Law covers the general framework for sustainable energy supply and consumption, and define the objectives in the field. (Other legal sources regulating the field: *The Law on Electricity, The Law on Nature Protection, Decision about a Methodology for the Determination of Purchase Prices for Electricity from Renewable Sources with Installed Power up to 5 MW***)**

However, more specified targets should have been included in order to spur the industry and motivate the production and the use of alternative energy sources.

The local government of the region initiated a dialogue between the stakeholders in order to map the interests connected to the renewable energy sector. Primarily, three Ministries are involved in discussions, planning and regulation processes. Actors of main affected interest groups were invited to participate in the current Peer Review Process and further strategic planning. Since end-users' attitude and interest may vary and have significant impact on the implementation, those should also be invited in the dialogue.

Neither the Federation of Bosnia and Herzegovina nor Republika Srpska have yet developed an Energy Strategy. Since stakeholders' dialogue has already been initiated, the National Energy Strategy is suggested to be prepared by the Government involving the interest groups in the strategic planning process. The Strategy is supposed to be the base document and motif for the sector moving towards sustainability.

With the support of Croatian, Dutch and Spanish organisations, preliminary research was done with the aim of studying the potential to produce energy from renewable sources and provide a solid ground for strategic planning. The Government and policy makers have the picture of the current and potential energy production, but this image should be considered with criticism, due to the fact that focal points of the researches were determined by the business and political interests of the partners.

The implementation of the future Energy Strategy should be supported by the use of differentiated policy instruments motivating different actors to substitute conventional sources with renewables. These instruments are recommended as the most suitable responses to the barriers of the execution detailed below.

The biggest problem lies in the bureaucracy that still prevents the hundreds of megawatts of renewable power being established. This is a relevant challenge in the case of Republic of Srpska also; policy makers are suggested to eliminate the administrative and financial barriers of optimization progress and to apply instruments tailored to the economic performance, the infrastructural background and RES potential of the country in question.

- The most significant hurdle is an administrative financial barrier. Renewables suffer from a price gap due to the fact, that the conventional sources are artificially low in price. As the local experts reported, only 1/3-1/2 of the real total cost of energy production and supply is paid by the end-user. Price difference must be reduced and partially linked to other economic instruments encouraging the use of RES.

- Due to the lack of education, the awareness of RES is relatively low, which result in longer optimization processes – as far as the end-users are concerned.

- Cost-efficiency rationale may limit the utilization of biomass to be exploited from forests. Intervention of the Government is needed. Regional optimization of logistics can be a solution.

- Improvement of environmental performance, such as energy efficiency must be based on Life Cycle Assessment. At the moment, the complex theory of LC is not represented by the local experts and policy makers, which harm the results of the optimization processes. A complex input-output inventory and an LCA for biomass utilization (exploitation, facilities, logistics, processing, products and services) may help the

evaluation of applied technologies, processes and products while supporting policy-making.

Since the Republika Srpska still does not have any energy strategy, it is essential to have the prioritization and schedule for the application of policy instruments. It is not relevant only for biomass-utilization, but the promotion of renewables and energy efficiency in general.

Policy instruments to be applied for the promotion of renewable energy sources and the optimization of the energy-mix:

- Effective regulation framework
- Development of the National Energy Strategy
- Setting the national objectives, priorities and targets for renewables
- Education activity to promote the production and utilization of renewables
- Infomation and communication activity, data management, publication of statistics
- Coordination of stakeholders' dialogue
- Application of economic incentives
- Infrastructural development
- R&D&I in order to have best clean technologies
- Development and harmonisation of standards for supply and services
- Building international partnerships for both business and political cooperation
- Involvement and efficient allocation of financial sources

Sustainability of national energy sector is to be based on three pillars as key priorities:

- Competitive conventional and renewable energy industries and markets
- Energy efficiency and optimization of the national energy-mix
- Protection of the environment and human health

Policy instruments are to be applied in line with these priorities and related objectives.

SECTION 5: ADVICE, EDUCATION AND TRAINING

Key findings and recommendations

As a key policy instrument, education has an important role to play in achieving the strategic sustainable goals in the field of energy. The attitude of the different stakeholders highly impacts the execution of strategies and process management. Based on information provided by local experts, there is no central or centrally supported education program for the promotion of renewable energy sources in the Republika Srpska. There are mainly separated actions without harmonised planning and coordination. The Peer Review Meeting in Banja Luka created a good opportunity for the concentration of stakeholders concerned with the issue of energy with a special focus on biomass utilization. Regular discussions involving a great variety of regional actors may improve the efficiency of the stakeholders' dialogue, quality of legislation and awareness regarding biomass potential.

Policy makers, authorities, energy producers, service providers, transfer organisations and end-users also should be educated. Beside the general data management, statistics publications and communication campaigns, diversified training programmes should also be launched in order to raise the RES-awareness and promote the utilization of alternative energy sources. When developing the education programmes, the involvement of mentor-regions/states is recommended in order to capitalize technical expertise and good practices. Territorial Cooperation Programs of the EU offer good opportunities for knowledge transfer, exchange of experiences and also for technical consultancy. (RS can be involved as third party in these projects.)

Technical consultation – in an international environment – may contribute to the introduction of more efficient new technologies (e.g.: nanotechnological utilization of biomass). Governmental support is especially needed in case of mobility programs of researchers and technical experts because of the high expenses.

Essential part of the work is the establishment of the (regional) institutional background for education with special purposes. Setting-up Regional Energy Agencies is a potential solution. If it is not implementable, authorities and self-governments are suggested to take the responsibility and conduct training programs in cooperation with education institutes and expert groups.

First trainings are to be organised for the representatives of the authorities and policy making bodies. The thematic fields below are to be amended with an Action Plan with the division of Tasks and Responsibilities of the certain body.

Recommended thematic areas of the education:

- Strategies and Regulation related (Key priorities, objectives and targets)
- Sustainable Development and the protection of the environment – „Think Globally, Act Locally"

- The Climate Change Challenge
- Energy efficiency on differernt levels
- The utilization of RES
- Best available rechnologies in biomass utilization
- Access to financial support
- Dialogue and partnership in strategic planning and implementation
- Local Energy Map and Energy-Mix

Concerning various stakeholders, namely: policy makers, authorities, research institutes, service providers, manufacturers, etc:

- Environmental Management Schemes and Standards
- LCA theory and Life Cycle Costing in practice

It is recommended to employ professional training organisations and advisory groups for the education programmes and conduct of management schemes, even if they have international networks and special programmes also for policy makers, researchers, service providers and end-users.

- INEM - www.inem.org
- Eco-counselling Europe - www.ecocounselling-europe.org).

Furthermore, political and administrative representatives of Republika Srpska are invited to take part in the Training Academies organised regularly by the Assembly of European Regions in Brussels and other member regions.

AER Standing Committee on Institutional Affairs launched its AER Training Academy in September 2007. These tailor-made basic courses aim to provide participants with conceptual and practical tools in the field of European affairs. They are designed to ensure that AER member regions are well equipped to optimise the benefits offered to them by the European Union. Special emphasis is therefore laid on regions acquiring the capacity and skills to fully engage in the AER's lobbying work – and their own.

AER training academies has the following format:

- two day training session
- small group of around 25 participants in order to ensure direct involvement of all participants
- application of peer learning method - facilitators of the sessions are working themselves in the area they are teaching and are employed by a regional authority

- active engagement of participants - exchange of experience
- free of charge for AER members

The training is specifically designed for member region officers who may be relatively new to European affairs as well as politicians willing to refresh their knowledge and understanding of the European Union. They are also open to new staff and interns in the Brussels offices of the AER member regions. In order to allow for

For more information, please visit: www.aer.eu/main-issues/governance/aer-training-academy.html

SECTION 6: COMMUNICATION AND PROMOTION

The outcomes of the expert report will be largely promoted by the Assembly of European Regions at European and regional levels. AER's extensive contacts with European institutions, organisations and media in Brussels and Strasbourg open a door for regions wanting to establish a political, economic and cultural presence on the European stage.

Promotional activities can be carried out through the following initiatives:

- Leaflet that shortly depicts the overall purpose, structure and output of the peer review. This flyer will be distributed on the occasion of various AER events, including AER General Assembly taking place from 25 to 27 November 2009 in Belfort, Franche-Comté (France). AER General Assembly attracts each year more than 600 regional politicians and officers, as well as guests from NGO-sector and academia. A number of eminent personalities will take part in this event, including José-Manuel Barroso, president of the European Commission and Danuta Hübner, Member of the European Parliament.

- AER website which offers our member regions easy and direct access to a worldwide audience. The full report from AER peer review in Republika Srpska is available on AER webpage dedicated to the issue of sustainable energy: http://www.aer.eu/main-issues/economic-development.html

- Outcomes of AER peer review in Republika Srpska will be presented by the representatives of the region at AER Tales from Europe on 4 November 2009. Tales offer a unique opportunity to present the region's activities to the Brussels-based journalists.

- The peer review in Republika Srpska has already been described by several European newspapers, such as Régions Magazine (article entitled: "Identifier les meilleures approaches régionales", issue n°94, "Spécial Energie Climat: Sur la route de Copenhague") and Regional Review (October 2009 issue). The articles about AER initiative were also published by numerous online media. See annex.

SECTION 7: COOPERATION AND PARTNERSHIPS

Key findings

Starting from June 2003 when BiH gained the status of potential candidate country for EU accession the cooperation between Republika Srpska and Assembly of European Regions (AER) has significantly increased, this peer review project being a concrete result of this cooperation.

Cooperation with a Spanish company resulted in a study on the potential for solar energy generation, while cooperation with German entities led to the preparation of a study for the assessment of the wind energy potential.

Partnerships with financial institutions such as the World Bank or European Bank for Reconstruction and Development (EBRD) have also been established. The EBRD has allocated Euro 30 million for potential projects in BIH, if the state submits applications for funding projects in the energy sector, urging government and business representatives to make every effort to utilize available domestic development resources.

Since 2007 Bosnia and Herzegovina has received EU financial aid under the instrument for pre-accession assistance (IPA) under two components: Transition Assistance and Institution Building and Cross-border Co-operation. The system for using the IPA funds is centralized and the funds are managed exclusively at BiH level through the Directorate for European Integration. The lack of personnel within the Ministry of Industry, Energy and Mining trained in the development and implementation of EU funded projects is an obstacle in accessing the funds required to transpose their ideas into practice.

It should be pointed out that Republika Srpska is very open and willing to cooperate with partners in the Republic and in the European Union, particularly as the country is now speeding up the EU-related reforms and is therefore on the right path to the starting EU accession negotiations in the coming years.

Recommendations

In the light of more and more EU funded programs available for Bosnia and Herzegovina and implicitly Republika Srpska, the Ministry of Industry, Energy and Mining should build a team of well trained people in EU project management to be able to promote infrastructure projects in the current period, although more difficult due to the centralized system, and even more when the IPA decentralization process is finalized.

A very attracting opportunity will soon be available for the development of a more extensive energy related project once the second call for proposals under **The South East Europe Transnational Cooperation Programme** is launched. The South East Europe Programme Area includes 16 countries among which Bosnia and

Herzegovina, Romania, and Hungary etc. The program web site is: http://www.southeast-europe.net.

A project could be submitted under PRIORITY AXIS 2: PROTECTION AND IMPROVEMENT OF THE ENVIRONMENT, AoI 2.4: Promote energy and resource efficiency, with eligible activities such as "*networking and exchange of information activities (not stand alone purely networking activities, as these will NOT be supported), studies and operational plans, capacity building activities, promotion actions, set-up of services, preparation and conduction of investments proposed by transnational strategic concepts, including infrastructure investment if appropriate and justifiable*".

Another opportunity for cooperation and joint implementation of projects is offered by the **Seventh Framework Programme (FP7)**. 'Framework programmes' (FPs) have been the main financial tools through which the European Union supports research and development activities covering almost all scientific disciplines. The broad objectives of FP7 have been grouped into four categories: Cooperation**,** Ideas**,** People and Capacities. For each type of objective, there is a specific programme corresponding to the main areas of EU research policy. All specific programmes work together to promote and encourage the creation of European poles of (scientific) excellence. Bosnia & Herzegovina is eligible to submit proposals under this instrument from 1 January, 2009 when the Memorandum of Understanding associating it to FP7 become applicable. The program web site is: http://www.cordis.europa.eu/fp7

The **United Nations Development Programme (UNDP)** has an office opened in BiH and offers assistance in addressing the challenges related to climate change, biodiversity degradation and ozone layer depletion at a global, national and local level, seeking out and sharing best practices, providing innovative policy advice and linking partners through pilot projects, thus helping build more sustainable communities.

The Deutsche **Gesellschaft für Technische Zusammenarbeit (GTZ)** GmbH is an international cooperation enterprise for sustainable development with worldwide operations owned by the German Federal Government.

GTZ has been operating a coordination office in Sarajevo since early 1996 and serves to rebuild the BiH economy, focusing on the following areas: economic reform/promotion of small and medium-sized enterprises (SME) and democracy/civil society.

The **TAIEX Instrument** is now available for potential candidate countries. TAIEX, or the Technical Assistance and Information Exchange is an instrument of the Directorate-General Enlargement of the European Commission. TAIEX helps countries with regard to the approximation, application and enforcement of EU legislation. It is largely demand driven and channels requests for assistance and contributes to the delivery of appropriate tailor-made expertise to address problems at short notice.

TAIEX' main tasks are:

- To provide short term technical assistance and advice on the transposition of EU legislation into the national legislation of beneficiary countries and on the subsequent administration, implementation and enforcement of such legislation.
- To provide technical training and peer assistance to partners and stakeholders of the beneficiary countries.
- To be an information broker by gathering and making available information.
- To provide database tools for facilitating and monitoring the approximation progress as well as to identify further technical assistance.

The beneficiaries of TAIEX assistance includes those sectors, both public and private, who have a role to play in the beneficiary countries in the transposition, implementation and enforcement of EU legislation. The program web site is: http://taiex.ec.europa.eu/

SECTION 8: CONCLUSIONS AND RECOMMENDATIONS

The main conclusion drawn by the team of experts and confirmed by the information made available by the host region is that there is definitely **a significant biomass resource potential** that can be used for the production of electricity and heat (separately or combined). However, this cannot be done without **proper legislative framework** to stimulate this sector. A lot of steps have been taken in this respect as a result of to the preparation for the accession to the EU that requires the adoption of the acquis communautaire. A new Energy Law has been issued applicable as from 1 September 2009 defining the renewable energy sources and pointing out that these sources are of general interest for Republic of Srpska.

The Regulatory Commission for Energy of RS is responsible for issuing the rules establishing the system of incentives that will stimulate the production of energy from renewable sources and cogeneration. The incentive scheme proposes a guaranteed feed-in price consisting of a reference price plus a premium.

This new legislation should be supplemented by financial mechanisms to support the investment cost for the construction of new renewable energy installations and upgrading of existing fossil fuel power/heating plants to allow co-firing and cogeneration. This will reduce the need for import of fossil fuels.

Financing sources are not easily available at national level, therefore **better use of funds from the EU or other donors** should be exercised (see the list indicated in Section 7). The Territorial Cooperation Programmes offer good opportunities for sharing experiences and best practices and also for technology transfer. The authorities should **build a team of well trained people in EU project management** to be able to promote renewable energy projects.

Electricity is largely used for domestic heating due to the regulated energy price which is kept low and also due to the **poor condition and inefficiency of the district heating installations and lack of individual measurement of consumption.**

Small communities in rural areas should be assisted and trained to use the available biomass for their energy needs. The promotion of public awareness for utilizing biomass is essential. **Awareness raising campaigns in industrial sector, as well as that of consumers should be promoted**. Consequently, biomass will be accepted in the RS society from small households to bigger industrial factories.

Problems have been identified with respect to the collection of wood waste from forests. **Detailed studies** should be conducted for specific locations to assess the conditions in which **waste can be collected and valorized** in a cost-efficient manner (taking into account forest openness, harvesting equipment, transportation distance and cost etc.).

Alternatively, **a comprehensive biomass inventory should be developed** to document current production and use by compiling information for various waste categories into one document and identify potential areas for expanding biomass

energy production. The study should identify potential energy and non-energy uses of biomass and the information and reference sources contained in the inventory would enable individuals and organizations to investigate the feasibility of some biomass projects.

The report may be used to:

- Better determine the feasibility of energy production with biomass waste in specific locations
- Provide municipalities and other government entities the opportunity to assess the waste available in their area and identify types and quantities of waste which could be used for energy and non-energy purposes
- Provide information for better planning of solid waste generation and disposal
- Offer businesses and potential business ventures the information necessary to begin investigation of waste utilization projects

The local industry should be stimulated to produce equipment for extraction of energy from biomass to avoid imports and create new jobs.

Cooperation and coordination between various stakeholders (authorities, wood processors, pellet producers, consumers) should be improved.

At last but not the least it should be noted that **political impetus is a key factor in promoting biomass energy**, which if managed properly can be sustainable, environmentally benign and economically sound.

ANNEX 1

Law on Energy

I BASIC PROVISIONS

Article 1

This Law provides the bases of the energy policy of Republic of Srpska, creation of energy development strategy, plans, programs and other documents for its implementation, basic issues of regulation and realization of the energy activities, use of renewable energy sources and terms and conditions for realization of the energy efficiency.

Article 2

The aim of this law is to, along with other laws which regulate realization of the energy activities, provide legal assumptions for safe and qualitative supply of customers with energy following the principles of the competitive power market and sustainable development, along with the energy use and environmental protection.

Article 3

Terms and definitions used in this law shall have the following meaning:

a) energy - a form of energy available as a commercial commodity, such as electricity, heat, natural gas, oil and its derivates and bio-fuel;

b) sustainable development - development and application of technologies for use of energy and energy resources which meet the current needs without making a negative effect on possibility for future generations to meet their own needs, first of all preservation of the environmental balance and exploitation of the fossil fuel resources;

c) renewable energy sources - non-fossil energy sources which were preserved in the nature and renewed totally or partially such as the energy of watercourse, energy of wind, non-accumulated sun energy, biomass, bio-fuel, sewage gas, gas from the waste water treatment facilities, bio-gases, geo-thermal energy etc.

d) electricity generated from the renewable energy sources is:

1) Electricity generated by generation installations which use renewable energy sources only;

2) An amount of electricity generated from renewable energy sources by combined generation installations which use non-renewable energy sources as well;
3) Electricity generated from renewable energy sources used for filling in the system for the energy accumulating, but the energy obtained using those reservoirs shall be excluded;

e) Certificate on the electricity origin - document serving the generator of electricity to prove that the electricity generated in its installation was generated from renewable energy sources or in co-generation with a high level of efficiency and it

necessarily contains the amount of electricity, energy source which was used for its generation, place and date of generation as well as other data which contribute to the accuracy and reliability of the document;

f) Certificate (declaration) for generation installation - the document which is issued to generator of electricity for a single generation installation certifying that such an installation fulfills the prescribed terms and conditions for the concurrent generation of electricity and heat with a high level of efficiency, or for generation of electricity using the waste or renewable energy sources in an economically appropriate way, harmonized with the regulations related to protection of environment;

g) Gas - natural gas, natural gas liquids, liquefied oil gas, evaporated liquefied oil gas, bio-gas, gas from biomass, sewage gas and gas from the waste water treatment facilities;

h) Oil derivates - liquefied or gaseous fuels generated by treatment, processing of oil, namely the process related to removal of gases (gasoline, diesel, all types of fuel oil, kerosene type jet fuel, petroleum, petroleum coke, liquefied oil gas and similar);

i) Bio-fuel - liquid or gaseous fuel obtained from the biomass;

j) Biomass - bio-degradable part of products, agricultural residues and waste, including vegetable and animal matters, and those from forestry and wood industry, as well as bio-degradable parts of the municipal and industrial waste which energy use is allowed;

k) Generation of energy - physical of chemical process of conversion of the energy items or renewable energy sources to electrical, heat and other forms of energy;

l) Generation of oil derivates - the processing and treatment of oil or process related to removal of gases, which result in liquid and gaseous products - oil derivates, including the liquefied oil gas ;

m) Co-generation - concurrent generation of electricity and heat or mechanical energy in the uniform process;

n) Efficient cogeneration - cogeneration which complies with the requirements:

1) Generation from co-generation facility which provides for primary energy saving of at least 10% in relation to the references for separate generation of heat and electricity and

2) Generation from micro and small co-generation facilities which provide for the primary energy savings;

o) Distribution - transfer of energy through distribution network for the purposes of delivery of energy to customers, other than supply;

p) Energy supply - sale, including the resale of energy to customers;

q) Safety of supply - capability of the energy system to provide the end user with energy of the defined level of continuity and quality, in a sustainable way complying with the valid standards and contracted arrangements;

r) Supply of tariff customers with energy - purchase and sale of energy to satisfy the needs of tariff customers;

s) Trade - trading, brokerage and representation at the power market;

t) Transfer, namely transport of energy - transport of energy through the transmission network in order to takeover the energy from generators or from other transmission networks and deliver such energy to the distribution network or customers which structures are directly connected to the transmission network;

u) Transport of oil and its derivates to other means of transport - transport of oil, i.e. oil derivates to all means of transport, other than oil pipeline i.e. product-pipeline;

v) Ministry - ministry in charge of energy;

w) Energy undertaking - a legal entity or entrepreneur which carries out one or more energy activities;

x) Customer - a legal or physical entity which buys energy;

y) Non-eligible (tariff) customer - a customer that buys energy for its own needs at regulated prices pursuant to the tariff system;

z) Eligible customer - an end user which got the right to buy energy by its own choice pursuant to regulations which define the power market;

aa) Public service - the service available to all customers and energy undertakings at certain area at the prescribed price and following the regulated terms and conditions for access and use of the service, in compliance with safety, including the safety of supply, regularity and quality of service, energy use efficiency, protection of environment and prevention of climate changes, which is being carried out following the principles of transparency of work and supervised by the law-established bodies;

bb) Public service obligation - an obligation of energy structures to carry out certain energy activities as public services;

cc) Energy efficiency - reduction of consumption of energy without a drop in the living standard and quality of services in the buildings and generation quality and quantity in industry, traffic and similar.

II ENERGY POLICY AND ENERGY DEVELOPMENT PLANNING

Article 4

The energy policy of Republic of Srpska provides the priorities and guidelines of the energy sector development in order to achieve the long-term aims, which should provide as follows:

a) safe and qualitative energy supply,

b) a long-term balanced and sustainable development of energy sector pursuant to the energy consumption tendency,

c) development of energy infrastructure and introduction of contemporary technologies by providing stable and transparent conditions for investment in construction, reconstruction and upgrading of the energy system and their connection with the neighboring systems,

d) encouragement of competition at the power market,

e) availability and material affordability of different types of energy for citizens of Republic of Srpska concurrently with gradual liberalization of the power market;

f) provision of conditions for encouragement of use of renewable energy sources and co-generation;

g) improvement of energy efficiency in realization of energy activities, but not in consumption of energy;

h) improvement of the environmental protection and preservation of environmental balance during generation, transmission and consumption of energy and energy sources;

Article 5

(1) Energy policy and energy development planning of Republic of Srpska are conducted by the Energy Development Strategy of Republic of Srpska (hereinafter: Energy development strategy).

(2) Energy development strategy defines as follows: long-term aims of development of certain energy activities, priorities of development, determination of energy needs of Republic of Srpska, sources and method of providing necessary quantities of energy, including long-term planning of the energy sources structures, a share of renewable sources, required levels of energy efficiency and energy savings, necessary investments in energy, measures for encouragement and method of providing means for investment in renewable energy sources and cogeneration, measures and mechanisms for increase of energy efficiency, improvement of protection of environment and prevention of climate changes, encouragement of competition and gradual liberalization of the power market, mechanisms for providing protection of end users, mechanisms and measures for protection of vulnerable customers under the circumstances of liberalized market and other elements which are important for achievement of aims of the energy policy.

(3) Energy development strategy is made by National Assembly of Republic of Srpska, at the proposal of the Government of Republic of Srpska (hereinafter: The Government) for the period of twenty years.

(4) Energy development strategy is harmonized with the spatial plan of Republic of Srpska and economic-development plans of Republic of Srpska.

Article 6

The Government makes action plans for implementation of the Energy development strategy referred to in Article 5 of this law, which establishes measures, leaders of activities and terms for realization of the energy policy as well as the method of realization of cooperation with local authorities within the scope of planning of the energy

sector development and cooperation with energy structures in the sectors of electricity, gas and oil, other undertakings in Bosnia and Herzegovina and international institutions.

Article 7

The institutions of local authorities are obliged to harmonize its development documents with the Energy development strategy.

Article 8

According to the Energy development strategy, plans and programs of the local authorities' institutions, the energy undertakings make programs and plans of construction, maintenance and use of the energy undertakings and other requirements necessary for realization of the energy activities, complying with those obligations resulting from the international contracts.

Article 9

(1) The Government makes the annual power balance which is used to plan total energy needs, sources and types of energy as well as the method and measures for satisfying those needs.

(2) The annual power balance is made no later than 15 December of the current year for the next one.

(3) The Minister in charge of energy (hereinafter: Minister) makes Rule which prescribes in a more detailed way the content of the power balance, the content, terms and conditions for submission of data which the competent bodies (entity and local authorities) and energy undertakings are obliged to submit to the Ministry in order to make the power balance.

III ENERGY ACTIVITIES AND LICENSES

Article 10

(1) Energy activities, for the purposes of this law, are meant by:

a) generation of electricity, distribution of electricity, supply of electricity and trade of electricity,

b) generation of oil derivates, transport of oil through the oil pipelines and oil derivates through the product-pipelines, transport of oil and oil derivates to other means of transport, storage of oil and oil derivates, trade of oil and oil derivates,

c) transport of natural gas, control of the natural gas transport system, storage and control of the natural gas storage system, distribution of natural gas and control of the distribution system for natural gas, supply with natural gas and trade of natural gas,

d) generation of bio-fuels, storage and trade of bio-fuel and

e) generation of heat, distribution and control of the distribution system for heat energy, supply with heat energy and trade of heat energy;

(2) The energy activities of distribution and supply with natural gas are meant by distribution and supply with the liquefied oil gas, bio-gas and gas from biomass

and other types of gas if they could be technically transported in a safe way through the distribution network of natural gas.

Article 11

The energy activities: transport and control of the natural gas transport system, transport of oil through the oil pipelines and oil derivates through the product-pipeline, generation of electricity for supply of tariff customers, distribution of electricity and natural gas, supply of tariff customers with electricity and gas, distribution and supply with heat energy are the activities of general interest and are carried out in the system of the public service obligation pursuant to the law and license for that activity.

Article 12

(1) Energy activity can be carried out by a legal entity or entrepreneur organized pursuant to the law and which has got the license for that activity in the region of Republic of Srpska (hereinafter: license), unless it has been differently stipulated by this law.

(2) Energy activities of supply and trade of electricity or natural gas can be carried out by a legal entity or entrepreneur who has got the license for implementation of that activity on the territory of Republic of Srpska, i.e. on the territory of Bosnia and Herzegovina.

(3) The license referred to in paragraph 1 of this Article should be necessarily possessed by energy undertakings which carry out one of the following activities:

a) generation of electricity in generation installations which capacity is more than 1 MW and generation of heat energy which capacity is more than 0.3 MW,

b) generation of oil derivates and bio-fuels,

c) storage of oil, oil derivates, bio-fuels and natural gas,

d) transport and control of the natural gas transport system,

e) transport of oil through the oil pipeline and oil derivates through the product-pipeline,

f) distribution, supply and trade of electricity,

g) distribution, supply and trade of natural gas,

h) distribution and supply with heat energy,

(4) The license is not required for realization of the following energy activities:

a) generation of electricity which is generated exclusively for one's own needs or is generated in the generation installations which capacity is up to 1 MW,

b) generation of bio-fuels which is generated exclusively for one's own needs,

c) generation of heat energy for one's own needs, the capacity of up to 0.3 MW,

d) wholesale and retail of oil derivates,

e) wholesale and retail of the liquefied oil gas and

f) storage of oil and oil derivates which are stored exclusively for one's own needs;

Article 13

(1) The license referred to in Article 12 paragraphs 1 and 2 of this Law is issued by the regulatory authority referred to in Article 15 of this law.

(2) The license referred to in paragraph 1 of this Article is issued at the request of the energy structure for each energy activity separately.

(3) Method, criteria, terms and conditions for issuance and revocation of the license are prescribed by special regulations which regulate implementation of activities in the sectors of electricity, natural gas, oil and oil derivates, bio-fuels and heat energy.

Article 14

(1) The energy undertaking which carries out two or more energy activities or which, apart from energy activities, carries out some other activity which, for the purposes of this law, is not considered the energy activity, is obliged to carry out the unbundling pursuant to the special law which regulates implementation of that activity.

(2) Unbundling of the activities for the purposes of this Law can be related to legal, functional and accounting unbundling, while the concrete application for unbundling is placed in relation to the type of activity, method of realization of the activity, terms and conditions of the activity regulation as well as the energy sector they belong to, taking into account the size, complexity and organization of the sector, size and level of development of the market.

IV REGULATORY COMMISSION FOR ENERGY OF REPUBLIC OF SRPSKA

Article 15

(1) Regulatory Commission for Energy of Republic of Srpska (hereinafter: Regulatory Commission) is a legal entity, with its right and obligations as stipulated by this law, laws which provisions define implementation of certain energy activities and Statute of the Regulatory Commission, and it has been registered at the court register.

(2) Regulatory Commission is an independent and non-profitable organization, which has been functionally independent from the republican institutions, energy undertakings and beneficiaries of their products and services, as well as from all other legal and physical entities.

(3) The headquarters of the Regulatory Commission is in Trebinje.

Article 16

Regulatory Commission shall regulate and supervise the relationships at the market of electricity, gas and oil pursuant to the provisions of this law and competences prescribed by the law and those competences assigned to it by the law provisions in the sector of electricity, gas and oil, taking into account providing the principle of transparency, non-discrimination, fairness, stimulation of competitiveness and protection of end users.

Article 17

Method of implementation and regulation of energy activities referred to in Article 12, paragraph 4, as well as the obligation to be granted the license for implementation of those activities which, for the purposes of this Law, Regulatory Commission is not competent for, are regulated by a special law.

Article 18

(1) Regulatory Commission is comprised of the president and four members of the Regulatory Commission appointed by the National Assembly of Republic of Srpska, at the proposal of the Government, following the public competition procedure.

(2) The mandate of the president and members of the Regulatory Commission is five years.

(3) No one can be appointed president or member of the Regulatory Commission more than twice (two terms).

Article 19

(1) President and member of the Regulatory Commission should be a citizen of Republic of Srpska or Bosnia and Herzegovina and who has got knowledge and professional skills related to technical sciences, economy or protection of environment.

(2) The persons referred to in paragraph 1 of this Article cannot:

a) be in a family relationship,

b) be the persons punished for crimes within the scope of economy payment transactions,

c) carry out the duties that may affect independence of the Regulatory Commission, pursuant to its code of ethics,

d) be members of legislative, executive or judicial authorities, supervisory board or board of directors of economic operators, banks or insurance companies and

e) carry out and do activities which are opposite to the principles of transparency and non-discrimination at the power market Republic of Srpska;

Article 20

(1) Regulatory Commission makes the Statute and Procedural Rules, which should comply with this law and which determine the method of operation, decision making

process and other documents, development of drafts and regulations and rules' proposals, realization of public consulting and similar.

(2) Regulatory Commission makes Code of Ethics harmonized with the law, which determines the issues related to conflict of interests, as well as the international practice which determines the conflict of interests and other standards of ethics for employees in Regulatory Commission.
(3) All rules, regulations and other documents which are of regulatory competence, and made by Regulatory Commission, are published in the Official Gazette of Republic of Srpska.

Article 21

(1) The sessions of Regulatory Commission are public, except in certain cases when it is about confidential information and commercially sensitive information, and when it is acted complying with secondary legislation made by Regulatory Commission.

(2) Some documents used by Regulatory Commission to decide on in the second-instance proceeding, as well as the documents used for deciding on in the proceedings related to settlement of disputes between participants at the power market are published in a prescribed way and are not subject to the obligation being published in the Official Gazette of Republic of Srpska.

(3) Documents of the Regulatory Commission, reports from the hearings and minutes are public, except in those cases when it is about confidential information and commercially sensitive information and are kept pursuant to the legislation made by Regulatory Commission.

Article 22

(1) If being prevented from realization of duties, the president of the Regulatory Commission is replaced by a member authorized by the president.

(2) Regulatory Commission makes decision by a majority of members of the Regulatory Commission.

Article 23

(1) President or a member of the Regulatory Commission may be relieved of their duties if:

a) he/she has been permanently prevented from carrying out his/her function due to health or other reasons,

b) he/she has been unjustifiably absent from more than three consecutive meetings of Regulatory Commission,

c) he/she has resigned as the president or a member of the Regulatory Commission,

d) got the conditions for being relieved, as prescribed by other law, or statute and Code of ethics;

(2) National Assembly of Republic of Srpska makes decision on having the president, i.e. a member of Regulatory Commission relieved of, at the proposal of Government.

(3) A vacancy for president or a member of the Regulatory Commission is filled in by appointing another person in a way and under the terms and conditions for appointment of the relieved president, or a member, for the remaining period of the mandate.

Article 24

(1) Financing of Regulatory Commission is provided by the annual fees from energy undertakings, licensees for one or more energy activities and one-off fees for the licenses it issues.

(2) Budget of the Regulatory Commission is adopted by the National Assembly of Republic of Srpska, before beginning of the budget year, at is proposal.

(3) Based on the approved budget, Regulatory Commission makes decision on the amount of fee referred to in paragraph 1 of this Article.

Article 25

(1) Rulings and decisions made by Regulatory Commission in all proceedings are final.

(2) The party which is not satisfied by decision or ruling of Regulatory Commission may initiate the administrative proceeding before the competent court.

(3) The complaint for initiating the administrative proceeding does not postpone the enforcement of decisions referred to in paragraph 1 of this Article.

Article 26

Regulatory Commission is independent, and it submits the annual report to the National Assembly of Republic of Srpska on its work, at least once a year.

V - RENEWABLE ENERGY SOURCES

Article 27

(1) Use of renewable energy sources and efficient cogeneration are of general interest for Republic of Srpska.

(2) Using renewable energy sources and efficient cogeneration provide decrease of use of fossil fuel and negative impacts on environment, as well as effective use of energy; stimulates development of new technologies, diversification of energy sources and increases safety of supply, and it also decreases dependence on import of energy on long-term basis.

(3) The government shall, at the proposal of Ministry, make a decree prescribing measures that contribute to achievement of aims, which are related to the increase of:

a) total generation of energy from renewable sources,

b) a share of consumption of electricity generated from renewable sources and efficient co-generation facilities and total consumption of electricity in Republic of Srpska;

c) a share of consumption of bio-fuel in total consumption of transport fuel;

(4) Ministry shall analyze, each year, achievement of aims referred to in paragraph 3 of this Article and propose new measures for their achievement, in cooperation with Regulatory Commission.

Article 28

(1) The system of stimulating generation of electricity from renewable energy sources and co-generation, method of providing and using incentive means are prescribed by Regulatory Commission, with the consent given by Government.

(2) The means for stimulating generation of energy from renewable energy sources and cogeneration referred to in paragraph 1 of this Article are provided through the tariff for energy.

(3) Institutional structure for operational implementation of the incentive system is determined and/or established by Government.

Article 29

(1) Generator of electricity may, at its own request, get a certificate on origin for electricity generated in the generation installations which has a valid certificate (declaration) when proven that, in the period which the certificate is related to for the generation installations, it has been operating in a way that it meets the terms and conditions prescribed for efficient cogeneration, i.e. generation of electricity from renewable sources.

(2) Certificate (declaration) for generation installations may be granted to generator of electricity if such generation installations generate electricity from renewable energy sources in an economically appropriate way, protecting environment or in efficient cogeneration.

(3) Regulatory Commission issues the certificate on origin and certificate for generation installations referred to in paragraph 1 and 2 of this Article and prescribes their content, as well as terms and conditions for issuance.

Article 30

System operators, which network the installations for generation of electricity are connected to, for which the certificate on origin are issued submit to Regulatory Commission all data related to electricity generated for which Regulatory Commission shall issue the certificate on origin.

VI - ENERGY EFFICIENCY

Article 31

(1) Efficient use of energy is general interest of Republic of Srpska and it represents the contribution to the global intention to decrease adverse effects on environment and sustainable development, and prudent and cost-effective use of energy sources.

(2) Programs of improvement of energy efficiency are carried out pursuant to the Energy policy of Republic of Srpska, Energy development strategy and regulations of Republic of Srpska.

(3) Programs of improvement of the energy efficiency are integral part of the Energy development strategy and are harmonized with other programs of sustainable development.

(4) The ministry is in charge of improvement of energy efficiency through the overall framework of measures to increase the energy efficiency and energy saving.

Article 32

Measures for conducting energy efficiency referred to in Article 31 paragraph 4 of this Law are as follows:

a) Establishment of favourable conditions for investment through the programs for increase of energy efficiency, through public-private partnership, development of financial cooperation and investment fund;

b) Provision of cooperation between customers, generators and suppliers of energy, as well as the sector of public services and local authorities' institutions in order to achieve the prescribed level of energy efficiency;

c) Realization of the requested levels related to energy efficiency through decrease of energy losses, decrease of energy consumption by introducing new technological solutions in different sectors (public sector and sector of public services, civil engineering, agriculture, industry, traffic, etc);

d) Education of customers and raising awareness of customers on necessity to decrease consumption (saving) of energy and methods for reduction of consumption;

e) Establishment of the verification system and compulsory labelling of devices with the energy level class, as well as certification of buildings regarding their energy characteristics;

f) Making regulations within the scope of energy efficiency in order to establish methodology of proving effects of measures and mechanisms to increase energy efficiency; and

g) Realization of the international cooperation regarding energy efficiency;

Article 33

Programs for efficient use of energy pursuant to the Energy development strategy is made by Government, i.e. the respective institutions of local authorities.

Article 34

(1) Undertakings dealing with supply of end users with energy should at least once a year, along with the bill, inform the customers on impact of the method of energy use on environment and sustainable development and, in an appropriate way, educate and direct the customers to use energy in a prudent and cost-effective way.
(2) In order to create conditions for cost-effective and efficient use of energy by end users, the calculation of energy is made according to the actually metered energy.

VII - SUPERVISION AND PENALTY PROVISIONS

Article 35

(1) Administrative control over implementation of provisions of this law and regulations made based on it is carried out by Ministry.

(2) Inspection control over implementation of provisions of this law is made by the Republican Inspectorate of Republic of Srpska.

Article 36

(1) The energy undertaking shall be fined in the amount of 3,000 to 5,000 BAM if:

a) it does not submit to the Ministry data as prescribed by this law (Article 9, paragraph 3) and

b) it does not inform the customers on tendency and importance of the energy use - energy efficiency (Article 34, paragraph 1);

(2) For the crime referred to in paragraph 1 of this Article, the person in charge of the energy undertaking shall be fined in the amount of 1,000 to 2,000 BAM.

Article 37

(1) The energy undertaking shall be fined in the amount of 5,000 to 15,000 BAM for the crime if:

a) it carries out the energy activity as the market one but is actually the public service (Article 11) and

b) it carries out the energy activity without the license for it (Article 12 paragraphs 1 and 2);

(2) For the crime referred to in paragraph 1 of this Article, the person in charge of the energy undertaking shall be fined in the amount of 1,500 to 3,000 BAM.

VIII - TRANSITIONAL AND FINAL PROVISIONS

Article 38

(1) Terms and conditions related to implementation of activities in the sector of electricity, gas, oil and oil derivates, their generation, distribution, transport, trade and safety of undertakings are stipulated by special laws.

(2) Terms and conditions for generation and distribution of heat energy, safety of energy undertakings in this field and status of generators and eligible generators of heat energy are stipulated by a special regulation.

Article 39

Within six months from the effective date of this law:

a) The government shall make decree of generation and consumption of energy from renewable sources and co-generation, referred to in Article 27, paragraph 3 of this law,

b) Minister shall make Rule referred to in Article 9, paragraph 3 of this law and

c) Regulatory Commission shall make rule on stimulating generation of energy from renewable energy sources and co-generation referred to in Article 28, paragraph 1 of this law.

Article 40

(1) Within four months from the effective date of this law, Government shall propose the National Assembly the appointment of president and members of Regulatory Commission, pursuant to the Article 18 of this law, except for the member of the Regulatory Commission whose mandate has been still running and who was appointed following the decision of National Assembly pursuant to the Law on electricity.

(2) President and member of the Regulatory Commission, whose term of office ended, keep on working until the appointment of new ones, and no longer than four months from the effective date of this law, is made.

Article 41

This law becomes effective on the eighth day from its publication in the "Official Gazette of Republic of Srpska" and shall be applicable as of 1 September 2009, apart from Article 40 which shall be applicable as of the effective date of this Law.

Number: 01-794/09
14 May 2009
Banja Luka
President
National Assembly
M Sci. Igor Radojicic, on his own

ANNEX II

Rules on qualified Generator and Support of Electric Power Generation from Renewables and Combined Generation of Heat and Electric Power

Regulatory Commission for Energy of Republic of Srpska

DRAFT

Rules on Qualified Generator and Support of Electric Power Generation from Renewables and Combined Generation of Heat and Electric Power

Trebinje, April 2008

Pursuant to the Article 36 of the Republic of Srpska Law on Electricity- the edited version (RS Official Gazette #8/8), Article 18, paragraph 1 of the Statute of the Regulatory Commission for Energy of Republic of Srpska (RS Official Gazette #41/04, 67/07,113/07) and Article 37, paragraph 1, item 1 of the Rules of Procedure of the Regulatory Commission for Energy of Republic of Srpska (RS Official Gazette #96/04), the Regulatory Commission for Energy of Republic of Srpska at its 25th regular session held on 18 April, 2008, issued the following

DRAFT

Rules on Qualified Generator and Support of Electric Power Generation from Renewables and Combined Generation of Heat and Electric Power

PART 1 – GENERAL PROVISIONS

Article 1
(Subject)

These Rules define the way and conditions under which the generators of electric power derived from renewables, including waste, may obtain the status of qualified generator of heat and electric power; define the conditions under which the generators of heat and electric power within a combined cycle may exercise their right to avail of the incentives and support system for electric power generation in a qualified power plant with a co-generation substation.

Article 2
(Implementation)

These Rules shall be implemented in the procedures upon application to obtain the qualified generator status and exercise the right to incentives submitted to the

Regulatory Commission for Energy of Republic of Srpska (hereafter: the RSERC), in accordance with the authority and capacities stipulated by the relevant law and RSERC rules and regulations.

Article 3
(Aim)

1. The aim of issuing these Rules is to establish and ensure a swift and efficient procedure during the submission and processing of applications and equal terms during the process of awarding the status of qualified generator and the right to avail of incentives meant for generators of heat and electric power in a combined cycle, as well as to render a just decision in regard to submitted applications and determine the prices and fees for purchasing electric power from the qualified generator and generators of heat and electric power within a combined cycle.

2. Encouraging electric power generation from renewables and generation of heat and electric power within a combined cycle (co-generation) ensures and helps the following:

a) Implementation of the Republic of Srpska Government electro-energy policy in regard to the portion of electric power generated from renewable sources of energy within the overall gross consumption of electric power in the Republic of Srpska.
b) Contributes to better environment
c) Helps the fulfilment of Kyoto Protocol
d) Creates better conditions for local and foreign investors
e) Contributes to self-sustained development of local communities and social cohesion (employment, migration decrease, etc)
f) Improves security and safety of electric power supply and development of electro-energy sector
g) Helps gradual competitiveness of electric power generated from renewables in the overall electric power market
h) Helps better and more effective usage of primary sources of energy
i) Ensures that generation of energy from renewables and co-generation do not reflect badly on the competitive electric power market development

Article 4
(Definitions and Acronyms)

(Definitions)

(1) The terms used in these Rules have the following meaning:

"Applicant"- is a legal person submitting an application to RSERC, requesting the status of qualified generator and the right to avail of the incentives in accordance with the law and these Rules;

"Generation" – means generation of electric power in hydroelectric power plants, thermal power plants and other power plants linked to the transmission or distribution network, as well as generation for one's own needs

"Qualified generator" – is a generator of electric power that generates electric power in an individual generation unit, using waste or renewable sources of energy in a cost-effective manner and in accordance with the environment friendly measures and based on the conditions defined by these RSERC Rules.

“Qualified power plant” – is an individual electro-energy generation facility with a properly issued qualifying certificate.

“Law”- means the Law on Electricity

“Distribution System Operator (Distributor)” – is a legal person responsible for the functioning, maintenance and development of the distribution system in a given area, including linkage to the other systems with a long- term aim to enable the system to meet all the reasonable electric power distribution requirements.

“Renewable sources for electric power generation”- are the renewable non- fossil energy sources (wind, solar (sun), geothermal, hydropower (flowing water), biomass, landfill gas, gas derived from facilities for treatment of waste water and agricultural biogas.)

“Biomass” – describes biodegradable product parts, waste and agricultural residue (including plant and animal matter), forestry and related industries, as well as biodegradable parts of industrial and communal waste.

“Geothermal energy”- is energy from the natural, deep underneath the earth heat sources.

“Non-accumulative solar energy” – is energy that comes directly from the sun.

“Photovoltaic cells” - are semi-conductor materials that convert direct sunlight to electricity.

“Solar thermal energy installation“- is an installation with which the non- accumulated solar energy is converted into electricity thru indirect heat transformation.

“Biogas”- is made by the anaerobic decomposition or thru the fermentation of organic matter.

“Landfill gas”- describes all kinds of gas generated thru biodegradation of solid waste.

“**Agricultural biogas**” - is a gas derived from natural biodegradation of organic matter with no oxygen (alkali farm waste, sugar beet residue, pasture residue, especially put aside biodegradable communal (municipal) solid waste, special energy crops etc).

“Wind power plant” – is an installation that converts wind energy to electricity, including all individual installations related to electric power generation derived from wind, be it with one or more wind turbines together with the accompanying transformer stations or electric lines, as well as other adjacent facilities or premises within the WPP installation.

“Fossil fuels” – are non-renewable energy sources naturally made underneath the earth surface over a long period of time, derived from plant and animal residue, such as coal, fuel oil and natural gas.

“Cogeneration” – is a simultaneous generation of heat and electric power and/or mechanical energy within one process.

“Cogeneration installation” – is an installation capable of working in cogeneration.

“Micro cogeneration installation” – is an installation with a maximum capacity installed of less than 50 kWe.

“Small cogeneration installation” – is an installation of the installed capacity of 50 kWe or more but less than 1MWe.

“Cogeneration generation” – is a sum of electric and mechanical energy and useful heat of cogeneration.

“Cogeneration of high efficiency (efficient cogeneration)” – is cogeneration that meets the conditions described in the Article 30 of these Rules.

“Useful heat” – is heat generated within the cogeneration process in order to meet cost-effective energy consumption meant for heating or air conditioning.

“Cost –effective consumption”- is consumption within the limits of the heating or air conditioning needs that under regular market conditions would be met by electric power generation other than cogeneration.

“Primary energy saving” – is an indicator of energy efficiency of cogeneration, representing the relative fuel energy saving within cogeneration in regard to the equivalent generation in separate installations of heat and electric power generation.

“Referential value of useful functioning of installation for separate generation” - is a degree of useful functioning of alternative separate heat and electric power generation processes that need to be replaced by cogeneration process.

“Market value (price)” – is the price of electric power on the market where the Republic of Srpska buyers and suppliers of electricity may carry out electricity trade activities.

“Indicative aims of renewable energy portion within the overall consumption”- are the amounts given in percentage representing a portion of electricity generated from the installations using the renewable energy sources within the Republic of Srpska gross consumption.

“Gross electricity consumption” – is electricity consumption in the Republic of Srpska plus import but minus exported electricity.

2) Apart from the terms described above in then paragraph 1 of this Article, these Rules also contain the terms used in the relevant law and RSERC by-laws.

(**Acronyms)**

RSERC - Regulatory Commission for Energy of Republic of Srpska

PES – Primary energy saving

FO – Form

PART II – QUALIFIED GENERATOR STATUS

CHAPTER 1 – Qualified Generator

Article 5

(Qualified Generator and Qualified Power Plant)

1) Qualified Generator of electricity is an electricity generator from one or more qualified power plants in possession of a certificate to generate energy from renewable energy sources in an appropriate and cost effective manner and in accordance with the environment friendly measures (hereafter: qualified power plant certificate), and the generator that acquired the status in accordance with the provisions of these Rules.

2) These Rules do not apply to power plants with no qualified power plant certificate but are part of the legal person that has obtained the qualified generator status and may be located within the same or different premises.

Article 6

(Types of Qualified Power Plants)

In regard to the primary energy sources, the qualified power plants may be:

1. The power plants using water flow energy -hydroelectric power plants
2. The power plants using wind energy – wind power plants
3. The power plants using biomass energy
4. The power plants using biogas energy (landfill gas, gas derived from installations for water waste treatment and agricultural biogas)
5. The power plants using geothermal energy and
6. The power plants using non-accumulated solar (sun) energy

PART II - Conditions for Obtaining the Status and Period of Validity

Article 7
(Conditions for Obtaining the Status)

The legal person engaged in the activity of electricity generation may obtain the qualified generator status in the qualified power plant should the following conditions be met:

a) the generation facility stated in the application should posses a licence for carrying out electricity generation activities if such a licence is prescribed by law;
b) to use renewable energy sources for generation of electricity in the generation facility;
c) to meet all the environment related provisions in accordance with the Environment Law and other relevant by-laws;
d) to posses legal acts regulating water-related issues and environment license and to comply with conditions and provisions set in the mentioned legal acts and regulations;
e) to ensure that each generation facility has the necessary metering devices that are to measure the energy input and output in accordance with the regulations;
f) to meet the technical and organizational requirements determined for an efficient and safe functioning of the generation facility in accordance with the technical regulations;
g) to meet any other condition or requirement in order to fulfil the aims of these Rules

Article 8
(Qualified Power Plant Certificate)

1) Upon receiving an application for obtaining the qualified generator status, the RSERC issues a qualified power plant certificate valid till 1 March of the coming year.
2) Application for renewal of the qualified power plant certificate shall be submitted to the RSERC every year no later than 15 January, together with the activity report of the qualified power plant in question for the previous year in the format prescribed by the Rules on Reporting or these Rules.
3) Upon receiving the application referred to in the paragraph 2 of this Article, the RSERC shall issue the qualified power plant certificate no later than 1 March of the year in question that would be valid till 1 March of the year to come.

Article 9
(Time Validity of the Status Awarded)

A company that obtains the status of qualified generator in the qualified power plant, for which it possesses the necessary qualifying certificate, may keep the status awarded for the period of up to 10 years as of the day of acquiring the status in question.

CHAPTER III – Application Procedure and Decision Making Regarding Qualified Generator Status Award Process

Article 10
(Applicant)

1) Any legal person engaged in the energy generation activities in one or more power plants described in the Article 6 of these Rules, may apply for obtaining the qualified generator status or renewal of qualified power plant certificate.
2) The application may be submitted by properly authorized representative on behalf and in the interest of the applicant in question

Article 11
(Application Forms and Supporting Documentation)

1) The Application for obtaining the qualified generator status consists of:

a) Properly filled in Form FO 04. 11- Application for obtaining the qualified generator status (Annex 1)
b) Properly filled in Form FO 04. 13 – Statement that the data and information submitted is true and valid (Annex 1)
c) Supporting documents proving the information given in FO 04. 11

2) The Application for renewal of qualified power plant certificate consists of:

a) Properly filled in Form FO 04. 12- Application for renewal of qualified power plant certificate (Annex 1)
b) Properly filled in Form FO 04. 13 – Statement that the data and information submitted is true and valid (Annex 1)
c) Supporting documentation proving the information given in FO 04. 11

d) Supporting documentation proving the information given in FO 04. 12

Article 12
Application Submitting Procedure

1) Properly filled in Application Forms with the supporting documentation and necessary information are to be stamped and signed by Applicant or authorized representative and shall be submitted to RSERC in writing, as well as sent in the electronic format as prescribed by RSERC.

2) Properly filled in Form FO 04.11 shall be submitted for each power plant in question.

3) Supporting documentation or information common for all the power plants shall be submitted in one copy

4) There is no need to yet again submit the supporting documentation or information that the Applicant had already submitted to the RSERC when applying for issuance of licence to carry out electricity generation activities or supervision of the licence usage, unless there is new information to be provided or validity date has expired.

Article 13
(Determining the Application Validity)

1) Upon receiving the Application, RSERC reviews it and determines it is complete as required.

2) The Application is considered complete and valid if the submitted forms and supporting documentation and information are in accordance with the Article 11 of these Rules.

Article 14
(Additions to the Application)

1) Should the documentation submitted with the Application be incomplete, the Applicant shall be informed accordingly in writing and given a deadline to either rectify the Application deficiencies or submit the additional missing documents.

2) Should the Applicant fail to act as prescribed in the paragraph (1) of this Article, the RSERC shall reject such an Application.

Article 15
(Public Announcement)

1) Once the Application is deemed to be complete, the RSERC shall inform the Applicant accordingly, followed by a short public announcement published in at least one daily newspaper circulated throughout the entire territory of the Republic of Srpska, displayed on the Notice Board and published on the RSERC web page.

2) The public announcement shall have a short summary of the Application in question; instructions as to how the parties concerned may obtain further information and forward comments with a described procedure and deadline; an invitation to the parties concerned to apply for obtaining the status of interferer in the procedure; criteria for obtaining the mentioned status and the application procedure transparency and access details.

3) In regard to the application to obtain the status of interferer within the procedure for obtaining the qualified generator status, the RSERC shall decide at its regular sessions in accordance with the Rules on Public Hearing and Dispute and Appeal Procedure.

4) Should the RSERC award the status of interferer in the process of obtaining the qualified generator status, after having reviewed the arguments in favour of such a decision, an official hearing shall be scheduled.

Article 16
(Public Hearing)

The RSERC shall decide as to the number and venue of public hearings, taking into consideration the comments received, the application for obtaining the status of interferer and arguments and information in favour of the application as well as other relevant information as to potential controversial questions in accordance with the Rules of Procedure and the Rules on Public Hearing and Dispute and Appeal Procedure.

Article 17
(Decision on Application)

1) Should the requirements for obtaining the qualified generator status be met, the RSERC renders its final decision at one of its regular sessions awarding the qualified generator status, including the qualified power plant certificate.
2) A final decision on renewal of qualified power plant certificate shall be made by the RSERC at one of its regular sessions with no implementation of the Articles 15 and 16 of these Rules.
3) On an exceptional basis, should there be legitimate reasons to reject the application for renewal of qualified power plant certificate, the RSERC may implement the Articles 15 and 16 of these Rules.
4) The RSERC has the right to check all the information and data, carry out the inspection of the Applicant's facility, installation and equipment, if needed, in order to determine all the facts as to the fulfilment of the requirements prescribed for obtaining the status, as of the moment of submitting the Application till the final decision is made.
5) The decision on awarding the qualified generator status shall be published in the Republic of Srpska Official Gazette, Notice Board and RSERC web site.

Article 18
(Initiating Procedure)

The procedure on extension, transfer, annulment or revoking of the qualified generator status may be initiated by the RSERC upon an application of the qualified generator or any other person in possession of the facts significant for the validity of qualified power plant certificate.

Article 19
(Application Withdrawal)

The Applicant may withdraw the Application at any moment of the procedure, in which case the RSERC renders a decision to cancel the procedure.

Article 20
(Dismissing Application)

Should the Application be incomplete, false or vague, and should the Applicant fail to submit the missing documents or rectify the deficiencies within the additional deadline determined by the RSERC, such an Application shall be dismissed by the RSERC.

Article 21
(Application Rejection)

1) The RSERC shall reject an Application for obtaining the qualified generator status in the following instances:

a) Should the Applicant fail to meet the requirements prescribed;
b) Should the Applicant undergo the status changes (dissolution, merging, take over), bankruptcy or liquidation;
c) Should the security measure of forbidding further activities or duties, in accordance with the Criminal Code of the Republic of Srpska or Law on Misdemeanour, be issued against the Applicant.

2) The decision to reject an Application for obtaining the status is made by the RSERC at one of its regular sessions.

Article 22
(Renewal of Status/Certificate)

1) Upon expiry date, a qualified generator may obtain a renewal of status in the procedure and under conditions prescribed by these Rules.
2) The qualified generator shall submit an Application for obtaining a renewal of status at least three months prior to the expiry date of the existing one
3) The procedure for renewal of qualified power plant certificate shall be carried out in accordance with the Articles 8, 11, paragraph (2), and 17 Paragraph (2) and (3) of these Rules.

Article 23
(Transfer of Status)

1) If during the period of validity of the qualified generator, the user of the status sells the qualified power plant or controlled (management) interest to the third party, the qualified generator status may be transferred to the party in question.

2) The qualified generator shall submit an Application to the RSERC, requesting the transfer of status and providing the necessary information and supporting documentation regarding the party the status is to be transferred to, providing the necessary proof that the conditions described in the Article 1 of these Rules are met.

3) The transfer procedure shall be carried out in the same manner as the procedure for obtaining the status.

Article 24
(Annulment of Status)

1) The RSERC may annul the awarded status of qualified generator and/or the qualified power plant certificate, should the holder of the status during the award procedure, renewal or transfer procedure provide false information, based on which the final RSERC decision was made.
2) The legal person whose qualified generator status is annulled in accordance with the paragraph (1) of this Article may not be entitled to receive a new status of qualified generator in a qualified power plant for the period of three years after the status annulment day.

Article 25
(Revoking of Status)

1) The RSERC may revoke (withdraw) the qualified generator status and/or the qualified power plant certificate.

2) The procedure for revoking the status and/or certificate may be carried out based on the RSERC initiative, status holder request or interested party request.

3) The qualified generator status and/or qualified power plant certificate may be revoked in the following instances:

a) Should the holder of the status fail to comply with the requirements based on which the status and/or certificate was issued in accordance with the law and these Rules;

b) Should the holder of the qualified generator status have its license for carrying out electricity generation activities revoked or annulled, providing that having such a license for electricity generation activities is prescribed by law;

c) Should the holder of the status fail to provide information or data as stipulated by these Rules or fail to provide information and data of significance as to the obtaining the status;

d) Should the holder of the status undergo a bankruptcy or liquidation procedure, status changes or have its concession ceased

e) Should the holder of the status fail to provide the authorized RSERC representatives with a direct access to the equipment and documents.

4) The RSERC shall inform the public and holders of qualified generator status on the status revoking procedure.

CHAPTER IV- Register/Records Keeping

Article 26

Register of Qualified Generators/Qualified Power Plant Certificates

1) The RSERC shall keep the Register of qualified generators

2) The RSERC shall keep records of all Applications for obtaining the qualified generator status submitted, accompanied by a time line assessment on decision making regarding each Application received

3) The Register file regarding each case should contain:

a) An Application for obtaining the qualified generator status with the necessary information and supporting documents;

b) The documents regarding public hearings;

c) The decision approving or rejecting the Application for obtaining the status, date of registration in the Qualified Generators Register;

d) Qualified power plant certificate and Applications for renewal of Qualified power plant certificate;

e) The decision on cancelling the procedure;

f) The decision on dismissing the Application;

g) The decision on renewal of status

h) The decision on annulment of status

i) The decision on revoking of status

j) Other documents in regard to each given procedure

4) The RSERC shall keep the overall Qualified Generators Register and Register of Issued Qualified Power Plant Certificates in the electronic format including:

a) The registration number of qualified generator/qualified power plant certificate;

b) The date of registration into the Qualified Generators Register and Register of Issued Qualified Power Plant Certificates;

c) Name, central office and address of the legal person holding the status of qualified generator;

d) Name, type and basic parameters of the qualified power plant that the qualified power plant certificate was issued for;

e) Date of acquiring the status/qualified power plant certificate;

f) Validity period of the status/qualified power plant certificate;

g) Date of decision issuance

5) Each qualified generator and qualified power plant that received the certificate issued by the RSERC shall be given a registration number in accordance with the RSERC Rules on Administrative and Archive Issues and the RSERC Decision on Reference Codes.

Article 27
(Content of Announcement for the Republic of Srpska Official Gazette)

The RSERC shall inform the public about award, renewal, transfer, annulment or revoking of the qualified generator status by publishing the relevant decision in the Republic of Srpska Official Gazette.

CHAPTER V – Monitoring

Article 28
Monitoring Conditions

1) The RSERC shall monitor the qualified electric power generator.

2) In order to enable the monitoring, the holder of the qualified generator status should submit to the RSERC all technical, financial, operational and other information and data relevant to the status.

3) The data referred to in the paragraph 2 of this Article should be submitted in the prescribed form, including the elements stipulated by the Rules on Reporting or these Rules, sent to RSERC in a written form, stamped and signed by the authorized representative and system operator representative and, should be required, sent in the electronic from.

4) The authorized RSERC officials carry out regular and emergency monitoring inspections within the qualified generator premises and have the right of access to the facilities, installations, equipment and documents in order to determine whether all the conditions are met necessary for obtaining the qualified generator status.

5) Should a third party file an appeal against the holder of the qualified generator status, the RSERC shall examine whether the appeal is legitimate and whether the holder has failed to meet the requirements for obtaining the status.

6) The qualified generator shall inform the RSERC on every single violation or failure to meet the requirements based on which the qualified generator status was awarded within 10 days as of the day the violation in question occurred.

PART III – COMBINED GENERATION OF HEAT AND ELECTRIC POWER (CO-GENERATION)

CHAPTER I - Cogeneration Installation; Requirements for Earning the Right to Support; Efficient Cogeneration Certificate and Validity Period of the Right to Support

Article 29
(Cogeneration Installation)

A cogeneration installation shall use one of the following technologies:

a) gas turbine of combined cycle with heat recuperation
b) pressure steam turbine
c) condensation steam turbine with steam reduction
d) internal broach combustion
e) micro turbine
f) Stirling engine (motor)
g) fuel cells
h) steam engine
i) organic Rankin process
j) other technologies for simultaneous and one process heat and electric power generation

Article 30
(**Requirements for Earning the Right to Support)**

Electric power generator in cogeneration installation may earn the right to avail of the support, should the following requirements be met:

a) to realize the high efficiency co-generation (useful functioning degree), or to meet the following:
1. generation made in cogeneration installation ensures primary energy saving, calculated in accordance with the Annex II of these Rules with at least 10% (PES $\geq$ 0,10);
2. generation made in micro or small cogeneration installations ensures primary energy saving (PES> 0)

b) to posses a licence for electric power generation activities for the generation facility referred to in the Application , should such a licence be required by law
c) to meet environment-related regulations in accordance with the Environment Law and other relevant by-laws and regulations
d) to posses water-related legal acts and environment licence and to comply with the relevant laws and regulations
e) to posses cogeneration installation license
f) to complete accounting and functional unbundling of cogeneration installation generation activities from the network operator that new generation facilities are connected to
g) to have the cogeneration installation with the appropriate metering devices accurately measuring energy input and output in accordance with the regulations
h) to meet all the technical and organizational requirements for efficient and safe installation functioning in accordance with the technical regulations
i) to meet any other requirement in order to achieve the aims set in these Rules

Article 31
(Efficient Cogeneration Certificate)

1) Upon receiving an Application to obtain the right to avail of the support for cogeneration, the RSERC shall issue an efficient cogeneration certificate valid till 1 March of the coming year.
2) Application for extension of efficient cogeneration certificate is submitted to the RSERC every year no later than 15 January together with the report on the cogeneration installation activities for the previous year in the format prescribed by the Rules on Reporting or these Rules.
3) Based on the Application described in the paragraph (2) of this Article, the RSERC shall issue an efficient cogeneration certificate no later than 1 March with the validity period till 1 March of the coming year.

Article 32
(Validity Period of the Right to Support)

The party that acquires the right to cogeneration support, shall have the right to avail of such support for the period of time of 10 years as of the day of acquiring such a right, provided all the requirements prescribed in the Article 30 of these Rules are met, including the possession of efficient cogeneration certificate.

CHAPTER II – Application Procedure; Decision Processing and Rendering Procedure; Extension, Transfer and Cancellation of Support

Article 33
(Application Submitting and Processing Procedure)

1) Any party or person engaged in electric power generation in cogeneration installation may apply to acquire the right to support.
2) The application procedure, the decision making process, the extension, transfer and cancelation of support procedure is the same as qualified generator procedure.

Article 34
(Application Forms and Supporting Documents)

1) The Application for acquiring the right to cogeneration support contains:

a) Properly filled in Form FO 04. 14 – Application for acquiring the right to cogeneration support (Annex 1)
b) Properly filled in Form FO 04. 13 – Statement that the data and information submitted is true and valid (Annex 1)
c) Supporting documentation proving the information given in FO 04. 11

2) The Application for extension of efficient cogeneration certificate contains:

a) Properly filled in Form FO 04. 15 – Application for extension of efficient cogeneration certificate (Annex 1)
b) Properly filled in Form FO 04. 13 – Statement that the data and information submitted is true and valid (Annex 1)
c) Supporting documentation proving the information given in FO 04. 15

CHAPTER III - Register/Archive Keeping

Article 35
(The Register of Electric Power Generators in Cogeneration Installations that Acquired the Right to Support)

The Register of Electric Power Generators in Cogeneration Installations that Acquired the Right to Support shall be kept as described in the Article 26 of these Rules.

Article 36
(Monitoring)

Monitoring of the electric power generator in the cogeneration installation that acquired the right to support shall be carried out as described in the Article 28 of these Rules.

PART IV – SUPPORT TO ELECTRIC POWER GENERATION IN QUALIFIED POWER PLANT AND EFFICIENT COGENERATION INSTALLATION

Article 37
(Support Types)

1) The electric power generators in the qualified power plant and efficient cogeneration installation may have the following support:

- incentives regarding connection
- dispatch priority
- the right to obligatory electric power purchase
- guaranteed selling price and fee

2) The right to support described in the paragraph (1) of this Article may be earned by generator that has the qualified power plant certificate and/or efficient cogeneration certificate and has met all the requirements stipulated by these Rules.

Article 38
(Connection to Distribution Network)

1) In order to obtain the connection of qualified power plant and efficient cogeneration installation with the installed power less than 10 MW, the distributor shall make the project analysis at its own cost, examining the connection possibilities, as well as changes to the existing network necessary to be done in order to meet the requirements for the power plant connection, while the investor shall cover the actual costs of non-standard connection to the distribution network all the way to the connection site and the actual costs of the changes done to the existing network.
2) Distribution System Operator shall make and publish the document describing the way, conditions and procedure for connection of power plant using renewable energy sources and/or connection of cogeneration installation with capacity of 10 MW within 6 months as of the day these Rules come into effect.

Article 39.
(Distribution Network Access)

1) The electric power generator in the qualified power plant and efficient cogeneration installation with the installed capacity of less than 10 MW has a dispatch priority in accordance with the daily schedule reported to the operator of the network to which the power plant is connected to, unless it jeopardizes the overall work of the electro- energy system.
2) The electric power generator in the qualified power plant and efficient cogeneration installation with the installed capacity of less than 250 kW has a priority of access to the network without having to report the daily schedule to the operator of the network to which the power plant is connected to.
3) The electric power generator in the qualified power plant and efficient cogeneration installation does not pay the balancing costs.

Article 40
(BRP eco groups)

1) In order to have a properly functioning system of support for electric power generation in qualified power plants and efficient cogeneration installations, the special Balance Responsible Party for electricity generated from renewable energy sources and cogeneration shall be established (hereafter: the BRP eco- groups) with the following role:
- upon a request by the generator in the qualified power plant or efficient cogeneration installation, the BRP eco- groups conclude the contract on obligatory purchase in accordance with the guaranteed purchase prices and proceed with the electric power purchase from the generator in possession of the qualified power plant certificate or efficient cogeneration certificate;
- to carry out the accounting and payment of the fee for the generators entitled to the fee or in possession of the qualified power plant certificate or efficient cogeneration certificate but without the contract on obligatory purchase;
- to determine the portion of electric power from the qualified power plants and efficient cogeneration that is to belong to each supplier based on the overall electric power generation from the qualified power plants and efficient cogeneration for which the obligatory purchase within the overall end users consumption has been concluded;
- to carry out the accounting of the planned and actual generation, invoicing and charging of the electric power from the qualified power plants and efficient cogeneration, as well as the fees for renewable energy sources from the suppliers;
- to compile and process the data on electric power from the qualified power plants and efficient cogeneration submitted by the suppliers, generators and network operators in the Republic of Srpska.

2) the BRP eco group shall keep a separate transaction account for accounting and payments of electric power from the qualified power plants and efficient cogeneration
3) the BRP eco group is responsible for contract concluding activities, accounting and payment of the fees described in the paragraph (1) of this Article towards the electric power generators in the qualified power plants and efficient cogeneration until the overall planned generation in these installations reaches the value and amount defined by the regulation determining the indicative goals of the portion of the electric power derived from renewable energy sources and efficient cogeneration within the gross electric power consumption in the Republic of Srpska.

Article 41
(Right to Obligatory Purchase)

1) The electric power generator in the qualified power plant and efficient cogeneration installation with the installed capacity of less than 10 MW has the right to conclude a contract on obligatory purchase of electric power with the BRP eco group based on the guaranteed purchase price determined by the RSERC decision in accordance with these Rules.

2) The contract shall define, among other things, the validity period for obligatory purchase and the amount of electric power subject to the obligatory purchase, taking into account the stipulations of the Article 39 and paragraph (3) of this Article.

3) The guaranteed purchase prices and fees for each type of qualified power plant and efficient cogeneration installation that were effective on the day of the beginning of the power plant work, or rather on the day of concluding the first purchase contract, may be implemented for the period of 10 years as of the first day of the power plant work upon the generator's request.

4) The day of the beginning of the power plant work shall be day when the power plant started delivering electric power to the network, without the probation period.

Article 42
(Criteria for Determining the Prices)

The RSERC shall determine the guaranteed purchase prices, as well as the implementation period, taking into account:

- the electro-energy policy goals in regard to the portion of electric power derived from renewable energy sources within the gross electric power consumption in the Republic of Srpska.;
- the assessment on the primary source availability, potential and possible annual generation;
- the needed investments, functioning and maintenance costs and fuelling costs
- the market prices that the power plant may reach in the competitive environment
- the prospects of technology developments and expected construction costs

Article 43
(Referential Price)

1) The RSERC determines the referential prices in order to:

- establish the fee amount in regard to the obligatory purchase
- establish the fee amount in regard to market sale and its own consumption needs.

2) The referential price in regard to the obligatory purchase is the trade price of electric power or retail electric power price used to determine the regulated/controlled electric power price in order to supply the end costumers.

3) During the transition period of market opening in which the electricity power generation price is fully regulated at the power plant threshold, the referential price is the price at the power plant threshold meant to supply the tariff customers and is determined in accordance with the Rules on Tariff Methodology and Tariff and Tariff Procedure.

4) The referential price for determining the fee amount in regard to market sales and its own consumption needs is the market price in the competitive market available to the electric power generators in the Republic of Srpska

Article 44.
(Guaranteed Price)

1) The guaranteed purchase price of electric power derived from renewable energy sources consists of:

- the electric power referential price for obligatory purchase of electric power from the qualified power plants,
- the fee used for covering the specific construction, functioning and maintenance costs of the installations using renewable energy sources in the qualified power plant in a cost effective manner that does not come out of the obligatory purchase referential price

2) The guaranteed purchase price of electric power from the efficient cogeneration installation is based on the avoided costs of providing the same electricity amount per obligatory purchase referential price plus the fee based on the avoided costs due to the energy and network savings.

3) The guaranteed purchase price of all types of electric power generation in the installation in possession of qualified power plant certificate or efficient cogeneration certificate is the same or higher than the obligatory purchase electric power referential price.

Article 46
(Revision of Guaranteed Purchase Price and Fee)

1) The RSERC shall examine the level of guaranteed purchase prices and fees at least once a year.

2) The RSERC shall examine the progress in technology development of electric power generation from renewable energy sources at least once every three years in order to harmonize the guaranteed purchase price with the new technology requirements, taking into account the available potentials and planned involvement portion of different renewable energy sources determined by the electro energy policy.

Article 47
(Correction of guaranteed purchasing price and fee)

1) Guaranteed purchasing price and fee, which was valid at the time of start-up of the plant or conclusion of first contract regarding the obligatory purchase and which is to be applied up to expiration of 10 year period from the start of plant's operation, in accordance to provisions of this Rule is corrected for growth index price on retail in a was to multiply guaranteed purchase price determined for the previous period with growth index price on retail following formula below:

$$GOC\ n = GOC\ n\text{-}1 \times ICM\ n\text{-}1 \qquad (1)$$

Where

(GOC) = guaranteed purchasing price

(n) = year for which guaranteed purchasing price is determined

(ICM) = Growth index price on retail for year which is previous to the year for which guaranteed purchasing price is to be determined

2) Guaranteed purchasing prices are corrected once a year for growth index price for retail and these prices are applied up to expiration of the month in which the RS Institute for Statistics announces achieved growth index price for retail in the previous year.

3) Correction of the fee for electric power sold on the market and for own consumption is calculated under following formula:

$$P(i)\,n = P(i)\,n\text{-}1 \times ICM\,n\text{-}1 \qquad (2)$$

Where
(Pi) amount of fee for given technology and purpose (i),
(i) type of renewable source, used technology and purpose (obligatory purchase, own consumption, sale on the market).

Article 48
(Net metering)

1) End user of connected capacity of 42 kW, which electric power for own needs secures by its own generation of electric power from renewable sources, may conduct off take and supply of electric power from / into distribution grid based on “net metering” principle, in accordance with Distribution Grid Code, with an obligation to register generation activity and obtaining license for generation of electric power.
2) Distribution System Operator is responsible to secure necessary technical conditions and connect facilities of the end user from paragraph 1 of this Article to the grid, in accordance with General Conditions and Distribution Grid Code, in order to provide for full functioning of “net metering” principle.

Article 49
(Tariffs of net metering)
1) End user’s supplier from Article 48. paragraph (1) is responsible, based on the request, to conclude contract on purchase of electric power delivered into the grid and measured by net metering.
2) Price based on which taken electric power from the end user in the system “net metering” is calculated is equal to tariff rate for active electric power of the tariff group to which end user belongs to in accordance with valid tariff rates for tariff users, or contract on supply of qualified consumers.
3) Net condition of two-rout meters of active electric power is base for development of invoice between contracted parties

Article 50
(Fees for own consumption and sale on the market)

1) Fees for electric power consumed in own facilities of the generator of electric power in qualified power plant or in efficient co-generation facility, are determined with special decision by RSERC on the basis of referential price from Article 43. paragraph (4) and fee for obligatory purchase.
2) If generator of electric power in qualified power plant or efficient co-generation facility, sales all or part of generated electric power on competitive market, by non using the right to obligatory purchase, RSERC with special Decision determines amount of fee for this energy on the basis of referential price from Article 43 of the Rule and fees for obligatory purchase.

Article 51
(Valorization of state assistance)

1) Qualified generator and generator of electric power in efficient co-generation facility who received state assistance in the form of privilege during investment have a right to decrease guaranteed purchase price
2) Under state assistance every direct and indirect assistance is considered in the form of direct donations in money, material and equipment, subsidy and tax exemption
3) Percentage decrease of guaranteed purchasing price from paragraph (1) amounts 50% of percentage participation of prepared assistance in total investment sum.

4) During resolution of request for gaining status of amount of directly or indirectly received state assistance is determined as well as percentage decreased of total investment achieved on the basis of these advantage.

Article 52
(Power Plants in Exploitation)

1) Right to guaranteed purchasing price in accordance with provisions of this regulation have generators of electric power in qualified power plant or co-generation facility constructed and put into operation no more than 10 years prior to proclamation of this Rule, or those facilities which are not older than June 30th 1998.
2) Generator of electric energy in qualified power plant or effective co-generation facility of installed power lower than 10 MW which is constructed before June 30th 1998 has a right to select all electric power generated in that facility to supply based on referential price for obligatory purchase or to sell all electric power on the market.

Article 53.
(Decrease for old facilities)

1) Generators from Article 52 of paragraph (1) have the right to guaranteed purchasing price and/or fee under the condition that they have installed new equipment and facilities for generation of electric power.
2) In case that procured equipment or part of the equipment and generator's facility from paragraph (1) of this Article was used previously, guaranteed purchasing price is decreased percentage vise for 50 % of the percentage participation of accumulated depreciation of used equipment, determined on the basis of procurement value of equipment and passed life of the equipment in the value of new power plant.
3) Total and percentage amount of decrease from paragraph (2) of this Article determines SERC during proclamation of act on obtaining the status of qualified generator and generator in efficient cogeneration facility.

Article 54.
(Investment in reconstruction of facility)

Generator of electric power from Article 52. paragraph (2) of this Rule who completes investment in generating facility in the amount higher than 50% of procurement value or fair vale of new generating facility of the same capacity has a right to guaranteed purchasing price or fee under same conditions as new facility.

Article 55.
(Planning)

1) Generator of electric energy who achieves a right to incentive delivers to BRP of eco-group generation plan for following year developed on monthly level up to October 31 of current year.
2) On the basis of plan from paragraph (1) of this Article BRP of eco-group determines percentage participation of electric power form obligatory purchase in total planned consumption of end users in RS up to November 30th of current year for the following year.

Article 56.
(Delivery of data for calculation)

1) System operator each month completes calculation of total taken electric power from generators which have a certificate on qualification and/or efficient cogeneration and delivers the report to BRP of eco-group by the 15th in the month for the previous month.

2) Suppliers of end users in RS deliver a report to BRP of eco-group on total sold electric power to end users and total calculated amount of fee composed in issued invoices for consumed electric power by the 15th in the month from the month before.

Article 57.
(Calculation and Invoicing)

1) On the basis of the report from System Operator, generators of electric power which secured certificates on qualification of power plant in efficient cogeneration deliver an invoice to BRP of eco-group with data on:

a) amount of electric power given to the grin in calculating period

b) amount of electric power which is subject to obligatory procurement, guaranteed purchasing price per unit and total value , as well as fee per unit and total amount of fee for calculating period

c) amount of electric power which is not subject of obligatory procurement, fee per unit and total amount of fee.

d) Amount of electric power which is not the subject of obligatory procurement, fee per unit and total amount of fee

e) Amount of electric energy consumed for own needs for which right on fee is achieved for calculating period.

2) BRP of eco-group delivers to each supplier of end user in RS calculation and invoice with the amount of debt on the basis of taken electric power from qualified power plants and efficient cogeneration facilities proportional to participation of their sale to end users in total consumption of electric power of end users in RS, on referential price for obligatory purchasing, as well as calculated fee for renewable sources.

3) On the basis of calculation from paragraph (2) of this Article, suppliers of end users make payments for obligations for belonging part of the electric power from renewable sources of energy and efficient cogeneration as well as for calculated fee for RES to the special transaction account which BRP of eco-group has. Obligations toward generators determined in accordance with paragraph 1 of this Article are being paid from this transaction account.

4) BRP of eco group delivers to RSERC monthly report on the amount of calculated fee of each supplier and calculated fee for each generator and cumulative report from the start of calendar year.

5) Payments from paragraph 3. of this Article are done no later than 25th in the month on the basis of calculation for previous month.

Article 58.
(Loss of right to incentive)

1) If qualified generator, prior to expiration of deadline from Article 41. of this Rule losses status of qualified generator or does not obtain certificate from RSERC on qualification of power plant for current year, will lose a right to incentive from Article 37 of this Rule from the day reason from losing of status occurs or the day when duration of certificate expires.

2) In case generator of electric power in cogeneration facility does not obtain certificate on efficient cogeneration, it losses a right to incentive from Article 37 of this rule on the day duration of certificate expires

3) In case the generator of electric power in cogeneration facility in calculation period does not achieve efficiency in cogeneration in the amount of referential value determined in Attachment II of the Rule, it does not have a right to fee for the previous period and losses a right to incentives in the following period in accordance with provisions of this Rule.

4) On the basis of RSERC's announcement, BRP of eco group tasks the generator from paragraph (1) and (3) for return of overpaid fee.

Article 59.
(Explanation)

1) Level of guaranteed purchasing price and fee, expressed in KM/kWh is published on the official web-site of RSERC
2) Each operator of distribution system and supplier of end users as well as BRP of eco group is responsible to publish RSERC's Decision in which it determines guaranteed purchasing prices and fees on its web-page and announcement board.

PART 5- FEE FOR RENEWABLE SOURCES

Article 60.
(Fee System for Renewable Sources)

1) Incentives for generation of electric energy from renewable sources and cogeneration facilities represent additional cost for end users of electric power in RS.
2) From the fee for renewable sources assets are secured for:

- total amount of calculated fees for electric power generated in qualified plants and efficient co-generating facilities.
- Cost coverage for settlement of non intentional deviances of qualified power plants and efficient co-generation facilities from planed amounts
- Financing of BRP eco-group

3) RSERC approves operation costs of BRP of the eco group in the process of determining necessary amount of fee for renewable sources.
4) RSERC determines single price of fee expressed in KM / kWh which is applied to taken active electric energy, which is calculated to each end user in RS on behalf of incentive foe generation of electric power from renewable sources and efficient co-generation.
5) Amount of fee for renewable sources is demonstrated as separate item on the bill
6) Fee for renewable sources calculates and collects supplier of end users and keeps it on the separate account
7) Calculated and collected fee for renewable sources in not considered as revenue of supplier for conducting the supply activity.

Article 61.
(Necessary amount of fee)

1) On the basis of determined guaranteed purchasing prices and fees, planned generation from renewable sources and co-generation facilities, referential whole-sale prices, achieved difference between total calculated fees and paid premiums in previous year, RSERC determines necessary amount of fee for renewable sources.
2) RSERC determines necessary amount of fee by December 15th of current year for the following year.

Article 62.
(Periodical corrections of fees and premiums)

1) In case calculated amount of fee in total calculated value of used electric power of end users in RS higher than the amount of calculated premium of generator, BRP of eco-group delivers announcement to RSERC on the amount of available premium, for the purpose of adjustment of fee amount in the next period.
2) In case calculated amount of fee in total calculated value of consumed electric power of end users in RS is lower than the amount of calculated premium of generator, BRP of eco-group delivers announcement to RSERC on each generator regarding level of missing amount nominal and in percentage, and pays available amount to each generator who has a

right to premium, in the amount determined based on the liability toward each generator decreased for the percentage of missing portion.

3) Difference between the amount of total calculated fee to end users and the amount of premium for electric power generated in qualified power plants and efficient co-generation in RS per each calculation during the year is being transferred for settlement in the following calculation for each generator.

4) Difference from paragraph (3) of this article on the end of fiscal year is transferred to the following year and enters into calculation of total needed fee for following year.

PART VI – INTERIM AND FINAL PROVISIONS

Article 63
(Cooperation with Other Regulatory Commissions)

The RSERC shall cooperate with other Regulatory Commissions in the energy sector in Bosnia and Herzegovina enabling a swift information flow regarding submitted Applications for obtaining qualified generator status and Applications for acquiring the right to cogeneration support; incentives and support made, monitoring issues and the relevant decisions.

Article 64
(Annexes)

The integral part of these Rules are:

a) Annex 1- Application and Statement Forms as follows:
1) Form FO 04. 11- Application for obtaining the qualified generator status
2) Form FO 04. 12- Application for renewal of qualified power plant certificate
3) Form FO 04. 13 – Statement that the data and information submitted is true and valid
4) Form FO 04. 14 – Application for acquiring the right to cogeneration support
5) Form FO 04. 15 – Application for extension of efficient cogeneration certificate

b) Annex II - Estimates/Budget on primary energy saving of cogeneration installation

Article 65
(Legal Protection)

1) The RSERC decision on obtaining the qualified generator status and acquiring the right to cogeneration support is final
2) The party that is not satisfied with the decision may initiate the legal procedure before the relevant court.

Article 66.
(Rules Interpretation)

1) The RSERC shall give final interpretation of these rules.
2) Amendments and changes to these Rules shall be done in the same manner as the Rules adoption procedure.

Article 67
(Termination)

On the day these Rules become effective, the Decision on Methodology Determining Purchase Prices for Electric Power Derived from Renewable Energy Sources with installed power of 5 MW, made by the Republic of Srpska Government on 29 July, 2004 (Republic of Srpska Official Gazette # 71/04) shall cease to be effective.

Article 68
(Date of Effectiveness)

These Rules shall come into effect eight days after they are published in the Republic of Srpska Official Gazette.

President

Milenko Cokorilo

Re Number:

_____, 2008

Trebinje

ANNEX III

Decision on fee amounts and guaranteed electricity purchase prices generated in qualified power plants and efficient cogeneration installations

Pursuant to the Article 36, (paragraph 2) of the Law on Electricity – the revised text ((RS Official Gazette # 8/8); Article 11, paragraph 12 of the Republic of Srpska Regulatory Commission for Energy Statute (RS Official Gazette # 41/04 and 67/07); Article 37, paragraph 1, item 3 of the Rules of Procedure of the Regulatory Commission for Energy of Republic of Srpska (RS Official Gazette #96/04); Article 45 of the Rules on Qualified Generator and Support of Electric Power Generation from Renewable Energy Sources and Combined Generation of Heat and Electric Power, the Regulatory Commission for Energy of Republic of Srpska at its 25th regular session held on 18 April, 2008, issued the following

DRAFT

DECISION ON FEE AMOUNTS AND GUARANTEED ELECTRICITY PURCHASE PRICES GENERATED IN QUALIFIED POWER PLANTS AND EFFICIENT COGENERATION INSTALLATIONS

I

This Decision determines the incentive prices for electric power generated in power plants using renewable energy sources and cogeneration installations, in accordance with the Rules on Qualified Generator and Support of Electric Power Generation from Renewable Energy Sources and Combined Generation of Heat and Electric Power

II

Terms and phrases used in this Decision have the meaning of the terms given in the Law on Electricity, Rules on Qualified Generator and Support of Electric Power Generation from Renewable Energy Sources and Combined Generation of Heat and Electric Power and Rules on Tariff Methodology and Tariff Procedure.

III

The guaranteed purchase prices and the fees (premium) included for the electric power generated in the qualified power plant, depending on the energy source used, while the contract on obligatory purchase is in effect, including the cogeneration installation that acquired the right to support and incentives, are as follows:

Power Plant Type According to Energy Source Used	Guaranteed Purchase Price	Fees (Premium) Included in Purchase Price
Wind Energy		
Up to and including 1 MW	0,1128	0,0610
Over 1 MW	0,0968	0,0450
Sun Energy – Thermo	0,3913	0,3395

Generators		
Sun Energy – Photovoltaic Generators		
Up to and including 42 kW	0,9496	0,8978
Over 42 kW	0,8677	0,8159
Water Flow Energy – Hydroelectric Power Plant		
Up to and including 1 MW	0,1069	0,0551
Over 1 MW to 10 MW	0,0879	0,0361
Biomass Energy		
- agricultural and industrial residue		
Up to and including 1 MW	0,1289	0,0771
Over 1 MW to and including 10 MW	0,1107	0,0589
- municipal waste	0,2085	0,1567
Biogas Energy		
- landfill gas		
Up to and including 1 MW	0,0803	0,0285
Over 1 MW to and including 10 MW	0,0652	0,0134
- gas derived from facilities for treatment of waste water	0,1088	0,0570
- agricultural biogas	0,1318	0,0800
Geo –thermal Energy	0, 1406	0,0888
Energy Generated from Renewable Energy Sources and Cogeneration Installations		
- biogas		
Up to and including 50 kW	0,0668	0,0150
Over 50 kW and up to and including 1 MW	0,0591	0,0073
- geo-thermal energy	0,0604	0,0150
- biomass		
Up to and including 50 kW	0,1294	0,0776
Over 50 kW and up to including 1 MW	0,1294	0,0776
Over 1 MW and up to and including 10 MW	0,0806	0,0288
Conventional Energy Sources in Efficient Cogeneration Installation	0,0650	0,0132

The prices and fees described above do not include the VAT.

IV

The guaranteed purchase prices established by this Decision shall be implemented when calculating obligatory purchase of energy from the generator that acquired the right to incentives.

V

The electric power generator in the qualified power plant or efficient cogeneration installation generating electric power for its own consumption shall be entitled to a premium of 20 % of the premium determined by this Decision on obligatory purchase for electricity consumed in its own installations.

VI

Should the electric power generator in the qualified power plant or efficient cogeneration installation sell all or part of the generated electric power on the competitive market, without exercising its right to obligatory purchase, it is entitled to a premium of 10% of the premium determined by this Decision on obligatory purchase.

VII

The right to the guaranteed purchase price, or premium, is given to the electric power generator after the issuance of the qualified power plant certificate or efficient cogeneration certificate for the current year.

VIII

The guaranteed purchase prices and premium described in item III of this Decision are reviewed and harmonized within the time-lines given in the Articles 46 and 47 of the Rules on Qualified Generator and Support of Electric Power Generation from Renewable Energy Sources and Combined Generation of Heat and Electric Power.

IX

This Decision shall be effective after eight days of its publishing in the Republic of Srpska Official Gazette.

Re Number:

Date: President

Milenko Cokorilo

Rationale

The RSERC issued the Decision on Fee Amounts and Guaranteed Electricity Purchase Prices Generated in Qualified Power Plants and Efficient Cogeneration Installations based on its mandate as described in the Article 36 of the Law on Electricity, stipulating that the RSERC shall prescribe the incentives for electric power derived from renewable sources of energy, including waste, as well as the combined generation of heat and electric power.

The same stipulation prescribes that these incentives are determined in order to meet the goals on electric power generation from renewable energy sources and energy efficiency defined by the electro energy policy in the Article 5 of the Law on Electricity.

The Article 5 of the said Law stipulates that the electro energy policy is led by the Republic of Srpska Government, while the policy, among other things, is to ensure different possibilities for using various primary energy sources, renewable energy sources with efficient and cost-effective energy consumption.

By ratifying the Contract on the SEE Energy Community, BiH and the Republic of Srpska have committed to harmonizing their respective legislations with the EU acquis in the electric power field, while at the same time the RS and BiH regulations should be fully harmonized with the stipulations of the Directive 2003/54 on Internal Energy Market and the Directive 2001/77 on Promoting Electric Power Generated from Renewable Energy Sources in Internal Market and in accordance with the time-lines given in the Annex attached to the Contract. These stipulations became effective on 1 July, 2007.

Given these stipulations, the relevant BiH authorise are bound to establish the indicative goals of the portion of electric power derived from renewable energy sources within the overall consumption for the period of 10 years; the measures to be taken in order to meat the mentioned goals. The relevant BiH authorities should also sent reports on the fulfilment of the goals set.

Taking into account the Article 36 of the Law on Electricity and RSERC duty to prescribe the incentives for electric power generation from renewable energy sources and cogeneration but also having in mind the fact that the target amounts of renewable energy sources and cogeneration portion within the overall consumption have not been determined and the fact that the actual portion of the electric power generation from renewable energy sources in the overall consumption in the Republic of Srpska is more than 80%, the RSERC estimated that the level of support and incentives is a basic mechanism for fulfilling the Article 36 of the Law on Electricity stipulating that a qualified generator may be a company that generates electric power in a cost effective manner. By determining the amounts of obligatory purchase prices and premium, the RSERC shall ensure that investments are made into the most cost-effective installations or the installations that use the most efficient technology available at the most-effective sites in order to have the overall costs as low as possible. Such an approach is possible due to the fact that currently the renewable energy sources are not being fully availed of, with an exception of water, which is being only partially used. [2]

The guaranteed purchase prices established by this Decision were determined based on the data on the potential and costs of renewable energy in the European Union [3] and investment costs of generation facilities for each renewable energy source, technology available and

[2] Source: Final Report on Study on Electro-Energy Sector in BiH, Hrvoje Pozar Institute

[3] Source: Deriving Optimal Promotion Strategies for Increases the Share of RES-E in a Dynamic European Electricity Market – Green X Project

cogeneration type per installed capacity unit, operational and maintenance costs per installed capacity unit annually and fuel costs per generation unit and taking into account the available data on the potentials currently used regarding different types of energy and technology in the Republic of Srpska. The overall costs per generation unit are determined based on the estimated optimal hours of full utilization for each technology, in accordance with the methodology implemented and described in the Green X Project documents.

The RSERC methodology was based on the following assumptions:

1. pay off period for investments – 15 years
2. average capital value 6,5 %
3. hours of full utilization, pending different energy sources and technologies, from 2000 to 7000 hours, as follows:

- wind energy 2400 hours
- sun energy – thermo generators 3000 hours
- sun energy photovoltaic generators 1200 hours
- water energy – hydroelectric power plants 4500 hours
- biomass energy 6460 hours
- biogas energy – agricultural gas 5300 hours
- biogas energy – landfill energy 6000 hours
- gas energy derived from facilities for treatment of waste water 5750 hours
- geo-thermal energy 7000 hours
- energy derived from renewable energy sources and cogeneration installations depending on various energy sources and technologies from 4000 to 6000 hours

4. revenue from heat energy and cogeneration is based on 25 EUR/MWhth;
5. correction of investment costs completed based on the increased scope and experience in utilization ("learning rate) [4] depending on the energy type and technology as follows:

- wind energy LR=9%
- sun energy – thermo generators LR=15%
- sun energy – photovoltaic generators LR=15%
- biomass energy LR=5%
- biogas energy LR=5%
- geothermal energy LR=5%

Given the fact that the RSERC used the assumptions recommended by the European Union, the Table bellow shows the prices determined by the Decision and the prices based on the long term costs of energy generation from renewable energy sources and cogeneration in the European Union countries [5] given in the Green X project documents.

Source Type	Price	€/kWh (RS)	€/kWh5 (EU-15)	Country
Wind Energy	Lowest Price ---------- Highest Price	0,0495 0,0577	0,0560 0,1119	Ireland ---------- Italy

[4] Source: Final Report Green X, 6.2.5. Future Cost Projection- Technological Learning, page 108
[5] Source: Deriving Optimal Promotion Strategies for Increases the Share of RES-E in a Dynamic European Electricity Market – Green X Project

	Average price		0,0560	EU-15
Sun Energy – Thermo Generators	Lowest Price ---------- Highest Price Average price	0,2001 0,2001	0,1052 0,2834 0,1983	Italy, Spain Italy, Spain EU-15
Sun Energy – Photovoltaic Generators	Lowest Price ---------- Highest Price Average price	0,4437 0,4855	0,4630 1,7392 0,9255	Portugal Sweden EU-15
Water Energy – Hydroelectric Power Plants	Lowest Price ---------- Highest Price Average price	0,0449 0,0547	0,0410 1,2115 0,0825	France Holland EU-15
Biomass Energy – Agricultural and Forestry Products and Residue	Lowest Price Highest Price Average price	0,0566 0,0659	0,0548 0,1733 0,1220	France Holland EU-15
Biomass Energy - Residue	Lowest Price ---------- Highest Price Average price	0,1066 0,1066	0,0592 0,1072 0,0839	All Countries All Countries
Biogas Energy – Agricultural Gas	Lowest Price ---------- Highest Price Average price	0,0674 0,0674	0,0566 0,1991 0,1023	All Countries All Countries EU-15
Biogas Energy – Landfill Energy	Lowest Price ---------- Highest Price Average price	0,0333 0,0411	0,0261 0,0494 0,0385	All Countries All Countries EU-15
Gas Energy Derived from Facilities for Treatment of Waste Water	Lowest Price ---------- Highest Price Average price	0,0556 0,0556	0,0545 0,1043 0,0816	All Countries All Countries EU-15
Geothermal Energy	Lowest Price ----------	0,0719	0,0459	Italy

	Highest Price Average price	0,0719	0,1123 0,0769	All Countries EU-15
Energy Derived from Renewable Energy Sources in Cogeneration Installations- **Biogas**	Lowest Price ---------- Highest Price Average price	0, 0342 0,0345	0,0436 0,1816 0,0886	All Countries All Countries EU-15
Energy Derived from Renewable Energy Sources in Cogeneration Installations- Geothermal Energy	Lowest Price ---------- Highest Price Average price	0,0309 0,0309	0, 0,0768 0,0507	All Countries All Countries EU-15
Energy Derived from Renewable Energy Sources in Cogeneration Installations- **Biomass**	Lowest Price ---------- Highest Price Average price	0,0412 0,0662	0,0520 0,1838 0,1451	France All Countries EU-15

Incentives for electric power generators in efficient cogeneration installations are determined in accordance with the Article 45, paragraph (2) of the Rules on Qualified Generator and Support of Electric Power Generation from Renewable Energy Sources and Combined Generation of Heat and Electric Power, with an aim to support and encourage more efficient energy sources utilization.

Given that the electric power generation is encouraged without the increase of primary energy source utilization regarding the basic process consumption, the guaranteed purchase price or fee for the efficient cogeneration installation should provide for the additional cost coverage due to the parallel operations within the cogeneration. Given that different installations and technologies may be described as different efficient cogeneration installations, the level of support and incentives is determined for the cogeneration installations that generate electric power in a cost-effective manner, as prescribed by the Article 36, paragraph (1) of the Law on Electricity.

The level of support corresponding to the cost effectiveness level is determined upon the calculation of unit price for the installation using natural gas of the installed capacity of 5 MW, with 2880 hours of work with the full cogeneration capacity utilization and the 15- year investment pay off period with the average capital value of 6,5%.

Given the above rationale, the Decision was issued as described.

ANNEX IV

Press releases regarding AER peer review in Republika Srpska