

## THE DEVELOPMENT OF THE ENERGY MARKET IN THE WESTERN BALKANS

*(the case of Macedonia and Croatia)*

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World fuel crisis, rising prices, global warming and climate changes are influencing all of the world economies. Small countries like in the Western Balkans that have open economies are also feeling the impacts of these events. "...Increase of energy consumption at the world level is even accelerated in comparison with the previous period...and a real increase of RES participation is minimal..."<sup>1</sup> Bigger energy consumption leads to bigger prices, bigger prices lead to bigger costs for the producers, the industry and the whole economy, which at the end of the day negatively influences the economic development of the countries. Having in mind that the WB countries' economic progress is quite fragile just adds up to the pressure: how to sustain market growth when all of the economies especially the biggest American economy are going into a crisis?

In the first part of the chapter the current position of the WB and the regional cooperation in this field will be discussed. In the second part of the chapter, the recommendations for the development of this sector will be elaborated with a special notion to the renewable energy sources and their better usage in the region.

### 1. REGIONAL COOPERATION AND UP TO DATE PROGRESS

In the past most of WB countries were relying on their high reserves of coal and in some part to the water and nuclear energy for their energy production. However with the global environmental issues and the high dependence of these countries from oil and gas can cause a major restriction of the development of their private sector. Each country cannot exclusively rely just on its own energy production. First, they do not have the capacity to achieve that, second only with enhanced regional cooperation will the energy supply be constant and according to the standards and third, with increasing the competition in this sector and investing in renewable energy sources they will not only improve the service but also the prices will go down. All of this will of course have an impact to the development of the entire economy and in the attracting of new investments.

The countries in the region however, have a good cooperation in this field with a highly good perspective of it being further developed. The most important step was the creation i.e. signing of the Energy Community Treaty in 2005 between the SEE countries with a purpose of integrating the whole region into the European Union's Internal Energy Market by 2015 through implementing completely the *acquis* on this subject and through regional cooperation. This Treaty is based on the Thessaloniki Agreement and the Athens Memorandum of Understanding. This memorandum was signed in 2002 and was based on "the principles, which are set out in the Stabilisation and Associa-

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<sup>1</sup> MANAGE, Energy Efficient Economy and Improved Environment Quality, Collection of Conference papers, Cosmo Energy Efficiency Conference 2008, Skopje, May 2008, page 5.

tion process, of cooperation between the European Union and the countries of the region, and of the necessity for co-operation between countries of the region”<sup>2</sup>. With it was set the creation of the national energy authority body, national independent regulatory body, transmission system operators and distribution system operators in each country signatory of the Memorandum. All with one purpose, creating an integrated regional energy market in which there will be fair competition and fair prices for the customers. The countries that signed this Memorandum also signed the ECSEE:

- EU Member States: Austria, Greece, Hungary, Italy, Slovenia;
- Regional members: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Romania, Serbia and Montenegro, Turkey, Kosovo;
- Observers: Moldova.<sup>3</sup> (before the creating of ECSEE, observers were also Austria, Hungary, Slovenia and Italy which later, when the Energy Community was created, joined the other regional members. Now only Moldova left as an observer country-author’s remark)

As it was mentioned, the purpose is creating a regional integrated market for electricity and gas, which will gradually integrate with the EU Single Market for Electricity. For that reason all the countries signatories have “...to unbundle generation, transmission, and distribution, while establishing independent sector regulators and transmission system operators (TSO’s)”<sup>4</sup> which was supposed to be finished by 2005. How this process will be developing, will be supervised by the organs created and those are:

1. Ministerial Council (all the Energy Ministers of the above mentioned countries). The Council meets “...once a year to decide the next stages of the process, in each case so far consisting of a political agreement amongst the members (the two MoUs).”<sup>5</sup>

2. Permanent High Level Group (which consists of senior ministry officials). These officials meet 3-4 a year to “...prepare the Ministerial Council and to ensure the follow – up of its decisions. The meeting will be co-chaired by the Commission and the Presidency in Office.”<sup>6</sup>

3. “A regulatory forum of PHLG members, Regulators and TSOs meets twice a year to develop the practical implementation of the MoUs.”<sup>7</sup>

There are lot of benefits that can come out of this project, such as: “...increased reliability in electricity supply; lower operating costs; reduced needs for additional capacity investments, especially in generation; improved opportunities for intra- and interregional trade, including peak load by hy-

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<sup>2</sup> Memorandum of Understanding on the Regional Electricity Market in South East Europe and its Integration into the European Union Internal Electricity Market (“The Athens Memorandum - 2002”), page 2.

<sup>3</sup> BRIEFING NOTES, Energy Community of South Eastern Europe, page 1.

<sup>4</sup> Kathuria Sanjay, Western Balkan Integration and the EU, an Agenda for Trade and Growth, The World Bank, page 101.

<sup>5</sup> BRIEFING NOTES, Energy Community of South Eastern Europe, page 1.

<sup>6</sup> The Athens Memorandum - 2002, page 10.

<sup>7</sup> BRIEFING NOTES, page 1.

dro producers in the region; and lower prices for the end-customers.”<sup>8</sup> However still a lot of work needs to be done; firstly in adjusting the laws in this sector between all the involved countries, secondly in strengthening the independent regulatory bodies, thirdly in enchaining the competition by introducing new types of business concepts and practices, etc.

## **2. STRATEGIES FOR DEVELOPMENT OF THE ENERGY MARKET AND STRATEGIES FOR BETTER USAGE OF RES IN CROATIA AND MACEDONIA**

The reason why all the Balkan countries should engage and deepen the cooperation into the energy sector is simple. For small countries “...the benefits of regional integration stem from cross-border competition, the ability to reduce expensive reserve capacity, and the ability to trade electricity with neighbours that have different energy endowments.”<sup>9</sup> The progress up until now has been good. The market is slowly opening with the support of the EU, the governments are realizing the need for investing into RES, the big energy companies are privatized, slowly competition is creating in this market, etc. However, a lot remains to be done in order the regional energy market to be completely functional and fully integrated into the EU Single Market.

### **2.1. Strategies for development of the energy market**

Very important notion is that this entire sector used to be held by the public monopolies. The prices were made by state regulators and the companies were not usually managed according to the markets demands, the capacities were not fully used, the revenues not fully collected. As this situation demanded a change, the WB countries started to privatize these companies. “Some of the arguments for private ownership of utility services—for example, the need to access capital to meet growing demand and improve quality of service—are even stronger for South Eastern Europe (SEE) than for other regions. And the discipline provided by private ownership is even more needed. The scale of losses and non-collection in some of the utility sectors...is very high. Moreover, losses and non-collection are simply inconsistent with good management and protection of customers and would not be tolerated under private ownership.”<sup>10</sup> Private firms care about the profit and will not tolerate losses, since unlike the state firms they have no one to cover their expenses. Because of that they will not leave poor management in the companies. Furthermore foreign owners will bring know-how, new technologies and invest further in the country’s infrastructure and network. Especially with the ECSEE, were the countries’ markets are united, companies for more profit will compete among each other for the non-domestic consumers. They will invest more, the supply will improve and the prices will be affordable. And this of course means increased GDP for the country were the

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<sup>8</sup> Harry G. Broadman, James Anderson, Constantijn A. Claessens, Randi Ryterman, Stefka Slavova, Maria Vagliasindi, and Gallina A Vincelette, *Building Market Institutions in South Eastern Europe, Comparative Prospects for Investment and Private Sector Development*, The International Bank for Reconstruction and Development/the World Bank, page 210.

<sup>9</sup> Kathuria Sanjay, 2008, pages 101 and 102.

<sup>10</sup> *Building Market Institutions in South Eastern Europe*, 2004, page 182 and 183.

company is located. By now in almost all of the region the energy companies have been privatized (mostly sold to foreign investors) but for more investments to come still a lot needs to be done.

For instance, a highly independent regulation is needed. This is especially important in the service sector (telecommunications, energy, aviation, etc.), where in order the markets to run as they should, regulatory bodies are needed to look over the competition, to control the prices, which in case of one supplier who exercises market domination can be distorted, and to basically deal with all the market distortions. In the past these bodies were naturally part of the government i.e. national, since all of these services were provided by the government. However times and things have changed. The WB countries in their path to the EU have vowed to open their economies especially this market sector to the free market forces and competition. Its opening comprehends that someone independent from the state's influences will look after the competition and with a good solid governing, new investments will be attracted. "Independent and strong regulators are the key to successful and sustained private interest in the power sector, as well as to protect consumers from the possibility of misuse of market power. To the extent that SEE regional cooperation allows form multiple sources of supply of power, the consumer as well as the business sector would benefit. Apart from capacity building, regulators would also benefit from regional cooperation in regulation."<sup>11</sup>

In table 4.1 the time when independent regulators have been established is presented. As it can be seen Macedonia, if we exclude Bosnia, was the last to introduce independent regulatory body.

Table 4.1 Independent Regulators in the SEE<sup>12</sup>

Country	Electricity	Telecommunication
Albania	1996	1998
Bosnia and Herzegovina	Planned	Planned
Bulgaria	1999	2002
Croatia	1997	2000
Macedonia	2003	2000
Moldova	1997	2000
Romania	1998	2002

Source: EBRD (2003).

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<sup>11</sup> Kathuria Sanjay, 2008, page 104.

<sup>12</sup> *Building Market Institutions in South Eastern Europe*, 2004, page 189.

The point is not only to establish these institutions but also to equip them with qualified personnel and to provide the necessary working environment away from the state's influences. Without proper functioning of the regulating bodies, investors will deter from this market. "Network industries are typically capital intensive, and the needed investment is sector specific; that is, it cannot be easily reallocated and can be viewed as "sunk." Consequently, a fair return on capital is guaranteed only if the private investment plan for the utility is successfully carried out over a sufficiently long time horizon that permits the private owner to recoup the sunk investment."<sup>13</sup> Weak regulatory bodies show that the investment made maybe will not be returned as planned, since they may not be able to correct the market distortions.

Not only that but also in a situation where the regulatory body is influenced by the state or where corruption is present, the companies which hold big market share of the energy sector will most likely behave in the same way. "...the entrepreneur...is acting rationally by definition, which means less as possible costs and the strain for realizing the set goals, above all the profit. In that case, if the macroeconomic model and politics of the state create the ruling economic model and policies with certain parameters and frames....most of the entrepreneurs will act rationally and search for the best solution in those frames. If the state...is corrupted, it is hard to believe that each entrepreneur will resist the urge to corrupt that bureaucracy for the realization of his goals."<sup>14</sup> Good, independent regulation means trust in the system. In case of uncertainty, those present on the market will behave as the situation imposes, those which want to invest will avoid that market, knowing that some of the money will have to go into bribing the administration, in order for them to function on that market.

Nevertheless, the countries can learn a lot from the EU in this field. What has been proven as exceptionally successful are the regional regulatory bodies. Since all of these countries are small, and they need regulatory bodies as a substantial part of the functioning market institutions, but because the corruption and inefficient administration are still a problem, with the creation of independent body on a regional level these problems could be solved. They already are in a process of creating integrated energy market and with the establishment and strengthening of the regulation, the integration will not only be deeper but also investments will be attracted. Important regulations are needed to ensure the emergence of effective competition because even if the cross-border trade is open and customers can buy services from other suppliers, if the tariffs are not levelled or the inter-connection is not made possible, the competition will not advance.

This leads us to the creation of a competitive environment. The current condition on these markets is: even though most of the service providers have been privatized, those are still big companies with almost no competition that can oppose them. Which means that small enterprises can face difficulties in establishing their business on the market since these companies can cause them difficulties. That is the reason why strong regulation is needed, to "...ensure the emergence of effective competition by providing access to the incumbent's network. Those operators with the ability to abuse their market power should be subject to special rules (ex ante regulation) to ensure that they do not abuse their dominance. These rules should include a requirement for the operator to meet all

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<sup>13</sup> Ibid. page 188.

<sup>14</sup> The European Perspective of Democratic Croatia, gathering of publications from a conference, Zagreb, 6<sup>th</sup> of June 2001, page 64.

reasonable demands for interconnection services from other network operators (for example, transparent and cost-based interconnection, unbundling of interconnection charges, non-discrimination, and publication of interconnection offers, including terms and conditions of contracts and prices).”<sup>15</sup>

Also, a possible solution can be the creation of private-public partnerships between the state and the private sector. Since this is a high risk capital intensive market, reallocation of the investment is had to achieve and profit comes in the long run. One of the possible solutions for each government is to offer some risk-sharing in the investment process, so especially smaller companies to be able to enter the market. “...international practice and experience demonstrate that the combined capital and intellectual resources of the public and private sector can result in better, more efficient services...”<sup>16</sup> Since foreign investors do not know much about this particular market and the possibilities it offers, it is up to the governments in the region to promote it. Also, having in mind that the corruption and the weak administrative and judicial systems are still a huge obstacle for attracting FDIs in this region, by offering to share the risk with their own investments in “...local capabilities...upgrading local skills, technological capabilities and infrastructure,”<sup>17</sup> they will appear as serious business partners. Governments in today’s imperfect markets are the leading players with a possibility and means to create an environment for investments and incentives to thrive.

## **2.2. Strategies for better usage of renewable energy sources in Macedonia and Croatia**

Although the WB countries have huge reserves of hydro, geothermal and coal capacities, they still remain net importers. What they need to do is to develop further the usage of these capacities, throughout exchanging experiences and enhanced regional cooperation, throughout joint projects and deeper cooperation with the countries of the EU.

### **2.2.1. Macedonia and Croatia**

In Macedonia there has been some progress lately with the instalment of the new government which “in its programme introduced concrete projects for overcoming the energy crisis, throughout gasification of the biggest part of the country, new mining capacities, building of new combined electricity and heating plant, building of big and small hydro plants through concessions...modernization of the thermo-electrical plant Negotino”<sup>18</sup> Also in the National Development Strategy for 2007-2009 the same measurements have been purposed, which gathered together will amount up to staggering 424 millions of Euros for that period. Most of the money, 361 millions Euros is meant for electricity generation and the rest is for the improvement of the energy distribution network. The main idea in the National strategy is the same as in the Croatian strategy: effective energy market, fair prices, save supply, environmental protection. However, what this strategy and every other

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<sup>15</sup> *Building Market Institutions in South Eastern Europe*, 2004, pages 192 and 193.

<sup>16</sup> Efthymiadis Nikos, 2004, page 31.

<sup>17</sup> *Ibid.*, page 36.

<sup>18</sup> Utrinski Vesnik. <http://www.utrinski.com.mk/?ItemID=BD1A39969440CB4683D84759E0BDD50E>

strategy in Macedonia lacks is how to efficiently use the RES, apart of the upgrading of the hydro sector. Nowhere in these strategies, is the developing of the RES (like geothermal, solar or biomass) mentioned, even though the potentials are great. Strategic partnerships throughout the ECSEE with the Croatian government and companies operating there, as well as with the neighbouring EU countries can help in changing that situation. What the government needs to do is to build a new energy strategy, apart from this quite extensive national strategy, where all the problems in the energy sector will be emphasized, were sustainable solutions and programmes will be suggested and constructed, that at the end of the day will serve as guidelines for the future projects in this area.

However, there are some important projects on the way, concerning the development of generating power from hydro sources. “In the period of 2007-2009, the building of the following hydro power plants is expected to start: Matka 2 (Sv Petka) Cebren, Galishte, Boshkov Most. Apart from these separate HPP, the building of a 19 smaller HPP is also suggested, which should be build in the scope of the concessions model with a high ‘investment need’ from 120 million Euros. The same model is expected to attract private investors for building of 6 other HPP in the Vardar alley.”<sup>19</sup> The important thing is that a strategy for building small hydro power plants needs to be developed. They are becoming very attractive lately but somehow their development has not been noticed in Macedonia. It is proved (as the case of Croatia) that HPPs will make the country less dependant on electricity imports, the production of clean energy will increase, which is a trend in the EU, etc. Having all the water capacities, it is a total waste to be left unused, especially when the country is a net importer of electricity. Some of the proposals for attracting FDI in building these SHPP are: creating “...one-shop-stop for SHPP, improvement of the cadastre services, continually regeneration of hydrological data for all locations, bigger promotion of SHPP like ecological energy resources, strengthening institutional capacity, etc.”<sup>20</sup>

How and with what incentives does the government plan to find i.e. attract foreign investments with to build these plants is not clear yet.

One type of energy is especially interesting but not much discussed or developed. It is the geothermal energy. The whole Balkan Peninsula lies on a huge amount of geothermal resources. The geothermal energy can be defined as: “Natural heat contained in the rocks, hot water and steam of Earth's subsurface; can be used to generate electricity and heat homes and businesses.”<sup>21</sup>

The amount of geothermal energy, in particular for Macedonia is: the total discharge of wells from the exploited fields...constitutes 1000 l/s, the existing thermal capacity is 74.5 MWt. The proven thermal potential constitutes 220 MWt.”<sup>22</sup> The geothermal energy source potential for Croatia “...is estimated at 839 MWt. The potential of binary GeoPP constitutes about 48 MWe.”<sup>23</sup>

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<sup>19</sup> National Development Plan of the Republics of Macedonia 2007, 2009, page 118.

<sup>20</sup> MANAGE, Energy Efficient Economy and Improved Environment Quality, 2008, page 116.

<sup>21</sup> Energy Terms, Geothermal Energy, <http://www.wisconsinpublicservice.com/farm/terms.aspx>

<sup>22</sup> Renewable Energy, Geothermal Energy, <http://www.eva.ac.at/enercee/mk/supplybycarrier.htm>

<sup>23</sup> Renewable Energy, Geothermal Energy, <http://www.eva.ac.at/enercee/hr/supplybycarrier.htm>

Although the used amount is well below the potential there has not been much of an investment in this field after the break-up of Yugoslavia. The transition that these countries had to go through, the conflicts that happened left them with crippled infrastructure that was high-priority for restructuring and investing in. Therefore these alternative sources of energy remained quite neglected. However, with the global environmental problems, that these countries also feel, some changes have begun to emerge. Since their aspiration is to join the EU, which is momentarily leading in application and development of renewable energy sources and is imposing high environmental standards, the WB countries have to get rid of their dirty industries and high dependence in their production from oil and coal. Apart from that, the world energy crisis and the high prices of oil and gas increases the production costs which influence their fragile economies. Also, without enlarged competition in the electricity market and heating supply, the households and companies are forced to pay high prices, which influences their purchasing power and growth potential, which at the end will have negative impact of the overall country's GDP. So lately, many initiatives about using the potentials for clean energy are emerging. One of them is the renewed interest in using the geothermal sources in the agriculture and for heating.

In the case of Macedonia, the interest in geothermal energy and its potentials was high before the 1990's and the break-up of the old system. "Rather intensive development...during the 80-es of the last century has been replaced with a complete stagnation during the 90-es and recent years...Unfortunately gained rich experience was not used for further development of use if this renewable energy source."<sup>24</sup> None of the governments had a strategy for developing this sector and making projects for better usage of the geothermal energy. However, as it was mentioned, with the higher and higher energy prices, the situation has to change and there has been some development. What is needed is a sound strategy for all geothermal potentials of the country, what has been done by now, how can current facilities be improved, how can new capacities be build, which new technologies can be used and how can FDI be attracted in this field.

The resources in this field are great. At present they are used for heating green houses in the agriculture sector, for heating households, swimming pools, some industrial objects and for balneology. The places i.e. the fields where geothermal springs can be mostly found are in the eastern part of the country and in Croatia the reservoirs are in the northern part of the country and are characterized by high value of geothermal gradients. This type of energy appliance was developed mostly during the energy crisis in the 70es where most of the projects and research was done. However the potentials are still great, especially in its application in the agriculture sector and the heating of the greenhouses as well as for the development of balneology and this type of alternative tourism.

Even though the agriculture and fisheries sector is decreasing its participation in the total GDP in all of the countries of the region, still there is a huge potential of developing it, with the usage of this type of energy. The reasons, why heating the greenhouses with geothermal energy is so important, are:

1. Good correlation between the sites of greenhouse production areas and low enthalpy geothermal sources.

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<sup>24</sup> Geothermal Energy in Macedonia, Macedonian Geothermal Association MAGA, Skopje 2005.

2. The fact that greenhouses are one of the largest energy consumers in agriculture.
3. Geothermal energy requires relatively simple heating systems, but advanced computerized installations can later be added for total conditioning of the inside climate in the greenhouses.
4. Economic competitiveness of geothermal energy for greenhouse heating in many situations.
5. Strategic importance of energy sources that are locally available for food production.<sup>25</sup>

Also growing of different species of fish in out-of season conditions made artificially has been proven successful. This could be the right solution where there is a need for some type of fish and also for the export. Furthermore this is especially useful for the development of the local fisheries and the SME's where lot of investment is not required but were there is a possibility for further growth with a small budget and efficient use of the energy sources. This also counts for the development of the greenhouses. All of this should be consider with an overall goal of making these countries' economies and agriculture sector more competitive once they enter the European Union Single Market. This also counts for the development of the spa tourism (balneology) in these countries as an alternative type of tourism and the development of the usage of this type of heating for more households and industrial objects.

### **3. CONCLUSION**

With the energy prices growing up and with the possibility of increasing the competition in the energy market, the increased usage of these alternative types of energy sources can help these countries find solutions for the common issues. Enhanced cooperation in this area, working together on projects, especially with the neighbouring EU countries, would help them in the developing of the regional energy market. However the "main problem for further development...is the absence of economic interest for concentration of efforts and investment funds for this 'neglecting' energy source, when the 'real energetics' needs urgent solutions. Plus, there is no local industry, interested for supply of materials and completion of geothermal projects, to 'push' the national and local governments to support the development.<sup>26</sup> The resources are there but more effort from the governments is needed as well as more funds for the projects and incentives for the foreign investors to invest in this renewable and clean energy sources. How much will this sector develop in the future, it remains to be seen.

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<sup>25</sup> MANAGE, *Energy Efficient Economy and Improved Environment Quality*, page 85.

<sup>26</sup> *Ibid.*, page 90.

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