Investing in A Newly Deregulated Energy Sector – The Case of Kosova

Master of Arts in Law and Diplomacy Thesis
Submitted by Teuta Kacaniku
April 2007
Advisor: Professor J. Brookfield

THE FLETCHER SCHOOL
TUFTS UNIVERSITY

List of Abbreviations

DSO	Distribution System Operator
EARD	European Agency for Reconstruction and Development
EAR	European Agency for Reconstruction
EBRD	European Bank for Reconstruction and Development
EC	European Commission
ERO	Energy Regulatory Office
EU	European Union
EUMIK	European Union Mission in Kosova
FDI	Foreign Direct Investment
GHG	Greenhouse Gas
IAE	International Agency for Energy
ICMM	Independent Commission of Mines and Minerals
IPP	Independent Power Producer
KEK	Kosova Energy Corporation (In Albanian: Korporata Energjetike e Kosovës)
KTA	Kosova Trust Agency
MEM	Ministry of Energy and Mining
MESP	Ministry of Environment and Spatial Planning
MFE	Ministry of Finance and Economy
MIGA	Multilateral Investment Guarantee Agency
MLSW	Ministry of Labor and Social Welfare
PPA	Power Purchase Agreement
PSC	Project Steering Committee
SEE	Southeast Europe
SEEREM	Southeast Europe Regional Electricity Market
SOE	Socially Owned Enterprises
SRSG	Special Representative of Secretary General
TSO	Transmission System Operator
UCTE	Union for the Co-ordination of Transmission of Electricity
UNMIK	UN Mission in Kosova
WB	World Bank

Table of Content

Tables and figures

Prelude

Eight years after the end of the conflict, Kosova's economy is still lagging behind. With a slow annual growth rate of 3 percent, the unemployment rates of a two million nation are still high reaching at times up to 50 per cent of the employable population. The €1,117 GDP per capita in 2006 was slightly less than in 2005 when it stood at €1,120, and the national income still depends around 69 per cent on customs tax. Kosova is not demonstrating yet a sound economic performance in order to provide its citizens with qualitative services and opportunities for a poverty-free living. The domestic production is very slowly reviving mainly through the privatization of publicly- and socially-owned enterprises of the pre-war centralized system. There is a small number of new production businesses being established, but they are small or medium in size. Kosova is not poor in natural resources. Mines of zinc and lead oars, nickel and iron, and lignite were the country's primary sources of foreign exchange. At present, their production is hardly a small portion of what was produced in the times when the companies were at their peaks.

In the last years, much of the economic growth discussion evolved around investments in the energy sector and the construction of a new power plant, which should generate lignite-based energy not only for Kosova, but for the region as well. With a GDP of 2.2 billion Euros, the Kosovar government cannot afford to construct a plant with a cost estimated at 3bill USD. Still lacking statehood, Kosova cannot apply for international loans. Expecting to inherit the debt that the Serbian government has taken up on behalf of Kosova, estimated at 1 bill USD, the ability to borrow internationally is postponed even further to a distant future. The only option left is foreign investment. The question unanswered is how these investments will boost Kosova's economic growth, while ensuring benefits to the foreign investor.

Introduction

In the age of democratic governance and market economy, it is a common truth that economies in transition aspire to attract foreign direct investors, as undergoing the development process these countries lack the necessary capital for investments. In the last decades, and especially during the privatization process, the most common solution to address this shortcoming, has been foreign direct investment, which has become a very important tool for improved economic performance. Resultantly, it is very common for the governments of these countries to direct their policies towards attracting and accommodating foreign investors. With many countries in the world going through a transition process, the desirability for foreign investments creates a true competition ground. And as always in a competition game, parties have to demonstrate that they can distinguish themselves from others, which in case of foreign direct investment means that they have to prove that they have abundant natural resources and/or potentials that other countries do not have.

Transition from a centralized to a market economy is a reality that also countries in the Western Balkans are facing today. In practice, the transition translates into privatization of socially owned enterprises (SOEs), the need to liberalize the market, reach bilateral and regional free trade agreements, and create sources for steady economic growth. Within the context and region, Kosova is currently going through the same transition process and faces very low economic growth and low domestic investment, so that the need to attract foreign capital becomes obviously very necessary. In the past years this has proved to be a rather difficult process. Two important factors have influenced the situation. Firstly, the undefined political status, and secondly, the politically and economically unstable situation in the first

years after the conflict have played a tremendous obstacle. Surviving primarily on the activities of small and medium enterprises, the country's economy did not demonstrate significant growth. Traditionally, Kosova's economy operated with large industrial producers, and the main economic activities consisted of energy, agriculture, and mining. This economic structure does not differ much from the structures of Kosova's neighbors and other countries in the region, such as Macedonia, Bosnia, Serbia, and Croatia. This similarity poses challenges to all the countries in the region, but in particularly to Kosova, in terms of foreign investors' attraction, as it increases the competition in certain sectors. Thus, the challenge for Kosova is not only to prove that investment in its economic sector offers the foreign investor high returns potential, but also to ensure that the access to resources, the financial security, political stability, legal framework, and rule of law in Kosova will provide the foreign investors with more convenient conditions than those in the countries in the region.

However, in spite of its still unresolved status, Kosova was able to see its first major foreign direct investment project forthcoming. The country owns large resources of lignite, which since the 1960s have been used for energy production. The energy is produced at two current power plants, Kosova A and Kosova B, which due to low maintenance during the pre-conflict period and depreciation during the years fails to produce consistent and sufficient amounts of power to supply the Kosovar market. In the post-conflict years, the efforts to reshape the energy system and to improve its quality were carried in great part by the European Agency for Reconstruction and Development (EARD)[1]. Since the end of the war in 1999, the EARD has been working actively to rehabilitate the energy system. The

[1] EARD is European Union agency established particularly for reconstruction of Kosova after the war in 1999.

total amount invested for the period 1999 - 2006 amounts to €353.4 million [2], and it covered the costs of the system's rehabilitation and necessary imports. However, these investments were unable to fully recover the energy system and assure a steady supply of electricity for Kosova's domestic needs and economic production, thus maintaining a situation with systematic power cuts and needs for electricity imports.

Owing to the high importance that energy has in furthering the economic development of a country, the significant resources of lignite, and the increasing regional demand for energy supply, have led the Kosovar government, the World Bank and the EU mission in Kosova to prioritize the sector to prepare it for future foreign investments.

Following the decision to attract new foreign direct investment into the energy sector, the Kosovar government in cooperation with the World Bank and the European Union Mission in Kosova (EUMIK), through the Ministry of Energy and Mining (MEM), designed a strategic plan on energy development, in which all the parties emphasized primarily the need for these investments. The strategy estimates that the needed investments will reach around €3 billion, an amount that the Kosovar government cannot afford with its current consolidated budget of €656.2 million.[3] A very simple but careful analysis proves that, with the present income level and such a high cost for the construction of the power plant, the Kosovar government will not be able to generate its own funds for the investment in the sector for at least a few years to come. Since the need for improvement and securing a steady household and industrial power supply is very high, it becomes clear right away that the Kosovar government will have to identify and capture external funding in order to be able to implement its strategy. When found in such a need, a developing country can either

[2] European Agency for Reconstruction and Development website, *Annual Programmes* (http://www.ear.eu.int/kosovo/kosovo.htm; accessed on January 3, 2007)
[3] Riinvest and UNDP, *Early Warning Report January – June 2006*, p.3

apply for loans from International Financial Institutions, or try to attract foreign investors. Lacking defined political status, Kosova is not yet eligible to borrow funds from International Financial Institutions. Consequently, foreign direct investment seems to be the only way to ensure the necessary funds for the implementation of the energy development strategy, given Kosova's present budget.

Traditionally the energy sector in Kosova has been a government owned industry, with the Kosova Energy Corporation (KEK), a vertically integrated utility company, being the administrator of the entire sector. In order to reach a sufficient level of attractiveness for a foreign investor, there will be a need to undergo several changes in the energy sector, as well as on the sectors that complement, support, or overlap with this sector's development. In order for the new investments into energy sector to expand Kosova's electricity production system, the very system will have to be unbundled beforehand, meaning that the three key functions of the production system will become operators that will function independently of the KEK. As such, the generation process will become part of the private sector, the transmission will become an independent operator under government's ownership, and the distribution will remain under KEK's administration.

Despite the fact that these investments are of remarkable importance, their success will be measured by the gains not to the investor only, but also to the Kosovar economy. For the private investor, gains will be measured in terms of high returns. For Kosova, benefits will have both economic and social implications. In general terms, this means economic growth and improved economic performance. Specifically, this means a steady energy supply to the industrial, medium and small producers, and steady energy supply to the Kosovar households.

However, there are many questions to which the Kosovar government has not responded properly yet. In spite of political claims, the effects of increased energy supply on poverty reduction have not been elaborated yet, and environmental impact assessments have taken place so far. Neither has the cost for purchase of CO_2 emissions been calculated in the present government's and the EAR's calculations.

In this paper I will identify the challenges and potentials for producing sufficient amounts of energy, where high returns for the investor and the desired/expected economic growth can be generated, while minimizing pollution to the Kosovar and regional environment. The paper will initially provide a background to the energy sector in Kosova and the energy situation in the region. The second part will analyze the investment potential itself and look at the issues such as country risk, high returns potential, investment costs, and requirements by the Kosovar government, such as corporate tax, royalties, etc. In a third part, I will analyze the impact these investments may have on Kosova's economic growth, with a particular focus on the trade balance and unemployment, as well as the environmental impact of the project. Part four will conclude the analysis and offer recommendations to both the investors and the Kosovar government.

Chapter 1

1.1. Kosova's Energy Sector

Until 1999, Kosova was a net exporter of electricity, a position that it no longer enjoys. At that time, from 4500 GWh total annual energy production, Kosova consumed only 60 – 80 per cent, and the rest was exported.[4] The 1999 war in Kosova left the energy sector with

[4] EU Mission in Kosova and Government of Kosova, *Energy Strategy and Policy of Kosovo - The White Paper* (2003) p.30

great damages, as well as poor prior maintenance of the energy system, broken external trade and financial links, and lack of investments. By 2002 total annual energy production was down to 3321 GWh[5]. From a net exporter Kosova became a net importer of the electricity, within a significantly short period of time. Due to low national income, high unemployment rates, and varying rates of bill collection, power import has significant budgetary implications with €30 million a year.[6]

Energy sector in Kosova is run by Kosova Energy Corporation (in Albanian Korporata Energjetike e Kosoves - KEK) a vertically integrated utility company, which is currently responsible for generation and distribution functions of electricity. Transmission has been separated as an independent Transmission System Operator as of July 2006. KEK still maintains under its ownership Kosova's two, and the only, coal fired power plants, power plant Kosova A and Kosova B. In addition, it owns two lignite mines, Bardh and Mirash that are used to supply current power plants with fuel.

Coal (lignite) is the major source of electricity production and one of the abundant natural resources in Kosova. Kosova has 14.3[7] billion tons of proven coal (lignite) reserves out of which 11.5[8] billion tons are exploitable. This amount brings Kosova lignite reserves to world's fifth-largest proven reserves of lignite. According to KEK, lignite found in Kosova is not of a high quality. It is considered to be the lowest cost coal in Europe in terms of unit cost of contained energy, and extraction cost, and thus compares favorably to other deposits found in the region. It is a geologically young lignite with a quality of 6.28-9.21 [MJ/kg]

[5] EU Mission in Kosova and Government of Kosova, *Energy Strategy and Policy of Kosovo - The White Paper* (2003) p.30
[6] World Bank, *Interim Strategy Note for Kosovo for the Period Fy06-Fy07*, March 30, 2006; p. 13
[7] Ministry of Energy and Mining (MEM), *Lignite Mining presentation - International Energy and Mining Investors' Conference,* (MEM October 2006; accessed from www.ks-gov.net/mem on March 15, 2006)
[8] Ministry of Energy and Mining (MEM), *Lignite Mining presentation - International Energy and Mining Investors' Conference,* (MEM October 2006; accessed from www.ks-gov.net/mem on March 15, 2006)

(the highest calorific value of lignite coal is 17.44 MJ/kg), consisting of 9.84–21.32 [%] ash, moisture content of 38–48[%], sulphur 0.64–1.51[%], and a relation of Ca/S>6.[9]

Coal reserves are found in two major basins, Bardh and Mirash, both located close to city of Prishtina. Mirash open-cast coal mine started operations in 1963 with first quantities of coal produced reaching an amount of 1 million tons per annum. Today it covers an area of 30 km^2 and has an installed capacity of 8.500 kt/year out of which only 3.650 kt/year is available capacity. Bardh open-cast coal mine started its production on 1969 producing first 169,537 tons of coal, which were used for power plant A. This output increased year-by-year reaching an amount of 5,752,836 tons by 1977, and its peak production level on 1987 by 6,473,986 tons of coal mined. Today this open-cast mine covers a surface area of 4.5 km^2 (450 ha) with installed capacity of 8.200 kt/year out of which only 3.400 kt/year is available capacity.[10]

Fossil fuel such as oil resources have never been explored nor discovered and resultantly Kosova does not possess any oil refinery capacitates. Thus, the demand for liquid fuel is secured through imports. Gas is not used much in Kosova, partly due to low energy consumption by industry, and also due to very old underground gas system. Gas could be introduced to Kosova market through Macedonia and Serbia, but requires the construction of 100 km long new gas pipe-line. Besides, since the gas storage facilities need a specific security system to allow for a reliable supply, at the moment and in the near future, the coal will remain the main source of energy production in Kosova.

[9] Kosovo Energy Corporation (in Albanian Korporata Energjetike e Kosoves KEK) website, *Basic Data,* http://www.kek-energy.com/WEB_EN/aboutkek/aboutkek2.htm (accessed on December 30, 2006);
[10] Kosovo Energy Corporation (in Albanian Korporata Energjetike e Kosoves KEK) website, *Open-cast coal mine,* http://www.kek-energy.com/WEB_EN/aboutkek/aboutkek2.htm (accessed on December 30, 2006);

1.2 Electricity Generation

Kosova possesses three main sources of energy. The first two are coal fired power plants, named Kosova A and Kosova B, which were build on 1960s and 1980s, respectively. The third source generates from the only hydroelectric plant, located on the man-made lake in Gazivoda, constructed in 1983**.** These two coal power plants generate 98 per cent of electricity, and only 2 per cent comes from hydroelectric station[11]. All together these sources have an installed capacity of 1513 MW. Power plant A consists of five units named A1 through A5, and power plant B consist of two units of equal capacity B1 and B2 (see table 1).

Table 1: Electricity generation installed capacity

	Installed Capacity in MW	Beginning of Production
Power Plant A		
A1	65	1962
A2	125	1964
A3	200	1970
A4	200	1971
A5	210	1975
Power Plant B		
B1	339	1983
B2	339	1984
Hydroplant		
G1	17.5	1983
G2	17.5	1983
Total in MW	1513	

Source: Kosova Energy Corporation (KEK)

However, not all these units are operational. Units A2 and A4 have been out of operation for a significant period now, reducing the entire power generation capacity of plant A down to 475 MW out of 800MW installed capacity. Besides, all five units of power plant A are subject to the aging process, and according to the EU mission in Kosova (EUMIK) the life

[11] Kosovo Energy Corporation (in Albanian Korporata Energjetike e Kosoves KEK) website, *Basic Data* http://www.kek-energy.com/WEB_EN/aboutkek/aboutkek2.htm (accessed on December 30, 2006);

of unit 1, 3, 4, and 5 can be extended for another five years only, whereas the life of power plant B can be extended for another twenty years (as of March 2007).[12] Therefore due to the ageing, the poor maintenance, as well as damage caused to the power plants during the war, total generating capacity has come down to 700MW.

1.3 Transmission

Starting July 2006 Kosova's, transmission system has been separated from KEK administration, and the independent Transmission System Operator has been established. It consists of overhead transmission lines of 400kV, 220kV, and 110kV, which all together create an overall length of transmission line of 1,162km[13] (see annex 2).

As shown in the table below, Kosova is connected to almost all neighboring countries with 400 kV transmission lines, except for Albania, with which it is connected through 220kV transmission line. During the war in Kosova's most 400 kV transmission lines suffered great damage, and even though most of them have been repaired, they are not considered to be fully operational due to very bad technical conditions in substations.[14]

The missing 400 kV connection line with Albania is considered of a very strategic importance for energy system, since these two countries have very favorable electricity trade opportunity due to different sources of energy production. This is for the fact that hydro plants in Albania represent the major source of electricity generation (98 per cent), while in Kosova thermal plants are major source of electricity generation. The electricity

[12] EU Mission in Kosova website, Documentation/Key Infrastructure, *Fact Sheet on Energy Issues in Kosovo (March 2007),* Accessed in April 10, 2007, (available from www.euinkosovo.org)
[13] EU Mission in Kosova and Government of Kosova, *Energy Strategy and Policy of Kosovo - The White Paper* (2003) p.34
[14] Ministry of Energy and Mining (MEM) of Kosova, *Energy Strategy 2005 – 2015,* p. 9 (available on www.ks-gov.net/mem)

exchange during different seasons of the year enabled this way becomes of strategic importance for these two neighboring countries.

Table 2: Interconnection lines with neighboring countries

Kosova - Macedonia	Kosova - Serbia	Kosova - Albania	Kosova - Montenegro
1x400kV	1x400kV	1x220kV	1x400kV
2x220kV	1x220kV		
1x110kV	2x110kV		

Source: Kosova Energy Corporation (KEK)

Transmission lines of 400kV and 220kV, that Kosova shares with Macedonia, Montenegro, and Serbia help maintaining it's participation in the regional interconnection transmission system making it part of Union for the Co-ordination of Transmission of Electricity – UCTE II, which is part of European Network System (see annex 1).

1.4 Distribution

Distribution system is part of the entire electricity production process, that is readily seen by consumer and which contributes most directly to providing electric services.[15] From all three primary functions of electric utility - generation, transmission, and distribution - the distribution system plays the major role since it defines the quality of electricity received by consumers. Distribution system takes high voltage electricity from transformers and converts it to lower voltage, suitable for the use by consumers.

Energy distribution system in Kosova consists of seven centers, based in major cities, such as: Prishtina, Ferizaj, Gjilan, Gjakova, Peja, Prizren and Mitrovica (see annex 3). Unfortunately, it follows same patterns as energy infrastructure in general – old, poor maintenance, and lack of new investments. This situation was especially emphasized right after the war when many households in rural areas were subject to poor quality of

[15] Jack Casazza and Frank Delea, *Understanding Electric Power System,* 2003, p.85

electricity. Good quality of the electric services means that the voltage at the consumers' premises is kept within acceptable voltage range, which allows for a satisfactory operation of consumers' equipment.[16] This was not always the case in the first years after the war, in particular in the rural areas. Due to more than 30 years old network, and sporadic small interventions by the communities themselves, the technical loss of the power was quite high. Thus by the time the power would reach the consumer, the voltage would be so low that it would make the light of electric bulb resemble that of a candle or two. While the urban areas faced very irregular power supply, with long hours of cut, the technical loss was significantly lower, due to the proximity between the households and the distribution centers.

Quality of the distribution system has a very important role on the technical losses caused during transfer of electricity from transmission system to distribution system, and also from distribution substations to consumers. Even at present, the situation has not improved much. The table below shows that Kosova has the highest percentage of technical losses during distribution stage, in the entire Southeast Europe region. This is due to small numbers of supply sources and high loads on the 110/35 kV and 35/kV substations and connecting lines.[17]

Table 3: Technical loss during distribution in power sector of SEE for 2004

Country	Distribution losses (%)
Albania	37
Bosnia and Herzegovina	10
Bulgaria	22
Croatia	11
Macedonia	19

[16] Jack Casazza and Frank Delea, *Understanding Electric Power System,* 2003, p.91

[17] EU Mission in Kosova and Government of Kosova, *Energy Strategy and Policy of Kosovo - The White Paper* (2003) p.40

Kosova	58
Montenegro	19
Romania	12
Serbia	19
Turkey	14

Source: World Bank Framework for Development of Regional Energy Trade in South East Europe (March 2004)

1.5. Bill collection

Besides technical losses that are normal in the electricity transformation and distribution system, Kosova Energy Corporation (KEK) suffers great losses due to failure in collection of electricity bills and the theft of electricity. Payment discipline in Kosova is the lowest in Southeastern Europe. In 2004, only 62 percent of the electricity sold was billed, of which cash collection was only 63 percent[18]. The problem of the bills' collection has become even more important today when the project of new power plant and the entry of foreign private company into energy sector are taking place. As mentioned earlier, high amount of lignite reserves lying in the grounds of Kosova, is considered to be a good attraction for foreign private investors. However, this comparative advantage of Kosova, can be undermined if collection rate of electricity bills is not satisfactory, and thus will not result with expected cash flow for private investor. Ensuring the returns on investment is one of the key factors that will determine private investor's decisions to invest.

The problem of electricity bills collection has not passed unnoticed by the KEK. Earlier this year KEK had introduced the so-called ABC policy, which divided consumers into three categories: A, B, and C. Each of these categories reflects the level of the discipline that consumers have had shown in terms of the electricity payment. In return, the payment discipline puts them in a certain schedule of power cuts, and power supply, respectively.

[18] World Bank, *Interim Strategy Note for Kosovo, March 2006,* p.8

However, these categories reflect neighborhood electricity payment discipline rather than individual household's one. Category A covers neighborhoods where at least 79 per cent of residents pay their electricity bills and thus they enjoy 24 hour electricity. Category B includes the neighborhoods where 54 per cent to 79 per cent of residents pay their electricity bills and have the power cut schedule of four hours – 2 hour in favor of light. Category C includes the neighborhoods where half or less than half (0 per cent - 54 per cent) of the residents pay their electricity bills regularly and thus have a power cut schedule of three hour - three hour.

While the first results after the introduction of ABC policy were rather negative, the KEK realized that enforcement of this policy with legal compliance was necessary. This became important especially in the efforts to collect the electricity bills from commercial and institutional users. Now the failure to comply with the duty of electricity payment can end up with imprisonment for a certain period. The Ministry of Energy and Mining (MEM) of Kosova was pleased to announce on November last year that due to this legal compliance, they were able to collect €4.5 million only for the first half of November[19].

This policy has been criticized by many consumers, and in some cities has even marked a decline in the collection of the electricity bills. The flaw with this policy is that it does not give any incentives to the consumers that belong to the remaining 20 per cent of residents grouped in the category A to improve their electricity payment discipline. On the other side, it can have a negative impact on the consumers who are regular in fulfilling their financial obligations for energy consumption, but because they are minority in their neighborhoods of C category, they cannot enjoy long hours of electricity availability. Furthermore, this policy

[19] Ministry of Energy and Mining of Kosova, Press Release November 17, 2006, *KEK collects 4.5 million Euros only for the first half of this month, the Task Force has reported* (http://www.ks-gov.net/mem/english/engpdf/RAPORTE/inkasimi%20TF-171106.pdf accessed on December 12, 2006)

does nothing to capture the collection of electricity bills from Serb minorities, who live in enclaves and who have been refusing to pay for their electricity bills since the end of the conflict in 1999. Even though this is a rather political problem, when it comes to the private investors, it shows just another cash flow gain/loss.

While the ABC policy was still able to increase cash collection by KEK, its positive effects can be further reinforced by technical upgrade of the electricity metering. Today in the world, a more advanced and more efficient electricity metering have been introduced (case of Italy). These new devices, which can be found under smart metering name, are fully computerized meters that involve an installation of intelligent meter at residential customer and allow for regular reading, processing, and feedback of consumption data to the customer.[20] It also allows for the option of reading it remotely, which enables remotely switching a customer on and off, and reading the maximum electricity consumptions. Benefits that would be accounted with the use of smart meters, include: lower metering costs, energy saving for residential customers, more reliability of supply, and easier detection fraud[21]. It would be interesting to have a further cost and benefit analysis done regarding introduction of smart metering in Kosova energy system.

1.6 Energy industry in region

Characterized with inter-ethnic conflicts and economic downturn, Southeast European (SEE)[22] countries are now challenged by adoption of market reform policies and thus building an efficient market economy. As part of the efficient economy, energy

[20] Rob van Gerwen, Saskia Jaarsma, and Rob Wilhite, *Smart Metering,* (KEMA Netherlands Ltd; Netherlands; 2006) p. 2

[21] Rob van Gerwen, Saskia Jaarsma, and Rob Wilhite, *Smart Metering,* (KEMA Netherlands Ltd; Netherlands; 2006) p. 3

[22] Countries that are geographically part of SEE include: Albania, Bosnia and Herzegovina, Croatia, Kosova (UNMIK) Macedonia, Montenegro, Serbia, Bulgaria, Romania, Greece, and Turkey

infrastructure plays a vital role. More importantly, a high energy efficiency, meaning that ratio between energy output and input (primary energy) should be high, and low energy intensity (GJ per unit of GDP)[23], should symbolize efficient energy sector, and thus efficient economy. However, due to poor maintenance, low energy prices, and high losses in the account of poor generation, transmission and distribution system, energy sector in most SEE countries has been underperforming and therefore is in the need of new investments and new generating capacities.

Previous experience of countries from Central Europe that underwent the transition period, demonstrated that unbundling of energy generation, transmission, and distribution system is key to development of an efficient energy market. Changing the nature of energy company administration from full government to private ownership or to public-private entity has been able to offer more qualitative energy services. Besides, it has proven to be a good policy against monopoly in the energy market. Countries in the SEE region are following this same example. They have begun opening up their energy markets, improving their energy infrastructure network, and building an environment for foreign investments.

Supported by European Commission, the countries of Southeast Europe have joined efforts in establishing regional electricity market (REM), with the primary goal to increase energy trade among themselves, strengthen regional cooperation, and in the later stage allow an integration of SEE regional electricity market into Europe's internal energy market. However, before reaching this point, countries of SEE have to ensure that their national electricity markets are compatible with EU Electricity Directive (Directive 96/92/EC) concerning common rules for the internal market in electricity, meaning that among others,

[23] International Energy Agency (IEA), *Energy Efficiency in Economies in Transition (EITs): A Policy Priority* (IEA, 2004)

common rules should be established for generation, transmission, and distribution of electricity.

"EU Directive 96/92 establishes common rules for the generation, transmission and distribution of electricity. It also lays down rules relating to the organization and functioning of the electricity sector, access to the market, the criteria and procedures applicable for calls to tender and the granting of authorizations and the operation of systems".[24]

These efforts lead to the establishment of the Athens Memorandum in 2002, an agreement signed in Athens by governments of Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Greece, UN Mission in Kosova (on behalf of Kosova), Romania, Turkey, and Serbia and Montenegro. This agreement marked an official establishment of Southeast Europe Regional Electricity Market (SEEREM) and it created a number of institutions[25], which are collectively called 'Athens Process'. Countries of SEE will use this agreement as a guideline for reforming their energy sector, and their major commitments include:

- Create a regionally integrated energy market for electricity and natural gas networks and to integrate that market into the wider EU market;
- Establish common rules for generation, transmission and distribution of electricity;
- Similarly establish common rules for the transmission, distribution, supply and storage of natural gas;
- Establish state level national energy authorities, regulators and transmission system operators;
- Establish compatible state and regional electricity and natural gas market action plans;

[24] Gateway to the European Union website, *Activities of the EU – Energy*, (http://europa.eu/scadplus/leg/en/lvb/l27005.htm; accessed on January 5, 2007)

[25] Institutions created as part of the Athens Memorandum are: 1) Ministerial Council; 2) The Permanent High Level Group; 3)The SEE Electricity Regulation Forum (SEEERF); 4) SEE Energy Regulators Work-Group; and 5) SEE Transmission System Operators Work-Group.

- Embryonic regional level dispute resolution mechanisms;
- Open the markets in line with EU commitments but with a suitable transition period (all non-domestic markets are projected to be open by 2005);
- Unbundling of integrated utilities;
- Authorization procedures for new infrastructure that are transparent;
- An anti-corruption programme;
- Implement grid codes and other technical and commercial codes that are necessary for the functioning of the market; and,
- Regulated third party access, tariff systems that encourage trade, and technical codes necessary for the operation of a trade based regional system.[26]

By the end of 2004 Energy Community Secretariat replaced 'Athens Process' Secretariat, whose task is to assist European Commission in guiding the process of creating energy community for SEE. Following this, Athens Memorandum was replaced with Energy Community Treaty for Southeast Europe, which was signed by all countries – except Turkey – that have signed Athens Memorandum previously. Turkey will still continue to participate in regional electricity market since it is one of the signatories of Athens Memorandum, and it is expected to sign the treaty at the later date. This replacement, though, did not change initial commitments of the SEE countries toward regional electricity market.

According to the initial time frame set by Athens Memorandum, by 2007 transmission system in all SEE countries need to be unbundled and independent Transmission System Operator (TSO) established. Also by 2007 common EU and SEE cross border trade

[26] Economic Reconstruction and Development is SEE website, *Energy in SEE (an official webpage of Athens Process).* (http://www.seerecon.org/infrastructure/sectors/energy/index.html; accessed on January 5, 2007)

mechanism should be in place; by 2008 all SEE countries should open their markets for non-household customers including distribution companies and large industrial users; by 2010 the unbundling of the distribution system with more than 100.000 customers to independent Distribution System Operator (DSO) should be in place, and also full compatibility with the EU internal electricity market; and finally by 2015 each of the SEE countries will have to open their market for household customers as well.[27]

On one of its studies regarding power market in Southeast Europe, World Bank has offered an overview of the reform progress reached by SEE countries towards well functioning regional electricity market. The benchmarks against which World Bank has measured reforms are: availability of average tariffs to cover the costs, electricity cross subsidy between large customers and other customers, meaning industrial end users of electricity and households, payment problems, social safety net to mitigate adverse consequences of tariff reform, separate energy regulator in place, transmission tariff methodology, end user tariff methodology, separate transmission company, functional unbundling generation and distribution.[28] Table below gives the summary of countries in the region, which have taken actions in this regards:

[27] European Commission (EC), *South East Europe Electricity Market options paper***,** (EC, 2005) p. 9 (http://www.seerecon.org/infrastructure/sectors/energy/rem.htm; accessed on January 8, 2007)

[28] World Bank discussion paper, *World Bank Framework for Development of a Power Market in South East Europe,* (WB, March 2006) p. 19

Table 4: Reform progress in SEE power sectors in 2006

	Average tariffs at cost recovery	Cross Subsidy	Payments Problems	Social Safety Net	Regulator in place	Transmission tariff methodology	End user tariff methodology	Separate transmission company	Functional unbundling of generation and distribution
Albania	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No
Bosnia	Yes	No	Yes	No	Yes	No	No	Yes	No
Bulgaria	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Croatia	Yes	No	Yes	Yes	Yes	No	No	No	No
Kosova*	No	No	Yes	Yes	Yes	No	No	No	No
Macedonia	Yes	No	Yes	Yes	Yes	No	No	Yes	Yes
Montenegro	Yes	No	Yes	No	Yes	Yes	Yes	No	No
Romania	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Serbia	Yes	No	Yes	Yes	Yes	No	No	Yes	No
Turkey	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes

Source: World Bank Framework for Development of Regional Energy Trade in South East Europe (March 2004)

* Kosova has established separate transmission company on July 2006.

Countries in the region have showed varied progress reached towards energy reform process. Payment problems, average tariff rate, and energy regulator, are the three benchmarks that at least nine out of ten countries in the region have addressed. The least addressed benchmarks are cross subsidy issue, transmission methodology, and functional unbundling. Bulgaria and Romania are two countries that have shown best progress towards reforms of energy sector, but this is due to their preparation for joining EU on January 2007. Kosova is the only country in the region that has not addressed average tariff rate, and thus has maintained lowest tariff rate in the region. While brining tariff rates at the level that they can cover the cost of electricity production is part of these reforms, this suggests that there will be tariff increase in the near future for Kosovar consumers. This can be considered as one of the most challenging part of these reforms for Kosova, since the payment discipline is very weak. Regarding the rest of the benchmarks, Kosova does not differ much from some other countries in the region. Therefore, excluding average tariff rate benchmark,

Kosova is in almost same position as Croatia, Albania, Macedonia, and Bosnia and Herzegovina in showing progress towards these reforms.

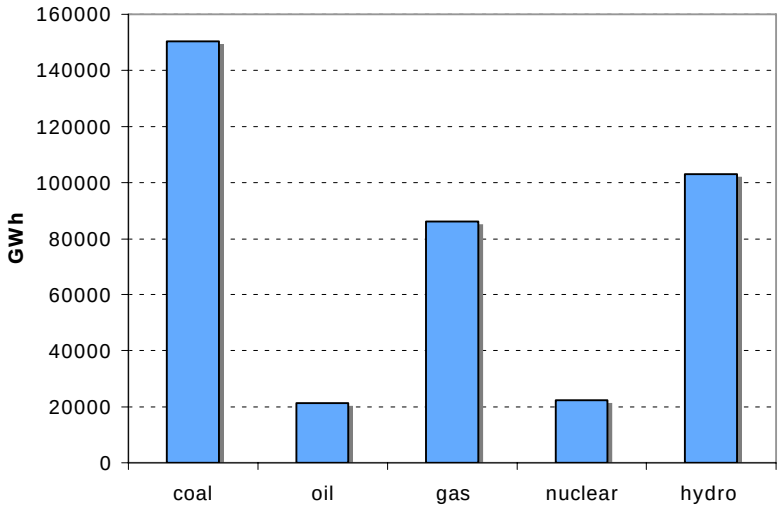
Furthermore, World Bank and European Commission (EC) have conducted a study, which analyzes the investments needed in the region, in order to assure efficient and sustainable electricity supply, and enable functional regional electricity market over a period 2005 - 2020. According to this study, titled Southeast Europe Generation Investment Study, and according to the least cost scenario, 11.5 GW of current generating capacity should be rehabilitated, and 11 GW of new generating capacities should be added to the system.[29] The new capacities should comprise from lignite-fired power plants in Kosova, Bulgaria, and Serbia, gas fired plants across the region, and nuclear plants in Bulgaria and Romania. The total investments costs, including both rehabilitation and new construction, are estimated to be €15.4 billion[30].

1.6.1 Energy production and consumption in the Southeast Europe

Coal is the most abundant fuel in the SEE region hence it is used as primary energy commodity by most countries, followed by water and gas. Oil and nuclear plants represent only marginal source of electricity production compared to the use of coal (Figure 1).

[29] World Bank and European Commission, *South East Europe Generation Investment Study – Executive Summary,* (WB and EC, 2003) p. 15 (www.worldbank.org Europe and Central Asia/Power; accessed on January 8, 2007)

[30] World Bank and European Commission, *South East Europe Generation Investment Study – Executive Summary,* (WB and EC, 2003) p. 15 (www.worldbank.org Europe and Central Asia/Power; accessed on January 8, 2007)



Source: IAE

Figure 1: Major sources of fuel used for electricity production in SEE for 2004

The largest coal industries are found in Bulgaria, Romania, and Serbia, each producing around 30 million tones of coal per year. Bosnia and Herzegovina, and Kosova come as second coal producing industries, each producing around 10 million tones per year.[31]

As table below shows, countries such as Bosnia, Serbia and Montenegro[32], Greece, Bulgaria, and Romania, use coal as primary fuel to produce energy. On the other hand, countries such as Croatia and Albania rely heavily on hydro plants for energy production, whereas Turkey is the only country in this region that uses gas as its primary commodity for energy production, and thus has the highest amount of energy produced by gas in the region. Gas is also used by Romania, Greece, Croatia, Bulgaria, and Serbia and Montenegro. For Montenegro itself and Kosova (not shown in the table) gas sector is not established, even though the introduction of gas in Kosova was planned in late 1980s, mainly for the use in

[31] World Bank, *Investment Incentives for the SE Europe Regional Electricity Market,* (WB, June 2005) p.10
[32] Since these data are from 2004, Serbia and Montenegro were still part of the union, and therefore the reporting was done for a union as a whole.

the industrial sector.[33] However the events that followed the break up of Yugoslavia did not allow this project implementation to advance further. Nuclear power is used only by Bulgaria and Romania.

Table 5: Sources of energy production in SEE for 2004 (GWh)

	Coal	Oil	Gas	Biomass	Waste	Nuclear	Hydro	Total
Croatia	2139	1636	2459	4	0	0	7051	13289
Bosnia and Herzegovina	6561	138	0	0	0	0	5900	12599
Serbia & Montenegro	25718	268	579	0	0	0	11924	38489
Macedonia	5170	13	0	0	0	0	1482	6665
Albania	0	93	0	0	0	0	5466	5559
Greece	35380	8385	8991	122	139	0	5205	58222
Bulgaria	19107	822	1494	0	19	16815	3363	41620
Romania	21773	2199	10462	4	0	5548	16513	56499
Turkey	34448	7670	62241	76	28	0	46084	150547

Source: IAE

Power generating capacities in SEE follow the same structure as resource endowment. The overall installed energy generation capacity in Southeast Europe is 49.5GW[34], out of which 55 per cent belong to the energy produced by thermal plants, 35 per cent of energy is produced by hydro plants, and remaining 10 per cent comes from nuclear power plant. The average age of power plants is estimated to be around 30 years, with some plants being 40 years old.[35] While this old age of power plants has caused that available capacity be lower than installed one, the lack of new investment, and the increase in energy consumption, has caused that entire region face big pressure on energy supply.

The peak load demand for period 1991 - 2001, increased for 23 per cent or 2.2 per cent per annum. Compared to 1991 when peak load was recorded to be 25.5GW, in 2001 it increased

[33] Southeast Europe Energy website, *Kosovo - Description of Energy Sector,* (http://www.seenergy.org/index.php?/countries&stat=8&type=3&col=2117; accessed on January 6, 2007)
[34] World Bank working paper, *Review of Electricity Supply and Demand in Southeast Europe,* (WB, October 2003) p.2
[35] World Bank working paper, *Review of Electricity Supply and Demand in Southeast Europe,* (WB, October 2003) p.2

to 31.4GW. However, the increase in the peak load was not the same across the region. Countries such as Albania and Montenegro had the highest increase in peak load, 109 per cent and 157 per cent, respectively.[36] Due to these conditions, and the failure to meet electricity demand and supply, many countries in the region were forced to apply shedding load schedule. The consumption trends in the region have not changed much, and the region continues to consume larger amounts of energy each year. According to the World Bank study, the energy consumption in the region is expected to increase further, reaching an amount of 214.3 TWh in 2012 compared to 171.2 TWh in 2002. The increase is also forecasted for peak load, where it is estimated that it will reach 38.2 GW by 2012.

These facts show clearly that region needs to add new generating capacities. Thus, it is estimated that 2.5 GW of new capacity would be required before 2010. Of this amount, 50 per cent should be lignite fired (located in Bulgaria, Kosovo and Serbia), 21 per cent gas fired (distributed across the region), and 26 per cent nuclear power (in Romania). Furthermore, 11 GW of new capacity would be required before 2020. Of this amount, 45 per cent should be lignite fired (in Kosovo and Serbia), 34 per cent gas fired (distributed across the region), and 20 per cent nuclear (in Bulgaria).[37]

1.6.2 Southeast Europe Regional Electricity Trade

Major electricity exporters in the SEE region are Bulgaria, Bosnia and Herzegovina, Romania, and Turkey. All other countries are net importers (table 6). However as Romania and Bulgaria joined EU this year, Bulgaria was forced to close down two of its nuclear

[36] World Bank working paper, *Review of Electricity Supply and Demand in Southeast Europe,* (WB, October 2003) p.9
[37] World Bank discussion paper, *Framework for Development of a Power Market in South East Europe* (WB, March 2006) p.10

units, each with an installed capacity of 440MW[38]. EU required the closure due to the plants' incompatibility with EU standards, therefore reducing the availability of nuclear power in the region even further. The Kozloduy nuclear power plant located 125 miles north from Sofia served as electricity supplier and biggest exporter for many countries in the region, such as Albania, Greece, Macedonia, Romania, Serbia, Kosova, and Turkey.[39] However, with 880MW less available electricity supply the situation in SEE is expected to deteriorate significantly.

Table 6: Energy production and consumption in SEE (GWh)

	Energy production	Domestic supply**	Total consumption*	Imports	Exports
Croatia	13291	16956	13669	5298	1633
Bosnia and Herzegovina	12599	10517	7177	997	3079
Serbia & Montenegro[40]	38489	38203	27755	1032	1318
Macedonia	6665	7841	5764	1176	0
Albania	5559	5762	3671	477	274
Greece	59344	62164	49719	4854	2034
Bulgaria	41621	35742	24906	741	6620
Romania	56499	55317	38775	2584	3766
Turkey	150698	150017	119618	463	1144

*Total consumption takes into account energy used by plant and electricity used for pumped storage as well as distribution loss. (source: IEA)
** Domestic supply is equal to amount of energy produced plus imports minus exports.

Differences in installed generating capacity, as well as differences in the fuel used for electricity production, create good trade opportunities between countries in SEE. This is the

[38] FT Article, *Energy: Nuclear closures spur rebuilding* (www.ft.com; Jul 11, 2006) accessed on February 27, 2007
[39] Deutsche Welle News, *Bulgaria in Nuclear Quandary as EU Entry Nears* (December 28, 2006; http://www.dw-world.de/dw/article/0,2144,2293021,00.html; accessed on January 6, 2007),
[40] IEA does not offer data separately for Kosova and Montenegro.

case especially with Croatia and Albania (see table 4), which use hydro plants as their main electricity production source, and Bulgaria, Bosnia and Herzegovina, Romania, and Kosova, which use coal as primary fuel for electricity production. While Albania and Croatia have subsistent capacity during wet seasons, they face shortage during the dry seasons, and are therefore obliged to import energy to cover their domestic demand.

Energy trade is usually enabled by the differences in the peak load among countries as well. However, this is not the case with countries in the Southeast Europe where the maximum time difference between countries is one hour, therefore the peak load time is very similar. But, in the past few years there has been a difference in the seasonal peak. Greece for example has become a summer peaking system and has imported power during the summer. Even though Greece is a net importer throughout the year, its energy imports are highest during the summer, reaching around 800 GWh in summer 2002.[41]

Chapter 2

2.1 Investment in the energy sector

Private energy companies are today's major investors in the energy sector and are often known by the name of independent power producers (IPP). These power producers are privately owned power plants that produce and sell electricity for further distribution. In this model, power is purchased either by a state-owned electric utility company, private distributor, or a large private industrial user. The emergence of the independent power producers is a result of the energy sector deregulation which separated the sector into three known segments of electricity production including, generation, transmission, and

[41] World Bank, *Framework for Development of Regional Energy Trade in Southeast Europe*, (World Bank, 2004) p.11

distribution. Traditionally, all three segments were part of the vertically integrated electricity utility companies, usually owned by the state, which was regarded to be a natural monopoly. However, with technological advancements, now it is considered that only transmission can be part of a natural monopoly, while generation and distribution can be passed on to the private sector and thus be part of the competitive market. This new idea resulted in increased number of private power generation companies, which now sell electricity in the open market.

Sales in the deregulated energy sectors evolve and develop differently from the state-run energy model. In the deregulated energy sector, electricity sales are conducted through either long-term bilateral contracts or energy exchange spot markets. Long-term bilateral contracts are often called Power Purchase Agreements (PPA) and as such anticipate a market where most electricity transactions are done through specific supply contracts between power generators on one side and distributors on the other. In energy spot markets, electricity is bought as needed and sold as available.[42] This structure allows for short-term electricity transactions, such as day-ahead contracts, and future contracts. However, the sales in deregulated market, as many country-experiences demonstrate, are usually conducted in two different stages. At an initial stage, the country establishes the whole-sales market, in which parties usually involved are power generators as the vendors, and the distributors and large industrial consumers, as the purchasers of the electricity from the generator. At a later stage of electricity market development, retail market is introduced as well, which enables the residential and commercial consumers to choose the power generator they will purchase the electricity from. Such an evolution allows for a

[42] Timothy J. Brennan, Karen L. Palmer, Raymond J. Kopp, Alan J. Krupnick, Vito Stagliano, and Dallas Burtraw, *A Shock to the System, Restructuring America's Electricity Industry,* (Published by Resources for the Future; 1996) p. 30

development of the energy sector on competitive basis, minimizing the opportunities of its monopolization by one single market actor.

The major flow of IPP investments in developing countries occurred during 1990s and according to Erik J. Woodhouse, a postdoctoral fellow with the Stanford University, Program on Energy and Sustainable Development during 2004-2005, three main factors contributed to this trend. First, there was an increasing demand for energy in developing countries as they where reforming their energy industry. Second, major multilateral banks had restrictions on their lending policies, in which case access to concessionary loans was enabled only if coupled with complementary moves to reform and privatize infrastructure. And third, massive liquidity and tight domestic returns in US and European utilities markets drove investors to seek higher returns in new markets abroad.[43] However, due to Asia financial crisis the flow of IPP investment in emerging economies has declined from $46 billion in 1996 to $15 billion in 2003, and only recently has began to show positive signs.[44]

Most IPP investments are considered to be Greenfield projects, which by their nature are very costly and account for high level of risk. These projects are limited recourse projects, or off-balance sheet financing, meaning that the only loan collateral is the revenue stream coming from the project directly. They are estimated to cost approximately $1200 per kW[45], thus drawing large amount of debt in their financing. Companies usually draw equity from a number of investors and secure debt from syndicate of banks. The expensive nature of these investments makes them very sensible to any instability in revenues. High debt service

[43] Erik J. Woodhouse, *A Political Economy of International Infrastructure Contracting: Lessons from the IPP Experience* (The Program on Energy and Sustainable Development at Stanford University; September 30, 2005) p.13

[44] Erik J. Woodhouse, *A Political Economy of International Infrastructure Contracting: Lessons from the IPP Experience* (The Program on Energy and Sustainable Development at Stanford University; September 30, 2005) p.2

[45] J.M. Bee´r, Department of Chemical Engineering, Massachusetts Institute of Technology, *Combustion technology developments in power generation in response to environmental challenges* (MIT, March 2000) p.23

requirements result in less flexibility to absorb changes in income over the term of the debt.[46]

IPPs have played key role during energy reforms in many countries, and countries that are currently in their transition process, are following suit. However, the riskiness that accompanies these companies and the project they are involved in makes them to become more risk averse. This is expressed especially if they sell electricity through PPAs in which case they strive to extent the maturity of the agreement for as longer period as they can, and ensure that international arbitration is part of the agreement as well.

2.2. Restructuring Kosova's Energy Sector

Following the same method as other developing countries, Kosova has begun building the policy and legislative framework in support of privatizing and restructuring its energy sector. The unbundling of the energy sector is already taking place, and it is expected that parts of the sector will be privatized in the near future. The transmission has been already separated from Kosova Energy Corporation (in Albanian KEK), and operates as an independent transmission system operator (TSO). These changes are part of the ongoing efforts to increase generating capacity of the current energy system by attracting foreign IPPs to invest in Kosova's energy sector. The investments have been focused on the construction of the new power plant, Kosova C, the costs of which has been estimated at €3 billion. Designed by the Kosovar Ministry of Energy and Mining (MEM) in cooperation with the World Bank and the European Union Mission in Kosova, new energy project consists of three components, the new power plant (Kosova C) with a generating capacity of 2100 MW; opening of new lignite open-cast mine for supply of the new plant; and

[46] Eric J. Woodhouse, *The Experience with Independent Power Projects in Developing Countries: Interim Report*, (Program on Energy and Sustainable Development, Stanford University; February 2005) p.31

rehabilitation of the current power plant (Kosova A and Kosova B), towards extension of their life-spans for another five years, respectively 20 years. The power plant is scheduled to be built in two phases; the first one will start on 2008 until 2012 and 1100MW will be installed, and the second phase will start on 2015 until 2019 when additional 1000MW will be added.

MEM has established special Project Steering Committee (PSC), which will be responsible to manage the process of this project and select the qualified company to implement it. The PSC comprises of ten members representing, Office of SRSG's; the Head of UNMIK Pillar IV (EU Mission in Kosovo); the Prime Minister's Office; the Ministry of Energy & Mining (MEM); the Ministry of Finance and Economy (MFE); the Ministry of Labor and Social Welfare (MLSW); the Ministry of Environment and Spatial Planning (MESP); the Energy Regulatory Office (ERO); the Independent Commission of Mines and Minerals Board (ICMM); and Kosova Trust Agency (KTA) a special agency established to oversee privatization process in Kosova.[47]

After the closure of the call for application, which ended November 30, 2006, MEM publicized the list of four short-listed companies, which were pre-qualify for further selection. By the end of 2007, the PSC should decide on the qualified winner, while the construction phase is expected to commence during 2008.

2.2.1. Short-listed companies

The four short-listed applicants come with different financial and managerial background, thus the selection of the company to invest in the new power plant will be a significantly

[47] Ministry of Energy and Mining (MEM*), Lignite Power Technical Assistance Project, Operational Manual 2007* (accessed from www.lpi-ks.com on April 3, 2007) p. 11

challenging process. The underlying criteria for selection of pre-qualified companies cited on the Pre-Qualification Memorandum issued by MEM were as follows:

… a Prospective Bidder (either directly or together with one or more of such Prospective Bidder's Affiliates) must meet the following minimum criteria to qualify as a "Pre-qualified Bidder":

1. Has developed green field, coal or lignite fired electric generation projects, which are now either in construction or operation, totaling more than 2,500 MW;

2. Has raised more than €2 billion of limited recourse project debt as of 31 October 2006, or has a minimum of € 2 billion Euro in free cash reserves, as stated in the year-end 2005 audited financial statements;

3. Has developed and is operating, as of 31 October 2006, mines producing more that 20 million tons per year of coal or lignite; and

4. Has control of or operates one or more coal or lignite generation companies and/or concessions with an aggregate capacity of at least 10,000 MW as of October 31, 2006.[48]

The project on building new power generating capacities has been successful in drawing the attention of few largest IPPs from United States and Europe. A total of eight companies expressed their interest for the project, and they are competing either alone or in consortium with other companies, thus creating a short-list of four bidders:

1) CEZ-AES, Consortium between the Czech CEZ and American AES power company;
2) RWE Power AG, German power company;
3) EnBW- WGI, Consortium between the German EnBW and American WGI company; and
4) Enel – Sencap, Consortium between the Italian power company and the Greek-US joint venture.

[48] Ministry of Energy and Mining (MEM), *Pre-Qualification Memorandum,* (MEM August 2006) p.13

The majority of short-listed companies have already established their presence in the Southeast European region. For example, AES in cooperation with French power engineering giant Alstom, is currently building a new 670MW coal-fired power plant, Maritza East I, in Bulgaria, which is expected to be operational as of 2009. RWE is already present in Hungary where it is operating 800 MW lignite-fired power plant. Enel owns 73%[49] of 840MW coal-fired power plant Maritza East III located in southern Bulgaria, while Bulgarian state electricity company NEK owns the remaining 27%. CEZ has signed an agreement with Bosnian Serb Republic to build a 700MW coal fired power plan in Serb Republic in Bosnia. Meanwhile CEZ owns three distributors and a power plant in Bulgaria. The presence of these companies in the region, and in particular in Bosnia and Herzegovina and Bulgaria has become a factor of strategic importance securing them access to the regional market as both these countries are net exporters of the electricity in the region. Having the same company establish its position on more than one country in a single region, connected into one single electricity market can give room for creation of regional monopoly. While countries in the region who are undergoing reforms in their energy industry are also trying to introduce more competition in this market, the possibility of having regional monopoly could undermine the efforts put toward successful reforming of energy industry. On the other hand, this development would be in full contradiction to the European Union policies of single market where competition is encouraged and protected strictly by EU directives and legislation. Any such development would push the countries of the region several steps behind in the European integration efforts, even though they are all at different stages of the process.

[49] Energy in East Europe, *Enel banks on Bulgaria* (The McGraw-Hill Companies, October 2006; accessed through LexisNexis search)

Box 1: Brief description of companies' profile

Established on 1981 AES Corporation is one of the world's largest power companies, operating in 25 countries around the world. It has more than 44,000MW generating capacity with 123 power generation plants, and 14 utilities for power distribution. AES maintains a diversified portfolio, with operation in two lines of businesses. On one side it generates power for sale to utilities and other wholesale customer, and on the other side it operates as distributor of power to retail, commercial, industrial and government customers. In addition to its primary business segments, AES is also engaged in exploring alternative energy business, such as wind generation, liquefied natural gas, and climate change technologies. It has been in wind generation business since 2004 and is currently operating 600MW of wind capacity. As part of its plan to increase its investment into wind generation, last year it acquired an equity stake in 120MW wind power project under development in Bulgaria in partnership with Bulgarian-German company Geo Power.[50]

CEZ power was incorporated as Joint Stock Company in 1992 by the National Development Fund of Czech Republic, which still owns more than 67.6%[51] of it. Its main business activities are electricity production and sale, plus ancillary electrification services. Merging with several regional distribution companies on 2003, CEZ added another business segment in its portfolio of operations. These activities contributed to establishment of CEZ group, which came to be one of the most significant energy utility in central and Eastern Europe. With its mission to become leading energy company in central and southeast European energy markets, CEZ Group has acquired three distribution companies in Bulgaria and one in Romania, two Polish power plants, and one Bulgarian power plant. These acquisitions have introduced the presence of 10 per cent of foreign companies in the CEZ Group. Following this trend, on April 2006, CEZ a.s. established a daughter company called New Kosovo Energy LLC, which has registered capital of €200,000[52].

RWE AG Group is one of the oldest and largest power company in Europe, which was founded on 1898 and it serves areas such as power generation, transmission, and distribution. RWE Power AG is power generator arm of the RWE AG Group, with its presence in Germany, the United Kingdom and Central Eastern Europe. Its power generation comes from variety of sources such as lignite, nuclear energy, wind energy, and biomass, among others. The total generating capacity owned by RWE Power AG is 33,664MW[53] out of which 60% comes from coal (lignite 32% and hard coal 28%). The rest is spread between nuclear, gas, hydro, oil, wind, biomass, and solar. Most of its business is concentrated in generating power in Continental Europe, and operating lignite mines. RWE AG Group, has on its umbrella RWE Energy, which is engaged in the distribution, transmission and sales of electricity for the Continental European electricity and gas businesses, as well as parts of Continental water business.

[50] Energy in East Europe, *AES to build 120-MW wind park,* (The McGraw-Hill Companies, October 2006; accessed through LexisNexis search)
[51] CEZ Group, *Structure of shareholders,* (CEZ Group website www.cez.cz; accessed on March 16, 2007)
[52] CEZ Group, *Companies within CEZ Group,* (CEZ Group website www.cez.cz; accessed on March 16, 2007)
[53] RWE Power AG, *Short profile: With all our power,* (accessed from www.rwe.com on March 16, 2007)

EnBW is third biggest power company in Germany with its subsidiaries operating throughout Germany and Central and Eastern Europe. Its three core segments are electricity, gas, and energy and environmental services. The electricity segment covers all value added chain of electricity, from generation to sales of electricity through trading, transmission and distribution. With its generating capacity of 14,800MW, EnBW electricity segment generates electricity with a mix of sources such as nuclear power, fossil fuel, and hydro power plants. In 2006 around 70% of electricity offered to their consumers was generated with CO2-free technologies like nuclear and hydroelectric power. Meanwhile, conventional power plants owned by EnBW are all combined heat and power stations.[54]

Washington Group International (WGI), established in 1993, is an international provider of the range of services such as, engineering, construction, construction management, facilities and operations management, environmental remediation and mining services. Washington Group International operates its business through six business units: Power, Infrastructure, Mining, Industrial/Process, Defense, and Energy and Environment. Power segment of its business is responsible for engineering, design, construction, modification, and maintenance of power generating facilities and systems that transmit and distribute their electricity. WGI offers these services to a variety of power generating facilities, ranging from conventional fossil fuels power plants, to nuclear, hydro, and alternative energy plants such as geothermal, wind, biomass, and solar power generating facilities.[55]

Enel was Italian state owned utility company until 1992 when it was transferred to join stock company, even though Italian government still maintains 32% ownership. With its 53,000MW generating capacity, Enel produces, distributes, and sells electricity mostly in Europe, North, and Latin America. Its generating facilities include thermal plants, hydroelectric plants, geothermal plants and other facilities that generate electricity from renewable resources.[56]

Sencap is a newly established joint venture power company between Greek Public Power Corporation S.A. – PPC, and ContourGlobal – CG, a US based private energy infrastructure development and operating company. This is a project that was initiated by EBRD with total cost of €600 million. EBRD has contributed with 10 per cent equity financing and the rest is sponsored by PPC and CG. Sencap will focus on electricity generation business, including any associated mines, renewable energy, and investing in electricity transmission and distribution in the region.[57]

[54] EnBW, *Company Annual Report 2006* (accessed from www.enbw.com on March 16, 2007)
[55] Reuters investor, *WGI - Company Profile* (accessed from http://investor.reuters.com on March 16, 2007)
[56] Enel website, *Company Profile* (accessed from www.enel.it on March 16, 2007
[57] EBRD Projects, Private Sector Development (accessed from EBRD website www.ebrd.com on March 16, 2007)

Currently, the PSC is in the process of preparing request for proposal (RFP) document, which will prepare grounds for bidding competition through set of criteria upon which the final decision will be made. While criteria that will be included in RFP have not been disclosed yet, financial strength and the use of technology among the competing companies are considered to be two paramount criteria that offer true picture of the companies.

Each of these companies is characterized with different financial conditions and different performances. Table 7 gives an overview of some important financial ratios, which offer a comprehensive evaluation of financial strength and managerial effectiveness among competing companies.

Most of these companies belong to a group of large cap companies, like Enel with $65 billion market cap, RWE with €39.1 billion, CEZ with $23.68 billion, and AES with $13.7 billion. EnBW with market cap of €5.3 billion and Greek PPC with €4.3 billion belong to mid cap, and WGI with a market cap of $1.8 billion belongs to a small cap company group. ContourGlobal is not publicly traded company therefore no data could be obtained.

While energy industry is characterized with high amounts of debt in its financing, the data in table 7, demonstrate that there is quite some variety in this respect among these companies. The most leveraged company in this list is AES with debt-to-equity ratio of 6.51 compared to average ratio of 1.69 in the industry. On another side of spectrum WGI has 0 per cent debt on its financing and CEZ has a ratio of 0.25. Indicators like these demonstrate the financial strength of the company, or how much debt they use to finance their asset. At certain cases, such situations can result in volatile earnings due to additional interest expenses, thus increasing the volatility rate of the company in the stock market. The short-listed companies demonstrate different levels of stock market volatility as well. The worst in this case is AES. The AES's beta coefficient is at level of 1.86. Average market coefficient

exceeds slightly the level of 0.60 (industry's beta is at 0.63). With the beta coefficient of almost the triple of the market, AES stock prices are extremely volatile compared to both industry and other competitors. Interest coverage ratio enforces these facts further. AES covers its interest payment only 1.77 times with its earnings, compared to industry's ratio of 5.43. WGI and CEZ as the least leveraged companies in this list, cover their interest expenses 18.5 and 58.23 times, respectively.

The disadvantageous position that AES has regarding financial strength, compared to other companies in the list, can be explained in part due to its heavy investments made over the last few years. Last year AES begun the construction of new 670 MW lignite fire power plant in Bulgaria worth $1.4 billion; it also started expanding its wind generation business, by acquiring minority interest in InnoVent SAS, a French wind farm developer with more than 600 MW, and in 120 MW Kavarna wind project in Bulgaria. While CEZ on the other side seems to be the strongest financially standing company in this group, the company's commitment to an aggressive expansion strategy[58] and investments in rehabilitation of its old power plants, would indicate a higher debt-to-equity ratio. Last year company announced investment of €1.5 billion[59] in building new power plant in Bosnia and Herzegovina; it acquired two Polish power plants, and one in Varna, Bulgaria, and acquired 51 per cent stake on Romanian electricity distribution company. One possible explanation for CEZ low debt-to-equity ratio on one side and its current intensive expansion on the other, may be the fact that government still has more than 60 per cent ownership on company, and thus may still subsidize it.

[58] CEZ, *Annual Report 2005* (accessed from www.cez.cz on March 17, 2007)
[59] Reuters News, *Cez, A.S. Plans To Launch New Power Plant,* (December 11, 2006; accessed from investor.reuters.com on April 2, 2007)

Besides differences in debt-to-equity ratio, table 7 show differences among these companies in their earnings per share (EPS) as well; which is an indicator often used to measure company's profitability. In this regard, AES has the lowest EPS of $0.56, while RWE has the highest EPS of €6.84. The range is even wider for sales growth rate, with lowest one belonging to Greek PPC with 0.05 growth rate and the highest one of 27.58 belonging to CEZ.

In addition, table 7 compares data on management's effectiveness between companies by using ratios like Return on Equity (ROE) and Return on Asset (ROA). ROE looks at the ratio of net income to total shareholder equity, and thus measures how much return has management been able to achieve by employing the capital invested by shareholders. ROA looks at the ratio of net income to total assets, and measures how much return has management earn on all the assets available to it. These ratios compared to industry average, are used to illustrate management effectiveness as both of them use net income as measure of return. Correspondingly to other cases, here too, countries in the list are characterized with big variety. On ROE side EnBW is characterized with highest ROE of 33.63 per cent, while Greek PPC has the lowest one of 3 per cent. While looking at the ROE, it is important to remember the fact that high financial leverage translates into high ROE ratio, and therefore it should always be looked together with other ratios. From ROA perspective, for year 2006 CEZ has achieved the highest one of 8.3 per cent compared to other companies, while Greece PPC has showed the lowest ROA of 1 per cent.

Based on the data from table and companies' establishment in the southeast Europe region, a categorization can be drawn on best possible candidate for the project and worst candidate. Consortium between AES and CEZ is a good combination. They offset each others weak points considered to be important and typical for a strong company. While AES is heavily

debted company, CEZ seems to be able to run its business with very little amount of debt in its balance sheet. However, both of these companies are present in two largest net exporting countries; Bosnia and Herzegovina and Bulgaria, and therefore if energy project aims at bringing more competition to Kosova and region, this option can threaten achievement of that goal.

Enel and Sencap consortium is an interesting combination. Sencap is newly established JV with no proved experience. Greek PPC, as one of the partners in this JV is the weakest company in the list. They have the lowest ROE and ROA, lowest profit margin, and lowest amount of net cash flow, which makes them the worst possible candidate for the project. Enel on the other side is one of the largest companies in the list, and its performance is in range with industry performance. However, its presence in Bulgarian market does not allow for introduction of new energy company in the region.

RWE and EnBW are both part of three biggest power companies in Germany. Their performance compares favorably to other companies in the list, and even though they have gained presence in the Eastern and Central Europe, neither of them has yet entered Southeast Europe market. Further, power companies in Germany have continuously contributed to development of new coal technologies, since Germany too uses coal as its primary source for energy production, and therefore EU's high environmental concerns have had great pressure on these companies in making efforts for clean environment. Therefore from this rough evaluation of companies, these two companies could comfortably be regarded as best possible candidates.

Table 7: Financial overview of four short-listed companies compared to industry average for year 2006 (company/industry)

	Market Cap	EPS (ttm)	Beta	Net PM (ttm)	Sales growth rate (ttm)	Debt/ equity (mrq)	Inter. cover.	ROE %(ttm)	ROA %(ttm)	Net CF (dec.06)
USA										
AES	$13.70B	$0.56	1.86/0.63	8.21/ 9.67	14.84/ 6.54	6.51/ 1.69	1.77/ 5.43	19.22/ 12.51	3.24/ 3.59	$ 1,390M
WGI	$1.80B	$2.65	0.77/1.26	2.47/ 4.88	6.57/ 16.21	0.00/ 0.66	18.5[1]	10.40/ 14.27	4.95/ 6.31	$ 232.1M
Germany										
RWE	€39.10B	€6.84	0.72/ 0.96	6.00/ 5.38	10.05/ 16.17	1.44/ 0.84	1.24[1]	20.18/ 16.20	2.64/ 3.77	€2,794M
EnBW	€5.30B	€4.11	0.56/0.44	8.40	22.75/ 21.99	1.47/ 0.43	1.83[1]	33.63/ 14.02	4.18/ 4.23	€ 1,932M
Czech Republic										
CEZ	502.200000 KcB or $23.68B[3]	47.000000 Kc or $2.22[3]	NA	18.02/ 9.67	27.58/ 6.54	0.25/ 1.69	58.23/ 5.43	14.91/ 12.51	8.30/ 3.58	CZK 30,932M or $1,459M[3]
Italy										
Enel	$65.00B	$2.26	0.58/ 0.63	8.83/ 9.67	13.18/ 6.54	0.79/ 1.69	5.66/ 5.43	17.99/ 12.51	6.36/ 3.58	€ 508M
Sencap JV:										
Contour Global (USA)										
Public Power Corp.S.A. -PPC (Greece) [2]	€4.30B	€0.58	NA	0.032	0.05	1.13	1.65	3.0	1.0	€35.82M[2]

Source: Reuters investor (except for PPC – Greece) – accessed from www.investor.reuters.com on March 15, 2007

[1] calculated from income statement

[2] data taken from 2005 annual report obtained from Athens stock exchange website

[3] exchange rate on March 14, 2007, 1 USD = 21.2076 CZK (source: www.xe.com)

2.2.2 Environmental Impact vs. technology application

No new energy project can be evaluated for its effectiveness without evaluation of its environmental impact, which in the projects of last decade starts with the technology used in the energy production process. According to the Energy Strategy of Kosova paper prepared by MEM, new investments have to be part of clean-coal energy technology, compatible with EU Large Combustion Plants (LCP) directive. On the pre-feasibility study done by European Agency for Reconstruction (EAR) it was suggested that these technologies be based on the pulverized firing (PF) and circulating fluidized bed (CFB) technologies, which are considered to bring the emission of SO_2, NO_X, and particulates to the levels allowed by EU LCP directive. This means that emission levels during power production by the new plant should not exceed the following levels:

Sulphur dioxide, SO_2	mg/nm^3	200
Nitrogen oxides, NO_x	mg/nm^3	200
Particulates	mg/nm^3	50

Table below shows the current level of gasses being emitted from the existing power plants, Kosova A and Kosova B. Both plants have been built more than 40, respectively 20 years ago, and their production technology has not changed much since then. During the post-conflict years, large portion of donor funds have been dedicated to rehabilitation, but not to the upgrade of the system. As a result, the emission levels remain close to the levels when the plants were first constructed, but much higher to European LCP directive, adopted on 2001. Due to this fact, there is a particular need for the selection

committee to assure that the technology to be used for energy production at the new plant Kosova C will be the most recent and efficient one. A fact that makes this parameter even more important is Kosova's demographic dispersion and the geographic size. The country's size does not exceed 11,000 km^2. With more than 2 million inhabitants, the population average density reaches to approximately 200 inhabitants per square kilometer. The current power plants Kosova A and Kosova B are located northwest of the capital Prishtina, otherwise, at the north of very central region of Kosova. According to current plans, the power plant is to be located in the vicinity of the present plants. Once operational, the power plant Kosova C will operate along with Kosova B, as their life-span extension is a part of the government strategy. The concerning fact is that such positioning of the Kosovar government towards increasing power generation capacities implies that the levels of pollution will increase for a certain period of time.

Table 8: Emission concentrations for existing power plants

Plant name	Installed capacity MW	Net output capacity	Emission concentration		
			Dust	Nox	SO2
			mg/Nm^3	mg/Nm^3	mg/Nm^3
EU Level			50	200	200
Kosova A1	65		2000	350	604
Kosova A3	200	35	2000	350	604
Kosova A4	200	130	2000	350	604
Kosova A5	210	130	2000	350	604
Kosova B1	339	140	260	756	693
Kosova B2	399	300	260	756	693
Total Kosova			8520	2912	3802
Kosova/EU level			170.4	14.56	19.01

Source: World Bank and SEEC, *Development of Power Generation in South East Europe - Implications for Investments in Environmental Protection* Report

As the table shows, the current emission levels in Kosova are drastically higher than the

levels allowed in the European Union. The overall dust emission is 170 times higher than European levels. The NOX level is 14.56 times higher, while the sulfur dioxide levels are almost 20 times higher.

Despite the fact that on pre-qualification criteria there was no word on technology requirement, it is very important to look at the current technology that some companies from the list employ for energy production, in particular to their investment in the Southeast Europe region. Knowing this fact can be helpful in building assumptions regarding technology usage by the new investor. A brief observation of the companies reveals some positive signs in this respect. RWE Power, has announced that it will start building new 1600MW coal-fired power plant which will employ carbon capture and storage technology and will reduce carbon emissions for 22% per unit of electricity generated.[60] RWE Power AG is also building lignite fired power plant in Germany (Neurath location) which is using state-of-art clean coal technology, and promises to raise the efficiency, meaning more power per ton of lignite, of the plant to 43 per cent[61]. Traditional coal fired power plants have efficiency level of 36 - 38 per cent. Furthermore, this power plant will emit up to 6 million tons less CO_2 compared to old ones, and reduce the emissions of sulfur dioxide, nitrogen oxide and dust by more than 30 per cent. [62]

AES has announced last December that it will install multi-emissions control technology at Westover, a 126 MW coal-fired facility near Binghamton, New York. The 670MW lignite-fired power plant that it is building in Bulgaria Maritza East 1, will use clean

[60] Datamonitor NewsWire, *RWE npower reveals plans for clean coal power station in Essex, March 13, 2007* (accessed through LexisNexis)
[61] RWE Power AG, *Short profile: With all our power,* (accessed from www.rwe.com on March 16, 2007) p.13
[62] RWE Power AG, *Short profile: With all our power,* (accessed from www.rwe.com on March 16, 2007) p.13

combustion technology and will meet World Bank environment standards.[63] CEZ inherited most power plants from being Czech state owned energy company, and while it is expending rather aggressively, the new generating capacity that it is adding to its portfolio, comes from buying old power plants rather than building new ones. However, last December they committed to invest more than $168 million over the next eight years to reduce air pollution from its coal-fired Varna power plant in Bulgaria[64].

Seeing that some of these companies are being aware of the important role that technology plays in this industry is a good indicator. However, it is not clear yet whether they will apply this state-of-art technology in Kosova as well. Due to its undefined status, Kosova has not signed Kyoto Protocol yet, and therefore no official and legal commitments toward reduction of green house emissions have been made so far by the Kosovar government. However, Kosova's membership into Energy Community Treaty, which binds the member countries to commit to EU Environment standards, among others, could be an optimistic indicator in this regard. Failure to comply with these standards can be harmful for both, private investor and Kosova people. With its strong aspiration and commitment of the Kosovar Government to join the EU, it can be assumed that in maybe less than 20 years Kosova may be part of the EU family. But this will not be possible with the use of energy production technology that is not compatible with EU standards. In case a plant is operating with technology other than one specified by EU standards, it will be required to close down, similar to the case of Bulgaria's nuclear plant. Considering the long time needed to recover investments in this kind of projects, it

[63] Business Wire News, *AES Begins Construction of 670 MW Power Plant in Bulgaria; $1.4 Billion Investment Marks Largest Foreign Investment In Bulgaria* (May 8, 2006; accessed through google search on March 20, 2007)

[64] SEE News, *Czech CEZ To Invest 127 Mln Euro To Cut Emissions at Bulgarian Power Plant,* (SEE News, December 20, 2006; accessed through LexisNexis)

is very important for private investor to ensure that the project will flow without any interruption for the entire power plant life. On the other side, for Kosovar people it is important that these new investment bring them sufficient amount of very much needed electricity supply without any interruption, but at the same time allow them to live in environmentally safe area.

Furthermore, according to numerous diplomatic estimations, it is very likely that Kosova's political status will be resolved during this summer. This fact implies that signing and ratifying Kyoto protocol, will become the government's responsibilities very soon. Thus, it is of particular importance to address such issues at the earliest stage possible of the new plant construction.

2.3. Political (country) risk

Investing in the foreign country is very often hard, uncertain, and complex decision that involves considering many elements. Country risk in general, and political risk in particular is an important part in this decision. These risks are usually reflected on the evaluation done by different rating agencies such as Standard & Poor's, International Country Risk Guide, World Bank investment assessment, etc., which rate countries according to their economic and political situation, government stability, government attitude toward foreign companies, etc. These information and categorization of countries are important information that any company interested to invest in the market of country other than their home, must pay a very serious attention.

Apart from showing political and country stability, these ratings very often influence and determine the cost of investments, as well. In developing countries, which are usually rated low, banks in general organize larger and more diverse lending syndicates and

charge higher interest rate. In such cases, countries with higher ranking will have less difficulty attracting foreign investment, as the cost of capital for those countries will be lower.

Political risk is divided in three parts: regulatory risk which is allocated to government through change-in-law provisions; legal risk which is reduced by providing for international arbitration; and contract performance risk which is reinforced by sovereign guarantees, investment treaties, and other legal constrains. Regulatory risk makes independent power producers vulnerable to changes in regulations regarding the project, whether it is introduction of new regulations or modification of the current ones. Therefore to be able to mitigate such a risk IPPs need a certain level of guarantee or legal protection from government of the country they plan to invest to. As most countries in which IPPs operate and invest are developing countries undergoing reforms in their energy system, it can be very common that legal protection of investor is either not fully in place or it is in the early stage of establishment. Experiences that many IPPs have had in Asia, like expropriation of plant, or other forms or refusal to comply with contract, have been a lesson for IPP investments and now many IPP request for international arbitration in order to avoid domestic courts. Another tool used by IPPs to mitigate political risk, is the participation of political insurance agencies, like Multilateral Investment Guarantee Agency (MIGA). As part of the World Bank Group, the primary purpose of MIGA is to offer political insurance for foreign direct investments in developing countries.

While Kosova is a place that came out of heavy war eight years ago, and is de facto still part of Serbia, politically, it has been developing into a real government structure with all

institutions in place, including the national Assembly, President, the Prime Minister, and the necessary ministries. While by these institutions it resembles a sovereign country, Kosova still lacks internationally recognized statehood. Since establishment of the Kosovar Government, known as Provisional Institutions of Self-Governance, in 2001, many laws and regulations that concern many aspects of life in Kosova have been promulgated by these structures, including those that regulate the energy market. At present, the legislative framework on energy consists of three laws, including, Law on Energy No. 2004/8, Law on Electricity No. 2004/10, and Law on Energy Regulatory Office No. 2004/9.[65] The law on energy defines the basic principles for the energy strategy and energy programs in Kosova; the rules for ensuring the efficient use of energy and the use of renewable energy sources; the rules for establishing an energy market; and other measures necessary to ensure the proper functioning of activities in the energy sector.[66] The law on electricity establishes conditions for performing the generation, transmission, distribution, supply, trade, import, export, and transit of electricity; the organization of access to the networks, and the organization of the electricity market.[67]. The third law adopted in the package of the laws regulating the electricity and energy market was the law that established the independent Energy Regulatory Office (ERO). The Office is responsible for issuing licenses to carry out energy activities, the procedures for granting permits for the construction of new generating capacity, the

[65] As each legal act, and in particular law promulgation needs final approval of the head of United Nations Mission in Kosova, the Special Representative of the Secretary General, the approved laws become UNMIK Regulations.
[66] Assembly of Kosova, *Law on Energy - Article 1,* (June 2004; accessed from www.assembly-kosova.org)
[67] Assembly of Kosova, *Law on Electricity - Article 1,* (April 2004; accessed at www.assembly-kosova.org)

criteria for regulating prices, and the conditions of energy supply.[68] With adoption of these laws, the Kosovar government has secured the basic legal mechanisms necessary to assure sound and functional energy market in Kosova.

However, in order to provide for a stronger legal protection to the foreign investors, in November 2005, the government adopted the Law on Foreign Investments. Beside the protection, the Law ensures the foreign investing company that it will not be treated less favorably than the local investors. Encouraging for the investor, the law does not limit neither the amount of profit repatriation nor the number of expatriate employees. Moreover, in case of disputes, the law provides for the possibility of arbitration in international level, such as International Centre for Settlement of Investment Disputes, Arbitration Rules of the United Nations Commission on International Trade law (UNCITRAL Rules), and New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards.

Based on these provisions, it is clear that Kosovar government has addressed the political risk of investment on all its three levels, regulatory, legal, and contract performance risk. The support that the World Bank and the EU Mission in Kosova have provided to the process both in terms of finances and expertise, demonstrates that the political risk has been reduced to its minimum. In particular, MIGA's participation will have positive effect in diminishing political risk of the project even further due to its ability and mandate to serve as guarantee tool for private investor.

Apart from the political risk, these types of projects account for macroeconomic and fuel risk as well. Kosova's economy is characterized with high unemployment rate of 40 per

[68] Assembly of Kosova, *Law on Energy Regulator - Article 1,* (April 2004; accessed at www.assembly-kosova.org)

cent, GDP per capita around €1,000, an average GDP growth rate of 3 per cent, and a Kosova Consolidated Budget of € 641 million.[69] Besides the poor economic situation, one of the advantages of doing business in Kosova is its almost non-existent currency risk. Right after the war Kosova adopted German mark as its official currency and it switched to Euro once it was introduced in January 2002. With respect to fuel risk, this project offers great protection in this regard. Foreign investor will be responsible for building power plant as well as opening lignite mine, which will be used to supply the power plant with its fuel. This option eliminates fuel supply risk as the power producer will own the mine as well.

2.4. Purchasing Electricity

As mentioned above, the most widely used form of electricity purchase, especially in the places where electricity exchange market is not established, is through purchasing power agreement (PPA). These agreements are specific for the fact that there is a single buyer, usually state owned entity that buys power from an independent power producer using long-term contracts, which contain plant specific terms and conditions. These agreements are very important as they try to capture all concerns and details regarding the deal, such as maturity of contract, amount of electricity purchased, price of electricity, cost pass-though mechanism, fuel supply and its price (if government owns those resources), legal protection of the investor, amount paid for royalties, profit repatriation, tax break (if any), employee structure (local versus expatriate), counterparty risk, etc. In addition, PPAs contain risk allocation for each issue to the party that can take a best care for it. Fuel

[69] UNDP and USAID, *Kosovo Early Warning Report* (July – September 2006; available from www.ks.undp.org; accessed on March 30, 2007) p.27

supply, for example, is allocated to fuel supplier with delivery guarantee ("ship-or-pay"), while fuel price is allocated to offtaker (single buyer) with pass-though provision for fuel purchase. Market risk in these projects can be two fold, either demand risk or currency risk, in which case both of them are allocated to offtaker through PPA; the former specifying the price and quantity, whereas the latter through denominating or indexing payments to hard currency.

For Kosovar government this will be the first time it will have to deal with such an agreement with foreign investor, meaning that it lacks any previous experiences upon which conclusions can be drawn. However, Kosova's Law on Electricity, Article 21.3 addresses specifically the issue of PPAs, according to which these agreements shall include following provisions:

a) the extent of the supply;

b) the technological conditions and quality of supplies;

c) the scheduling of supply and receipt;

d) responsibility for supply and receipt;

e) sanctions for breaches of any contractual provisions;

f) the payment or payment guarantees for supplies.[70]

Furthermore, Kosova's Law on Electricity Article 21.5 specifies the length of the contract to be from 1 to 5 years, with the possibility of extension. While provisions listed under Art. 21.3 follow the standards of the issues covered by these agreements, the length specified under Art. 21.5 falls far behind standard maturity of the contracts. In most cases PPA are singed in the period of 15 to 20 years. This can be illustrated with a case of new

[70] Assembly of Kosova, *Law on Electricity - Article 21.3,* (April 2004; accessed from www.assembly-kosova.org) p.12

coal power plant project that AES is building in Bulgaria, and which includes a 15[71] year long PPA. As the length of power purchasing agreements is one of the most important elements of these contracts, it will probably be first issue to be negotiated between private investor and MEM.

Drawing on Art. 21.3 of Law on Electricity and some basic assumptions from the nature of these agreements one can think of three initial options (interaction between KEK that will be single buyer in this case, and private producer) that can finalize the project. The first would be that KEK agrees to buy all the energy generated from power producer. Second option would be that producer decides to sell the produced power outside of the Kosovar market. And the third option would be that part of electricity is sold to KEK and another part is exported. However, PPAs are far more complex than this and therefore involve many elements that need to be decided between electricity purchaser and power producer. The first three most important ones are the quantity purchased, price of electricity, and length of the agreement. Even though Kosova's Law on Electricity limits the term of PPAs to five years, it is very likely that this will be one of the very first item to be negotiated between parties in the agreement. Assuming that length of the PPA will be subject to an agreement between parties, table below shows three possible scenarios that can characterize the project. For simplicity reasons only three variables have been used, the quantity of electricity purchased, meaning whether KEK will buy all of electricity generated or only part of it (assumed to be 50 per cent), price of electricity, which is assumed to be fixed for the life of the contract, and the length of the contract, which is assumed to be either 15 or 40 years (note: 40 year is the planned life of the

[71] Business Wire News, *AES Begins Construction of 670 MW Power Plant in Bulgaria; $1.4 Billion Investment Marks Largest Foreign Investment In Bulgaria* (May 8, 2006; accessed through google search on March 20, 2007)

power plant). The labels worst, best, and moderate are shown from the KEK's (single buyer) perspective.

Table 9: Possible scenarios for PPA

Scenarios	Quantity	Price	Length
1 - worst case	all	fixed	40 yr
2 - best case	50%	fixed	15 yr
3 - moderate	50%	fixed	40 yr

In scenario one KEK would lock itself in buying all electricity produced from the same power producer during the entire duration of the project. The reason why this scenario is estimated to be the worst case is that with establishment of Southeast Europe Regional Electricity Market, KEK will have an option to purchase electricity from producers outside Kosova as well, therefore locking itself in such an agreement is not the best option. While from KEK's perspective scenario one is the worst-case, for power producer this would be the best-case scenario. Since these kinds of projects are financed based on their projected revenue stream, having an agreement that guarantees that the amount produced will be sold, will have huge impact on its financing.

Scenario two is considered to be best-case scenario for KEK since in this case KEK will commit on purchasing half of electricity produced only for 15 years at fixed price, after which it can decide whether it will continue with same producer or it will diversify its electricity supply portfolio with different producers in the region. From producers perspective this scenario could be more like a moderate-case scenario since half of its electricity produced will be subject to regional market forces and will therefore cause some uncertainties in the projected revenue stream.

There are also other variables that are very important and should be reflected in these cases, such as the cost pass-through mechanisms, which is not included on the Art. 21.3 of Law on Electricity. As operation cost can be subject to changes, it is important that during negotiations between parties in the agreement, the pass-through mechanism are clarified as best as possible. One option can be that changes in operation cost be fully pass through to the retail price, in which case end users will be directly affected by it. Another option would be that an agreement is reached between MEM and power producer that if there is an increase in production costs, only part of it could be passed through to the retail prices, and the rest compensated with lower transmission fee. This option, though, assumes that transmission operator is state owned.

Purchasing power agreement can be considered as most important part in these types of projects. Most of these projects are implemented in developing countries, where governments work actively on reforming and liberalizing energy markets, thus bringing new rules and regulations that will reduce investment risks. However, this is not enough in attracting foreign investment. What is more important, as Woodhouse puts it, is the ability to offer right package of contract terms.

Governments learned that to attract IPP investment, actually reforming the electricity sector in a way that reduced risk was not necessary. Rather, all they needed to offer was the right package of contract terms. [72]

[72] Erik J. Woodhouse, *A Political Economy of International Infrastructure Contracting: Lessons from the IPP Experience,* (Program on Energy and Sustainable Development at Stanford University, September 2005) p.16

Chapter 3

3.1. Economic Growth

Even after eight years since the end of conflict in Kosova, the country is still facing very low economic growth, high unemployment, and huge trade deficit. Since the end of the war in 1999, donor assistance and remittances have comprised a significant portion of national income, both of which have marked considerable decline in the last years. To respond to this situation in the best manner, the World Bank office in Kosova suggest that:

"As foreign assistance and remittances decline, Kosovo clearly needs to replace these flows with export earnings and foreign investment," (World Bank, Kosovo Economic Memorandum, 2004)

At present, the main national income comes from the customs tax collection. During 2005 customs collected €436 million net, representing 69 per cent of total revenues collected for the Kosova Consolidated Budget.[73] The level of exports continues to be low.

According to the statistical office of Kosova, exports cover imports by average 5 per cent[74]. Faced with this negative balance of trade, and its implications for further economic development, the Kosovar government as well as the leading international organizations believe that increasing the energy production capacity of Kosova is the quickest way of changing the negative balance of trade. According to them, this can be achieved through construction of the new plant, since the amount of MWs produced will

[73] EU Mission in Kosovo website, *EU Pillar Components,* (accessed from www.euinkosovo.org on April 10, 2007)
[74] Statistical Office of Kosova (SOK), *External Trade Statistics, July 2006*; (available from http://www.ks-gov.net/esk)

suffice not only to supply the domestic, but the regional market as well, causing a drastic change in economic trends of Kosova and converting the country from net energy importer, to net energy exporter. World Bank has in particular offered significant assistance in this direction.

"The urgency for Kosovo to boost its economic growth and reduce poverty is growing, and the energy sector has the potential to become one of the main pillars of economic growth in Kosovo's medium and long-term development strategy," Kanthan Shankar, World Bank Representative in Pristina.[75]

Lack of sufficient and regular energy supply has been identified many times by local businessmen as the major obstacle in operating their business activities. In times when the domestic private sector and in particular domestic production, need to be supported and strengthen with utmost importance, the lack of regular power supply becomes the primary impediment to its steady development. The current energy peak demand has been estimated to be around 900MW, and it is expected to increase further as the large industrial producers, such as Feronikel and Trepca mining complex, which alone consume 80MW[76] and 120MW[77], respectively, are privatized and will begin their full operations soon. Hence building new power generating capacities becomes unavoidable step.

3.1.1. Effect on Unemployment

Changes in unemployment, improvement of electricity supply at reasonable price, changes in trade balance, increase of Kosovar budget revenues, are only few of the parameters that can serve to estimate the impact that energy project will have in the

[75] World Bank – Kosovo (accessed from www.worldbank.org/kosovo, on April 4, 2007)
[76] Kosova Ministry of Energy and Mining (MEM), *Energy Strategy 2005 – 2015,* (MEM, July 2005) p.16
[77] *ibid*

general economic situation of Kosova. However, the impact that it will have to reduce, the already high unemployment rate is frequently mentioned by politicians, without proper calculations made. Current number of registered job seekers in Kosova is estimated to be around 324,835[78]. Being capital, rather than labor-intensive industry, the new plants' capacity to employ new labor force will hardly be noticed. The base line design of the new power plant study done by EAR assumes that foreign investor will not hire the plant management and operations key personnel locally, but will rather import that part of the labor force from abroad. The study estimates the total number of plant employees will be around 192 (see annex 5), excluding the mine employees, which apparently will contain a slightly larger number. In general, the total number of employees will not be that large. The Minister of Energy and Mining, Mr. Ethem Ceku, confirmed this on one of the project presentation, stating that this project will create 500 new jobs.[79] However, the net effect in employment will be influenced also by the destiny of the Kosova A, the oldest power plant in Kosova. By the time that Kosova C becomes operational in 2012, it is very likely that the Kosova A will be shut down. In such case, current labor force in Kosova A, will be back in the job market. Whether these job seekers will be absorbed by the new power plant is something to be seen, but in case it does, its direct benefits to reduction of unemployment will be very minor. Positive effects in unemployment can be expected in longer term when fueled by sufficient energy supply, Kosova's economy can grow faster and thus create new job opportunities. However, this is a longer-term impact the results of which can be seen only in few years

[78] UNDP & USAID, *Kosovo Early Warning Report, July – September 2006,* (accessed through www.kosovo.undp.org, on April 2, 2007) p.5
[79] MEM Activity Report, *The MEM presented the Project on Energy Sector Investments to the KEK staff* (August 2006; available from www.ks-gov.net/mem)

time. Until then, Kosova has a large number of unemployed people to worry about.

3.1.2. Effects in Price of Electricity

The restructuring of the electricity will affect the price of electricity. Under state-ownership, the electricity sector enjoys the benefit of state-subsidies which manage to keep the electricity price below the costs of generation. This makes electricity companies insolvent, and inefficient. Therefore, the improvement of financial standing of the electricity company, and its efficiency should be part of the reforms in this sector. While the former will require price increase, the latter will result in lower costs, and as such result with the opportunities in opposite changes in price. Changes in price of electricity can also result from electricity market liberalization and thus introduction of competition. This is one of the most important parts of the entire reforms because it is known that introduction of competition can result in higher production efficiency and lower prices.

In case of Kosova, even though the project will establish private participation in energy sector, it is still unclear who will be the main competitors. Current power plant Kosova B is expected to continue power generation until 2027, whereas the oldest power plant Kosova A is expected to retire by 2012. Presently KEK owns both of these plants, and while energy sector restructuring is ongoing, no announcements have been made yet on privatization of old power plants. But according to the Energy Community Treaty, countries are obliged to open their electricity market for third parties by 2008, allowing for competition in the wholesales market. In this case, the distribution and big industrial companies will have an option of choosing between more than one power generator. Household, small retail, and commercial consumers will be able to do so by 2015.

The excess demand for electricity in Kosova in the past years has been resolved through electricity imports. This option is usually expensive one, especially for a country that has ability to generate its own electricity. However, due to inherited price level setting mechanism, which kept the prices below cost of generation, consumers in Kosova have been lucky enough not to pay for the full price of imported electricity. This also resulted in KEK being insolvent company and thus a big burden on Kosova budget. In its efforts to improve this image KEK already started price increase, where in its latest announcement they introduced a progressive price structure, which is illustrated in table 9. In addition, new changes include removal of peak load and base load tariff, thus bringing single tariff in the market.

Table 10: Current and new prices of electricity

	Current price (€cents/KWh)		New price (€cents/KWh)	
Consumption	Winter season	Summer season	Winter season	Summer season
<200[3] KW	4.80H[1]/2.40L[2]	3.83H/1.92L	3.47	2.49
200 KW – 600 KW	4.80H/2.40L	3.83H/1.92L	4.76	3.42
>600 KW	5.11H/2.56L	3.83H/1.92	8.43	6.06

Source: Energy regulatory office (www.ero-ks.org)
* Winter season is October 1 – March 31, and summer season is April 1 – September 30
[1] High tariff (peak load), which applies 07:00 – 22:00 Monday through Saturday during winter season, and 08:00 – 23:00 during summer season.
[2] Low tariff (base load)
[3] According to Energy Regulatory Office (ERO) consumption of 200KW means minimum needs without heating and 600KW means minimum needs with heating.

KEK had categorized the household consumers into three groups, first being the ones who consume not more than 200 KW, second group consisting of consumers who consume 200 to 600 KW, and third one covers consumers who consume more than 600 KW. The new price increase will affect mostly households that consume more than 200KW, meaning second and third group. If compared to average current price for winter

season for second and third group, which is 3.6 cents and 3.8, respectively, new price means an increase of 32 per cent for second group and 121 per cent for third group. With currently low rate of bill collection, it is unsure how much and what sort of effect this price increase will have in this situation. The price increase makes the Kosovar tariffs the most expensive in the region. As explained, this will affect negatively especially the third group, which for a KWh will have to pay 8.43 €cents. As such the electricity price in Kosova becomes the highest in the region. Until now, Croatia and Turkey with 7.7 and 7.9 cents per KWh respectively had the highest tariffs in the region.[80]

Even though it is important for KEK to improve its financial standing, the latest price increase does not seem to be the best option at the moment. Kosova's population is still suffering from high unemployment estimated to be around 40 per cent and 37 per cent of population living under the poverty.[81] In addition, the underemployment is also high, and includes the Kosovar government and public services employees, including education and health service. Improvement of bill collection and improvement of efficiency would have been more effective and strategic priorities at this time. For the private investor, the level of bill collection is a more important factor, rather than high prices. With the latest price increase, the consumer compliance, which has just started to improve few months ago, has been jeopardized, and the potential for electricity theft and boycotting of the power payments have been increased.

On the other side, low level of bill collection represents credit risk for private electricity producer. If it is assessed that bill collection does not show positive results, and poses

[80] World Bank discussion paper, *Framework for Development of Regional Energy Trade in South East Europe* (WB March 2004; accessed from www.worldbank.org on April 2, 2007) p. 36
[81] World Bank, *KOSOVO POVERTY ASSESSMENT: Promoting Opportunity, Security, and Participation for All* (WB June 16, 2005; accessed from www.worldbank.org on April 2, 2007) p. 7

serious risks to the private producer's revenue stream, the producer can choose to reduce the amount of electricity sold to Kosova and divert it to other markets in the region.

Electricity price increase in Kosova is unavoidable reality. The fact that these prices have been artificially kept below cost of electricity production suggests so. However, based on the assumptions that new power plant will be more efficient, and based on the estimated operation cost of €13.5 MWh (see annex 4), compared to average world electricity price of €40 MWh, it may be possible that these factors will influence electricity price by causing some downward movements.

3.1.3. Financial Benefits

According to pre-feasibility studies done by EAR, once the plant with 2100MW capacity is build and is fully operational, it is estimated that its turnover will be around €600 million (estimated with sale price of €40 MWh and 15TWh annual production or 85 per cent of load factor i.e. full 7500 hours per year). Out of this amount Kosova's economy will directly benefit with €150 million a year. The main contributors to this amount will be the lignite fee (royalty), transmission fee, corporate tax, salaries (mine and plant), maintenance services, ash and water fee, and land lease. According to Pre-feasibility study done by EAR, royalties will contribute €48 million annually to the Kosovar budget, assuming royalties are paid €3/ton; transmission fee will contribute with €30 million, assuming a fee of €2 per MWh of electricity transferred; taxes will contribute with €10 million annually (corporate tax is 20 per cent); salaries, and maintenance services will

contribute with €25 million each; ash and water fee will contribute with €10 million; and land lease with €2 million. [82]

For Kosova budget to benefit €150 million out of €600 million turnover, or only 25 per cent of the total revenues, raised many question if this project is planned properly, and if all the cost associated with it have been examined. However, the turnover of €600 million is not expected to happen before 2020 when all units adding to the planned capacity of 2100MW are installed.

Except for taxes, most other contributors to the Kosova economy are fixed income, which are not expected to experience significant change since a handful of these items will be part of the PPA and therefore will carry the agreed amount for the life of the contract, except for inflation adjustment.

The average investment costs for building new power plant are €1,088 per KW and as mentioned earlier average operation cost are estimated to be €13.5 MWh. However these costs does not account for carbon emission fee, which during the past few years has proven to be quite volatile, ranging anywhere from €1 - €25 per ton. Once this fee is calculated, it can have significant importance on the calculation of free cash flow for the project, as well as cumulative cash flow. These changes can also be reflected on the calculation of Kosova's benefit from the project as well.

For the purpose of this paper, a simple financial analysis of the project was done based on the following assumptions:

[82] European Agency for Reconstruction (EAR*), Pre-feasibility studies for the new lignite fired power plant - Financial and economic analysis* (February 2006) p.15

Items	Value	Units
Royalty	3	€/ton
Lignite	1.1	ton/MWh
Interest on loan	10	% (assumed 70% of capex)
Tax	20	%
Project Life	40	Years
Average Operating cost	13.5	€/MWh
Depreciation	5	%
Loan amortization	10	Years
Average capex	1,088	€/kW
Discount Rate	10	%
Inflation	4	%
Carbon cost	20	€/ton
Carbon cost	10	€/ton
CO2 amount	1	ton/MWh
CO2 amount to be purchased	40	% of total CO2 emissions
Price of elect.	40	€/MWh

From these assumptions three scenarios derived. The first one looks at cash flow without accounting for carbon cost, the second one assumes that 40 per cent of total CO2 emissions has to be purchased for a CO2 price of €20 per ton of emissions, and the third scenario is same as the second one, except that carbon price is €10 per ton. Below is the summary of NPV and IRR for each of the scenario. IRR does not change much from one scenario to another, but there is significant change in NPV, especially if compared between first and second scenario. This fact emphasizes the implication of accounting for carbon cost.

#	Scenarios	NPV	IRR
1	No CO2 cost	€866,916,593	9%
2	Cost of CO2 of €20 per ton	€185,852,774	7%
3	Cost of CO2 of €10 per ton	€528,048,353	8%

In addition, including carbon cost to the calculation give different picture for the time necessary to recover investments. This is illustrated with graph below. If during the life

of the project there will be no carbon costs involved – according to first scenario - foreign investor will be able to recover his/her investments on 2023. According to second scenario when the price of carbon is €20 per ton, foreign investor will be able to recover his/her investment by 2025, and according to the third scenario the investment will be recovered on 2024.

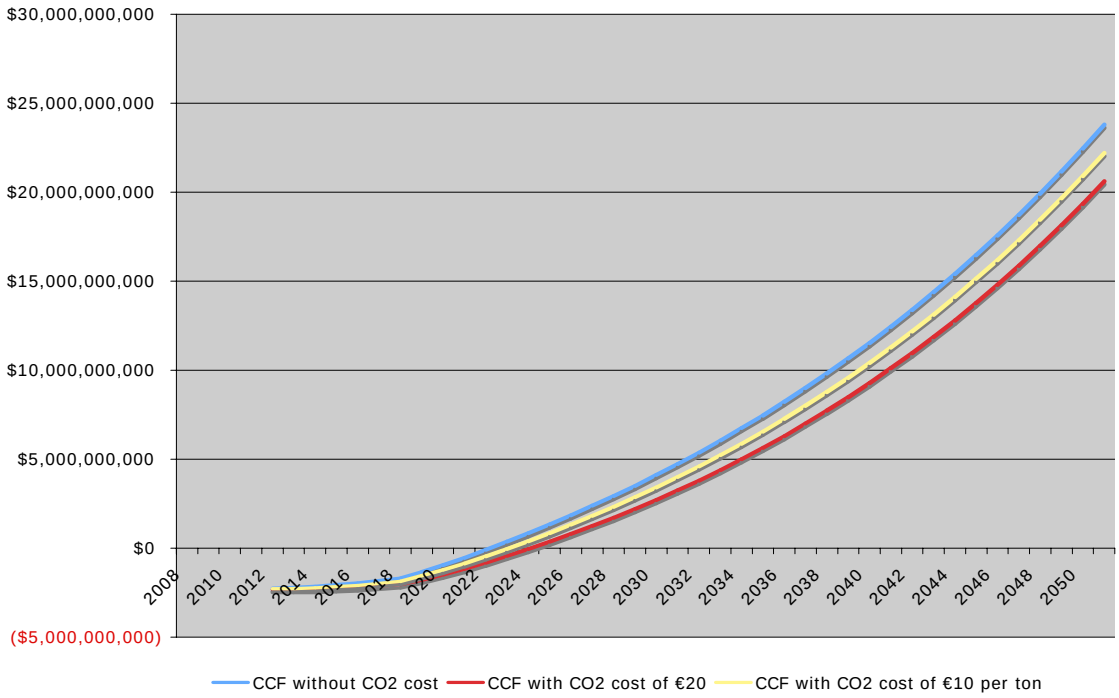


Figure 2: Cumulative Cash Flow for the project

While the foreign investor will not be able to recover his/her investment until 2023 or 2024 or 2025, depending on the carbon cost, the taxes paid to Kosova government from this project will began much earlier. According to first scenario, first tax revenues will come in 2016 in a value of €3.2 million reaching €66 million on 2019 when full capacity of 2100MW is installed. In second scenario tax revenues will start on 2018 at a value of €3.6 million reaching at €45 million on 2019. And according to third scenario tax

revenues will start on 2017 at €3.2 million value and reaching €56 million on 2019. The figure 3 gives an overview of these changes in tax revenues.

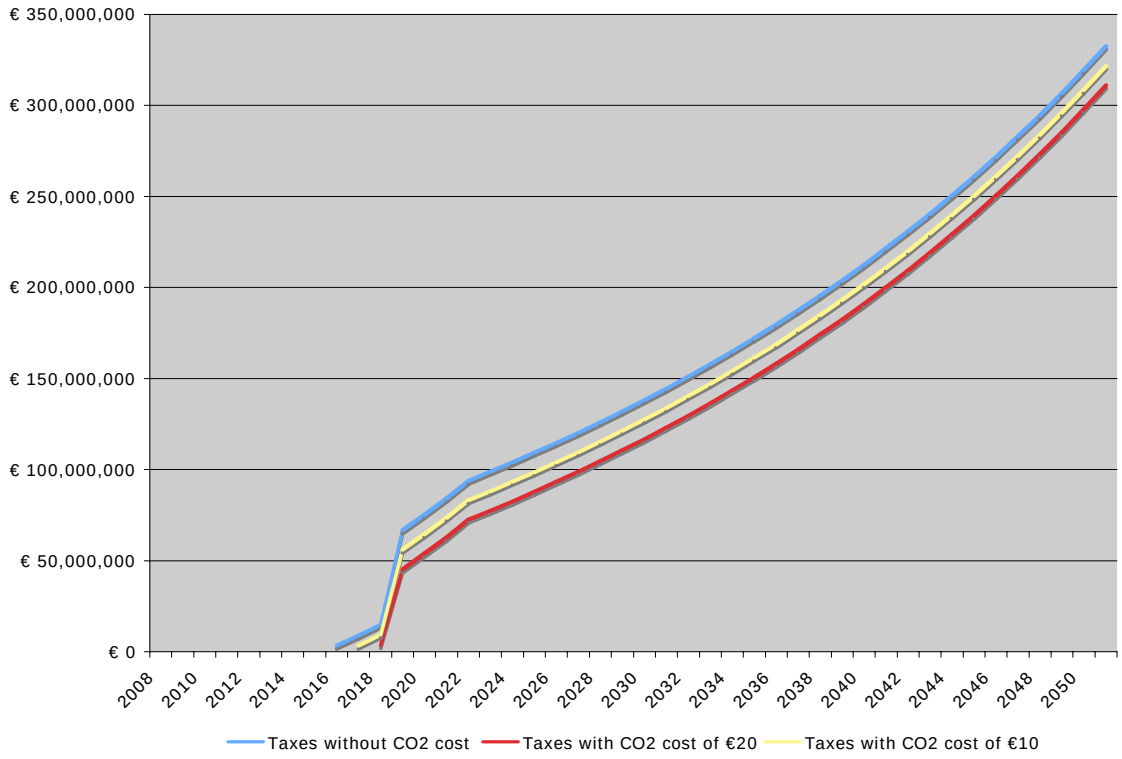


Figure 3: Taxes paid to Kosova government from the project

3.1.4. Social Cost

While there are some economic benefits deriving from these investments, the project itself creates certain social costs as well, primarily in terms of dislocation. The lignite reserves, planned to supply the new power plant, are located under the residential area of village Sibovc, covering 1050m^2, with approximately 73500 premises consisting of private houses and schools, and a total of 520,000 residents, slightly less than one fourth of total Kosova's population. The residents were never part of any consultation for relocation, and neither has the Ministry of Environment and Spatial Planning progressed

in identification of the new area where the Sibovc residents are to be relocated. Failure to properly address the problem of social costs involved with this project, will generate hostile feelings among affected residents towards not only MEM, but foreign investor as well, in which case the image of the company will also be affected. In today's world many multinational companies have realized that while bringing high returns to their investor is their first priority, running a business in a socially responsible manner is another one. Some studies have even suggested that socially responsible firms have performed better in stock market than others.[83] But for many executives socially responsible business is not just a matter of the economics but also a moral issue, which is than reflected in its employees and in the community they operate. Companies have realized that working in friendly community will offer them benefits by attracting better quality labor force, and improved moral. Workers feel better about working for a company that is socially responsible.[84]

Projects that involve natural resources extraction in particular, are sensitive to these moral issues, as they usually necessitate resettlement of inhabitants occupying the mining area. Therefore it is very crucial that this problem is addressed in the early stage of the project, and it is also important that a good partnership is established between company and the community around it. However, as these resettlements are costly, and without sufficient financial means they can take very long time to be finalized, it would be apt that this action be co-implemented between companies themselves and host governments. The resettlement issue should be looked as part of the total costs for the project implementation, not only from economics perspective but also from the social and ethical

[83] Joseph E. Stiglitz, *Making Globalization Work* (Norton&Company, 2006) p. 198
[84] Joseph E. Stiglitz, *Making Globalization Work* (Norton&Company, 2006) p. 199

perspective.

3.1.5. Energy export and its impact on trade balance

Suffering from chronic trade deficit, Kosova government has identified energy sector as the one with the highest potential to show the way out of this situation. As it has been mentioned earlier, most countries in the Southeastern Europe are net importers of electricity and according to the Generation Investment Study founded by European Commission, it was projected that Kosova has an ability to produce huge amounts of electricity with least cost. Low average operation cost for the production of electricity compared favorably to world electricity price of €40 per MWh, offers great opportunities for good profit margin (see annex 4). Of the planned 2100 MW, the Kosovar government foresees that approximately half of the capacity will be dedicated to the regional market. Exporting 1000MW worth of electricity will certainly have effect on the trade balance. A rough estimate demonstrates that if Kosova C is to export based on the electricity average world price of €40MWh, and assumed at 80 per cent load factor, the annual turnover from exports would be more than €200 million. (1000MW x 7000 hours per year = 7,000,000 MWh (7,000 GWh) * €40 MWh = €280,000,000)

However, export potentials are to be realized only after full 2100MW capacity is installed, which is expected to be sometime in 2020. By that time Kosova A would be retired, and according to Energy Strategy paper, Kosova's forecasted electricity annual demand would be 1,296MW (average annual growth scenario of 3.9 per cent) or 1,960MW (high growth scenario of 5.5 per cent). The average growth scenario would still allow for almost half of generated capacity to be exported, but for high growth scenario, Kosova's electricity export would be rather marginal exports, and would

therefore fail to cause major expected differences in Kosova's trade balance.

While electricity export will certainly affect the current trade balance, the fact that these exports will be coming from foreign company, may cause some deterioration in balance of payment. The energy project is recognized as the first Greenfield foreign direct investment project in the territory of Kosova. FDI play an important part in the economic development of a country especially in developing world. They provide for the technology transfer, improvement of exports, increase the competitiveness in the domestic market, more efficient use of resources, increase in labor productivity, etc. However, if FDI policy is not planed carefully, it can have some drawbacks, such as profit repatriation. A status of being foreign company, which operates in another country, will require that profit is repatriated in the home country of the foreign company, thus causing great deterioration to the balance of payment in the short run. This fact calls for careful implementation of policy for attracting foreign investments. In many cases country puts a limit (usually in percentage) of the profit that can be repatriated, however in the case of Kosova, the law on foreign investments does not apply such a rule, thus imposing big question on the true effects of these investments into economic development, especially in the short run.

3.2. Impact on Environment

While electricity is the source of life by providing vital services to modern economies, and powering economic growth, it is frequently known to be the major contributor to environmental and water pollution. In particular coal fired power plants are main contributors to greenhouse gas (GHG) emissions. This is a price that many countries and power producers chose to pay, since energy production based on coal is known for the

cheapest way to generate electricity. The emission of the gasses can be managed to a degree, but not eliminated, by application of the certain technologies that reduce GHG emissions and increase plant efficiency. In most cases the efforts to reduce GHG emission have incorporated refurbishment/upgrading of the old power plants, or building new ones. The decline of GHG emissions is an international obligation, ratified by majority of the countries, imposed by the Kyoto Protocol, according to which the industrialized countries are required to reduce GHG emission level to 5.2 per cent below 1990 level over the period of 2008 – 2012.

While Kosova is not a signatory of Kyoto Protocol, even though it is part of UN Framework Convention on Climate Change, it is not required to reduce its emissions yet. Two current power plants, Kosova A build in 60s and Kosova B build in 80s, continue to operate and cause air pollution of the level far above EU standards. Kosovo A has average particle emission of 2000 mg/Nm3, which is 40 times higher than the level set by EU standards of $\leq$ 50 mg/Nm^3. TPP Kosovo B has average particle emission of 260 mg/Nm^3, which is far lower, but still 3 times above the allowed limit of 200 mg/Nm^3 (see table 8 above). This level of current emissions coming from these two power plants calls for urgent action to be taken in this direction, as well as careful planning for future power plant.

Even though, presently Kosova does not have any commitments to reduce its GHG emissions, with its long-term perspective of joining EU, it will have to comply to its 90000-page *acquis communautaire* and many directives, including those on environment. If the power plant is not to be constructed and produce energy according to the EU standards, and in particular those on environment, the plant will bear the risk of having to

be shut down long before the foreign investor is to mark its return. Another important reason why efforts on reducing pollution should start sooner rather than later, is the fact that more pollution mean higher carbon costs. Besides the fact that Kosova has no set amount of emission allowances, and resultantly with no commitments on emission reduction, the fact that new power plant will be commissioned after 2012, brings some uncertainties. First Kyoto commitment phase ends in 2012 and while no clear decision have been taken on its continuity, it can be easily assumed that Kyoto commitments will continue in one form or another. Whether developing countries will be obliged to follow same example as developed countries is still not clear, but nevertheless, it important that energy project in Kosova accounts for carbon trading possibilities as well.

Conclusions and Recommendation

Kosova is faced with lagging economic development and lack of sufficient amount of electricity supply, a key ingredient to the economic growth. The current power plants are approaching their maturity and will have to retire soon. This situation creates an urgent need for new additional generating capacities. The current budget constrains Kosovar government to make such an investments on its own, therefore the only option left is to attract a foreign private investor to fill this gap.

While Kosova's interest in this project is its economic development, foreign investor is interested in having high returns on its investment. As both parties have equally important interests in this project, it is vital that an alternative that will allow both parties to gain their expected benefits be implemented.

Possibility for major electricity exports makes this project great attraction for foreign investor. Especially due to the fact that three out of four Kosova's neighboring countries are electricity net importers. And since in Kosova market the current level of bill collection is not at satisfactory level, this gives more option for private electricity producer to sell electricity to the customers who are able to pay for it.

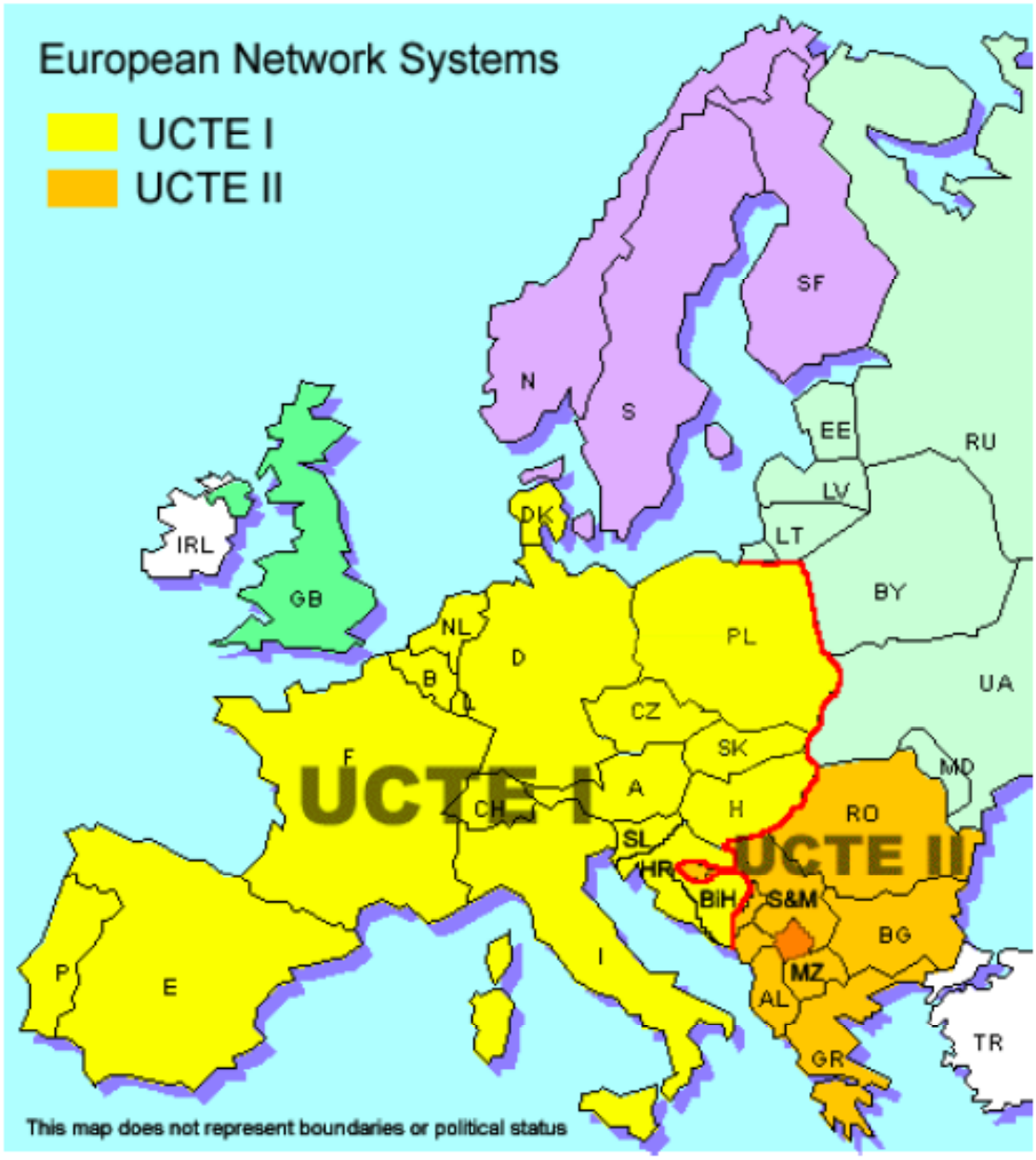
However, it is very uncertain how much this project will contribute to Kosova's economic development. First, it is important that Kosova electricity market is open to competition, which can be achieved only with access of third party to this market. A vital factor in this regard is careful selection of the final winner of the project. Great attention should be given to the possible regional monopoly or duopoly creation, and efforts should be made in avoiding such a thing. This can be achieved by including regional presence as one of the evaluation criteria during selection process. Currently AES and CEZ seem to be largest player in the regional market, and in order for electricity market to operate under fair competition, more players should be allowed to enter. Both Kosova and the region will benefit from more competitive market.

Second, unlimited amount of profit repatriation can cause a risk of having deterioration in Kosova's balance of payment. There are two ways in which this foreign investment downside can be reduced. First, foreign company could implement the project in partnership with local company. While this partnership will offer more guarantees that part of profits will remain inside Kosova's borders, it will also increase the credibility of the foreign company among local population, in which case the foreign investor wont be seen just as someone who is exploiting Kosova's wealth. Furthermore, it will protect the project from internal politicizations, which is often the case in these kinds of projects.

Second, Kosova's government can imposes requirements that private company invest part of their profit in Kosova. This can be for example investment in the renewable energy sources, such as wind energy, solar, or hydro plants. As signatory of the Energy Community treaty, Kosova is committed to submit a plan for developing renewable energy sources; therefore the requirement from foreign investor to invest in renewable sources, can meet the commitments under the treaty as well. In addition, it would be very useful to do a study on renewable energy source potential for Kosova sooner rather than latter. Considering the fact that current project for new power plant will be implemented in two phases, it would be worthwhile to have information on whether second phase of the project can be replaced with renewable energy source. While this option will have huge contribution in reduction of GHG emissions in Kosova, it will also diversify energy sources, which is important in case that new EU environment regulation become more rigorous on coal-fired power plants. Current EU directive on large combustion plant was last amended on 2001, therefore with its increasing environmental concerns EU can always appear with new modifications.

One last thing that is very important for the success of this project is the level of transparency under which the project is implemented. These kinds of projects are very often surrounded with uncertainties, and suspicion of corrupted officials. Therefore it is crucial that public enjoys its right on being informed for all the development in the project and the terms that government is offering in the package, so it can judge on efficacy and soundness of the project. Failure to do so will cause unnecessary troubles for both government and private investor in later stage.

Annex 1 – European Network System



Annex 2 – Kosova's transmission system

Annex 3 – Kosova's distribution system

Source: KEK website (www.kek-energy.com)

Annex 4 – Estimated operation cost of the power plant

Operation cost estimate €/MWh at 85 % load factor
Lignite cost including capital 6,84 €/ton (10 %/a discounting factor)

	Consumptions			Pulverized firing		CFB-firing
		units per hr		Cost per MWh		
Unit size		**300**	**500**	**300**	**500**	**300**
Lignite	tons	330	544	**7,52**	**7,44**	**7,72**
Limestone	tons	1	2	**0,14**	**0,12**	**0,00**
Water	cu.m	850	1250	**0,14**	**0,14**	**0,14**
Hydrochloric acid	tons	0,20	0,30	**0,09**	**0,08**	**0,09**
Caustic	tons	0,10	0,15	**0,08**	**0,07**	**0,08**
Ammonia	tons	0,00	0,30	**0,00**	**0,00**	**0,00**
Boiler water treatment chemicals	kg	10	15	**0,10**	**0,09**	**0,10**
Total consumables				**8,07**	**7,94**	**8,12**
Ash disposal	tons	50	83	**0,50**	**0,50**	**0,50**
Variable maintenance	per MWh			**2,00**	**2,00**	**2,00**
Grand total				**10,57**	**10,44**	**10,63**
Fixed costs				**3,20**	**2,98**	**2,80**
Total cost excl. capital				**13,77**	**13,41**	**13,43**

Source: European Agency for Reconstruction, Pre-feasibility studies for the new lignite fired power plant and for pollution mitigation measures at Kosovo B power plant - Financial and economic analysis of the new TPP

Annex 5 – Estimated number of personnel for new power plant

Personnel estimate	**First unit**		**Following units**	
	number	type	number	type
Plant manager	1	expat.	0	expat.
Deputy plant manager	1	local	0	local
Operations manager	1	expat.	0	expat.
Finance director	1	expat.	0	expat.
Personnel manager	1	expat.	0	expat.
Secretaries	3	local	1	local
Operation div.				
Operations planner & efficiency control	2	local	1	local
Shift engineers	5	local	1	local
Operators	30	local	30	local
Technical department-maintenance				
Engineers				
Boilers	2	exp./local	1	exp./local
Turbines	2	exp./local	1	exp./local
Chemist (water & fuel)	2	exp./local	0	exp./local
Electrical	2	exp./local	1	exp./local
I&C	2	exp./local	1	exp./local
Scheduling	2	exp./local	1	exp./local
Supervisors				
Mechanical	9	local	5	local
Electrical	4	local	2	local
I&C	4	exp./local	2	exp./local
Misc.	2	local	2	local
Shift maintenance				
Mechanical	5	local	2	local
Electrical	5	local	1	local
I&C	5	local	1	local
Day				
Mechanical	5	local	5	local
Electrical	5	local	5	local
I&C	5	local	5	local
Laboratory	3	local		
Misc. drivers	10	local	5	local
Grand total	**119**		**73**	

Source: European Agency for Reconstruction, Pre-feasibility studies for the new lignite fired power plant and for pollution mitigation measures at Kosovo B power plant - Baseline Design of New Thermal Power Plant Options

Bibliography

Assembly of Kosova. *Law on Electricity - Article 21.3, (April 2004).* Accessed on April 3, 2007 (Available from www.assembly-kosova.org)

Assembly of Kosova. *Law on Energy Regulator - Article 1,* (April 2004). Accessed on April 3, 2007 (Available from www.assembly-kosova.org)

Assembly of Kosova. *Law on Energy - Article 1,* (June 2004). Accessed on April 3, 2007 (Available from www.assembly-kosova.org)

Business Wire News. *AES Begins Construction of 670 MW Power Plant in Bulgaria; $1.4 Billion Investment Marks Largest Foreign Investment In Bulgaria* (May 8, 2006). Accessed on March 20, 2007 (Available through google search)

CEZ Group, *Companies within CEZ Group.* Accessed on March 16, 2007 (Available from CEZ Group website www.cez.cz;)

CEZ Group. *Structure of shareholders.* Accessed on March 16, 2007 (Available from CEZ Group website www.cez.cz;)

CEZ. *Annual Report 2005.* Accessed on March 17, 2007 (Available from www.cez.cz)

Datamonitor NewsWire. *RWE npower reveals plans for clean coal power station in Essex. March 13, 2007* (Available through LexisNexis)

Deutsche Welle News, *Bulgaria in Nuclear Quandary as EU Entry Nears* (December 28, 2006. Accessed on January 6, 2007 (available from http://www.dw-world.de/dw/article/0,2144,2293021,00.html)

EBRD Projects. *Private Sector Development.* Accessed on March 16, 2007 (Availble from www.ebrd.com)

Economic Reconstruction and Development in SEE. *Energy in SEE (an official webpage of Athens Process).* Accessed on January 5, 2007 (available from http://www.seerecon.org/infrastructure/sectors/energy/index.html;)

EnBW. *Company Annual Report 2006.* Accessed on March 16, 2007 (Available from www.enbw.com)

Enel. *Company Profile.* Accessed on March 16, 2007 (Available from www.enel.it)

Energy in East Europe News. *AES to build 120-MW wind park.* The McGraw-Hill Companies, October 2006. Accessed on March 16, 2007 (Available through LexisNexis search)

Energy in East Europe News. *Enel banks on Bulgaria.* The McGraw-Hill Companies, October 2006. Accessed on March 16, 2007 (Available through LexisNexis search)

Eric J. Woodhouse. *The Experience with Independent Power Projects in Developing Countries: Interim Report*, (Program on Energy and Sustainable Development, Stanford University; February 2005)

Erik J. Woodhouse. *A Political Economy of International Infrastructure Contracting: Lessons from the IPP Experience.* (The Program on Energy and Sustainable Development at Stanford University; September 30, 2005)

EU Mission in Kosova and Government of Kosova. *Energy Strategy and Policy of Kosovo - The White Paper* (2003)

EU Mission in Kosovo. *EU Pillar Components. A*ccessed on April 10, 2007 (Availbale from www.euinkosovo.org)

European Agency for Reconstruction (EAR*). Pre-feasibility studies for the new lignite fired power plant - Financial and economic analysis* (February 2006)

European Agency for Reconstruction and Development. *Annual Programmes.* Accessed on January 3, 2007 (available from http://www.ear.eu.int/kosovo/kosovo.htm;)

European Commission (EC), *South East Europe Electricity Market options paper***, (**EC, 2005). Accessed on January 8, 2007 (available from http://www.seerecon.org/infrastructure/sectors/energy/rem.htm;)

Financial Times Article. *Energy: Nuclear closures spur rebuilding (Jul 11, 2006).* Accessed on February 27, 2007 (available from www.ft.com;)

Gateway to the European Union. *Activities of the EU – Energy*. Accessed on January 5, 2007 (available from http://europa.eu/scadplus/leg/en/lvb/l27005.htm;)

International Energy Agency (IEA). *Energy Efficiency in Economies in Transition: A Policy Priority* (IEA, 2004)

J.M. Bee´r, Department of Chemical Engineering, Massachusetts Institute of Technology. *Combustion technology developments in power generation in response to environmental challenges* (MIT, March 2000)

Jack Casazza and Frank Delea. *Understanding Electric Power System* (2003)

Joseph E. Stiglitz. *Making Globalization Work* (Norton&Company, 2006)

Kosova Ministry of Energy and Mining (MEM) Press Release. *KEK collects 4.5 million Euros only for the first half of this month, the Task Force has reported* (November 17, 2006). Accessed on December 12, 2006 (available from http://www.ks-gov.net/mem/english/engpdf/RAPORTE/inkasimi%20TF-171106.pdf)

Kosova Ministry of Energy and Mining (MEM). *Activity Report: The MEM presented the Project on Energy Sector Investments to the KEK staff (August 2006).* Accessed on March 13, 2007 (Available from www.ks-gov.net/mem)

Kosova Ministry of Energy and Mining (MEM). *Energy Strategy 2005 – 2015.* Accessed on December 30, 2006 (available from www.ks-gov.net/mem)

Kosova Ministry of Energy and Mining (MEM). *Lignite Mining presentation - International Energy and Mining Investors' Conference,* (MEM October 2006; accessed from www.ks-gov.net/mem on March 15, 2006)

Kosova Ministry of Energy and Mining (MEM*). Lignite Power Technical Assistance Project, Operational Manual 2007.* Accessed on April 3, 2007 (available from www.lpi-ks.com)

Kosova Ministry of Energy and Mining (MEM). *Pre-Qualification Memorandum.* (August 2006)

Kosovo Energy Corporation. *Basic Data.* Accessed on December 30, 2006 (available from http://www.kek-energy.com/WEB_EN/aboutkek/aboutkek2.htm)

Reuters investor. *WGI - Company Profile.* Accessed on March 16, 2007 (Available from http://investor.reuters.com)

Reuters News. *Cez, A.S. Plans To Launch New Power Plant* (December 11, 2006). Accessed on April 2, 2007 (Available from investor.reuters.com)

Riinvest and UNDP. *Early Warning Report #14, January – June 2006.* Accessed on March 15, 2007 (available from www.kosovo.undp.org)

Rob van Gerwen, Saskia Jaarsma, and Rob Wilhite. *Smart Metering,* (KEMA Netherlands Ltd; Netherlands; 2006)

RWE Power AG. *Short profile: With all our power.* Accessed on March 16, 2007 (Availble from www.rwe.com)

SEE News. *Czech CEZ To Invest 127 Mln Euro To Cut Emissions at Bulgarian Power Plant,* (SEE News, December 20, 2006). Accessed on March 17, 2007 (Available through LexisNexis search)

Southeast Europe Energy. *Kosovo - Description of Energy Sector.* Accessed on January 6, 2007 (available from http://www.seenergy.org)

Statistical Office of Kosova (SOK). *External Trade Statistics, July 2006.* Accessed on April 10, 2007 (Available from http://www.ks-gov.net/esk)

Timothy J. Brennan, Karen L. Palmer, Raymond J. Kopp, Alan J. Krupnick, Vito Stagliano, and Dallas Burtraw. *A Shock to the System, Restructuring America's Electricity Industry.* (Published by Resources for the Future; 1996)

UNDP and USAID, *Kosovo Early Warning Report #15: July – September 2006.* Accessed on March 30, 2007 (Available from www.ks.undp.org;)

World Bank – Kosovo. Accessed on April 4, 2007 (Available from www.worldbank.org/kosovo,)

World Bank and European Commission, *South East Europe Generation Investment Study – Executive Summary,* (WB and EC, 2003). Accessed on January 8, 2007 (available from www.worldbank.org Europe and Central Asia/Power;)

World Bank discussion paper. *World Bank Framework for Development of a Power Market in South East Europe.* (WB, March 2006)

World Bank working paper. *Review of Electricity Supply and Demand in Southeast Europe.* (WB, October 2003)

World Bank. *Framework for Development of Regional Energy Trade in Southeast Europe*. (World Bank, 2004)

World Bank. *Interim Strategy Note for Kosovo* (March 2006)

World Bank. *Interim Strategy Note for Kosovo for the Period Fy06-Fy07*, March 30, 2006

World Bank. *Investment Incentives for the SE Europe Regional Electricity Market.* (WB, June 2005)

World Bank. *Kosovo Poverty Assessment: Promoting Opportunity, Security, and Participation for All* (June 2005). Accessed on April 2, 2007 (Available from www.worldbank.org)