

# **The Proposed *New Kosovo* *Power Plant:* An Unnecessary Burden at an Unreasonable Price**



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# Executive Summary

The proposed coal-fired *New Kosovo Power Plant* would cause the price of electricity in Kosovo to rise to unreasonable levels and place a needless long-term burden on Kosovo's economy.

**IEEFA concludes that the World Bank, which has announced its support for a substantial financial subsidy for construction of the coal-fired plant, should invest instead in the development of renewable energy and energy efficiency in Kosovo. IEEFA concludes also that the U.S. government, which has endorsed the project, should cease its support for the misguided introduction of a costly and outdated form of electricity generation.**

This paper explores how the people of Kosovo would have to drastically reallocate their household budgets to pay for the *New Kosovo Power Plant* if it is built. This impact has not been addressed previously by any other technical, environmental, economic or energy finance study of the proposed plant.

IEEFA's research shows also that the cost to produce power from the *New Kosovo Power Plant* would be four times the current cost of electricity production in Kosovo. And because the NKPP would be a disproportionately large addition to a relatively small electricity system, it would drive up the price of electricity for Kosovo households. IEEFA research suggests that the *New Kosovo Power Plant* would increase the overall price of electricity in Kosovo by at least 33.8 percent and by as much as 50 percent.

Kosovo's electric rates are already too high, particularly for residents who live below the poverty line. Most households in Europe pay less than 6 percent of annual income for electricity; in Kosovo that percentage is significantly higher.

The *New Kosovo Power Plant* would worsen Kosovo household finances across the board:

If the plant is built:

- The average household would pay 12.9 percent of its annual income for electricity.
- A low- to middle-income household would pay 18 percent of its annual income for electricity.
- A very low-income household, living below the poverty line and using less electricity than other families, would pay 39.7 percent more for electricity.

The proposed plant carries a number of broad financial risks for Kosovo. Under the current proposed financing model, the Kosovo government would borrow €945 million to cover 70 percent of the cost of the project. A private developer, New York-based ContourGlobal, which is the sole bidder on the project, would provide equity financing for the additional 30 percent of project costs under a scheme that would reap a return in excess of 20 percent.

Among the red flags IEEFA sees on the proposed *New Kosovo Power Plant*:

- The proposed debt burden of €945 million for a single coal-fired plant in a country the size of Kosovo would put enormous pressure on the domestic banking system and likely crowd out new investment across the economy.

- By contemplating a single-bid project as costly as NKPP, the government is risking domestic control of its electricity system, access to its revenues, basic organizational decisions like hiring and firing of employees and future rate increases.
- Plans for the new plant are based on optimistic economic growth assumptions. If the plant underperforms because the economy underperforms, its electricity will become even more expensive.
- The plant will very likely cost more than the World Bank assumes, it may not operate as much as forecast, and/or its operating costs may be significantly higher than expected.
- No investment bank or group of investment banks has come forward to finance the project, an indication that the deal is not creditworthy.
- Recent statements of project support by the World Bank and the U.S. government increase the likelihood that the *New Kosovo Power Plant* project costs will soar as participants in the development process exploit political support for financial advantage.
- Although the government of Kosovo has made considerable improvements in recent years in the billing, collections and loss-management processes across its electricity system, the system nevertheless continues to suffer lost revenues from weak management controls. Weak revenues could cause serious cash flow problems and jeopardize repayment of the new construction loan.
- Studies that have been done in support of the proposed plant lack timely, relevant, detailed and consistent technical data related to construction, finances, operations, utility management or social statistics required to formulate baseline measures or forecasts. After a decade of development, there is still no consensus around any detailed plant design.

**IEEFA finds that the *New Kosovo Power Plant* would create an undue burden for ratepayers and would damage Kosovo's frail economy.**

**While Kosovo's minister of economic development stated in November 2015 that the construction cost of the plant would total 1 billion euro, IEEFA's expectation—based on past experience with similar coal plant construction projects—is that construction costs alone would total €1.35 billion, and the true cost of the plant, when financing and subsidies are included, would come to at least €4.169 billion.**

**IEEFA notes also that Kosovo has alternatives to building an unnecessary power plant at so unreasonable a price. Independent studies, including some done by the World Bank itself, have shown that implementing energy-efficiency measures and installing renewable energy in Kosovo would be less expensive than building a coal plant and would stimulate economic development, create jobs, and serve as a long-term hedge against energy-cost inflation.**

# I. Background: Project Scope and Current Status

The Republic of Kosovo, with a population of approximately 1.8 million people, has generated an annual average 5,375 GWh of electricity over the past five years.<sup>1</sup>

The current system consists of power plants that have a total generating capacity of 1,527 MW of electricity. These include two coal-fired power plants, known as Kosovo A and Kosovo B, that produced over 95 percent of Kosovo's electricity generation in 2014 and together have a capacity of 1,478 MW. Kosovo also has hydroelectric plants with 48 MW of capacity, and the country has a small amount of wind-powered generation.<sup>2</sup> Its coal-fired power generation assets are old and are heavy polluters, and its transmission system is old and ill-suited to a new nation (the Republic of Kosovo declared its independence from Serbia in 2008).

As early as 2004,<sup>3</sup> the Kosovo government began to plan an overhaul of its electric generation system. A government review identified operational problems, unplanned outages, high emissions and an overreliance on imported electricity. The government settled on four principal actions to improve its electricity grid: 1) close Kosovo plant A; 2) rehabilitate Kosovo plant B; 3) build a new coal-fired plant, the *New Kosovo Power Plant*; and, 4) invest in a series of efficiency and renewable initiatives.<sup>4</sup>

Over the past several years, the *New Kosovo Power Plant* project has gone through a series of design changes driven by political and technical considerations. Original plans to build a 2,000 MW plant were scaled back to 600 MW due to a lack of demand.<sup>5</sup> Then, plans for a one-unit 600 MW base-load plant were changed due to a lack of demand and because of concerns that the size presented potential reliability problems in the event of outages.<sup>6</sup> Two 300 MW units rather than one larger 600 MW unit were proposed for a plant that would generate 560 MW net capacity (because 40 MW would be needed to run the plant), would use outdated and inefficient subcritical coal plant technology.

On Nov. 23, 2015, Kosovo's minister of economic development, Blerand Stavileci, announced<sup>7</sup> the latest version of the plant. The announcement came in the form of oral remarks. The new design reduces the size of the plant from 600MW to 500MW and is subject to further negotiations. On December 18, 2015, the government of Kosovo, led by Prime Minister Isa Mustafa, announced the signing of a Memorandum of Understanding for the project with ContourGlobal.<sup>8</sup>

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<sup>1</sup> Energy Regulatory Office, Annual Report 2014, Electricity generation 2004-2014, Figure 6.5, p. 17, [http://ero-ks.org/Annual%20Report/2014/Raporti\\_Vjetor\\_2014\\_eng.pdf](http://ero-ks.org/Annual%20Report/2014/Raporti_Vjetor_2014_eng.pdf)

<sup>2</sup> Energy Regulatory Office, Annual Report 2014, p. 35 and 36. [http://ero-ks.org/Annual%20Report/2014/Raporti\\_Vjetor\\_2014\\_eng.pdf](http://ero-ks.org/Annual%20Report/2014/Raporti_Vjetor_2014_eng.pdf)

<sup>3</sup> LPTAP Project Appraisal Document 2006, p. 3-5, [http://issuu.com/lptap/docs/lptap-project-appraisal-document-2006\\_09\\_13](http://issuu.com/lptap/docs/lptap-project-appraisal-document-2006_09_13)

<sup>4</sup> Document of the World Bank, 2012, Report No. 66877-XK, p. 22-23, [http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2012/05/07/000406484\\_20120507085250/Rendered/PDF/668770IDA0R201001400MIGA0R201200024.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2012/05/07/000406484_20120507085250/Rendered/PDF/668770IDA0R201001400MIGA0R201200024.pdf)

<sup>5</sup> Implementation Completion Report (ICR) Review - Lignite Power Technical Assistance Project, <http://lnweb90.worldbank.org/oed/oeddoclib.nsf/DocUNIDViewForJavaSearch/8525682E0068603785257AC5006A5C1D?opendocument>

<sup>6</sup> World Bank, Energy Sector Unit, Europe Central Asia Region, Kosovo Power Project: Terms of Reference, SFDC Expert Panel, June 14, 2011

<sup>7</sup> <http://www.kryeministri-ks.net/?page=2,9,5394>

<sup>8</sup> [http://www.mzhe-ks.net/sq/lajmet/nenshkruhet-memorandumi-i-mirekuptimit-ne-mes-te-ministrise-se-zhvillimit-ekonomik-dhe-investitorit-amerikan-contour-global-2674#.VoZii\\_IVikp](http://www.mzhe-ks.net/sq/lajmet/nenshkruhet-memorandumi-i-mirekuptimit-ne-mes-te-ministrise-se-zhvillimit-ekonomik-dhe-investitorit-amerikan-contour-global-2674#.VoZii_IVikp)

Proposed financing includes a 30 percent equity contribution from ContourGlobal, the sole bidder on the project,<sup>9</sup> with the remaining 70 percent of financing from outside sources. The World Bank has pledged support for the project and has already provided substantial funding for technical assistance and upfront development costs. The final terms of both ContourGlobal's equity participation and loans from the World Bank and any other lenders are under discussion.<sup>10</sup> The economic development minister states that the technical documents will be completed in the next several months and that construction is to start in late 2016 or early 2017 and will take four to five years to complete.

The project has seen recent delays while the World Bank re-examines its policies on climate change, and as the bank has moved away from financing coal-fired power plants. Currently, the *New Kosovo Power Plant* is one of the few coal plants in the world that the World Bank has deemed acceptable.<sup>11</sup>

## II. Structure of Report, Methodology, and Comment on Data Sources

### Structure of IEEFA Report

In addition to the executive summary above, background detail (Section I), and the methodology and data information summarized here (Section II), this report contains the following sections:

**Section III**, summarizing the major findings of the impact of the *New Kosovo Power Plant* (KNPP) on household budgets.

**Section IV**, detailing the steps IEEFA used to determine the costs to construct NKPP, operate it, and produce electricity from it.

**Section V**, describing a series of risk factors that could affect the market model.

**Section VI**, analyzing the role of the World Bank, its policies on alleviating poverty and mitigating climate change, and its potential role in subsidizing the NKPP project.

**Section VII**, discussing the potential for investment in renewable energy and energy efficiency in Kosovo.

The report contains two appendices. Appendix I lists technical improvements to data systems that would help energy planning in Kosovo. Appendix II provides a more detailed discussion of the financial model used in this report to derive the price of electricity.

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<sup>9</sup> LPTAP Project Appraisal Document 2006, p. 77, [http://issuu.com/lptap/docs/lptap-project-appraisal-document-2006\\_09\\_13](http://issuu.com/lptap/docs/lptap-project-appraisal-document-2006_09_13)

<sup>10</sup> GazetaExpress, May 2015, "Disagreements between the World Bank and "Contour Global" on the "Kosova e Re" power plant," <http://www.gazetaexpress.com/en/news/disagreements-between-the-wold-bank-and-contour-global-on-the-kosova-e-re-power-plant-104154/?archive=1>

<sup>11</sup> US News, 2013, "The Real War on Coal Starts in Kosovo," <http://www.usnews.com/opinion/blogs/world-report/2013/07/22/the-war-on-coal-in-kosovo-and-the-world-bank>

# Methodology

IEEFA uses two core calculations to create a model to estimate the impact of the *New Kosovo Power Plant* on the price of electricity to Kosovars. The first is the cost of electricity that the plant would produce. The second is the price of electricity that would be passed along to households in monthly bills; this is determined by blending the cost of electricity from the new plant with the general price of electricity in Kosovo. (This report focuses on household electricity bills rather than industrial or commercial-sector bills). IEEFA then assesses risk factors that could affect plant operations.

## Components of the Model

To determine the cost of electricity that the plant would produce, the model identifies what the plant would cost if developed using the basic business model outlined in the planning studies<sup>12</sup> published over the past several years on NKPP and the recent announcement by the minister of economic development.

IEEFA uses market information related to power plant construction costs, interest rates, costs of equity and operating expenses for power plants to compile a “market basket” of costs for the New Kosovo Power Plant. The components of the market basket are expressed in terms of EUR/MWh.

- The costs of debt (70 percent of construction cost) and the costs of equity for the project (30 percent of construction cost) are determined based on total construction costs (see *Figure 2: Estimated Total Cost for the New Kosovo Power Plant*). The construction cost is amortized over a set time period consistent with the terms of debt and equity investors. The debt portion of the project costs assumes an interest rate paid by the owner for the long-term use of the money borrowed to build the plant. The equity cost includes a return on equity, which is based upon the assessment of risk as determined by the project owner and the equity investor.
- To understand how much the plant would cost to operate, it is necessary to calculate how much electricity it would actually generate. This amount is determined by applying an estimated capacity factor, which is expressed in megawatt hours (MWh). The capacity factor is a measure that compares the amount of power that a plant actually produces in a year with the amount it would have produced if it had operated at full power for all of the hours in that year. The higher the capacity factor, the more power the plant produced in the year (see *Figure 5: Capacity Factor*).
- IEEFA multiplies the cost of producing energy at the plant times the capacity factor. This results in a cost of electricity for NKPP, expressed in Euros per megawatt hour (EUR/MWh). (See *Figure 6: 2021 Cost of Electricity From the New Kosovo Power Plant*).

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<sup>12</sup> LPTAP Project Appraisal Document, 2006, [http://issuu.com/lptap/docs/lptap-project-appraisal-document-2006\\_09\\_13](http://issuu.com/lptap/docs/lptap-project-appraisal-document-2006_09_13)

## Methodology (continued)

IEEFA integrates the cost of electricity from the new plant into the overall electricity system, producing an estimated new price of electricity for Kosovar households. To do this calculation, IEEFA starts with the 2014 price of electricity for the system as a whole and for Kosovar households as a category of ratepayers in particular (see *Figure A1: 2014 Non-Household and Household Price of Electricity* on page 41). IEEFA then adjusts the system price of electricity from 2015 to 2021 to factor in an inflation rate that would be expected to cover the customary and usual costs to the system without the addition of NKPP. (See *Figure A5: Typical Annual Percentage Increase in Price of Electricity From 2015 Through 2020 Compared to the Increase in Price During First Year of Operation of the New Kosovo Power Plant*).

IEEFA then blends the cost of NKPP into the system-wide numbers, reflecting how much of the total system electricity would be produced by NKPP (See *Figure A2: 2021 System Price of Kosovo Electricity System With the New Kosovo Power Plant*). The final calculations provide a 2021 price for the Kosovo electricity system as a whole with NKPP.

Using this information, IEEFA then calculates the price of electricity to Kosovo households in 2021 with and without NKPP (See *A3: Change in Household Price of Electricity with and without the New Kosovo Power Plant First Year of Operation*). To calculate the price, IEEFA used as a model the Kosovo government's historic pattern of setting prices for households relative to other customer groups.<sup>13</sup>

The study then calculates the impact of these price increases on Kosovo households. The numbers in this section are framed in terms of Eurocents/KWh (which are used for household usage, sales, and billing) rather than EUR/MWh (used throughout most of the study to explain the broader discussion of system costs and pricing).

*Figure A4: Percentage of Income Paid by Kosovar Households in 2015 Before and After the New Kosovo Power Plant in 2021* on page 43 breaks household consumers into three income categories—average per capita income, low and middle income, and poverty level. The price impact for each income group is run under two different consumption models, one using the household average of 550 kwh per month and one using a lower consumption model of 300 kwh per month (see *Figure 1: Average Use of Electricity by Household in Kosovo, 2014*).

IEEFA uses these consumption levels to calculate the annual costs of electricity to Kosovar households and determines the percentage of annual household income that would be required to pay for electricity before and after NKPP is introduced.

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<sup>13</sup> See the discussion on tariffs and price setting in Section VI on the role of the World Bank.

## Data Sources

IEEFA uses information from the following sources as the basis for its calculations: World Bank planning and technical documents prepared by various committees, commissions and independent consultants, studies financed by international organizations such as USAID and the European Union; and information on Kosovo's electricity system from the Energy Regulatory Office (ERO, Zyra e Rregullatorit të Energjisë së Kosovës), and KEK, Korporata Energjetike e Kosovës (Kosovo's state-owned utility).

In addition, IEEFA uses broader economic and social data from the International Monetary Fund, the Central Intelligence Agency, the Kosovo Agency for Statistics, and various private and public development, banking and finance associations. IEEFA also uses the regional market information to support projections used in this paper as well as credit agency reports on some of the private and public entities discussed and several technical papers financed by non-governmental organizations working in Kosovo on issues related to the proposed power plant.

In IEEFA's experience, a professionally managed project of this nature generally involves a set of baseline documents that describe the project, its financing, the business plan, a description of the project's legal relationship with stakeholders, construction plans and financing and operating assumptions related to fuel, labor, environmental compliance as well as a database of the underlying quantitative assumptions of the project. Such core documents are publicly available and frequently updated. However, no core set of documents for the NKPP has been released to the public.

The data used in this report comes generally from the Kosovo government or international organizations for broad macroeconomic or Kosovo-specific energy disclosure purposes. The quantitative energy and energy finance data systems that serve the Kosovo government have significant limitations. Most of the background technical papers developed to support the *New Kosovo Power Plant* also have significant limitations as noted throughout this report. Analysis of NKPP would be much improved with better macroeconomic and social statistics, energy planning and specific data inputs to the power plant estimates.<sup>14</sup>

Robust data systems regarding fiscal, financial, economic, energy and utility management are critical for public and investment analysis. Ten separate written requests by various public-interest organizations,<sup>15</sup> for information from the Kosovo government related to the NKPP transactions

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<sup>14</sup> See Appendix I: Note on Data Analysis. See also the discussion in this paper on income sub groups, ERO's treatment of user classification and consistent reporting of price of electricity reporting and general discussion on rate setting.

<sup>15</sup> A series of 10 requests for information and government responses are outlined below and can be found at this link:

[http://www.institutigap.org/documents/31883\\_Pergjigjet\\_refuzuese.pdf](http://www.institutigap.org/documents/31883_Pergjigjet_refuzuese.pdf)

- I. "Mos transparenca e Qeverisë së Kosovës për shitjen e KEDS dhe 'Kosova e Re,'" by the Kosovo Civil Society Consortium for Sustainable Development (KOSID), October 9, 2012.
- II. Request for information, to Mr. Bernard Atlan, International Finance Corporation, from Agron Demi, Institute for Advanced Studies – GAP, July 18, 2011.
- III. Request for information to the Ministry of Economic Development (Ministrinë e Zhvillimit Ekonomik), from Agron Demi, Institute for Advanced Studies GAP (Instituti për Studime të Avancuara – GAP), July 7, 2011.
- IV. Response from the Republic of Kosovo, Ministry of Economic Development, to the Institute for Advanced Studies GAP, July 25, 2011.
- V. Request for access to public documents, to Ministry of Economic Development, from Krenar Shala, Institute for Advanced Studies GAP, December 1, 2011.
- VI. Response from the Republic of Kosovo, Ministry of Economic Development, to Krenar Shala, Institute for Advanced Studies GAP, December 5, 2011.



and plan of finance and operation have been gone for the most part unanswered. A recent request by KOSID for a copy of the Memorandum of Understanding<sup>16</sup> signed on December 18, 2015 was denied by the government of Kosovo on the grounds that negotiations are still in progress. Although IEEFA has included some components in its modeling based on the government's announcement, those quantitative inputs come with a high degree of risk.<sup>17</sup>

The recent announcement by the Kosovo government of the NKPP redesign represents a further deterioration in the already weak commitment to openness and transparency. After over a decade of design, redesign, and failure to deliver on project benchmarks. The Kosovo government has chosen now to announce this latest scenario with no supporting documents, without a business plan, and with only unspecified financial commitments for most of the project's finance.

## III. The Impact of the *New Kosovo Power Plant* on Kosovo's Households

### A. Background on Income and Electricity Price Dynamics in Kosovo

Kosovo is among the poorest countries in Europe,<sup>18</sup> according to World Bank data. The World Bank cites a 2017 gross per capita income in Kosovo of €3,597 (approximately U.S. \$4,000) per year.<sup>19</sup> Gross per capita income for low- and middle-income households<sup>20</sup> in Kosovo is €2,575 (U.S.

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VII. Request for access to public documents, to Ministry of Economic Development, from Antigona Berisha, Institute for Advanced Studies GAP, March 8, 2012.

VIII. *Response from the Division of Public Communications (Zyra për Komunikim Publik)*, Nr. 1/12, to Antigona Berisha, Institute for Advanced Studies GAP, March 14, 2012.

IX. *Request for documents, to the Ministry of Economic Development and the Republic of Kosovo, from KOSID (Konsorciumi i Organizatave të Shoqërisë Civile për Zhvillim të Qëndrueshëm)*, no date.

X. *Response from the Ministry of Economic Development, reference Nr. 22/12*, to Antigona Berisha, Institute for Advanced Studies GAP, August 1, 2012.

<sup>16</sup> The Memorandum of Understanding was signed by ContourGlobal, however the company issued no independent press statement regarding the project. A review of ContourGlobal's website shows that they frequently announce projects at various stages of the development process when significant benchmarks are reached. <http://www.contourglobal.com/media?page=3>

<sup>17</sup> Ministry of Economic Development, Memorandum of Understanding, December 29, 2015, [http://ieefa.org/wp-content/uploads/2016/01/Pergjigje-ndaj-kerkeses-tuaj-per-qasje-ne-dokumente-publike-me-nr.-protokolli-3005-12\\_29\\_2015.pdf](http://ieefa.org/wp-content/uploads/2016/01/Pergjigje-ndaj-kerkeses-tuaj-per-qasje-ne-dokumente-publike-me-nr.-protokolli-3005-12_29_2015.pdf)

<sup>18</sup> List of sovereign states in Europe by GNI (nominal) per capita

<sup>19</sup> World Bank, Kosovo, <http://data.worldbank.org/country/kosovo>

<sup>20</sup> For the purposes of this paper we use the Gross National Per Capita Income statistic offered by the World Bank (World Bank). We adjust that figure by .716 to derive the low and middle income measure. This is a somewhat arbitrary measure as the World Bank sets no comprehensive standard within countries for the definition of sub income groups. The World Bank method is used instead to compare national economic systems. We use here an approximate relation between average purchasing price and middle income (World Bank, "Gross national income per capita 2014, Atlas method and PPP," <http://databank.worldbank.org/data/download/GNIPC.pdf>). We use the measure of poverty offered by the World Bank in 2015 of EUR 1.74 per day. This inexact set of income distribution measures is used because the Kosovo government does not prepare any income distribution data by households. The Kosovo Agency of Statistics prepares an annual household budget survey to monitor household consumption patterns. (Republic of Kosovo, Ask data, <http://ask.rks-gov.net/ENG/hbs/tables>). The overall National Per Capita Income data which is used in Kosovo and throughout Europe is useful for understanding trends in national wealth, but not in terms of income distribution. (For a more complete discussion of the strengths and limits of this kind of income reporting see, EuroStat, "Income distribution statistics," <http://ec.europa.eu/eurostat/statistics->

\$2,946) per year, and gross per capita income for the 29.7 percent<sup>21</sup> of the Kosovo population living below the poverty line is €635 (U.S. \$726) per year.<sup>22</sup>

While the price of electricity in Kosovo is low in relation to surrounding countries,<sup>23</sup> the cost of electricity consumes a disproportionately higher share of income for Kosovar households. For the purposes of this report, IEEFA puts the current price of electricity at 5.24 eurocents/kilowatt hour (kwh).<sup>24</sup>

European households rarely pay over 6 percent of their income for electricity.<sup>25</sup> In contrast, Kosovar households that purchased an average amount of electricity in 2015 (550 MW per month)<sup>26</sup> paid just over 9.6 percent of their annual income for electricity. Low- and middle-income families paid 13.4 percent of their annual income for electricity, and poor families, who purchased a smaller amount of electricity, paid 29.7 percent of their annual income for electricity.

The Kosovo Agency of Statistics says that 44 percent of Kosovars had trouble paying their bills for housing, electricity, taxes and heating in 2014.<sup>27</sup> For this 44 percent, household budgets were—and are—stressed. An increase in one area of household spending means a family must reduce expenditures on other basic necessities. This is why the price of electricity in Kosovo, which has been rising steadily in recent years, has created much public unrest.

## B. Current System: Price and Household Use

Under Kosovo's current system, increased costs to the electricity system are not passed directly through to household, commercial or industrial consumers. The price of electricity actually charged to Kosovars is based on a tariff schedule<sup>28</sup> published by the government. The tariff schedule classifies consumers by user groups and assigns various rates depending on volume usage and timing. The rate-setting process has limited transparency and is based on a balancing of equities between households, industrial and commercial users.

There are 309,700 households in Kosovo (see Figure 1). In 2014, the average household in Kosovo paid 5.24 eurocents/kwh for electricity. Commercial users paid 9.53 eurocents/kwh and industrial

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[explained/index.php/Income\\_distribution\\_statistics](#)). We have constructed a three tiered of income structure within Kosovo to provide a perspective on the impacts of electricity prices on various subgroups within the country.

<sup>21</sup> Republic of Kosovo, Kosovo Agency of Statistics, Statistical Yearbook of the Republic of Kosovo, 2014, Table 10.7: Overall Extreme Poverty Years 2003-2011.

<sup>22</sup> The World Bank Group in Kosovo, "Country Snapshot, April 2015," p. 6, <http://www.worldbank.org/content/dam/Worldbank/document/eca/Kosovo-Snapshot.pdf>

<sup>23</sup> Energy Regulatory Office, Annual report 2014, p. 66, [http://ero-ks.org/Annual%20Report/2014/Raporti\\_Vjetor\\_2014\\_eng.pdf](http://ero-ks.org/Annual%20Report/2014/Raporti_Vjetor_2014_eng.pdf)

<sup>24</sup> Energy Regulatory Office, Annual report 2014, p. 51, [http://ero-ks.org/Annual%20Report/2014/Raporti\\_Vjetor\\_2014\\_eng.pdf](http://ero-ks.org/Annual%20Report/2014/Raporti_Vjetor_2014_eng.pdf)

<sup>25</sup> Vaasa Global Energy, "European Residential Energy Price Report," 2013, p. 27, [http://www.vaasaett.com/wp-content/uploads/2013/05/European-Residential-Energy-Price-Report-2013\\_Final.pdf](http://www.vaasaett.com/wp-content/uploads/2013/05/European-Residential-Energy-Price-Report-2013_Final.pdf)

<sup>26</sup> This figure is derived from, The World Bank Group in Kosovo, "Country Snapshot, April 2015," p. 48, [http://ero-ks.org/Annual%20Report/2014/Raporti\\_Vjetor\\_2014\\_eng.pdf](http://ero-ks.org/Annual%20Report/2014/Raporti_Vjetor_2014_eng.pdf). Total household consumption in 2014 is 2,063,000 MWh. This figure is divided by 309,700 household as estimated by the Republic of Kosovo, Ministry of Economic Development, "Long-Term Energy Balance of the Republic of Kosovo 2015-2024," p. 7, [http://mzhe.rks-gov.net/repository/docs/Long-Term\\_Energy\\_Balance\\_of\\_the\\_Republic\\_of\\_Kosovo\\_2015\\_-\\_2024.pdf](http://mzhe.rks-gov.net/repository/docs/Long-Term_Energy_Balance_of_the_Republic_of_Kosovo_2015_-_2024.pdf)

<sup>27</sup> Republic of Kosovo, Household Budget Survey, p. 28. <https://ask.rks-gov.net/ENG/hbs/publications>

<sup>28</sup> Energy Regulatory Office, Annual report 2014, [http://ero-ks.org/Annual%20Report/2014/Raporti\\_Vjetor\\_2014\\_eng.pdf](http://ero-ks.org/Annual%20Report/2014/Raporti_Vjetor_2014_eng.pdf)

users paid 5.45 eurocents/kwh.<sup>29</sup> The system as a whole costs Kosovar electricity consumers an average of 7 eurocents/kwh.

In order to gauge the varying likely impacts of the *New Kosovo Power Plant* on different households, IEEFA uses two primary examples: the average household, using 555 kwh per month, and a household that uses a lower amount of electricity, 300 kwh per month.

**Figure 1: Average Use of Electricity by Household in Kosovo, 2014<sup>30</sup>**

Billings and Household Units		Amount
Total Billing – All Users	kwh	3,651,870,000
Households (56.5%)	kwh	2,063,365,500
Total Households <sup>31</sup>	units	309,700
Average Annual Household Consumption	kwh	6,662
Monthly Average Household Consumption	kwh	555

## C. The Price of Electricity in 2021 Without New Kosovo Power Plant

Although Kosovars have experienced significant increases in the price of electricity in the recent past, more increases are likely to occur from 2016 to 2021, before NKPP would ever go online. Assuming an increase of 2 percent per year, electric rates in Kosovo will increase from 5.24 eurocents/kwh in 2014 to 5.9 eurocents/kwh by 2021. These increases are driven by the customary and usual costs of operating and maintaining an electricity system and by political restraints on annual price increases.

## D. The Cost of Electricity from the New Kosovo Power Plant

IEEFA estimates the all-in cost of electricity from the *New Kosovo Power Plant* will be 128 EUR/MWh when it opens in 2021. The 2015 all-in cost of producing electricity under the current operating system is 28.93 EUR/MWh. Thus, the cost of power from the new plant will be four times higher than the cost of power in the current system.

## E. The Impact of the *New Kosovo Power Plant* on the Price of Electricity

Electricity from NKPP would be expensive. The price of electricity charged to Kosovars would rise significantly if NKPP is brought online. Because of the way electric rates are set in Kosovo, the size

<sup>29</sup> Energy Regulatory Office, Annual report 2014, p. 51, [http://ero-ks.org/Annual%20Report/2014/Raporti\\_Vjetor\\_2014\\_eng.pdf](http://ero-ks.org/Annual%20Report/2014/Raporti_Vjetor_2014_eng.pdf)

<sup>30</sup> Other than Total Households all other figures found in, Energy Regulatory Office, Annual report 2014, p. 48, [http://ero-ks.org/Annual%20Report/2014/Raporti\\_Vjetor\\_2014\\_eng.pdf](http://ero-ks.org/Annual%20Report/2014/Raporti_Vjetor_2014_eng.pdf)

<sup>31</sup> Republic of Kosovo, Ministry of Economic Development, "Long-Term Energy Balance of the Republic of Kosovo 2015-2024," p. 7, [http://mzhe.rks-gov.net/repository/docs/Long-Term\\_Energy\\_Balance\\_of\\_the\\_Republic\\_of\\_Kosovo\\_2015\\_-\\_2024.pdf](http://mzhe.rks-gov.net/repository/docs/Long-Term_Energy_Balance_of_the_Republic_of_Kosovo_2015_-_2024.pdf)

of the price increase would be a political decision. However, IEEFA estimates that, based upon the current balance of equities between the household, commercial and industrial sectors, the introduction of NKPP electricity into the system would result in a *minimum price increase of 33.8 percent*, from 5.9 eurocents/kwh to 7.9 eurocents/kwh for households in Kosovo.<sup>32</sup> What's more likely is that household electricity prices would increase by 50 percent.

A 33.8 percent increase in the cost of electricity would have the following impacts:

- Households with an average per capita income would see their costs for electricity per year rise to 12.9 percent of their annual income.
- Households with low- to middle incomes would see their costs for electricity per year rise to 18 percent of their annual income.
- Households below the poverty level would pay more than 39.7 percent of their annual income for electricity.

The introduction of the *New Kosovo Power Plant*, under these assumptions, would undermine steps to make electricity more affordable to most Kosovars and would keep electricity largely unobtainable for the poorest people in Kosovo.

These price-increase estimates are very conservative (see Section V: Risks). Additional risk factors could push the price of electricity even higher. These risk factors are related to the ultimate cost of the plant, business assumptions that have not yet been decided or disclosed, plant performance, interest rates, political changes, and system improvements. Further, the type and the size of NKPP impacts on the budget of the government of Kosovo are unknown.

## IV. Calculating the Cost of Electricity From the *New Kosovo Power Plant*: A Model

IEEFA has derived a cost of electricity from the *New Kosovo Power Plant* based upon a financial model that provides a benchmark understanding of the cost of the plant under current and projected economic conditions.

The cost of electricity from NKPP, as with any generating facility, reflects its capital costs, annual operating and maintenance (fixed and variable) costs, and its operating performance. Once the plant is operating it becomes part of Kosovo's portfolio of electricity resources. In Kosovo, this portfolio is made up largely of coal-fired power, some hydroelectric power and some imported power. The cost of electricity from NKPP is blended with the cost of the rest of the system. The result is a new price for electricity for households. The cost of electricity from NKPP is passed from the plant through the Kosovo system of price regulation to the household user in a monthly bill as a eurocent-per-kwh use charge.

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<sup>32</sup> See Appendix II for a detailed presentation of the methodology used for these calculations.

## A. Capital Cost: The Cost of Construction

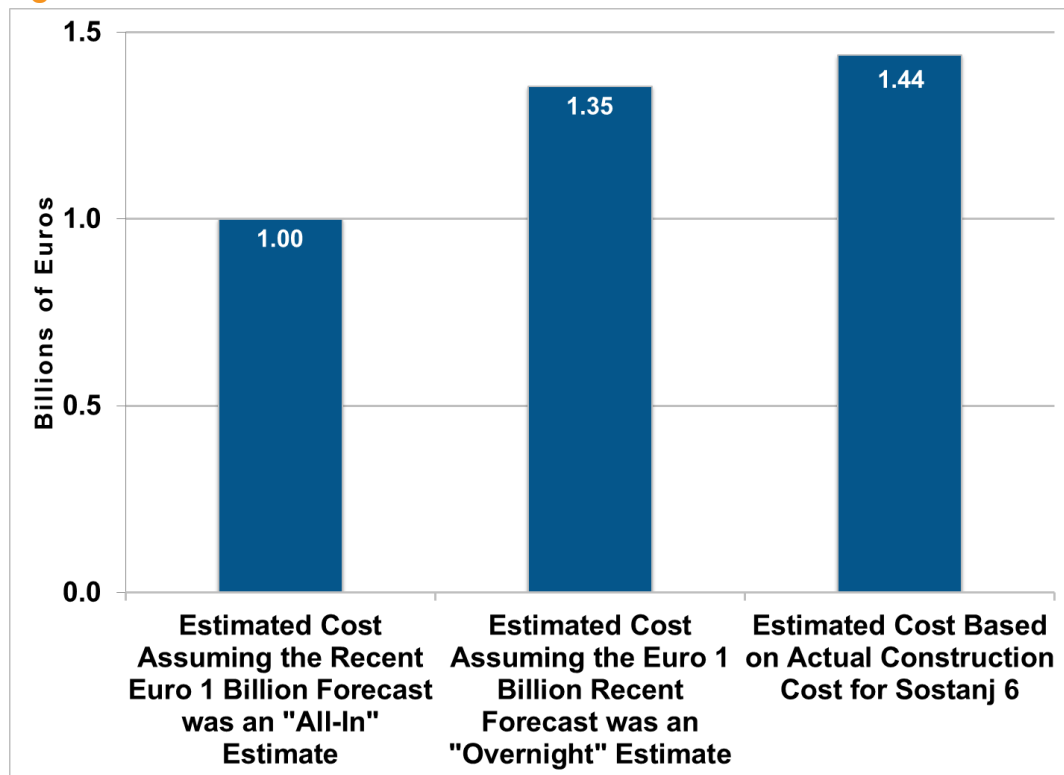
Among the most significant factors affecting the price of electricity from a coal plant are its construction and financing costs. Unfortunately, very limited information is available on the currently estimated construction cost of the proposed NKPP coal plant. In fact, the only publicly available information on the plant is the claim that it will cost €1 billion and will start operations four to five years after construction commences in late 2016 or 2017. Thus, key questions remain unanswered.

First, the government has not stated whether the €1 billion figure is an “overnight” or an “all-in” cost estimate. An “overnight” estimate reflects the engineering and construction costs that would be needed to build a plant overnight and, therefore, does not include escalation or financing costs. An “all-in” estimate includes escalation and financing costs, and therefore, more reasonably reflects what the actual cost of building the plant would be, assuming that all costs are reasonably known and that proponents are being honest with the public.

Second, it is not clear whether all of the expected engineering, procurement and construction costs for NKPP are included in the estimated €1 billion cost. Most particularly, there is no certainty about what emissions controls are included and whether those controls would meet the regulatory requirements expected to be in effect when the plant is operational.

Because of this uncertainty, IEEFA has developed a range of estimated costs for the *New Kosovo Power Plant* that range from a low of €1 billion to a high of €1.44 billion. These costs are shown in Figure 2, below.

**Figure 2: Estimated Total Cost for the New Kosovo Power Plant**



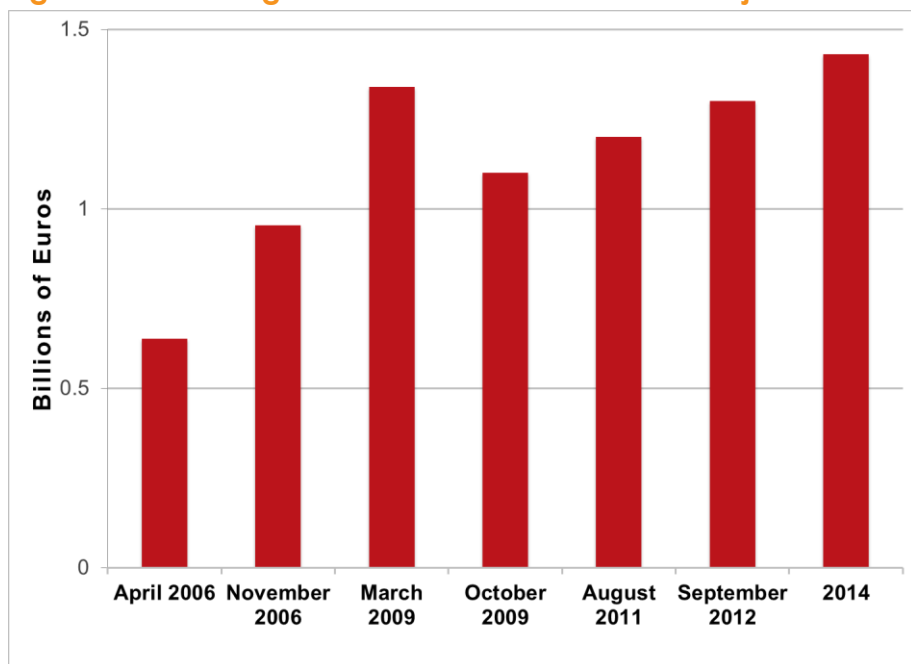
The low end of this construction-cost range shown in Figure 2 assumes that the recently announced cost for the NKPP was an “all-in” estimate that included escalation and financing costs.

The €1.35 billion middle-cost estimate shown in Figure 2 assumes that the recent estimate was only an “overnight” cost for NKPP and adds escalation and financing costs, assuming that construction begins in 2016 and the plant begins operations early in 2022. A 7 percent annual cost of debt was used to determine the annual costs of financing the construction of NKPP. An annual escalation rate of 2.4 percent also was used in this calculation, representing Kosovo's average annual inflation rate over the past five years.

The third cost estimate is based on the reported final cost of the recently completed Šoštanj 6 coal plant in Slovenia. This plant was completed in late 2014 at a cost of 1.43 billion euros. IEEFA has adjusted this cost to reflect the smaller size of the proposed NKPP (500 MW vs. 600 MW at Šoštanj 6) and the fact that NKPP construction would occur approximately seven years later than construction at Šoštanj 6, with an in-service date of 2022.

IEEFA uses the middle cost estimate (1.35 billion euros) in its model of electricity prices in Kosovo. Even if the €1 billion figure recently announced by the government is an “all-in” estimate it may not represent the actual cost. Many coal-plant projects have significant cost overruns and delays during construction. For example, as shown in Figure 3 below, the final €1.43 billion cost of the Šoštanj 6 coal plant was more than double the €637 million cost originally estimated for the project in 2006.

**Figure 3: Rising Construction Costs of the Šoštanj 6 Coal Plant**



Consequently, the actual cost to build NKPP could be substantially more than 1 billion euros, and could top 1.35 billion dollars.

## B. Debt Financing: Interest Rate Costs

For the purposes of this report, IEEFA assumes a mid-range construction cost for NKPP of 1.35 billion. Earlier published plans assume a 70 percent debt to 30 percent equity ratio. The Kosovo economic development minister confirmed this capital structure in his recent announcement. IEEFA assumes that the *New Kosovo Power Plant* would, therefore, carry €945 million in debt and €405 million in equity. The cost of carrying the debt is 34.93 EUR/MWh and the cost of the equity is 40.97 EUR/MWh (see Table 5: Price of Electricity from *New Kosovo Power Plant*).

IEEFA uses the recently announced 7.5 percent interest rate for the debt portion of the financing for *New Kosovo Power Plant*. IEEFA assumes this is a subsidized interest rate. The source of the funds and terms and conditions are unspecified in the recent announcement.

IEEFA also assumes that the real interest rate on this project would be upward of 18 percent, if not higher. This figure is arrived at based upon an assessment of the qualitative factors that face the Kosovo financial markets and from a review of interest rate trends for commercial lending since 2004 (see Risk Factor No 2). However, a loan for *New Kosovo Power Plant* would be unusual in many respects.<sup>33</sup> No other coal plants are financed in Kosovo, the debt portion of the power plant, at 945 million, is extraordinary in size, and the loan poses numerous political and regulatory risks. The loan would most likely be classified as an electricity industry loan undertaken by a non-financial corporation.<sup>34</sup>

From 2004 through 2011, Kosovo's commercial lending rates were in the 14 percent range with some rates as high as 16.6 percent.<sup>35</sup> In the last several years the rates for commercial loans in Kosovo have improved and are now generally below 10 percent.<sup>36</sup> While interest rates in 2015 are generally in the 10 percent<sup>37</sup> range—down from historically high levels of 14 percent<sup>38</sup>—the size, complexity and unique features of a €945 million loan in Kosovo adds to the risk profile of the transaction. The rates for commercial lending have typically been higher than average interest rates. For this coal plant and the specific demands it places on the borrower and lender, an 18 percent assumption is conservative.

The announcement by the Economic Development Minister does not establish a real, market interest rate for the project. It does not address the level of subsidy required. A subsidy from a market rate of 18 percent to 7.5 percent would be approximately €1.7 billion over the life of the loan. The announcement did not identify the source of any subsidy or a consortium of private lenders willing to actually lend on these terms.

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<sup>33</sup> In August 2006 the government identified four international consortiums interested in the project and approached the World Bank to use its credit guarantees for the project. World Bank, "Kosovo Power Project Terms of Reference, for the SFDCC Expert Panel," p. 3-4.

[http://siteresources.worldbank.org/KOSOVOEXTN/Resources/110621\\_Kosovo\\_SFDCC\\_Expert\\_Panel\\_TOR.pdf](http://siteresources.worldbank.org/KOSOVOEXTN/Resources/110621_Kosovo_SFDCC_Expert_Panel_TOR.pdf),

<sup>34</sup> Central Bank of the Republic of Kosovo, Interest Rate Report, Version 2.0, p. 31 for loan classification, [http://www.bqk-kos.org/repository/docs/Interest\\_Rates\\_Report.pdf](http://www.bqk-kos.org/repository/docs/Interest_Rates_Report.pdf)

<sup>35</sup> Kosovo Banking Association, "Comparative Study on business environment and the role of the banking sector in Kosovo," Slide: Interest Rates on Loans, p. 9, <http://bankassoc-kos.com/wp-content/uploads/2013/09/KBA-Research-Study-final.pdf>.

<sup>36</sup> The World Bank Group in Kosovo, "Country Snapshot, April 2015."

<http://www.worldbank.org/content/dam/Worldbank/document/eca/Kosovo-Snapshot.pdf>

<sup>37</sup> Ibid.

<sup>38</sup> Riinvest Institute, "Banking Section: Facilitator or Barrier," <http://www.riinvestinstitute.org/publikimet/pdf/53.pdf>

## C. Cost of Equity Financing

IEEFA assumes that the designated project developer will provide 30 percent equity financing for the deal.<sup>39</sup> ContourGlobal was recently designated the preferred bidder by the economic development minister.<sup>40</sup> ContourGlobal is the sole bidder on the project. It was the only company that responded to the government of Kosovo's bid in February 2015.<sup>41</sup>

ContourGlobal's business strategy concentrates on infrastructure projects in high-risk locations and relies upon high degrees of leverage. Given the relative position of the company and its business model, the €405 million equity infusion provided by the company will carry a 21.5 percent rate of return.<sup>42</sup> IEEFA assumes an aggressive schedule of five-year principal payback, reflecting the company's current risk profile and its privileged position as the preferred developer.

ContourGlobal owns and operates power projects in Europe, Africa, the Caribbean, South America, and the United States.<sup>43</sup> Additionally, the company has five projects totaling 215 MW of generating capacity under construction in various locations<sup>44</sup> (the Company does not list NKPP among projects it plans to bring into commercial operation over the next two years).<sup>45</sup> The projects ContourGlobal has in its development pipeline are a mix of coal, natural gas, wind, hydro, solar, biomass, and fuel oil.

ContourGlobal currently carries U.S. \$1.9 billion in debt underwritten by the cash flow from its existing projects to its investors. The company uses the leverage of each project to raise its equity contributions. The company's business model is thus highly sensitive to execution risks during the development and construction process. The highly leveraged nature of the business makes it highly dependent on stable cash flow from its projects. The company seeks to diversify and thereby strengthen its overall cash flow position<sup>46</sup> by adding more development and acquisitions. A Moody's Investors Services November 2014 report on the company says that if ContourGlobal can operationalize its proposed five new projects it will have achieved two important goals: diversification of its cash flow and decreased exposure to politically risky countries.<sup>47</sup>

ContourGlobal recently experienced significant financial problems at its Maritsa coal-fired power station<sup>48</sup> in Bulgaria due to changes in the Bulgarian government. The company faced substantial delays and ultimately was forced to renegotiate the deal and accept lower (though

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<sup>39</sup> The outline provided in the project appraisal in 2006 assumes a 70 to 30 debt to equity ratio and a return on equity of 18 percent. See: LPTAP Project Appraisal Document, 2006, [http://issuu.com/lptap/docs/lptap-project-appraisal-document-2006\\_09\\_13](http://issuu.com/lptap/docs/lptap-project-appraisal-document-2006_09_13)

<sup>40</sup> The United States Secretary of State has also acknowledged Contour Global's partnership role: <http://www.state.gov/secretary/remarks/2015/12/250260.htm>

<sup>41</sup> Reuters, "ContourGlobal could start building Kosovo power plant in 2016," Feb. 2015, <http://in.reuters.com/article/2015/02/04/kosovo-energy-contourglobal-idINL6N0VE2DW20150204>

<sup>42</sup> ContourGlobal and the World Bank have acknowledged a dispute over the rate of return. ContourGlobal has apparently asked for 25%. See: Gazeta Express, "Modeli armen për 'Kosovën e Re,'" <http://www.gazetaexpress.com/lajme/modeli-armen-per-kosoven-e-re-78370/?archive=1>

<sup>43</sup> Moody's Investor Service, "Rating Action: Moody's assigns B2 to ContourGlobal's proposed \$350 million senior secured term loan," [https://www.moodys.com/research/Moodys-assigns-B2-to-ContourGlobals-proposed-350-million-senior-secured-PR\\_256985](https://www.moodys.com/research/Moodys-assigns-B2-to-ContourGlobals-proposed-350-million-senior-secured-PR_256985)

<sup>44</sup> Moody's Investor Service, *Contour Global L. P. – Successful delivery of new assets would reduce concentration and development risks, both credit positive*, Credit Focus, November 5, 2014. (Moody's Credit Focus)

<sup>45</sup> Ibid.

<sup>46</sup> Ibid.

<sup>47</sup> Ibid.

<sup>48</sup> Moody's Investor Service, *Agreement at Maritsa subsidiary is credit positive*, April 9, 2015.



purportedly more stable) payments.<sup>49</sup> This is significant because the Maritsa project comprises 37 percent of ContourGlobal's earnings before interest, taxes, depreciation, and amortization (EBITDA), a concentration level that creates financial exposure for the company and affects its cash flow.

According to the Kosovo economic development minister, the project will carry a rate of return on the equity portion of the project of 21.5 percent. This is a reduction from ContourGlobal's prior requests for a return of 23 percent to 27 percent.<sup>50</sup> It is unclear whether this rate of return will be subject to further negotiation. The Kosovo government's apparent acceptance of a 21.5 percent rate of return is higher than the planning estimates of 18 percent made in 2006.<sup>51</sup> Prior press reports stated that the World Bank and ContourGlobal were in a dispute over the rate of return and other development.<sup>52</sup> The economic development minister's announcement implies this disagreement with the World Bank is now resolved.

After almost 10 years of analysis, the equity rate of return has risen on the project, a clear sign of market risk. The increase from the original 18 percent to the newest return assumption at 21.5 percent reflects more risk in the project, not less.

Given the considerations of risk and ContourGlobal's highly leveraged position, IEEFA's financial model makes aggressive assumptions, a five-year full amortization at a 21.5 percent rate of return. We carry this rate of return in the model with a neutral/negative outlook. IEEFA calculates the annual cost to the project on equity as 43.49 EUR/MWh.

## D. Operating Assumptions

### Operating Costs

Operating and maintenance expenses are the third area (in addition to debt and equity costs) needed to develop a comprehensive assessment of the cost of electricity from NKPP. IEEFA uses the operational cost estimates from KEK's 2015 budget proposal as the starting point.<sup>53</sup> KEK operates Kosovo A and Kosovo B coal plants and its operations data represents the best available expense projections.<sup>54</sup> The company estimates a 28.93 EUR/MWh cost of operation for Kosovo A and B in 2015. This projects forward to a 3 percent inflation-adjusted cost of 33.53 EUR/MWh in 2021.

The ownership structure or management arrangement for the plant has not been outlined. During the past year, ContourGlobal has asked that it runs the plant as part of a partnership arrangement. Consistent with the government's stated intent to privatize its electricity system,

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<sup>49</sup> Bloomberg Business, "Bulgaria Cuts Power Purchase Prices With AES, ContourGlobal," April 2015,

<http://www.bloomberg.com/news/articles/2015-04-08/bulgaria-cuts-power-purchase-prices-with-aes-contourglobal>

<sup>50</sup> <http://mzhe-ks.net/en/news/the-countrys-largest-project-tpp-kosova-e-re-with-investments-exceeding-1-billion-and-thousands-of-jobs-gets-under-way-#.VmrksvVikp>

<sup>51</sup> LPTAP Project Appraisal Document, 2006, p. 77, [http://issuu.com/lptap/docs/lptap-project-appraisal-document-2006\\_09\\_13](http://issuu.com/lptap/docs/lptap-project-appraisal-document-2006_09_13)

<sup>52</sup> While the paper is here constructing a model of the *New Kosovo Power Plant*, it is instructive that the World Bank concern related to the rate of return has been registered. The World Bank, as a public co-lender will, with its subsidization powers, effectively set the terms upon which CONTOURGLOBAL participates in the project as negotiations proceed.

<sup>53</sup> Kosovo Energy Corporation, letter 2014, [http://www.ero-ks.org/Tarifat/2015/Aplikacioni\\_i\\_KEK\\_ut\\_2015.pdf](http://www.ero-ks.org/Tarifat/2015/Aplikacioni_i_KEK_ut_2015.pdf)

<sup>54</sup> In the World Bank's 2011 presentation its estimators projected that a lignite plant in 2011 would cost EUR / 20.22 MWh. This would be a EUR / 27.16 MWh 3 percent inflation adjusted operation cost in 2021.

IEEFA assumes a new business arrangement using a private operator. We include in our calculations, as part of the operating budget, EUR 21.25/MWh as profit paid to the private manager of the plant.<sup>55</sup>

IEEFA has calculated the cost of the plant with and without carbon costs. It is unclear whether NKPP will be included under any of the European Union's carbon protocols. The various "political exemptions" already granted the project are likely to extend to carbon regulations (see discussion of Risk Factor No. 8). For the purpose of including carbon costs with a real budget impact, we assume 25.75 EUR/MWh.<sup>56</sup>

**Figure 4: Operating Costs of the New Kosovo Power Plant, First Year of Operation**

	Amount (EUR/MWh)
Cost of Operation	33.53
Profit	21.25
Total Operating Costs without CO2	54.78
CO2 Cost Estimate	25.75
Total Operating Costs with CO2	80.53

## Capacity Factor and Demand Projections

The amount of power that can be produced by a plant is called the plant's capacity and it is measured in megawatts (MW). The *New Kosovo Power Plant* will have a capacity of 500 MW. Because 35 MW of capacity is needed to run the plant itself, the amount of electricity that is available for the grid, known as net capacity, will be 465 MW.<sup>57</sup>

The percentage of energy that a power plant produces compared to its maximum operations of 100 percent is known as its "capacity factor." The energy produced by a plant is measured in megawatt hours (MWh). The capacity factor is determined both by how well the plant operates and by how much electricity is needed. The Economic Development Minister's announcement did not provide any information regarding a capacity factor for the plant. In the past, the World Bank has used 85 percent as its operating assumption.

The *New Kosovo Power Plant* project planners have previously assumed that annual demand growth for the country's electric system will be 4.4 percent. The plans also project a more generalized growth of the Kosovo economy by 4.5 percent.

These assumptions are overly optimistic (see Risk Factor No 1). IEEFA makes the following assumptions: 1) the announced reduction in plant size suggests recognition that the prior sizing of the plant was defective, in part because anticipated demand is unlikely to materialize; 2) from 2010-2014 electricity consumption was flat or slightly negative, and within

<sup>55</sup>[http://www.cedelft.eu/publicatie/a\\_critical\\_examination\\_of\\_the\\_investment\\_proposals\\_for\\_unit\\_6\\_of\\_the\\_sostanj\\_power\\_plant/1205](http://www.cedelft.eu/publicatie/a_critical_examination_of_the_investment_proposals_for_unit_6_of_the_sostanj_power_plant/1205), see p. 9 for detailed operations budget including net profit of approximately 16.5% of revenues and CO2 costs.

<sup>56</sup> See: [http://www.cedelft.eu/publicatie/a\\_critical\\_examination\\_of\\_the\\_investment\\_proposals\\_for\\_unit\\_6\\_of\\_the\\_sostanj\\_power\\_plant/1205](http://www.cedelft.eu/publicatie/a_critical_examination_of_the_investment_proposals_for_unit_6_of_the_sostanj_power_plant/1205), see p. 9 for application of EU standards to Šoštanj operating budgets.

<sup>57</sup> World Bank, Options Paper, 2011

this broad trend are significant annual fluctuations in demand; 3) going forward IEEFA assumes a 2.5 percent annual increase in demand using as a base 5375 GWh per year demand, an average of the last five years.

Using these figures, along with the relative capacities of Kosovo B and integration of other planned power supply capacity, IEEFA uses a 75 percent capacity factor in its model. Using this figure carries a number of risks, including a potential for significantly higher costs of power from the plant should the growth and demand assumptions not materialize. (See *Section on Risk Factors*).

**Figure 5: Capacity Factor**

Relevant Metrics	Unit of Measure	Quantity
Total Capacity -New Kosovo Power Plant	MW	500
Net Capacity	MW	465
100% Capacity Factor	MWh	4,073,400
75% Capacity Factor	MWh	3,055,050
Annual Demand Growth (2015-2025) <sup>58</sup>	MWh	2.5%

## E. Total Cost of the New Kosovo Power Plant

Taking all of the above factors into account, IEEFA estimates that the system cost of electricity from *New Kosovo Power Plant* in 2021 will be 128.17 EUR/MWh, determined as follows:

**Figure 6: 2021 Cost of Electricity from the New Kosovo Power Plant**

Components	Cost in EUR/MWh
Cost of Equity	43.49
Cost of Debt	29.90
Cost of Operations	54.78
Cost of Electricity w/o CO2	128.17
Cost of Electricity with CO2	153.92

The cost of the plant<sup>59</sup> at 128.17 EUR/MWh is four times higher than the current cost of electricity in Kosovo under the system managed by KEK. The cost to produce electricity in the current system was \$28.93/MWh in 2015 dollars, as reported by KEK. The current system is old. It is operated under a different set of business assumptions than that used for NKPP. Furthermore, although KEK also carries some debt on its books (see discussion of Risk Factors No. 5) the debt is managed flexibly

<sup>58</sup> See discussion of past electricity demand trends in Kosovo compared with the World Bank projections in Risk Section: Risk Factor # 1.

<sup>59</sup> The World Bank's 2011 Option paper (p.27) carried a levelized cost of electricity for the *New Kosovo Power Plant* (formerly known as Kosovo C plant) of 81.45 EUR/MWh. Adjusting this amount going forward to 2021 would be 106.23 EUR/MWh. This would result in an 18.8% general increase in the price of electricity for Kosovar households.

including interest rate write-offs. The *New Kosovo Power Plant* model will carry profit on operations, substantial debt, and equity costs that will need to be paid.

## F: True Cost of the Plant, including Costs of Construction, Interest Payments, and Subsidies

Kosovo's economic development minister stated in November that the construction cost of the plant would be €1 billion. IEEFA finds that number dubious and has adjusted it to €1.35 billion, although it is likely that the final cost will be higher. Another way to consider the cost of the plant is to add up the cost of construction, financing and subsidies. This gives a clearer idea of how much the plant will actually cost.

**Figure 7: Total Cost of Plant Including Construction, Financing and Subsidies (in euros)**

Item	Cost
Construction Cost	1,355,000,000
Interest on Loan (7.5%)	882,085,000
Equity Rate of Return	259,249,000
External Subsidy <sup>60</sup>	1,673,145,000
Total Cost of Plant in EUROS	4,169,479,000

The Economic Development Minister identified neither the source of the financing for the plant nor the source of any subsidy commitments, though presumably the World Bank would be a major source of subsidies. If the World Bank and other sources have a commitment to mitigating the electric price hikes caused by the plant, they will have to provide deeper subsidies than the €1.7 billion estimated above. Changing the interest rate on the loan to 2 percent would make the cost of electricity more affordable, but would require a subsidy of €2.3 billion over the life of the loan. This would increase the total true cost of the plant to €4.8 billion.

## Summary of Section IV

The price of the coal plant would place significant upward pressure on the price of electricity in Kosovo. While the cost of electricity from the plant would be four times the current cost of electricity produced by KEK, the price charged to consumers could rise as much as 50 percent in the first year of operation.<sup>61</sup>

<sup>60</sup> To achieve a reduction of the interest rate from a market rate to the 7.5% disclosed by the Economic Development Minister we estimate it would cost EUR 1,673,145,000. We assume a market rate of interest at 18% for the life of the loan at 20 years or EUR 2,555,230,000.

<sup>61</sup> For a detailed discussion of how the cost of electricity from the plant will turn into actual increases in consumer bills see Appendix II.

IEEFA finds that the cost of the plant, based upon the best available data, is extraordinary. The question boils down to whether the proposed *New Kosovo Power Plant* is the best way to use €4.169 billion.

IEEFA also sees considerable areas of immediate and ongoing risks to the plant from Kosovo's financial, business and a political operating environment. These risks will affect plant operation and financing, Kosovo's energy costs and its economy. Because a reliable supply of affordable electricity is a basic necessity, and given the plant's size and importance, the individual and cumulative risks associated with the *New Kosovo Power Plant* are also risks to the public interest.

## V. Risk Factors Facing the Proposed Plant, Kosovo's Electricity System and Its Economy

The environment in which the *New Kosovo Power Plant* would be developed and operated contains numerous risks. Taken individually and cumulatively, these risks pose significant challenges to the successful implementation of this project as an affordable power resource. This section of the IEEFA report outlines these risks and suggests the likelihood of their occurrence. Where appropriate, this section also identifies how a specific risk factor might affect the quantitative conclusions presented in the model developed for this report.

**RISK FACTOR NO. 1:** Economic growth may not take place at sufficient levels and with sufficient distributional equity to support the *New Kosovo Power Plant* and its new financing demands.

The World Bank's projections for Kosovo assume that the gross domestic product of Kosovo will grow by 4.5 percent per annum through 2025.<sup>62</sup> However, the Kosovo economy has approached that rate of growth only once since 2010, with 4.4 percent growth in 2011. From 2010 through 2014 the average GDP growth rate was substantially below 4.5 percent and is likely to remain below 4.5 percent in 2016 and 2017.<sup>63</sup> The International Monetary Fund recently forecasted Kosovo's annual GDP growth rate through 2020 at 3.9 percent.<sup>64</sup> While the government's latest *New Kosovo Power Plant* announcement now refers to a 500 MW plant and a 16.6 percent reduction in the size of the plant, even this may not be necessary.

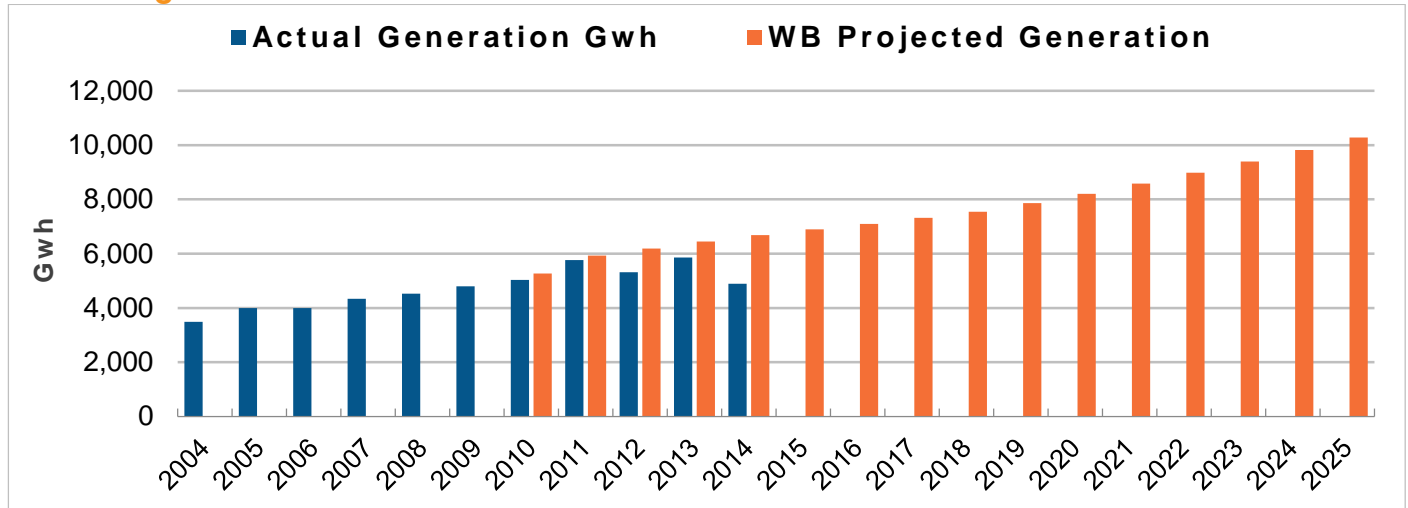
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<sup>62</sup> World Bank, "Background Paper: Development and Evaluation of Power Supply Options for Kosovo," 2011 p. 13, [http://siteresources.worldbank.org/INTENERGY2/Resources/Kosovo\\_generation\\_options\\_report\\_12312011.pdf](http://siteresources.worldbank.org/INTENERGY2/Resources/Kosovo_generation_options_report_12312011.pdf)

<sup>63</sup> The Vienna Institute for International Economic Studies, Kosovo, <http://wiiw.ac.at/kosovo-overview-ce-23.html>

<sup>64</sup> International Monetary Fund (IMF), Republic of Kosovo, IMF Country Report No. 15/210, July 2015, <http://www.imf.org/external/pubs/ft/scr/2015/cr15210.pdf>

**Figure 8: Comparison of Actual Kosovo Generation 2004-2014 with 2011 World Bank Projections 2010 through 2025 in Gwh**



A comparison of Kosovo's reported actual generation for the period 2004-2014 compared to the World Bank's 2011 Options Study projections of generation usage shows that the World Bank overestimated electricity usage for the period 2010-2014 by on average 14 percent annually. During the five-year period for which data is available, the spread between actual and projected generation increased in greater amounts in years three through five than in years one and two.

If the economy does not grow as anticipated, the demand for electricity will not be as great as projected. This could reduce the use of the *New Kosovo Power Plant* (or some other component of Kosovo's electricity system), causing the price of electricity from the plant to rise as the high fixed costs of the project would be spread over fewer megawatts generated. A reduction in the capacity factor of the plant from the projected level of 75 percent used in this report to 60 percent, for example, would cause a substantial price increase to the one already projected in this report.

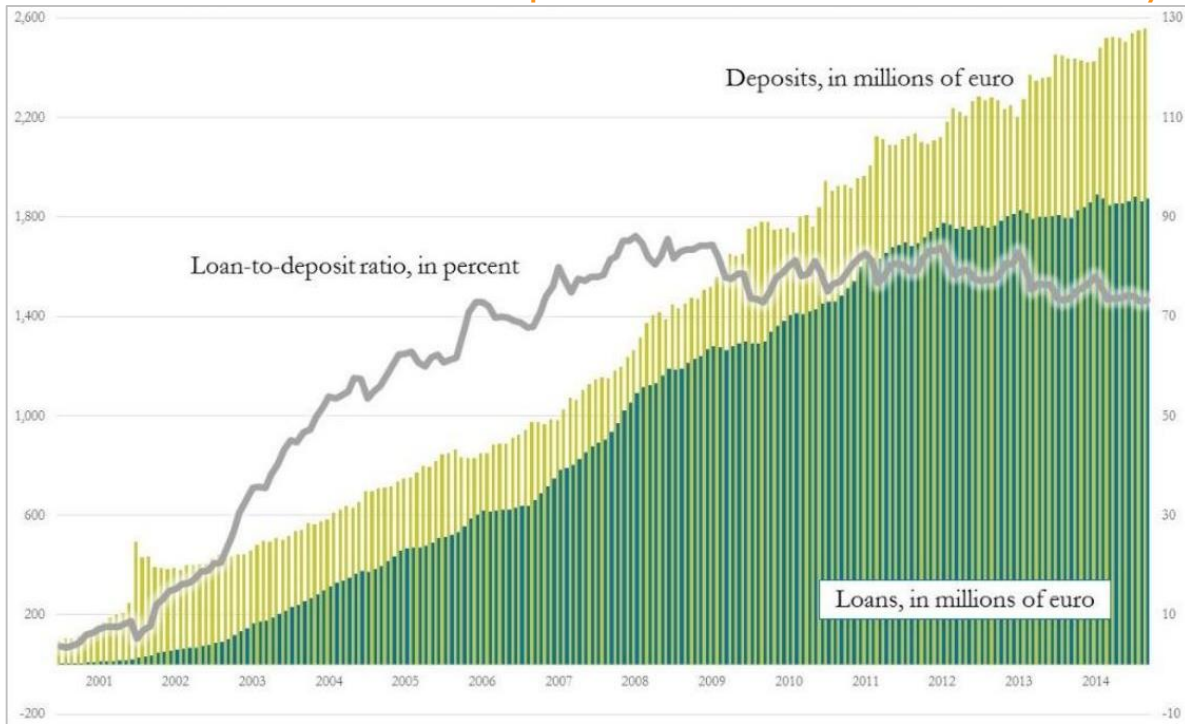
Going forward, the government of Kosovo would be well served by a reliable, publicly available electricity data model that measures consumption, demand and supply on a uniform basis over time.

**RISK FACTOR NO. 2:** The Cost of the Power Plant will produce stress on the banking and financial sector that will undermine the type, quality and magnitude of economic growth now occurring in Kosovo.

The power plant poses a number of risks to the macro-financial condition of the country.

Figure 9 below shows that Kosovo's commercial banks had \$2.6 billion on deposit at the end of 2014. Its loan-to-deposit ratio was approximately 76 percent, but slipped to 81 percent as of February 2015.<sup>65</sup>

**Figure 9: Kosovo Commercial Banks Deposits and Loans: December 2009 – February 2015<sup>66</sup>**



Source: The World Bank Group in Kosovo, "Country Snapshot, April 2015," Figure 3.

Adding the *New Kosovo Power Plant* to the commercial loan levels of Kosovo's banking institutions would increase loan levels from €2.08 billion to €3.0 billion, pushing the loan-to-deposit ratio over 100 percent. This one transaction would increase the macroeconomic risk for the country. First, it would concentrate risk in an economy that is small and is already struggling with risk diversification. Second, it would exceed the standard set by independent bank examiners to maintain an 80 percent loan-to-deposit ratio.<sup>67</sup> Third, it would add to political tensions in the country on a range of issues related to domestic and foreign banking.<sup>68</sup> Fourth, it is likely to place credit constraints on other sectors at a time when the

<sup>65</sup> The World Bank Group in Kosovo, "Country Snapshot, April 2015," <http://www.worldbank.org/content/dam/Worldbank/document/eca/Kosovo-Snapshot.pdf>

<sup>66</sup> The World Bank Group in Kosovo, "Country Snapshot, April 2015," p. 4, <http://www.worldbank.org/content/dam/Worldbank/document/eca/Kosovo-Snapshot.pdf>

<sup>67</sup> <http://www.imf.org/external/pubs/ft/scr/2013/cr1399.pdf>, p. 22.

<sup>68</sup> For a discussion of the key macro finance issues that face Kosovo banking system see: International Monetary Fund, "Republic of Kosovo: Financial System Stability Assessment," IMF Country Report No. 13/99, April 2013, <http://www.imf.org/external/pubs/ft/scr/2013/cr1399.pdf>

private economy is vulnerable; according to the World Bank, the current growth model for private development in Kosovo is already unsustainable.<sup>69</sup>

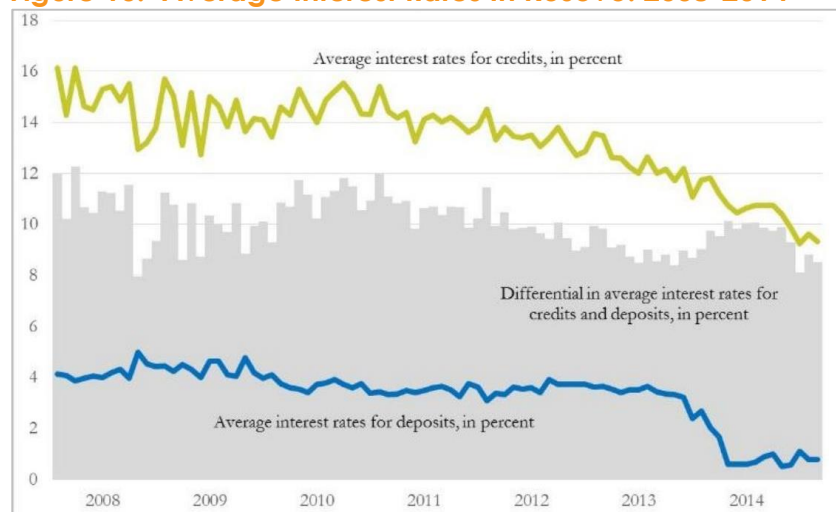
The likely scenarios put forth thus far regarding the structure of the loan, including an interest rate subsidy from a consortium of public and private lenders, would place long-term pressure on Kosovo's economy to repay a massive debt.

## Typical Spreads Between Average Lending Rates, Household Lending, and Enterprise Lending

Historically, banks in Kosovo lend money to businesses at a higher interest rate than they lend to households, reflecting the higher risk profile of commercial lending. For example, "The average interest rate on loans (12-month moving average) as of June 2010 stood at 14.3 percent, whereby the average interest rate on loans to enterprises was 16.7 percent, while the average for household loans was 12.2 percent."<sup>70</sup> In this example, the spread between the average interest rate and the commercial rate was 2.4 percent. In the current economic environment in Kosovo, interest rates have declined and are just below 10 percent. The *New Kosovo Power Plant* will place upward pressure on interest rates at a time when progress has been made toward bringing them down. The project loan interest rate cited by the Economic Development Minister for a loan of this size is unsustainable absent massive subsidization.

A massively subsidized loan, using a project with only one bidder based upon political exemptions from policy and a weak utility system will not be an attractive package to the international banking community. It is more likely the high-risk nature of the transaction will undermine the more positive growth story of the modest but stable progress unfolding in the economy.

**Figure 10: Average Interest Rates In Kosovo: 2008-2014<sup>71</sup>**



Source: The World Bank Group in Kosovo, "Country Snapshot, April 2015," Figure 4.

<sup>69</sup> The World Bank Group in Kosovo, "Country Snapshot, April 2015," p. 5,

<http://www.worldbank.org/content/dam/Worldbank/document/eca/Kosovo-Snapshot.pdf>

<sup>70</sup> Interest Rates by Banks in Kosovo Comparative Analysis— Between Kosovo and neighboring countries Prepared by: XHEVAT MEHA FCCA Prishtina, September 2011, p. 5, [http://www.luani.net/publikimet-artikujt-65/items/interest-rates-by-banks-in-kosovo.html?file=tl\\_files/music\\_academy/Interest%20rates%20on%20bank%20lending%20in%20Kosovo.pdf](http://www.luani.net/publikimet-artikujt-65/items/interest-rates-by-banks-in-kosovo.html?file=tl_files/music_academy/Interest%20rates%20on%20bank%20lending%20in%20Kosovo.pdf)

<sup>71</sup> The World Bank Group in Kosovo, "Country Snapshot, April 2015," p. 4.

<http://www.worldbank.org/content/dam/Worldbank/document/eca/Kosovo-Snapshot.pdf>



## Improvements Needed to Kosovo's Bank Lending System

Kosovo is served by eight commercial banks. Two are domestic banks; the remainder are either European based or Kosovan subsidiaries with European parents in Germany, Slovenia, Austria, Turkey and Albania. The banking sector typically covers its lending needs through bank deposits from households and businesses in Kosovo.<sup>72</sup>

Observers of the Kosovo banking system that include the Organization of Economic Co-operation and Development<sup>73</sup> and the Kosovo Foundation for Open Society Projects<sup>74</sup> have indicated that the system is in need of greater lending to small and medium-size enterprises.<sup>75</sup> Micro-lending is seen as a key to growth in the economy.<sup>76</sup>

The NKPP project is a sole extraordinary loan that will require servicing from a country with a low-wage market and a portfolio of investments that are small and struggling.

## The Absence of Domestic Banking Support; Coal and Interest Rate Risks

A large loan like that contemplated for the *New Kosovo Power Plant* would require the involvement of a consortium of banks. Coal plants are seen as high-risk investments due to their construction costs, environmental costs, vulnerability to competition, policy risk, potential climate risk and growing public opposition.<sup>77</sup> Over the past 10 years, the Kosovo government has failed to produce a private lending consortium willing to absorb this risk. It did not identify any group of lenders in its most recent announcements. Policy coordination for a lending consortium with regard to coal, particularly with regard to establishing a risk-responsive interest rate, is likely to prove problematic.<sup>78</sup>

## Political Risk

As discussed earlier in this report, plans for the *New Kosovo Power Plant* have changed several times, both as a result of valid energy-related planning assumptions and due to value choices prompted by political events. These political changes occur, perhaps more frequently in the life of a new country than in a more established environment.

The economics of the *New Kosovo Power Plant*, whether the cost is subsidized from the outside, will pose ongoing political choices for the Kosovo government. Most of these choices will revolve

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<sup>72</sup> Kosovo Banking Association, "Comparative Study on business environment and the role of the banking sector in Kosovo," Slide 7, <http://bankassoc-kos.com/wp-content/uploads/2013/09/KBA-Research-Study-final.pdf>,

<sup>73</sup> OECD, Enterprise Development and Innovation Facility (EDIF), <http://www.oecd.org/investmentcompact/enterprise-development-innovation-western-balkans.htm>

<sup>74</sup> Riinvest Institute, "Banking Section: Facilitator or Barrier," <http://www.riinvestinstitute.org/publikimet/pdf/53.pdf>

<sup>75</sup> Centre for Research, "Interest Rates in Kosovo's Banking System," <http://cn4hs.org/wp-content/uploads/2015/09/CRDP-Chronicle-Interest-Rates-in-Kosovo-August-31-2015.pdf>

<sup>76</sup> Kosovo Banking Association, "Comparative Study on business environment and the role of the banking sector in Kosovo," <http://bankassoc-kos.com/wp-content/uploads/2013/09/KBA-Research-Study-final.pdf>

<sup>77</sup> Froggatt, A., "Coal Financing in Europe: The Banker's Dilemma," 2011, [https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy,%20Environment%20and%20Development/1111pp\\_froggatt.pdf](https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy,%20Environment%20and%20Development/1111pp_froggatt.pdf)

<sup>78</sup> For example, in 2008, one agency of the United States government with 70 years' experience with financing coal plants, began to assess the risk of new coal fired plants in a changing market. After reviewing construction markets, coal markets and potential changes in future carbon policy the agency decided that the cumulative risks made the creation of an interest rate that accurately reflected coal plant risk too speculative. The agency has since 2008 not funded any new coal plants. Mail Tribune, "USDA halts loan program for rural coal-fired plants," <http://www.mailtribune.com/article/20080314/BIZ/803140318>

around the issue of electricity rates and the upward pressure that the plant will place on them. These factors cannot be ignored when establishing an interest rate for this project.

A recent example, from Bulgaria, which involved ContourGlobal, the same developer who plans to be involved in NKPP, shows that even after a plant is up and running political pressure can compel a restructuring of project finance and increased risk to investors.<sup>79</sup> In such cases, the developer receives a much lower return on its investment than it had planned.

None of the technical papers commissioned by the World Bank and others for this project have addressed the impact of the project on the banking system or actual interest rates in the country. The *New Kosovo Power Plant* will require a large loan in a relatively small financial market. The loan will drive Kosovo banking decisions for decades to come. Typically loans of this nature are “off balance sheet” loans, but the loan structure in this case is arranged so that the equity payments, profits and loan payments will reappear on the “balance sheets” of Kosovo’s residents and businesses in the new tariffs to be charged.

The 7.5 percent interest rate cited by the Economic Development Minister would be based upon heavy subsidization. IEEFA’s model suggests the project will remain financially risky and will produce electricity that is unaffordable even with 7.5 percent financing. The price of electricity will rise beyond that anticipated in this study unless further subsidies are made or ContourGlobal further reduces its rate of return.

**RISK FACTOR NO. 3:** New private sector entrants into the Kosovo electricity system do not have the same interests as the government of Kosovo. The Kosovo government has not demonstrated sufficient capacity to secure the terms of a mutually beneficial agreement or to achieve long-term accountability for the benefit of the people of Kosovo.

Private investors and any new private operator who enters the Kosovo energy system via the *New Kosovo Power Plant* project would require adherence to contracts and payment schedules and would place other demands on the government of Kosovo. The Kosovo government has a history of political interference in the operation of its state-run businesses.<sup>80</sup> Political disruption in the new business model is a risk for both the government and any new private companies doing business in Kosovo. The recent renegotiation of the costs of the Maritsa plant in Bulgaria and the cost overruns and corruption investigations surrounding the Šoštanj 6 plant in Slovenia are recent examples of how these risks can materialize.

The recent Kosovo government announcement identifying ContourGlobal as the preferred developer for the project was not accompanied by any information regarding the business model and legal structure of the *New Kosovo Power Plant* project. IEEFA assumes there will be some form of public-private partnership similar to the Limak-Calik privatization deal for Kosovo’s transmission and distribution system.<sup>81</sup>

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<sup>79</sup> Reuters, “Bulgaria approves power price cut deal with ContourGlobal,” <http://www.reuters.com/article/2015/08/27/bulgaria-energy-idUSL5N1122SP20150827>

<sup>80</sup> U.S. Department of State, “2014 Investment Climate Statement,” June 2014, <http://www.state.gov/documents/organization/229098.pdf>

<sup>81</sup> <http://kfos.org/wp-content/uploads/2015/06/4.-KEDS-PRIVATISATION-IN-THE-ENERGY-SECTOR.pdf>

A public-private partnership (PPP) is a contract between a government and a private company. To succeed, public-private arrangements must be mutually beneficial.

Typically, the private company finances, builds and operates some element of a public service, in this instance the *New Kosovo Power Plant*. The private company gets paid over a number of years, either through consumer charges or by payments from the government, or a combination of both. For the public, these transactions can leverage private finance and expertise. The projects are controversial in large measure because they involve large public projects, like NKPP.

The public-private partnership for NKPP contains three major types of risk: 1) the PPP model is inherently likely to result in higher construction and operating costs than those assumed in IEEFA's model in this report; 2) the PPP model would introduce new expense factors into the ongoing operation of the plant that would place ongoing upward pressure on electricity prices in Kosovo; 3) the PPP model would significantly alter the current governance of the electricity system, a factor with critical implications for the currently employed Kosovo labor force as well as future employment opportunities.

Opponents<sup>82</sup> and proponents<sup>83</sup> of public-private partnerships, as well as neutral third-party guidance,<sup>84</sup> note that sound planning, a skilled public-sector negotiating team, good financial advice and openness are critical elements of success.<sup>85</sup>

A review of literature on PPPs and the professional experience of IEEFA analysts highlight the common questions and areas of risk for both the public and private sector:

1. Objectives and priorities: Are there clear public sector objectives and priorities, outlined in comprehensive legislation designed to inform the development, operations and evaluation phases of the project?
2. Sound energy and financial planning: Have alternative energy options been considered? What are the baseline assumptions of the options; have the options been assessed against various business models? Are there clear objectives and methods regarding financial benefits?
3. Government contract policies: Has there been competitive bidding versus negotiated sales? Do public sector procurement professionals have the skill and knowledge to evaluate the proposals?
4. Accountability and quality of financial advice and consultants: Whom do they serve? How thorough are they? What is the track record of the host government in managing the consultants?
5. Business Plans: Is there a business plan for the government? What are the legal entities governing the development and operation phases; what is the structure of legal agreements that constitute the governing documents; what are the lines of authority and communication; how are revenues collected, accounted for and disbursed; what are the terms and

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<sup>82</sup> <http://kfos.org/wp-content/uploads/2015/06/4.-KEDS-PRIVATISATION-IN-THE-ENERGY-SECTOR.pdf>

<sup>83</sup> <http://www.ncppp.org/wp-content/uploads/2013/03/WhitePaper2012-FinalWeb.pdf> , See also: [http://www.ifc.org/wps/wcm/connect/e00cbd004e4adc988f0caf7a9dd66321/PPPStories\\_Kosovo\\_ElectricityDistribution.pdf?MOD=AJPERES](http://www.ifc.org/wps/wcm/connect/e00cbd004e4adc988f0caf7a9dd66321/PPPStories_Kosovo_ElectricityDistribution.pdf?MOD=AJPERES)

<sup>84</sup> [http://www.cscd.gov.bc.ca/lgd/policy\\_research/library/public\\_private\\_partnerships.pdf](http://www.cscd.gov.bc.ca/lgd/policy_research/library/public_private_partnerships.pdf)

<sup>85</sup> The World Bank also provides a series of detailed guides to the use of public private partnerships and the various legal, financial and governmental implications. <http://ppp.worldbank.org/public-private-partnership/overview/ppp-objectives#risks>

conditions of critical contracts; are there development budgets, operation budgets with rationales and explanations and are they publicly available; are these budgets guides or legally enforceable; are there payment schedules for all parties?

6. Rates and Public Subsidies: Is there a clear plan for how much the public will pay before, during and after the transaction is consummated? Are public subsidies clearly described and are both issues made clear to the public and the governing bodies of the government prior to the transaction?
7. Internal controls: Is the government prepared to protect itself and secure benefits during actual implementation? What standards will the government use to determine if benefits promised are benefits received?
8. Labor policies: How will the jobs promised during construction be obtained by the people who reside in the host country? What will be the labor standards, including wages and benefits, for the construction project? How will current employees who provide current services be retained after the transaction is completed, and what will be the compensation package for these employees? What labor pool will be relied upon to recruit new employees and what will their compensation packages be?
9. Oversight and corrective measures: What happens if actual results do not measure up to the planned performance? What formal monitoring is done that documents and verifies performance under the agreements? What kind of corrective action planning is in place?
10. Politics: Does the governmental body possess the level of internal stability, commitment, and expertise to both close the deal and to deliver the benefits?

Based on the above criteria, IEEFA's review of the *New Kosovo Power Plant* planning process finds a number of significant red flags that indicate the government of Kosovo is a weak partner for moving forward with these negotiations.

Among these red flags:

1. Past planning studies and financials have inaccurately assessed basic elements of energy demand and energy options for Kosovo and have failed to point out very weak organizational capacity issues.
2. The development team assembled by the Kosovo government has demonstrated weak performance. The team has failed over a decade to bring together the various components of a viable project. One factor completely within the control of the development team is the level of energy demand and the size and design of the coal plant to be used. This remains a matter of contention 10 years after project planning began. Other demonstrable weaknesses include that the project has not produced a valid competitive bid. Nor has it produced any identifiable private sector investors.
3. In all of the planning studies and consultant agreements, no business plan that can be used to make ultimate determinations of project viability and to monitor changes has been made publicly available. The core topic of this study, for example—how much the people of Kosovo would pay for electricity if the *New Kosovo Power Plant* is built—has not previously even been asked.

4. The government of Kosovo's previous experience with privatization is unknown. There has been no credible public reporting on the transmission privatization agreement or progress. In fact, quite the opposite. Attempts to obtain valuable information to conduct external reviews do not receive the cooperation of the government.<sup>86</sup>
5. The various substantive design changes over the past decade reflect both weak technical support and considerable political interference. Our review indicates that the primary form of management of this project thus far is political rather than professionally competent and that it is not guided by financially sound energy policy for Kosovo's overall benefit. The foreign political support for this project is based on "political exemptions" to policy and financial standards, a weak basis indeed for proceeding.
6. The assertion by project developer ContourGlobal that the construction of the plant would create 10,000 jobs<sup>87</sup> is not backed by any reliable study,<sup>88</sup> and there is no guarantee that Kosovars will get any of the jobs that would be created.<sup>89</sup> If the plant were to be constructed, a plan would need to be enacted to ensure that any jobs created go to Kosovars.

Proponents,<sup>90</sup> opponents, and third-party observers all emphasize proper and professional due diligence because a weak partner will ultimately create a weak project. In this instance, weaknesses in the government of Kosovo are likely to be exploited by the private developer in a manner that would cause subsidies to be increased and the public of Kosovo to pay higher prices for electricity. IEEFA does not see this as a distant risk. Given the current status of the project, we see it as an all but certain outcome.

## **RISK FACTOR NO. 4: The announced financial plan for this plant is based on a 70 percent debt to 30 percent equity ratio. Kosovo has no track record with this kind of financial structure.**

Under the current system, the government of Kosovo is a 100 percent owner of the Korporata Energjetike e Kosoves (KEK, Kosovo Energy Corporation). The government lends money to KEK at a rate of 2 percent over 30 years.<sup>91</sup> KEK and the government have a high degree of flexibility on terms and payments. For example, KEK interest payments were recently written off.

Under the deal announced by the economic development minister, at least two and probably more investors would provide money to the plant. The electricity system, as a result, would be required to carry significantly higher levels of debt, at higher interest rates with tight payment

<sup>86</sup> <http://kfos.org/wp-content/uploads/2015/06/4.-KEDS-PRIVATISATION-IN-THE-ENERGY-SECTOR.pdf>

<sup>87</sup> <http://www.reuters.com/article/kosovo-energy-contourglobal-idUSL6N0VE2DW20150204>

<sup>88</sup> The Ochs Center for Metropolitan Studies conducted a study in 2011 to determine whether coal-fired power plants in the U.S. from 2005-2009 had met their job creation goals, and concluded the projects had fallen far short of the goals: [http://www.huffingtonpost.com/david-eichenthal/coal-doesnt-deliver-on-it\\_b\\_846641.html](http://www.huffingtonpost.com/david-eichenthal/coal-doesnt-deliver-on-it_b_846641.html)

<sup>89</sup> Very few studies have been done by the World Bank or other analysts on actual job creation on projects funded under PPP arrangements. Communities in the United States however, have campaigned for decades to insure that jobs promised to local residents were delivered to local residents. It is usually difficult to translate promises into actual jobs. <http://www.forworkingfamilies.org/sites/pwf/files/publications/0708-MakingDevelopmentWorkForLocalResidents-Summary.pdf>

<sup>90</sup> The NCPP report provides six examples of successful privatization transactions. IEEFA notes that none of the examples used are power plants. <http://www.ncppp.org/wp-content/uploads/2013/03/WhitePaper2012-FinalWeb.pdf>

<sup>91</sup> GrantThornton, "Independent Auditors' Report and Financial Statements Kosovo Energy Corp., Year ending December 31, 2014," p. 26 and 35, <http://www.kek-energy.com/doc/publikime/Grant%20Thornton%20Financial%20Statement%20for%20year%20ended%2031%20December%2014.pdf>

deadlines and default provisions. Failure to adhere to these deadlines would create immediate risks for the equity owner and raise significant issues for the other lenders.

The ERO has identified various forms of losses of energy in the Kosovo electric system, as well as difficulties in billing and collecting outstanding revenues.<sup>92</sup> The levels of actual cash losses are substantial. While some progress is now being made in energy losses, billing and collection issues all impair the creation of adequate, stable cash flows. Predictable cash flow is necessary for the proposed NKPP project, and any disruption of the cash flow presents a risk.

Private companies work on the premise that the price of electricity to consumers bear close relation to the cost of production, debt service and profits. If NKPP is constructed as planned, private companies are likely to be active proponents of higher electricity rates. Pressure to raise the price of electricity is already an issue in Kosovo under the current regulatory system. The addition of foreign owners and investors will place added risk that Kosovo's price of electricity will bear the burden of those companies interest rate, credit, and other financial risks.

## **RISK FACTOR NO. 5: The *New Kosovo Power Plant* would result in the diversion of significant portions of revenues currently available to the Kosovo government and its subsidiary organizations, most notably KEK.**

Kosovo's 2014 revenue collections from its electricity generation system amounted to €214 million. By IEEFA's estimate, the system will generate approximately €400 million by 2021. Perhaps as much as three-quarters of this revenue would have to go to support NKPP if it is built. There would need to be a significant restructuring of the revenue distribution within the system and to KEK.

In addition to the loss of revenue for KEK—and in addition to more limited control the government would exercise over revenue from the electricity system—NKPP would create further fiscal impacts, even though the economic development minister has stated that there would be no cost from the Kosovo budget for the new plant,<sup>93</sup> an assertion IEEFA finds questionable.

The Kosovo government has a €225 million outstanding loan from KEK. In 2014, interest payments were waived, and the loan is being restructured.<sup>94</sup> The interest waiver is a form of canceled debt, a form of subsidy from the government of Kosovo to the electricity system. The final disposition of the loan will need to be decided as KEK faces significant revenue reduction, and how the loan is disposed of has fiscal implications for the government.

A second area of fiscal impact relates to the income of poor families in Kosovo that are eligible for electricity payments under Kosovo's social assistance statutes. The government currently spends €4.5 million per year on this item. Assistance to eligible families pays for 400 Kwh of electricity per month.<sup>95</sup> An increase in the cost of electricity from NKPP would place pressure on

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<sup>92</sup> The World Bank has identified losses of electricity and hence revenue as the result of illegal activity as well as the technical losses cited by the ERO.

<sup>93</sup> <http://www.kryeministri-ks.net/?page=2,9,5394>

<sup>94</sup> <http://www.kek-energy.com/doc/publikime/Grant%20Thorton%20Financial%20Statement%20for%20year%20ended%2031%20December%2014.pdf>

<sup>95</sup> [http://www.kryeministri-ks.net/repository/docs/Programi\\_i\\_Qeverise\\_eng\\_.pdf](http://www.kryeministri-ks.net/repository/docs/Programi_i_Qeverise_eng_.pdf)

the government either to raise annual budget allocations or reduce benefits through program amendments.

A third area of fiscal concern stems from how the government of Kosovo has historically made direct allocations to the electricity system to offset deficits. These annual allocations have diminished over time.<sup>96</sup> Government officials attribute the reductions in outlays to improvements in revenue collections. It is reasonable to anticipate that with a rapid rise in electricity prices for Kosovo residents more revenue would go uncollected. The risk here is that the government of Kosovo would again be called upon to increase subsidy payments from its general fund revenues for the electricity system.

Such risks require thorough analysis. A fiscal impact study that analyzes current revenues, expenditures and debt from the energy system, how they would change and what new roles and responsibilities are undertaken is crucial in minimizing risk to Kosovo's governmental budget.

## **RISK FACTOR NO. 6: Construction Costs for the plant could be much higher than anticipated.**

As noted earlier in this report, many coal plants projects have significant cost increases and schedule delays during construction. For example, as shown in Figure 3, the final cost of the recently completed Šoštanj 6 coal plant in Slovenia was more than double the cost that had been estimated in 2006. Plant construction in Kosovo would require the transport of most items required for construction from outside Kosovo,<sup>97</sup> placing those costs beyond government control.

The most significant risk factor related to construction cost increases results from the public commitment for the *New Kosovo Power Plant* by the World Bank and the U.S. government (discussed below). Builders who know the plant is a political priority of these two powerful supporters have an inherent negotiating advantage when setting the initial construction price on the project and in any price disputes during the construction process. It is also unclear what procurement rules would govern the bidding and builder selection for the plant.

## **RISK FACTOR NO. 7: Coal plants that burn lignite coal are likely to produce unacceptable emissions.**

India and China, two countries with recent histories of economic growth, are now seeking to reduce their reliance on coal-fired technology in large part due to air pollution problems. The process of shifting away from coal in these countries is complex, but made manageable by the size, financial depth and diversity of the economies. In contrast, Kosovo is a small, growing economy that has little room for error on an investment the size of NKPP.

Earlier plant designs assumed subcritical coal plants, a highly polluting source of energy when combined with lignite. The economic development minister's recent comments seem to imply that the new proposal would be for a supercritical plant, that is, one that is less polluting. Supercritical plants are typically larger than 500 MW, do not burn lignite and are more expensive

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<sup>96</sup> <http://kfos.org/wp-content/uploads/2015/06/4.-KEDS-PRIVATISATION-IN-THE-ENERGY-SECTOR.pdf>

<sup>97</sup> Sierra Club, "Affordable Electricity for Kosovo? A Review of World Bank Group Cost Estimates. For New Lignite-fired Plants in Kosovo," 2011, <https://www.sierraclub.org/sites/www.sierraclub.org/files/uploads-wysiwig/Affordable%20Electricity%20for%20Kosovo.pdf>

than subcritical plants.<sup>98</sup> Additional engineering, design, and finance work is necessary to determine if this is a viable direction.

## **RISK FACTOR NO. 8:** The political exemptions that have apparently been granted by the World Bank and the U.S. State Department will lead to higher costs.

World Bank President Jim Yong Kim has pledged support for the project (see Section VI below), despite the fact that the bank is moving away from financing coal plants except in rare circumstances. U.S. Secretary of State John Kerry has likewise pledged U.S. backing. Secretary Kerry's support for the plant appears to be based on a desire to reduce greenhouse gas emissions, but his statement lacks any credible foundation. The only coal plant for which there is some description for Kosovo thus far is a subcritical plant burning lignite. This technology is the most polluting type of coal plant.

These two endorsements effectively waive the World Bank's policy on climate change and its overall policies to assist the poor. They also appear to exempt Kosovo from any serious climate standards held by the U.S. State Department. These political exemptions provide an immediate path forward for the project. As noted throughout this paper, the level of financial and capacity risk ensures that these parties will be called upon again for greater amounts of support. It is highly likely that the organizational capacity problems that plague the government of Kosovo are likely to turn into further financial burdens for its American sponsors. At some point, these additional financial burdens may lead to a reconsideration of the political exemptions.

## **RISK FACTOR NO. 9:** International agreements on climate policy may impose constraints on coal-fired generation.

The potential for international climate policy initiatives and agreements and their impact on Kosovo present a distinct risk. The ongoing nature of the dialogue, along with the international agreement reached in Paris in December 2015 is creating initiatives around the world that restrict the use of fossil fuels, particularly coal. Many of Kosovo's economic partners in the European Union and beyond have adopted policies and programs to address climate change. Kosovo currently relies on coal-fired power generation for over 95 percent of its energy, and the introduction of the *New Kosovo Power Plant* would only perpetuate that dependence on coal. The ongoing reliance on coal-fired power generation is a risk.

## **RISK FACTOR NO. 10:** Public opposition to the plant in Kosovo presents a material risk.

Public objections have been raised to four specific impacts of the *New Kosovo Power Plant*. First, the forced displacement of Kosovo residents and the potential violation of World Bank development standards remains an ongoing and major public controversy.<sup>99</sup> Second, residents

<sup>98</sup> [https://www.iea.org/publications/freepublications/publication/Power\\_Generation\\_from\\_Coal2011.pdf](https://www.iea.org/publications/freepublications/publication/Power_Generation_from_Coal2011.pdf), see pg. 13 for global sampling of plant sizes.

<sup>99</sup> Downing, T., "Does the Kosovo Power Project's Proposed Forced Displacement of Kosovars Comply with International Involuntary Resettlement Standards?," 2014,



have raised questions of air quality deterioration in Kosovo that would be caused by burning lignite with outmoded technology. Third, Kosovo's reliance upon coal-fired generation for 95 percent of its annual power generation brings criticism for the levels of greenhouse gas emissions it creates. Fourth, recent opposition to electricity price increases under the existing system demonstrates the difficult pressure that any new project will face that raises prices substantially.<sup>100</sup>

The issues raised individually and cumulatively represent a material risk<sup>101</sup> to the successful implementation of NKPP. Public opposition to coal plants and other fossil fuel projects in many places in the world have combined with weak project finance economics to cancel proposals.<sup>102</sup>

## VI. The Importance of the Role of the World Bank in Development of the *New Kosovo Power Plant*

### A. The World Bank's Position on Coal, Climate, and Poverty

The World Bank, with support from the U.S. Treasury, adopted a policy in 2013 in which the bank stated its opposition to coal-fired generation:

The World Bank Group will cease providing financial support for greenfield coal power generation projects, except in rare circumstances where there are no feasible alternatives available to meet basic energy needs and other sources of financing are absent. Private sector finance will be the preferred option, but where the World Bank Group does engage, the existing screening criteria for coal projects will apply.<sup>103</sup>

The World Bank and the U.S. government have indicated that support for NKPP would qualify as a "rare circumstances."<sup>104</sup> In August 2013, the President of the World Bank Jim Yong Kim said that his support for NKPP grew out of a commitment to prevent the poor from freezing in their apartments.<sup>105</sup>

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[http://www.kosid.org/file/repository/Does\\_the\\_Kosovo\\_Power\\_Project\\_s\\_Proposed\\_Forced\\_Displacement\\_of\\_Kosovars\\_Comply\\_with\\_International\\_Involuntary\\_Resettlement\\_Standards.pdf](http://www.kosid.org/file/repository/Does_the_Kosovo_Power_Project_s_Proposed_Forced_Displacement_of_Kosovars_Comply_with_International_Involuntary_Resettlement_Standards.pdf)

<sup>100</sup> Gazeta Express, "70 NGOs, with citizens petition against the increase of electricity," September 2014,

<http://www.gazetaexpress.com/lajme/70-ojq-bashke-me-qytetaret-peticionkunder-shtrenjtimit-te-energji-se-elektrike-44296/?archive=1>

<sup>101</sup> IEEFA, Material Risks report, October 2014, [http://www.ieefa.org/wp-content/uploads/2014/10/IEEFA.OCI\\_Material-Risks.compressed.pdf](http://www.ieefa.org/wp-content/uploads/2014/10/IEEFA.OCI_Material-Risks.compressed.pdf)

<sup>102</sup> Sierra Club, "Move Beyond Coal, The Global Movement in 2014,"

<https://www.sierraclub.org/sites/www.sierraclub.org/files/Move-Beyond-Coal-2014.pdf>

<sup>103</sup> E&E Publishing, "Toward a Sustainable Energy Future for All: Directions for the World Bank Group's Energy Sector,"

[http://www.eenews.net/assets/2013/06/27/document\\_cw\\_01.pdf](http://www.eenews.net/assets/2013/06/27/document_cw_01.pdf)

<sup>104</sup> Bloomberg Business, "Coal-Fired Plant in Kosovo Tests World Bank Clean-Air Pledge," June 2014,

<http://www.bloomberg.com/news/articles/2014-06-01/coal-versus-poverty-in-kosovo-tests-world-bank-clean-air-pledge>

<sup>105</sup> <http://www.bloomberg.com/news/articles/2013-04-17/kim-says-world-bank-can-t-reject-coal-if-people-freeze>

The primary mission of the World Bank is the promotion of development that will alleviate poverty. According to its 2013 climate change policy document, "The World Bank Group is intensifying its focus on the objective of ending poverty and promoting shared prosperity."

The World Bank makes the statement about energy poverty more concrete by linking the high cost of energy to economic un-competitiveness by noting that such costs also impair the ability of the poor to obtain access to basic energy resources: "Yet high costs of energy compromise the affordability of basic energy needs for households and the competitiveness of industry ... Where they are retained, subsidies need to be sharply targeted to the poor."<sup>106</sup>

The World Bank also advances the general theory that access to energy stimulates economic growth, which assists the poor and creates broad economic improvement, as described below:

"Energy is an important engine of economic growth, on which both poverty reduction and shared prosperity depend. Inclusive economic growth is the single most effective means of reducing poverty and boosting prosperity. Most economic activity would be impossible without energy. Adequate, reliable, and competitively priced modern energy is essential for business development, job creation, income generation, and international competitiveness.

"Efficient, financially sound sector performance is a prerequisite for affordable and reliable energy. The ability to recover costs is essential to financial health and to restoring the viability of affected suppliers. Such cost recovery depends on phasing out price controls that cause underpricing; introducing efficient payment systems through better metering, billing, collection, and service standards; and reducing and eliminating, over time, theft across the supply chain, short selling, fuel adulteration, and mislabeling. Improving management of power and natural gas utilities will often result in more efficient operation, including reduction of losses. Operational efficiency will, in turn, restore utilities' ability to finance new investments and make a positive contribution to the economy under all circumstances, but particularly in countries with serious energy shortages. Improving the finances of a utility by reducing commercial losses and increasing potential energy supplies by reducing technical losses are effective complements to new investment."

The World Bank policy perspective, in brief, comes down to this: many problems and inefficiencies with regard to energy-development policies, practical implementation and political will related to energy production can undermine economic growth and progress for the poor.

## **B. The World Bank and the *New Kosovo Power Plant***

The 2011 Kosovo energy options paper prepared by the World Bank puts the policy issues into a Kosovo-specific focus. The paper points out the dilemma of a system in which household users pay less for electricity than the cost of operations of the system. The World Bank also identifies how losses and inefficiencies in the system further reduce the Kosovo energy system as a viable investment opportunity.

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<sup>106</sup> E&E Publishing, "Toward a Sustainable Energy Future for All: Directions for the World Bank Group's Energy Sector," [http://www.eenews.net/assets/2013/06/27/document\\_cw\\_01.pdf](http://www.eenews.net/assets/2013/06/27/document_cw_01.pdf)

“Current tariffs charged to customers are not cost reflective: for the most part, household consumers are subsidized by non-household users. Household tariffs as a whole are estimated to be roughly 20-30 percent below the suppliers’ total financial costs, whereas some industrial tariffs significantly exceed the cost reflective level. Moves to more cost reflective tariffs will affect the demand by different consumer categories with the impact (as discussed in the next section) depending on consumers’ price elasticity of demand.

“Most metered electricity demand in Kosovo is residential (approximately 63 percent in 2010), followed by industry. Technical and non-technical distribution losses together represent more than 40 percent of total electricity generated. Non-technical losses have been reduced in recent years, from roughly 30 percent in 2006 to 24 percent in 2010. Losses in 2010 totaled roughly 2,000 GWh. The current District Heating system in Pristina and Gjakova, if not operated properly, can also load the power system with an additional demand of 70-100 MW during winter.

“Reductions in non-technical losses will reduce consumption of electricity because unmetered households have been shown to use considerably more electricity (in some cases nearly double that of metered households). Addressing theft and non-payment for consumption of electricity by metered households would reduce demand and would have the important effect of increasing the revenues of the power utility (because a large proportion of non-technical ‘losses’ are actually electricity that is consumed but not paid for).<sup>107</sup>

Inherent in the World Bank’s discussion of broad economic issues and energy finance related to tariffs is the view that the price of electricity for Kosovars must increase in order for investment in the energy sector to take place. Recent actions by the Kosovo government to raise the price of electricity seem intended to change this “underpricing,” increasing the amounts households pay relative to other consumer groups.

It is precisely at the nexus of the cost of capital and the price of electricity to the Kosovo population where the World Bank’s financing flexibility—for NKPP or any other energy development project—can make a difference.

World Bank policy and actions regarding Kosovo lack a sound policy basis. First, there is no evidence of widespread hypothermia in Kosovo. Kosovars receive a low level of electricity subsidy and live with already burdensome prices and yet the system provides heat. Second, there is abundant evidence from the government and NGO’s that Kosovars are having trouble paying their bills. Any cost increase in a basic necessity means the poor do without some other basic necessity. The *New Kosovo Power Plant* will raise electricity prices placing pressure on households to do with less food, not pay the rent or buy other necessary basics. Dr. Kim’s statement unnecessarily pits one household necessity against another, a weak position for an agency that supports poor people.

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<sup>107</sup> World Bank, Options paper, p. 4.

## C. Poverty in Kosovo, the Price of Electricity and the *New Kosovo Power Plant*

The price of electricity for most of the population in Kosovo is unaffordable right now and it is particularly out of reach for those living below the poverty line. The *New Kosovo Power Plant* will add significant additional costs to the Kosovo system that will put upward pressure on the price of electricity and invariably raise prices. How those price pressures are integrated into the system and how the equities are balanced is a political matter.

## D. World Bank Tools to Address the Poverty Problem

The World Bank uses a wide range of tools and strategic initiatives to assist countries in achieving their energy, climate and poverty-reduction objectives.<sup>108</sup> Those initiatives include broad planning and integration functions, financing of all forms of renewable energy, alternatives to coal, energy efficiency, tariff and pricing reforms and reduction of GHG emissions. Kosovo is eligible for loans<sup>109</sup> and grants from the World Bank's International Development Association (IDA) program.<sup>110</sup>

In the case of NKPP, the World Bank has broad financial tools that could make the coal plant affordable for Kosovo. The bank can provide financing that adjusts any aspect of the €945 million loan required for the debt portion of the project. It can offer generous repayment terms of principal (deferring principal payments), provide low-interest rates and long-term payback periods. It can negotiate many provisions related to payments and default in favor of the country borrower. The World Bank has considerable say over the terms and conditions of the equity investor participation in the proposed project. Through its own terms and conditions, it can enhance the profitability of the private sector participation and offer additional incentives for participation.

From the view of Kosovo's households, the World Bank's financial tools could, for example, offer sufficiently low-interest rates to actually maintain or lower electricity rates with the introduction of NKPP. Such a subsidy would be steep and require a long-term commitment to manage the other risks identified in this paper, however. The World Bank, by our models, would need to provide an interest rate subsidy beginning at €2.8 billion over 30 years simply to keep electricity prices even with inflation. Yet such a subsidy would do nothing to correct the currently disproportionately high cost of Kosovo's coal-fired electricity system.

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<sup>108</sup> E&E Publishing, "Toward a Sustainable Energy Future for All: Directions for the World Bank Group's Energy Sector," [http://www.eenews.net/assets/2013/06/27/document\\_cw\\_01.pdf](http://www.eenews.net/assets/2013/06/27/document_cw_01.pdf). The agency offers a wide range of operational possibilities on pages 14-28.

<sup>109</sup> It is unclear at this point what the World Bank would do with the *New Kosovo Power Plant* project regarding project finance. The World Bank's main fund, the International Bank for Reconstruction and Development (IBRD) offers very flexible financing terms but they are standard loans. The World Bank's International Development Association (IDA) has much broader flexibility to provide longer terms and much lower interest rates. The IDA, however is much smaller. For example it spent \$18 billion over the last three years, half of it in Africa. A project the size of Kosovo could take up most of one year's non-African allotment. For the purposes of this paper, due to the interest of the private sector the modeling generally assumes a loan with principal and interest.

<sup>110</sup> World Bank, Kosovo, <http://www.worldbank.org/en/country/kosovo>

Bringing the price of electricity into alignment with the income levels of those living below the poverty line in Kosovo would require deeper and ongoing subsidies to make a coal plant viable as an instrument of poverty reduction.

## VII. Potential for Renewable Energy and Energy Efficiency in Kosovo

IEEFA concludes that coal is not the least-cost option for Kosovo, and recommends that the World Bank consider instead financing the development of renewable energy and energy efficiency in Kosovo.

This conclusion is reached based upon three propositions:

- That World Bank financing is broad and capable of financing any type of energy development. The terms of World Bank financing are sufficiently flexible to make the capital costs of any technology choice affordable.
- That the World Bank's 2011 Kosovo energy options paper documents how wind and solar operational expenses are cheaper than those of coal-fired generation.
- That wind and solar long-term operating costs are not inflationary because the cost of energy for wind and sun are zero; the operating costs of a coal plant, by contrast, rise annually with inflation.

Dan Kammen, distinguished professor of energy at the University of California at Berkeley and former chief technical specialist for renewable energy and energy efficiency at the World Bank, found in a 2013 report that the system in Kosovo could technically incorporate considerably more wind, solar and energy efficiency.<sup>111</sup> Such an investment would result in jobs, new economic development, and a more efficient electricity system.

The World Bank 2011 energy options paper compared cost measures for various energy options, demonstrating that the costs of operating wind and solar power generation are lower than the costs of operating a lignite plant.

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<sup>111</sup>Renewable & Appropriate Energy Laboratory Energy & Resources Group, University of California, Berkeley, "Sustainable Energy Options for Kosovo," May 2012, <http://coolclimate.berkeley.edu/sites/all/files/Kosovo20May2012.pdf>

**Figure 11: World Bank Energy Options Paper:  
Operational Costs of Wind, Solar and Lignite Plants<sup>112</sup>**

Type of Energy Source	Cost EUR /MWh
Wind	10.68
PhotoVoltaic	19.68
Lignite Plant	20.22

Over time, the price of wind and solar energy does not increase. This is not true for coal-fired generation.<sup>113</sup> Wind and solar prices have an anti-inflationary impact on energy prices. This has a mitigating impact on increases in the price of electricity to consumers.

The Kammen report argues that including more solar and wind energy in Kosovo's planning scenarios is technically feasible. Operational costs favor wind and solar over coal, and World Bank financing can support renewables in a manner that promote energy-affordability goals.

## Conclusion

The introduction of the *New Kosovo Power Plant* into the electricity mix in Kosovo would cause rates to rise and would place an enormous debt burden on the new nation.

The *New Kosovo Power Plant* project has inherent, serious risks that could lead to default and further economic hardship. Although Kosovo has made some recent progress toward reducing poverty and unemployment, its economic growth is likely to remain at best uneven and is not likely to occur at the levels needed to sustain the proposed plant.

Kosovo can align its objectives of achieving economic growth, alleviating poverty, and protecting the environment by investing in renewable energy and energy efficiency. World Bank subsidies can be better used to support those options. From a technical, environmental, climate and financial perspective, Kosovo would benefit from far a greater development of renewable energy.

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<sup>112</sup> World Bank, Options paper, p. 27 and 30.

<sup>113</sup> IEEFA, "Briefing Note, India Power Prices," May 2014, [http://www.ieefa.org/wp-content/uploads/2014/05/IEEFA-Briefing-Note\\_IndianElectricityCoalPricing\\_4-May-2014.pdf](http://www.ieefa.org/wp-content/uploads/2014/05/IEEFA-Briefing-Note_IndianElectricityCoalPricing_4-May-2014.pdf). See page 7 for a discussion of the difference between wind and solar and coal tariffs in India.

# Institute for Energy Economics and Financial Analysis

The Institute for Energy Economics and Financial Analysis (IEEFA) conducts research and analyses on financial and economic issues related to energy and the environment. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy and to reduce dependence on coal and other non-renewable energy resources. More can be found at [www.ieefa.org](http://www.ieefa.org)

## About the Authors

**Tom Sanzillo, director of finance for IEEFA**, is the author of several studies on coal plants, rate impacts, credit analyses, and public and private financial structures for the coal industry. He has testified as an expert witness, taught energy-industry finance training sessions, and is quoted frequently by the media. Sanzillo has 17 years of experience with the City and the State of New York in various senior financial and policy management positions. He is a former first deputy comptroller for the State of New York, where he oversaw the finances of 1,300 units of local government, the annual management of 44,000 government contracts, hundreds of annual performance audits of government programs and where he had oversight of over \$200 billion in state and local municipal bond programs and a \$156 billion globally invested pension fund.

During the early period of Tom's career he served in several positions that dealt with poverty in the United States. He organized low-income tenants, served as Executive Director of an anti-poverty organization and developed low-income housing across New York State. Tom has served on a number of nonprofit boards and committees dedicated to reform of income support for the poor.

Sanzillo recently contributed a chapter to the Oxford Handbook of New York State Government and Politics on the New York State Comptroller's Office.

**David Schlissel, director of resource planning analysis for IEEFA**, has been a regulatory attorney and a consultant on electric utility rate and resource planning issues since 1974. He has testified as an expert witness before regulatory commissions in more than 35 states and before the U.S. Federal Energy Regulatory Commission and Nuclear Regulatory Commission. He also has testified as an expert witness in state and federal court proceedings concerning electric utilities. His clients have included state regulatory commissions in Arkansas, Kansas, Arizona, New Mexico and California. He has also consulted for publicly owned utilities, state governments and attorneys general, state consumer advocates, city governments, and national and local environmental organizations.

Schlissel has undergraduate and graduate engineering degrees from the Massachusetts Institute of Technology and Stanford University. He has a Juris Doctor degree from Stanford University School of Law.

# APPENDIX I: Note on Data Systems

Several studies have been done on the proposed *New Kosovo Power Plant*, funded largely by donors outside of Kosovo. They provide some useful data. The World Bank's 2011 options paper World Bank, "Background Paper: Development and Evaluation of Power Supply Options for Kosovo," provides some useful planning and estimates of energy costs in Kosovo. It, of course, is now dated. An early 2006 appraisal 'LPTAP Project Appraisal Document, contains a useful financial model that is transparent. Reports after this one, including the 2011 World Bank study abandon the use of a transparent financial model for the plant. The Annual Reports of Kosovo's electricity system contains some useful information. Noted throughout the report, however are examples of inconsistent reporting year to year, and limits on the use of this system data for analytical purposes.

However, the modeling and conclusions of this paper would have been assisted immeasurably had quantitative data been available in several areas. Future studies of NKPP and future utility reform efforts in Kosovo would benefit from more relevant, reliable, consistent reporting of data in the following areas:

- Power plant construction cost estimated derived from detailed, timely, actual, regionally based projects;
- Updated, detailed, timely, actual, regionally based projections of renewable energy construction and operation costs;
- Updated, details, timely, actual, regionally based and Kosovo-specific estimates of operating costs for lignite plants, solar, wind, and energy efficiency.
- A series of reliable, integrated resource planning models that test a wide series of energy assumptions;
- Publicly available, comprehensive, utility finance models that detail revenue by consumer classification in a consistent manner, identify the actual costs of the Kosovo system and a transparent relationship between revenues and expenses. Similarly, a multi-year financial plan projecting revenues and expenses over a five-year period, adjusting for capital investment and other relevant changes.
- A consistent, formal reconciliation between demand projections and actual usage on an annual basis;
- Improved social statistics that allows the utility system and the government of Kosovo to better understand changing household income dynamics at the sub income levels.



# Appendix II: Calculating the Cost of Integrating the *New Kosovo Power Plant* Into the Electricity Market

This appendix provides additional detail that explains how IEEFA's model gets from the **cost of the plant** and then translates it into a **price of electricity** to Kosovar households. Although the plant costs 400% more than the current cost of electricity the increase in price to households will be on average 33.8%, but could rise to over 50% in the first year of operation.

IEEFA's model assumes that the Kosovo generation system without the new plant would require an average price of electricity of 84 EUR/MWh in 2021 (see *Figure A2: 2021 System Price of Kosovo Electricity System with the New Kosovo Power Plant* on page 42). With the new plant added the cost of electricity to the Kosovo system as a whole will be EUR 107MWh.

This plant, which would provide almost 50 percent of the electricity for the country will place an upward price pressure on prices.

## Methodology

Determining a price of electricity for the plant and its social impacts required a five-step method:

- 1) Establish the 2015 base price of electricity for the Kosovo system as a whole and for Kosovar households specifically.
- 2) Estimate the 2021 system price of electricity by adjusting for inflation and integrate the price of NKPP, establishing a new 2021 system price of electricity with the new plant.
- 3) Estimate the 2021 household price of electricity without NKPP by adjusting for inflation.
- 4) Using the current system of equities within Kosovo's regulatory system between the household sector and the rest of the system, estimate the new price of electricity for households in 2021 with the introduction of the *New Kosovo Power Plant*.
- 5) Calculate the actual Eurocents/kwh and percent differences from the price of electricity without and with NKPP.

**Below are descriptions of the specific calculations for each step:**

### **1) Establish the 2015 base price of electricity for the Kosovo system as a whole and for Kosovar households specifically.**

The benchmark 2015 price of the system is generated from 2014 actual data as provided by the Energy Regulatory Office in its 2014 Annual Report. The ERO discloses the amount of

electricity consumed by the system as a whole, by Kosovar households as a percentage of the whole and provides a household price of electricity.<sup>114</sup> The total system price of electricity is calculated by dividing the amount of money received (EUR) by the amount of electricity used (MWh) based upon actual 2014 data provided by ERO (Figure A1: 2014 Non-Household and Household Price of Electricity). The system-wide price paid for electricity is EUR 71/MWh (or 7.1 Eurocents/kwh).

**Figure A1: 2014 Non-Household and Household Price of Electricity**

	2014 Price Per E/MWh	Pct. Share of System	Share of 2014 MWh	2014 Actual Revenues
Household Price: 2014 Actuals	52.40 <sup>115</sup>	0.526 <sup>116</sup>	1,593,228.23	€83,485,159.04
Non-Household	91.19	0.474	1,435,722.77	€130,912,840.96
Total – All User Groups	70.78		3,028,951.00 <sup>117</sup>	€214,398,000.00

**2) Estimate the 2021 system price of electricity by adjusting for inflation and integrate the price of the New Kosovo Power Plant, establishing a new 2021 system price of electricity with the new plant.**

IEEFA assumes that the Kosovo government will elect to have the price of electricity charged to customers in 2021 cover the new costs of NKPP and at least be comparable to 2015 costs on an inflation-adjusted basis. The rest of the system cost for 2021 is calculated by taking the base cost of 71 EUR/MWh in 2015 and adjusting it for inflation through 2021. The 2021 rest of system cost is 84 EUR/MWh.

According to the World Bank and IEEFA's adjustment based on the recent announcement, the Kosovo system would receive half of its electricity from NKPP<sup>118</sup> in 2021. When NKPP is integrated with the rest of Kosovo's electricity system, the new overall system cost with is EUR 107.00 MWh.

<sup>114</sup> The Kosovo tariff rates are explained on page 63 of the ERO Annual Report. There are a variety of rates created by user classification, usage and timing. The actual usage and actual collected revenue provided by ERO in the Annual Report is used to derive an average price of electricity for the system as a whole and for households. The price of electricity is distinguished in this report from the tariff rate structure. **The estimates in this paper flow from the actual usage and actual dollars paid by Kosovars, not the tariff rate schedules.**

<sup>115</sup> Energy Regulatory Office (ERO), Annual Report 2014, Table 6.18, p. 52, [http://ero-ks.org/Annual%20Report/2014/Raporti\\_Vjetor\\_2014\\_eng.pdf](http://ero-ks.org/Annual%20Report/2014/Raporti_Vjetor_2014_eng.pdf)

<sup>116</sup> ERO, Annual Report 2014, p. 48, [http://ero-ks.org/Annual%20Report/2014/Raporti\\_Vjetor\\_2014\\_eng.pdf](http://ero-ks.org/Annual%20Report/2014/Raporti_Vjetor_2014_eng.pdf)

<sup>117</sup> ERO, Annual Report 2014, Table 6.17. p. 51, provides the total system wide MWh consumption and revenues collected against that consumption, [http://ero-ks.org/Annual%20Report/2014/Raporti\\_Vjetor\\_2014\\_eng.pdf](http://ero-ks.org/Annual%20Report/2014/Raporti_Vjetor_2014_eng.pdf)

<sup>118</sup> World Bank, "Background Paper: Development and Evaluation of Power Supply Options for Kosovo," Appendix E: Generation by Plant, p. 75, [http://siteresources.worldbank.org/INTENERGY2/Resources/Kosovo\\_generation\\_options\\_report\\_12312011.pdf](http://siteresources.worldbank.org/INTENERGY2/Resources/Kosovo_generation_options_report_12312011.pdf)

**Figure A2: 2021 System Price of Kosovo Electricity System with the New Kosovo Power Plant**

Generation Components	Percentage of System	Price (EUR/MWh)	Weighted Price (EUR/MWh)
Rest of the System	50.6%	84.00	43.68
New Kosovo Power Plant	49.4%	128.17	63.32
2021 Price Required			107.00

**3) Estimate the 2021 household price of electricity without NKPP by adjusting for inflation.**

Although Kosovars have experienced significant increases in the price of electricity in the recent past, more increases are likely to occur between 2015 and 2021, before NKPP would ever go online. Assuming an increase of 2 percent per year for households, electric rates in Kosovo will increase from 5.24 Eurocents/kwh in 2014 to 5.9 Eurocents/kwh by 2021. These increases are driven by customary and usual costs of operating and maintaining an electricity system and the political limitations placed on annual increases.

**4) Using the current system of equities within Kosovo's regulatory system between the household sector and the rest of the system, estimate the new price of electricity for households in 2021 with the introduction of the New Kosovo Power Plant.**

The **price of electricity** for Kosovar households in the first year of operation of the *New Kosovo Power Plant* will rise from 5.9 Eurocents/kwh to 7.9 Eurocents/kwh, a 33.8 percent increase.

Figure A3 below adjusts the household price of electricity to align with the current balance of equities in the Kosovo system between the various customer classifications.<sup>119</sup> After balancing the equities against the 2021 system cost households would be required to pay 7.9 Eurocents/kwh to accommodate cost pressures from NKPP on the system as a whole. This amounts to an increase of 33.8 percent in the price of electricity in the first year of operation of NKPP.

**Figure A3: Change in Household Price of Electricity with and without the New Kosovo Power Plant (NKPP) First Year of Operation**

	Household Price EUR/MWh	System Price EUR/MWh	Ratio Household to System
2014 Household Price of Electricity	52.40	71.00	0.738
2021 Household Price of Electricity without NKPP	59.00	84.00	0.702
2021 Household Price of Electricity with NKPP	78.96	107.00	0.738
Difference with & without NKPP	19.96		
Percentage Difference with & without NKPP	<b>33.8%</b>		

<sup>119</sup> "Household tariffs as a whole are estimated to be roughly 20-30 percent below the suppliers' total financial costs, whereas some industrial tariffs significantly exceed the cost reflective level." World Bank, Background Paper: Development and Evaluation of Power Supply Options for Kosovo, p. 4, [http://siteresources.worldbank.org/INTENERGY2/Resources/Kosovo\\_generation\\_options\\_report\\_12312011.pdf](http://siteresources.worldbank.org/INTENERGY2/Resources/Kosovo_generation_options_report_12312011.pdf)

**5) Calculate the actual Eurocents/kwh and percent differences from the price of electricity without and with NKPP.**

Under any scenario of income and household consumption pattern, the price of electricity after NKPP is introduced will take a larger share of household income. The average European household pays less than 6 percent of their income for electricity. Currently, the average Kosovar household with average monthly consumption pays 9.6 percent of income for electricity. Low and middle-income families pay 13.4 percent of income for electricity. The current system in 2015 is particularly unaffordable to the poor. Even at lower than average electricity consumption (300 MW per month) the average household living below the poverty line pays 29.7 percent of its income for electricity (Figure A4: Percentage of Income paid by Kosovar households in 2015 before and after the *New Kosovo Power Plant* in 2021).

When NKPP comes online in 2021 the price of electricity rises as a percentage of household income. The average households will pay 12.9 percent of income for electricity and low and middle-income households pay 18.0 percent. For poor households that consume less than the average household, the cost of electricity increases to 39.7 percent of income.

The current system is already costing Kosovo's households a disproportionate share of income for electricity. The Introduction of NKPP under market conditions will only increase the burden on the household budget.

**Figure A4: Percentage of Income paid by Kosovar households in 2015 before and after the *New Kosovo Power Plant* in 2021**

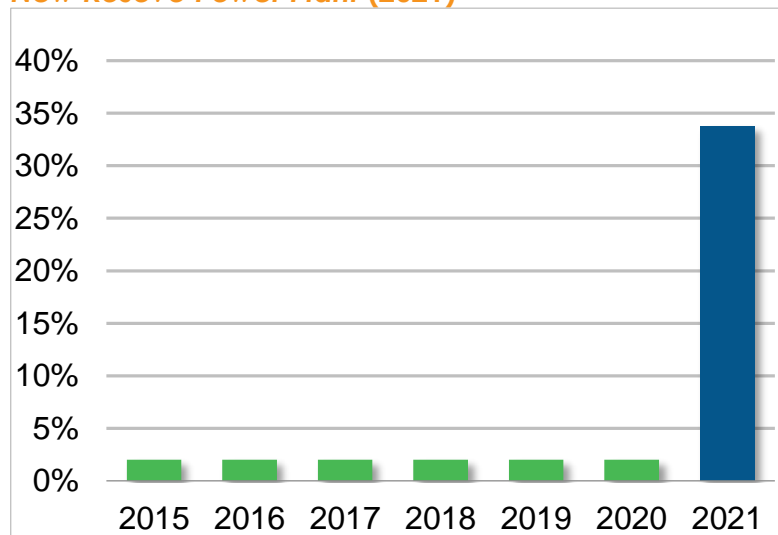
	Per Capita Income	Annual Price of Electricity	% of Income for Electricity
<b>2015 Income, 300 MWh</b>			
Average Per Capita	3,597	212	5.2%
Low and Medium Income	2,575	212	7.3%
Poverty	635	212	29.7%
<b>2015 Income, 550 MWh</b>			
Average Per Capita	3,597	389	9.6%
Low and Medium Income	2,575	389	13.4%
Poverty	635	389	54.5%
<b>2021 - PRICE INCREASE AFTER THE NKPP</b>			
<b>2021 Income, 300 MWh</b>			
Average Per Capita	4,050	284	7.0%
Low and Medium Income	2,899	284	9.8%
Poverty	714	284	39.7%
<b>2021 Income, 550 MWh</b>			
Average Per Capita	4,050	521	12.9%
Low and Medium Income	2,899	521	18.0%
Poverty	714	521	72.8%

## 6) The new price of the New Kosovo Power Plant when the cost of carbon is included.

The 2021 price of electricity for residential consumers for NKPP without the cost of carbon is 7.9 Eurocents/kwh. If Kosovo is subjected to standard carbon protocols of the European Union then the price of residential electricity would rise to 8.83 Eurocents per kwh. This would constitute an increase of 49.7% in the price of electricity to consumers in the first year of operation of the *New Kosovo Power Plant*.

Another way to gauge the impact on the household budget is to view the price increase in 2021 versus a standard of customary and usual cost increases. It is typical for utility systems to increase the price of electricity in a slow and steady manner.<sup>120</sup> This presumably allows households and businesses to adjust their budgets accordingly and to mirror the slow and steady growth of typical income patterns. For the purpose of this analysis the customary and usual increase is 2 percent annually between 2015 and 2020.<sup>121</sup> In 2021, the first year that NKPP is introduced, the price for Kosovo's households will increase by 33.8 percent. This is more than sixteen times the usual and customary increase.

**Figure A5: Typical Annual percentage Increase in price of electricity from 2015 through 2020, compared to the increase in price during first year of operation of the New Kosovo Power Plant (2021)**



<sup>120</sup> In its 2014 Annual Report the Electricity Commission provides prices for four classifications of electricity users. Energy Regulatory Office, Annual report 2014, p. 51, [http://ero-ks.org/Annual%20Report/2014/Raporti\\_Vjetor\\_2014\\_eng.pdf](http://ero-ks.org/Annual%20Report/2014/Raporti_Vjetor_2014_eng.pdf). This is a useful disclosure. Prior year reports however do not provide such information. This prevents year-to-year comparisons of prices. This reporting lapse is particularly critical electricity prices are a cause of public concern.

<sup>121</sup> The household price of electricity throughout Europe has risen approximately 3 percent per year from 2008-2012 largely as a function of taxes and network costs, the energy portion of electricity charges has decreased as has the wholesale price of power. The upward price pressure on European energy prices is seen in large measure due to continued reliance upon fossil fuels. See: Communication from the Commission to the European Union, Energy prices and costs in Europe, [https://ec.europa.eu/energy/sites/ener/files/documents/20140122\\_communication\\_energy\\_prices\\_1.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/20140122_communication_energy_prices_1.pdf). This paper adopts a 2 percent annual increase for households during the 2015 to 2021 period in recognition of the recent price increases and the public opposition it has engendered as well as the longer term trend of maintaining household electricity prices below system costs. See also, Gazeta Express, "70 NGOs, with citizens petition against the increase of electricity," Sept. 2014, <http://www.gazetaexpress.com/lajme/70-ojq-bashke-me-qytetaret-peticionkunder-shtrenjtimit-te-energijise-elektrike-44296/?archive=1>

The current system of electricity is already unaffordable. The price of electricity for the poor already places severe stress on any household budget and is far beyond the range of either other Kosovar households or the European average.

The system with the introduction of NKPP is more unaffordable. The introduction of NKPP under creates a particular hardship on those living below the poverty level. The introduction of NKPP for even modest, monthly electricity consumption pushes up the cost of electricity and absorbs 39.7 percent of income in 2021. With the ERO concerned about technical and commercial losses of electricity and the World Bank suggesting that more aggressive action on illegal electricity hookups be undertaken (see Section VI: *The Importance of the Role of the World Bank in Development of the New Kosovo Power Plant*), the introduction of NKPP would appear to provide stronger incentives for more classes of households to try and hook up to unmetered or other forms of illegal electricity usage.