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# Towards Energy Transformational Policy in Kosovo: Dissecting the Inconsistencies between Energy Regulation and Implementation

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# Towards Energy Transformational Policy in Kosovo: Dissecting the Inconsistencies between Energy Regulation and Implementation

*An Honors Society Research Project*

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## Abstract

The main purpose of this study was to identify and analyze the inconsistencies between the energy regulation and energy strategies in place, and the current patterns of energy production and consumption in Kosovo. That is, this current research looks at the existing discrepancies between the energy regulations and their implementation in Kosovo and provides recommendations on how to address these discrepancies. In doing so, the existing strategies and EU directives such as Kosovo Energy Strategies and Acquis Community Directives by the Energy Community Secretariat were reviewed and analyzed. The answer is represented and alternative methods pertaining to Kosovo's energy industry are proposed. Sustainability in investments are the yielded end result of the thesis, as alternative approaches are recommended for Kosovo's energy sector. Main results of energy sector in Kosovo are showed through this analysis, as there are inconsistencies in the energy sector in Kosovo such as the fossil fuel vs. clean energy production. Therefore the need for change in the sector is presented, namely the Energy Transformation Policy (ETP).

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# Part I:

## 1.0 Introduction

The development of societies throughout the world is done through progressive growth. In search for economic growth and increased living standards, societies have been exploiting their resources. Resource exploitation in a wrongful manner is at the core of climate change concerns. Climate change is a factual event that is occurring in the world, which is destroying the environment and health sector by greenhouse gas emissions released from the wrongful resource exploitation[1]. Greenhouse gas emissions come mostly from burning fossil fuels, e.g. coal, releasing into the atmosphere carbon dioxide, methane, nitrous oxide, and particulate matter (PM)[2]. It is estimated by the World Health Organization that the human beings are the one responsible for the climate changes throughout the world, their impact is visible specifically after the year 2000, and it is anticipated that the climate change will have high impact from 2010 and onwards in regards to the environment and the health of residents of earth[3]. Captivating industry standards imposed by developed countries reflect on energy sector. The basic standard is clean energy that means abolishment of the use of harmful means of energy production, and a focus on renewable energy source exploitation. The European Union satisfies the definition of a global society, which developed the body of laws of *acquis* community, consisted of directive and legislatures that regulate industries in Europe. This research reviews the EU *acquis* on energy and it relates them to Kosovo case. Acquis community is the body of laws that are imposed to every potential country that joins EU, in order for their legislation to be harmonized with the EU. This includes the energy directives for Kosovo as an aspiring EU member country, meaning that the Kosovo legislation and its strategies on the energy sector development should be harmonized with that of EU. More specifically, this current study analyzes the Kosovo Energy Strategies through the lenses of the EU directives and it ultimately offers alternative approaches on how to improve the situation in the energy sector in Kosovo.

### 1.1 Energy Situation in Kosovo

The energy sector in Kosovo is primarily comprised of coal – based power production. Taking into account that Kosovo operated with thermal power plants from 1970s[4], it is logical to think that it has the required experience into knowing that this industry has consequences in many spheres of life. However, the situation in Kosovo driven by political, social, and economic reasons has pushed forward coal as the primary source for energy in Kosovo. Since Kosovo is the 5$^{th}$ country in the world with the largest coal reserves, coal utilization seemed a an economic option for energy

[1] World Health Organization. (2003). Climate Change and Human Health – Risks and Responses. France: who.int. Retrieved from: https://www.who.int/globalchange/environment/en/ccSCREEN.pdf?ua=1
[2] World Health Organization. (2003). Climate Change and Human Health – Risks and Responses. France: who.int. Retrieved from: https://www.who.int/globalchange/environment/en/ccSCREEN.pdf?ua=1
[3] Ibid.
[4] KEK. (2019). Kosova A power plant. Retrieved from Kosovo Energy Corporation: http://kek-energy.com/kek/termocentrali-kosova-a/

production [5]. However, the environmental impact of coal has been detrimental to air quality[6]. Coal as a chemical matter consists of many elements that when burned to produce electricity release Sulphur content and "it is a major source of particulate emission and carbon dioxide, one of the greenhouse gases implicated in climate change"[7]. This coal oriented energy industry brings up Kosovo as the first particulate matter emitter amongst the Western Balkan 6 members[8]. Additionally, Kosovo being a signatory of the Energy Community Treaty (EnCT), is required to sign and implement certain criteria imposed by the Energy Community that serve in the best protection of the citizen welfare. At the same time, Kosovo developed national strategies on energy to satisfy both customer needs and Energy Community requirements. The main objectives of the energy strategies developed by Kosovo are focused on a new combustion of capacity generation, an initiative on renewable energy source exploitation and energy efficiency measures, and environmental protection goals to be achieved.

### 1.2 Transition Pathway

The world needs energy production and consumption, in the sense that energy is a basic need for life on earth. It is an international consensus that the Renewable Energy Resource (RES) utilization is the next step applicable to the energy sector, as is more friendly option for the environmental protection doctrine. To achieve the environmental protection policies, a state of transition is necessary through the use of transition fuels such as coal and uranium[9]. The theory on energy sector transition explains that the need for RES reduces the dreadful environmental consequences, however, the road with the transition fuels is inevitable[10]. After transition fuels are exhausted, the transformation from coal to RES and/or a combination of coal and RES is proposed with many challenges within it.

#### 1.2.1 Challenges of the Transition Pathway: Coal to RES

The main challenge for conversion from the transition fuels to the RES is the less costly investment in the former industry. That is, "pricing system implies that the new, higher – cost sources are averaged in with the lower – cost sources, yielding a rate that is substantially lower than the true marginal cost of the power being generated, thus, the consumer considering investing in conservation would save less money by conserving with average cost pricing"[11]. That means the initial investments in RES are higher, and the short – term benefit will be difficult to be noticed. Relevant to this, is the fact that when the assessment has been made for regulating the coal – industry prices, only the generating and distribution costs have been taken into account, not the

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[5] Hoxha, B. B., Kurti, H., Sweeney, K.K, & Dulaj, D. (2018). *Kosovo Case: Lignite Coal – Energy of the Past, Coalbed Methane Extraction – Energy of the Future. European Biomass Conference and Exhibition*. 1365 – 1372.

[6] Tietenberg, T. (2007). *Environmental Economics & Policy*. Pearson Addison Wesley.

[7] Ibid.

[8] Vlatka Matkovic Pujlic et.al. (2019). *Chronic coal pollution: EU action on the Western Balkans will improve health and economies across Europe*. Brussels: WHO.

[9] Tietenberg, T. (2007). *Environmental Economics & Policy*. Pearson Addison Wesley.

[10] Ibid.

[11] Tietenberg, T. (2007). *Environmental Economics & Policy*. Pearson Addison Wesley.

environmental hazards. Thus, the fundamental argument of climate change takes place, in the sense that "it is being jeopardized by current and prospective energy – consumption patterns"[12].

Hence, the remaining problematic idea on the transition aspect is the extent to which the customers will accept this transition to RES, and the relativity of prices in the new industry. Customer acceptance term thought-provoking idea because the human knowledge refuses and resists change, as it is engraved in the human brain that change is a fear. Thus, people are reluctant to trying the new idea on energy. This would lead to the new transition to have slow and inefficient steps towards development, with lower customer market share and higher cost[13]. To address the customer acceptance toward RES, the government should intervene in RES, by introducing tax incentives. Subsequently, when the market will have enough reach that can start to exploit from the economies of scale, the incentives can be removed[14]. Related to the price relativity, the term itself implies that the price will change occasionally and mainly will be reduced so that it is tailored to the customer requirements. The new innovative technologies will yield up better and more efficient ways to exhaust RES production, leading to lesser prices and more effective consumption. The rules of the market define that every new plan for energy sector will cost more than the previous one, and the valuable and reasonable recommendation to achieve the breaking point for a reasonable price would be to reduce the demand for electricity[15].

This study analyzes transition policy from coal to RES in the Kosovo context. It does so by analyzing the strategic documents through the lens of EU directives and current situation on both energy production and consumption. This project draws upon on two main literatures that will provide in – depth explanation of how Kosovo plans and evaluates production and consumption of the energy sector, namely Kosovo energy strategies, and what Energy Community lists as priorities for the signatory countries, namely *energy acquis*.

## 2.0 Literature Review

Initial review of the literature is based on two main documents, namely the energy strategies that are ratified by the parliament of Kosovo and are in appliance to the current situation. The first energy strategy was developed for 10 years, a plan that lists coal exploitation, new capacity generation construction, and energy efficiency as its objective. This plan covers the time period from 2005 until 2015 but was extended until 2018. The plan includes electricity production methodologies, and advanced policy making frameworks that is inscribed to be harmonized with energy acquis. Subsequently, the second strategy covers the time period of 10 years, including 2017 – 2026. The main objectives are energy efficiency and RES measures, new capacity generation construction, and harmonizing the legislation with *acquis*. In the last part of this section, the EU reports on energy sector are reviewed.

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[12] Tietenberg, T. (2007). *Environmental Economics & Policy*. Pearson Addison Wesley.
[13] Tietenberg, T. (2007). *Environmental Economics & Policy*. Pearson Addison Wesley.
[14] Ibid.
[15] Ibid.

## 2.1 Kosovo Energy Strategy 2005-2015 (KES1)

Kosovo Energy Strategy 2005-2015[16], further to be known as KES 1, was a 10 year plan for the state of Kosovo about its energy progress and policies in this timeframe. It covers the legislation and regulatory framework; the progress of energy efficiency action plan, heating plan, and natural gas exploitation, amongst other topics. A focus of the strategy concerning the environment, competition, and energy is given to harmonization of Kosovo's legislature with *acquis.* Environment protection plan is exclusively highlighted on this strategy, meaning that it planed reduction of gas emission from power generators in Kosovo. The KES 2005-2015 recognized key strategies and policy measures to be achieved in order to realize changes in the energy industry that would attract private investments in Kosovo, leading to a faster market integration frameworks with the European and regional markets.

KES 2005-2015 was proposed and ratified in Kosovo Parliament and its objectives included:

- Introduce relevant stakeholders and their responsibilities
- Coal exploitation for energy production
- Introduce the RES utilization for energy production
- Measures of EU for environmental protection
- Promote competition

### 2.1.1 Relevant Stakeholders

First, KES 2005-2015 identifies the most important energy institutions in Kosovo, which are KEK J.S.C, KOSTT J.S.C, and ERO. One of the most influential companies in Kosovo concerning energy industry for the period 2005-2015 was Kosovo Energy Corporation, which dealt with power generation, distribution and processing of lignite mining. Its financial status was negative in the beginning of operation, thus the company outsourced technical assistance to improve its performance. However, the outsourcing concept failed and this is considered the fundamental issue that brought KEK in a financial crisis in that time[17].

Second, Transmission System Operator and Electricity Market Operator (KOSTT JSC) established in 2006 to fulfill the agreement of *acquis* on unbundling the market and rebuilding the power generation system. KOSTT is an organization in charge of electricity processes, arrangement, support and improvement of the transmission network and its interconnections with neighboring power systems, in order to preserve security in Kosovo's system of supply with energy. The primary source of incomes for KOSTT comes as exchange installments paid by KEK JSC, as categorized by ERO.

Third, Energy Regulatory Office is founded by Kosovo serving as a manager of the energy policies in the country. The office governs and regulates the energy market, deals with tariffs imposed to

[16] Ministry of Energy and Mining. (2009). Kosovo Energy Strategy 2009-2018. Prishtine: Official Gazette.
[17] Ibid.

energy producers, monitors market trade process, and provides licenses for energy operators in Kosovo.

### 2.1.2 Coal as the primary source of Energy

KEK operates based on lignite as the primary energy source given that Kosovo has 12442.4 tons of coal reserves in basins of Kosovo, Dukagjini, and Drenice-Skenderaj.

Table 1. Location-based lignite reserves[18]

| Basin | Surface (km2) | Reserves [Million Tons] | | | |
|---|---|---|---|---|---|
| | | **Explored** | | **Exploitable** | |
| | | Tons | T | Tons | T |
| Kosova | 247 | 10091 | 2957 | 9772 | 2521 |
| Dukagjini | 49 | 2248.8 | 782 | 2047.7 | 464 |
| Drenice-Skenderaj | 5.1 | 106.6 | 22 | 73.2 | 19 |
| Total | | **12442.4** | 3761 | **10892.9** | 3004 |

Table 2 demonstrates coal reserves and their spread in Kosovo, listing Kosovo basin with the most coal which is why the two thermal power plants were built near that area for more efficient exploitation. The KES 1 explicitly lists the priorities of basin exploitations. Subsequently, one of the key objectives derived from KES 1 is the intensive anticipation and utilization of coal for energy production in Kosovo. According to the KES1 there were three priorities of exploitation of the Kosova basin, which promote attentive exploitation of coal resources, while possibly opening new areas of exploitation within the same basin[19]. That new exploitation area was planned to start in the year 2010, called 'Mihja e re' in Sibovc area. The same applies for Dukagjini basin, which serves as a plan B if exploitation of coal in Kosova fails, which still has 70% capacity to cover Kosovo's network with electricity. The third basin, namely Drenica, is said to not be exploited in the sense of power generation needs.

### 2.1.3 Renewable Energy Sources

KES 1 determines only Ujman hydropower with 35 MW as a source of RES. Concerning hydropower Zhur, the plan has been in place is to conduct feasibility studies to reach the result of revitalization of this particular hydropower. One strategic thought has been to offer the usable water with concession to private companies in order to start having a focus on renewable energy production. At that time, the then Ministry of Energy and Mining (MEM) discussed for the first

[18] Ministry of Energy and Mining. (2009). Kosovo Energy Strategy 2009-2018. Prishtine: Official Gazette
[19] Ibid.

time the feed-in tariffs, mostly used in the sense of renewable energy resources motivations, to guarantee better pricing, long term contracts, and reduced risks. The strategic thought for about solar energy production is mentioned briefly such as solar panel appliances in public buildings. Related to *acquis*, the state of Kosovo planned to implement the directive on promotion of interstate renewable energy production, and the directive on promotion of bio-fuel used for transportation.

### 2.1.4 Obligations from EU: Environmental Protection

While examining the environmental protection strategies, MEM presented environmental obligations derived from *acquis.* The source of those directives and requirements was the energy community, however, since Kosovo is a contracting party in the community it employed the right to introduce the requirements as their own objectives within the energy strategy 2005 – 2015. A more focused pathway is the potential treatment of carbon dioxide emissions which will result in great efforts on protecting the environment from potential vulnerabilities[20].

Table 2. Environmental Requirements derived from *Acquis*[21]

| |
|---|
| 1. With the entry into force of the Treaty, all Contracting Parties shall apply the Directive of Council 85/337 / EC of 27 June 1985 on the assessment of the effects of certain public and private projects in the environment, and changes made through the Directive of Council Directive 97/11 / EC of 3 March 1997 and Directive 2003/35 / EC of the Parliament European and Council dated 26 May 2003. |
| 2. By 31 December 2011, all Contracting Parties shall apply the Directive of Council 1999/32 / EC of 26 April 1999 concerning content reduction of sulfur in certain liquid fuels and which amends Directive 93/12 / EEC. |
| 3. By 31 December 2017, Kosovo shall apply limitations on emissions of some pollutants into the air from power plant Kosovo A and Kosovo B. |
| 4. Upon entry into force of the Treaty, all Contracting Parties shall apply Article 4, paragraph 2 of Council Directive 79/409 / EC of 2 April 1979 on the conservation of poultry wild. |

[20] Ministry of Energy and Mining. (2009). Kosovo Energy Strategy 2009-2018. Prishtine: Official Gazette
[21] Ministry of Energy and Mining. (2009). Kosovo Energy Strategy 2009-2018. Prishtine: Official Gazette

The environmental requirements that Kosovo planned to implement for the period 2005-2015 arewere mainly focused on lowering the levels of gas emissions, introducing advanced technologies in recycling of industrial waste, managing Ujman hydropower in accordance with acquis requirements, and particulate matter emission reduction to lowest levels. As per KES 1, Kosova e Re Project was directly related to environmental requirements and planning within the energy strategy 2005-2011. It was stated that Kosova e Re project, a new thermal power plant, is planned to be built in the near future and will operate on two phases, firstly decommissioning of Kosovo A plant working as a substituent with 1000MW, secondly with 1000MW to aid revitalization of Kosovo B planned to happen in 2015. In reality, Kosova e Re power plant was never built and World Bank withdrew their support for the project. This scenario is also deliberated by the parliament where the members of parliament (MP's) filibustered the procedures and never really gave the green light, due to many concerns related to the environment and the contract itself.

## 2.2 Kosovo Energy Strategy 2017-2026 (KES 2)

The next energy strategy of Kosovo currently in application is KES 2017-2026[22], further to be known as KES 2, with the main goal of obtaining sustainability in energy and observing environmental protection objectives, which has a special consideration. KES pays special attention to harmonization of legislature with *acquis*, such as promotion of competition and energy efficiency. There are five strategic objectives set out in KES 2, namely:

- Sustainability in Energy Sector
- Regional Market Integration
- Revitalization of Kosovo A and B, and construction of the new thermal power plan
- Natural Gas operating system
- Promotion of RES, Measures of Energy Efficiency, and Environmental Protections

- The first objective is conditioned as one of the pillars for the economic development in Kosovo. Because of its acute condition, it is necessary to increase the energy production capacities to be able to cover the demand which is increasing constantly. This objective recognizes the environmental pollution as a challenge, in the sense that thermal power plants will emit gas and particulate matter at a higher level if proper investments are done to increase the capacity of energy production.
- The second objective of the energy strategy is to abide with Stabilization Association Agreement and *Acquis* to promote, respect, and protect the competition in the energy market. The first step to achieving competition is to formulate the trading zone between Kosovo and Albania as would pertain to the idea of integrating the market with the region.
- The third objective is directly associated with the new capacity building in Kosovo, a new thermal power plant named Kosova e Re that was also mentioned in the KES 2005-2015

[22] Ministry of Economic Development. (2017). *Energy Strategy of the Republic of Kosovo 2017-2026*. Prishtine: Official Gazette

as the goal of the strategy. This objective also targets losses that occur during distribution in the network and the way to cope with it. A significant part of the third objective is that co-generation between power generation capacities and Termokos J.S.C. will be put into the table, to research the alternative of co-generation.

- The fourth objective is about supporting natural gas projects in Kosovo, such as inclusion of the Trans Adriatic Pipeline (TAP) that offers opportunistic availability of Kosovo connection in this network.
- The fifth objective is promotion and preservation of RES to 9% total target. This objective elaborates that Kosovo has the capacity to acquire only 9% of its total energy production energy by RES, but plans to reach the target of 25% RES production by the year 2020.

### 2.2.1 Repetitive idea on coal: Kosova e Re

Despite the stated strategic positioning towards energy and environmental protection, Kosovo follows a different road when it comes to environmental protection and stabilization of energy production. This is because its strategic objectives are in favor of constructing a new power plant system based on coal. Other objectives focus on improving the distribution network, integrating the market which is briefly mentioned in the strategy. However, the crucial factor of the strategy is still the construction of Kosova e Re and revitalization of Kosovo B, which are both coal – oriented power plants.

Figure 1. Current Status of Energy Sector in Kosovo[23]

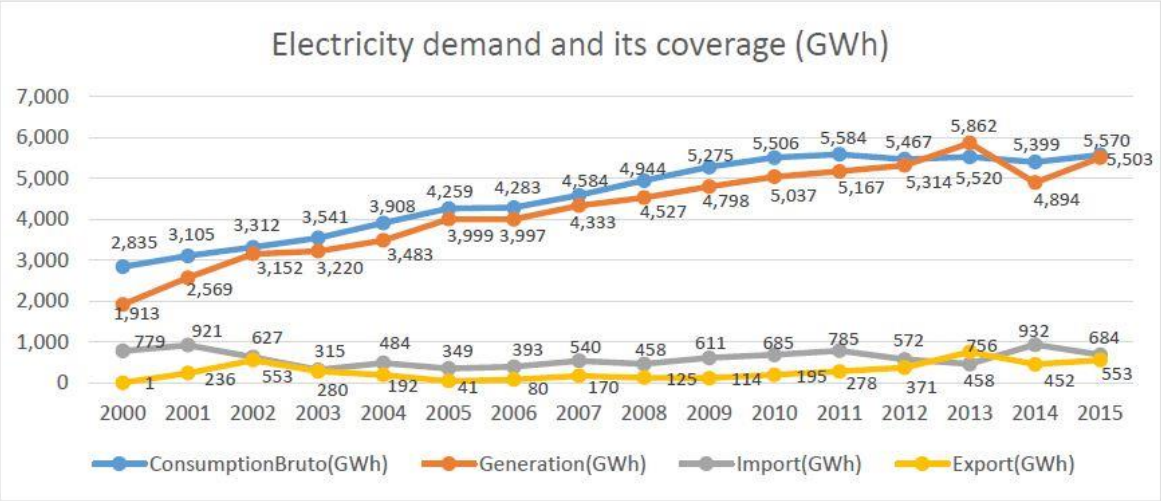



Figure 4 shows the generation – consumption ratio and import – export ratio. It shows that consumption and production in the energy sector in Kosovo had a flow of a relatively similar ratio,

[23] Ministry of Economic Development. (2017). *Energy Strategy of the Republic of Kosovo 2017-2026*. Prishtine: Official Gazette

despite 2013 and 2014 where the graph shifted positively and negatively for Kosovo respectively. The essence of power generation as a rule of thumb is to produce as much as the country needs, because difficulties occur when dealing with overproduction and/or underproduction.

The import-export of energy ratio presents Kosovo during the period of 2004-2012, which had less export than import, and 2013-2015 the import and export relatively balanced each other in the sense of reaching a break-even point of 0[24]. The strategy claims that this ratio is not reaching a sustainable status for electricity in Kosovo including existing thermal power plants and hydro power plants. Reasons for this situation vary from expenditures in electricity import for the years 2000 – 2015 with around 538.25 million EUR, commercial losses with old distribution network reach 31.8%, and inability to bill the northern municipalities in Kosovo with nearly 5% loss[25]. It is also important to clarify that in 2013, Kosovo initiated and finished the privatization of the distribution network of electricity system that was justified with the argument of harmonization of the unbundling the market and the distribution system operation in Kosovo. Still the state of commercial loss due to the distribution network scores nearly 32 % electricity loss[26].

### 2.2.2 Renewable Energy Source Utilization

KES 2 examines that Kosovo has great potential of utilizing RES, but currently stagnates in this field. The utilization of RES is defined as the long-term goal of energy sector and is planned to be executed through the usage of three vital policies deriving from country's laws, namely support of monetary and economic progress, expand sources of energy production, and environmental and ecological protection. In perspective of these achievements, it is important to apply monetary and fiscal incentives, such as feed – in tariffs, for a wide range of RES utilization. It is determined that feed – in tariffs are set for hydropower plants, wind energy, biomass, and photovoltaic energy production means.

### 2.2.3 Feed – in Tariffs: Energy Efficiency Measures

ERO is a key factor in the ground of RES utilization, as it is considered to be the primary institution which licenses and motivates enterprises to implement RES energy production by legally supporting with feed – in tariffs. ERO has legitimate liability for administrative exercise in the field of RES, by creating methodologies for directed feed – in tariffs and authorization of RES to interested enterprises. ERO is legally obliged to issue "certificates of origin" for energy produced and/or co-generated by RES[27]. The current feed – in tariffs methodology implemented for RES energy producers is as follows:

- Hydro power plants: 67.3 EUR/MWh

[24] Ministry of Economic Development. (2017). *Energy Strategy of the Republic of Kosovo 2017-2026*. Prishtine: Official Gazette

[25] Ministry of Economic Development. (2017). *Energy Strategy of the Republic of Kosovo 2017-2026*. Prishtine: Official Gazette

[26] Ibid.

[27] Ministry of Economic Development. (2017). *Energy Strategy of the Republic of Kosovo 2017-2026*. Prishtine: Official Gazette

- Wind power plants: 85 EUR/MWh
- Biomass power plants: 71.3 EUR/ MWh
- Photovoltaics: 136, 4 EUR/MWh

A simple analysis of the data portrayed above is that for one (1) MW electricity produced in a specific hour during the day, despite being day or night, the company generator having a hydro power plant gets 70 EUR support. The same logic is applies with the wind, biomass, and photovoltaics, meaning that for one megawatt in an hour the licensed company gets 85, 71, and 136 EUR support respectively. This support is planned to be implemented for the next 10 to 12 years with idea of promoting RES power generation.

This way of motivation to include RES into the small business and/or households' energy production is a requirement of *acquis* for transportation and implementation of RES directive. A different implementation of RES in Kosovo includes heating system generated by RES, included as a priority in the strategic pathway to RES utilization. Since there is the requirement to limit the use of wet lignite and the use of unsustainable wood processing for heating purposes, RES implementation in the sense of solar power plants, industrial waste, and wood waste is seen as the most encouraging aspect for household heating system. The support for a higher utilization level of RES is mentioned in the strategy to be implemented and motivated by many policies developed by Ministry of Agriculture, Forestry and Rural Development, by including wood waste as a thermal source of heating and/or energy production.

In the energy efficiency part of the KES 2, Kosovo introduced the action plan for energy efficiency 2010-2018[28]. It includes mostly instructions on energy efficiency with the end goal of promoting efficiency as the cardinal idea in Kosovo's energy sector. The plan supports energy efficiency in supervisory and evaluation aspect, such as in schools, hospitals, public and municipal buildings, and private or residential buildings. This project is funded by the European Commission, aiming to reduce the unnecessary energy consumption attitude depicted in Kosovo. In addition, other stakeholders in the funding part are UNDP, GIZ and the German Government.

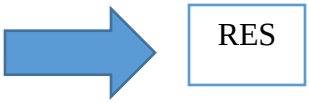
### 2.2.4 Costs: Coal v. RES

The estimated cost for each objectives is in total of 3060 million EUR. Certain aspects of objectives that are worth mentioning determining the allocation of monetary expenditure concerning Coal – production vs. RES production are:

- The construction of Kosova e Re 1000 (million EUR)
- New Coal Mine 150 (million EUR)
- New Thermal Energy production system 200 (million EUR)
- Revitalization of Kosovo B 350 (million EUR)


[28] Ministry of Economic Development. (2017). *Energy Strategy of the Republic of Kosovo 2017-2026*. Prishtine: Official Gazette

- Hydro Power Plant regulatory system 200 (million EUR);
- Protection of customers 45 (million EUR)
- Energy Efficiency Measures 100 (million EUR)
- RES feed – in tariffs expenditures 600 (million EUR)




### 2.2.5 Stabilization Association Agreement

Additionally, KES 2 prioritizes on the Stabilization Association Agreement[29] signed in 2016, that is a new agreement between the state of Kosovo and EU dealing with different development fields' cooperation between Kosovo and EU. The fundamental part of SAA is to establish better relations between two parties to prosper on reciprocity and mutual interest. SAA can be considered as an annex document to the acquis when it comes to energy sector enlargements and cites cooperation to be the key to prosperity of Kosovo. The agreement defines cooperation to be an assistance coming from the EU resources for improvements, aid, and restructuring of energy sector in Kosovo. Main agreements of SAA in energy sector article 114[30] are explained below.

1. Having in mind acquis requirements, EU will help Kosovo on improving the diversification in the energy sector, which means that competition has to be embraces in the market economy terms. Regional cooperation has an important role in this sense.

2. Having in mind acquis requirements, EU pushes forward the exploitation of RES opportunities in Kosovo, that will lead to energy efficiency mentioned prior in the energy strategy of Kosovo 2017-2026.

3. Having in mind acquis requirements, Kosovo has to restructure power generation companies in order to unbundle the market.

Additionally, SAA article 115[31] promotes the protection of environment by improving the conditions in Kosovo that harm the welfare of the environmental stipulates. The agreement focuses on air and water advances by introducing European standards for protection and respecting these two from industrial hazards.

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[29] Council of European Union. (2015). *Stabilization and Association agreement between the European Union and the European Atomic Energy Community, of the one part, and Kosovo*, of the other part.* Brussels: Consilium.europa.eu

[30] Ibid.

[31] Council of European Union. (2015). *Stabilization and Association agreement between the European Union and the European Atomic Energy Community, of the one part, and Kosovo*, of the other part.* Brussels: Consilium.europa.eu

## 2.3 Kosovo Energy Industry and *Acquis*

Kosovo as a 'potential candidate[32]' to join the European Union, needs to align regulation of energy, among other industries, with '*acquis community[33]'*. The 2019 European Commission report on Kosovo emphasized energy efficiency as one of the crucial aspects to alignment of acquis. This became problematic for Kosovo as its legislation is not fully in accordance with *acquis*, which is a requirement from European Union[34].

Table 3. *Acquis* on Electricity[35]

| |
|---|
| 1. Directive 2009/72/EC concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC |
| 2. Regulation (EC) 714/2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) 1228/2003 |
| 3. Regulation (EU) 838/2010 on laying down guidelines relating to the inter-transmission system operator compensation mechanism and a common regulatory approach to transmission charging |
| 4. Regulation (EU) 543/2013 on submission and publication of data in electricity markets and amending Annex I to Regulation (EC) 714/2009 |
| 5. Regulation (EU) 2016/1388 establishing a network code on demand connection |
| 6. Regulation (EU) 2016/631 establishing a network code on requirements for grid connection of generators |
| 7. Regulation (EU) 2016/1447 establishing a network code on requirements for grid connection of high voltage direct current systems and direct current-connected power park modules |
| 8. Regulation (EU) 1227/2011 of 25 October 2011 on wholesale energy market integrity and transparency |

Table 1 presents the directives related to energy sector that European Union highly recommends to Kosovo and other Western Balkan states, in order to be considered a member state of their global

[32] European Commission. (2019). Kosovo 2019 Report: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: 2019 Communication on EU Enlargement Policy. Brussels: Europa.eu. Retrieved from https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-kosovo-report.pdf

[33] Ibid.

[34] European Commission. (2019). Kosovo 2019 Report: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: 2019 Communication on EU Enlargement Policy. Brussels: Europa.eu. Retrieved from https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-kosovo-report.pdf

[35] Energy Community. (2019). Retrieved from Energy Community acquis: https://www.energy-community.org/legal/acquis.html

society. The table depicts the titles of EU directives, which shortly explain the key takeaways that EU demands from contracting parties of Western Balkan states. The table is the summary of the clean energy rule that was mentioned in the beginning as an imposition by the global societies vis-à-vis Kosovo, that is called the Clean Energy Package[36].

- The first directive presents the obligation of unbundling, meaning that supply of energy needs to be separated from production of energy. This directive is about creation of competitiveness between energy producers and market suppliers, so that the price of it will be automatically regulated and afforded by the customer. It is about giving a choice to the customer of which power supplier to choose to produce efficiency gains and decent principles of service.
- The second regulation presents rules on cross-border exchanges in electricity that will allow states to export when excessively produced and import when a state has power deficit.
- The third regulation presents the guideline of cross-border transmission compensation methodology, which means that it regulates the affairs of compensation when export and import is needed.
- The fourth regulation presents on a rule of open data for energy producing companies in one country. That is, a comprehensive way of how to publish the data on a central database accessed publicly.
- The fifth regulation presents the internal market directives, since it promotes a fair competition and ensures security while incorporating renewable electricity resources.
- The sixth regulation presents a code which integrates the transmission with control of power production companies, meaning that it harmonizes the generator and controller with the interconnected system.
- The seventh regulation presents standards on high-voltage supplier and helps competition of internal market.
- And the eighth regulation presents general practices on avoiding abusive wholesale energy, providing monitoring without bias and state regulatory organization which gives licenses to energy production companies.

## 2.4 European Union Standards and Reports for Kosovo

The general enlargement policy developed by the EU, lists several fields that Kosovo is a success story and certain gaps that require immediate attention. Focused more on the latter, the policy – making system is described to be one of the fundamental issues that Kosovo stagnates. That is explained by the EU enlargement report as one of the weaknesses that develop many problems and

[36] Energy Community Secretariat. (2018). *Annual Implementation Report.* Vienna: Energy Community. Retrieved from: https://www.energy-community.org/

bring up issues in Kosovo[37]. The report evaluates that "inclusive and evidence – based policies and legislative development are in place"[38].

That is also explained by the report findings that:

> "Regulatory and budgetary impact assessments and EU acquis alignment opinions, though formally required for draft laws, are not systematically reflected in adopted government decisions. Ad hoc policy-making, in many cases influenced by special interests, seriously hampers inclusive and evidence-based policy-making. Administrative data collection and its systematic use for policy-making needs to improve substantially across the administration"[39]

This means that, policy making in Kosovo, according to the EU report, lacks proper implementation as reflected by adopted government decision.

### 2.4.1 International reports on Energy Situation in Kosovo

Regarding the energy sector in Kosovo, the EU progress report on Kosovo developed thorough explanation on many findings. A significant result that is mentioned in the report is the lack of investment in the field of security of supply. The term is explained to be the efficient utilization of energy resources that guarantee power supply to the citizens. Further, it is mentioned that little or no progress is made on the Kosovo – Albania network operator, which is being compromised by the state of Serbia that yet have the dispute on the recognition of the energy boarder[40]. The evident problem for Kosovo is explained to be the lack of policy implementation, meaning enforcement of the legislation in the context of energy. It is clarified that the distribution losses, meaning the commercial loss, are still at high levels and the investment or revitalization methodologies are not occurring.

## 2.5. EU account on Kosova e Re, Environmental Protection and RES in Kosovo

The crucial disputable point is the internal energy market. The environmental problems caused by Kosovo A and B, the anticipation of Kosova e Re coal – oriented power plant, and the electricity market regarding the RES power production are what consist of the internal market disputes[41]. The disputable point for Kosova e Re is being a coal – based power plant that does not promote the green initiative that many organizations in Kosovo demand. Moreover, when the cost – benefit

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[37] European Commission. (2019). Kosovo 2019 Report: Communication on EU Enlargement Policy. Brussels:ec.europa.eu. Retrieved from https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-kosovo-report.pdf

[38] European Commission. (2019). Kosovo 2019 Report: Communication on EU Enlargement Policy. Brussels:ec.europa.eu. Retrieved from https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-kosovo-report.pdf

[39] European Commission. (2019). Kosovo 2019 Report: Communication on EU Enlargement Policy. Brussels:ec.europa.eu. Retrieved from https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-kosovo-report.pdf

[40] Ibid.

[41] European Commission. (2019). Kosovo 2019 Report: Communication on EU Enlargement Policy. Brussels:ec.europa.eu. Retrieved from https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-kosovo-report.pdf

analysis was conveyed, it resulted that around 1 billion EUR of initial investment on the project will not outweigh the benefits of the power plant building. Environmental problems caused by Kosovo B and Kosovo A are present in Kosovo, which is why the decommissioning of Kosovo A as the alternative path opener for clean energy is being pushed forward. However, if Kosovo A is decommissioned, the new capacity generation will be a coal – based energy industry, with a more innovative way of power production that will still harm the environment. Hence, the electricity market of RES power production is a national objective in Kosovo, with the 25 % RES power by 2020[42]. That is also reflected in the Kosovo legislation, with the Law No. 05/L – 085 on Energy, imposing to energy production companies the obligation of implementing measures on efficient energy production, e.g. RES utilization[43].

## 3.0 Methodology

This project examines the main discrepancies between the energy strategies and their implementation in practice in Kosovo. To do so, it uses a mixed methods research design: a survey to collect citizens' opinion regarding the energy sector; two interviews with relevant stakeholders in the Kosovo energy sector; and a critical review of the exiting studies in the field of energy sector in Kosovo.

- The survey was based on a convenient sampling technique and it collected perceptions of Kosovar people on energy sector issues. The largest share of the respondents live in Prishtina followed by Mitrovica and Gjakova. About 90% of the respondents live in urban areas; whereas 87% of the respondents have finished at least a bachelor's degree.

- There were two interviews conducted, one with a representative of the Kosovo Energy Corporation and one with an energy expert. The aim of the first interviews was to gain more insights into the idea of the Kosovo Energy Corporation and its institutional opinion on the energy transformation policy idea as well as challenges and obstacles involved in this process. The second interview was used to gain deeper insights into the discrepancies in the energy sector and the main guiding pillar to formulating the transformational energy policy.

- The main secondary research information was gathered by analyzing reports published by the Statistical Agency of Kosovo, USAID, Millennium Challenge Corporation (MCC), Balkan Green Foundation, INDEP, GAP, European Commission, Energy Community Treaty, and Government of Kosovo strategies.

[42] Ministry of Economic Development. (2013). National Renewable Energy Action Plan (NREAP) 2011 – 2020. Prishtine: Energy Community. Retrieved from https://www.energy-community.org/implementation/Kosovo/reporting.html

[43] Kosovo Assembly. (2016). Law No. 05/L - 085: Law on Energy. Official Gazette. Prishtine

The study follows a thematic analysis[44] of scholarly articles combined with descriptive statistical analysis of the primary data collection. It is mostly based on qualitative data analysis of secondary and primary information and result interpretation. The objective of this research project is to focus on strategical point views and compare them with the regular application in Kosovo. The main research idea is revolved around the regulation framework in energy sector derived from existing document strategies. The first part of the study highlights the value of the three main pillars in energy sector policy framework in Kosovo, the *acquis community*, stabilization association agreement, and energy strategies documents of Government of Kosovo. This part uses descriptive analysis methodology to identify the main critical concepts that pertain to the patterns of energy production and consumption, while identifying the main discrepancies between them.

### 3.1.1 Limitations of the study

Limitations to the study concentrate on the level of difficulty, meaning on the restrictive level of information gathering from interviews. It is elaborated with the interviewing individuals who work for a specific institution that cannot reach a consensus with the internal work policies to disclose information that would add value and enable better argumentation. Additionally, the opinion survey conducted is a result of a convenient sampling, and the results may not be representative of the whole population nor they may reflect expert opinion on the answered questions.

[44] Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Thousand Oaks, California: SAGE Publications. Retrieved from http://englishlangkan.com/produk/E%20Book%20Research%20Design%20Cressweell%202014.pdf

# Part II: Analysis of Results

The results of the thorough analysis are to be presented in the following section, while focusing and narrowing the study on determining the conflicts between the regulation of the energy sector and its implementation per se. There will be mainly two conflicts in this manner, the coal exploitation and the RES utilization conflicts which are elaborated in details further.

## 4.1 Coal Basin Exploitation Conflict

In the KES 1 the first inconsistency is about coal basin exploitation, which augments conflicts with SAA and acquis taking into account the facts about energy regulation policies. The regulation (EU) 1227/2011 of October 25th 2011 examines wholesale energy and incorporation of renewable energy resources in production of electricity in Kosovo. Additionally, the project REPOWER Kosovo which aimed at supporting Kosovo institutions on promotion clean modern energy, implemented by USAID and funded by AECOM sets clear RES target of 20% RES by 2020[45].

## 4.2. Environmental Protection Conflict: Coal v. RES utilization

Within the first parts of the KES 1 there are numerous discrepancies. First, the decision to build new energy production capacities of 1000 megawatt that corresponds with the first decision to *exploit coal* (lignite) resources is in contradiction with the statement that KES 1 will work on *effective management* of environmental protection policies[46]. The strategy centers the argument on improving the security of supply as per European principles and enhances the branching out energy resources, which means that the market is planned to have various energy providers to promote competition and open the market. The purpose of KES 2005-2015 is to encourage the rational electricity usage that ought to expand the energy efficiency goal of using sustainable energy resources, presenting new innovations that do not harm the environment, along these lines respecting environmental standards that are set by *acquis*. This is considered to be one of the many discrepancy within the energy strategy, since it claims energy sustainability but ratifies energy production through coal exploitation. The same ideology is applied in the second energy strategy 2017-2026 where exploitation of coal and creation of new mines is pushed forward with 67 % of estimated initial costs, while 33% leftover budget is allocated to renewable energy production.

Moreover, the KES 2 plans on fulfilling environmental requirements on lowering the emission of hazardous gas, and introducing advanced innovations on industrial waste recycling. SAA article 115 is also a regulation that Kosovo's legislation needs to be harmonized with, that pushed forward air and water energy production by EU standards while protecting the environment. The second main pillar of SAA also motivates RES as a future opportunistic energy source that produces less environmental hazards. In KES 2 coal exploitation is presented to be amongst the main objectives developed by this expectation, leading to inconsistencies with EU requirements.

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[45] REPOWER – KOSOVO. (2019, September). Retrieved from USAID: https://www.usaid.gov/kosovo/fact-sheets/repower-kosovo

[46] Ministry of Energy and Mining. (2009). Kosovo Energy Strategy 2009-2018. Prishtine: Official Gazette

KES 1 puts significant effort to the implementation of the environmental requirements put forward by EU, but in reality it is detected that little was done with this dispute. During the strategical planning from 2005 – 2015, the Directive of Council 1999/32/EC was applicable which demanded reduction of gas and liquid emissions, and also required certain assessments to be done regarding such disputes. However, no certain data or analysis was conducted by Kosovo in reality, and/or it was never published for research purposes.

### 4.3 Unbundling the Market Conflict: Risk of Neighboring Countries

In KES 1 another inconsistency is presented with KOSTT J.S.C. and its purpose. KOSTT being a public organization established with the idea of fulfilling the unbundling the market and investing on regional cooperation, acquis requirement (EC) 714/2009 and regulation (EU) 838/2010 respectively. In theory the unbundling concept is derived from Europe that generally means separation of an entity into clusters to reduce monopolization and to promote competition. In addition, KOSTT operates in transmitting the energy and regulation the voltage for the interest of households and big companies, but it failed on regional cooperation with neighboring countries. Kosovo has a risk from Serbia that could create continuous problems for energy borders, as Serbia still does not recognize Kosovo's energy borders and might be considered as a threat if continuously causing obstructions[47]. The risk of Serbia closing the energy circuit for Kosovo is evident and may happen easily if they were not compromised by this occurrence themselves, meaning that they cannot just close the network. However, the threats through public communication are happening on a daily basis. Conversely, Kosovo's transmission unit (KOSTT) has Serbia's transmission unit (TSO) signed an agreement on 2013 which gives the impression of strengthening the relations between KS and SRB concerning energy transmission, which never happened[48].

### 4.4 Sustainability in Investments?

Another inconsistency is related to the term of sustainable investments in Kosovo. Sustainability remains one of the critical points of the KES 2, and again it is denoted just as a term that has a good connotation for energy and in actual grounds was never fully applied. When KES 2 uses the concept of sustainability, it refers to the challenging reduction of thermal power plants utilization that are dangerous for the Kosovo environment. It expects various investments, but none was actually done until today. When analyzing the sustainable investments opportunities in Kosovo, one concludes many examples that are feasible for Kosovo mostly related to the application of RES. However, the plan is headed to a different path and it includes a new capacity generation through combustion. Moreover, efficiency measures and acquis implementations are further explained with the Energy Community meeting and their findings for Kosovo.

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[47] Ministry of Economic Development. (2017). *Energy Strategy of the Republic of Kosovo 2017-2026*. Prishtine: Official Gazette

[48] KOSTT. (2013). *Agreement on the energy sector reach between Kosovo and Serbia*. Prishtine: KOSTT Newsletter.

For that matter, the Energy Community Ministerial Council meeting in the end of 2017 held in Prishtina offered opportunistic frameworks for energy efficiency promotion and compulsory adoption to all stakeholders and member states[49]. Kosovo is part of the Energy Community of the South East Europe from 2005, and as such is obliged to fulfilling the contractual responsibility on the acquis requirements[50]. Additionally, on February 2019 Ministerial Meeting on clean energy, the Minister of Economic Development, responsible for the energy sector in Kosovo amongst all Western Balkan ministers of energy disclosed the greatest commitment to investing their capacity on implementing *acquis* and Paris agreement obligations to prosper on clean energy[51].

The targets for member states as main contributions to Energy Efficiency Plan, are acknowledgement of:

- New Climate and Energy Framework for emission reduction[52]
- Renewable Energy, Energy Efficacy and Greenhouse Gas Emission reduction by 2030
- Other *Acquis* Requirements: *Regional Integration, Unbundling, Competitiveness, Access to the network.*

Table 4. Kosovo's current situation on implementation of *acquis* obligations[53]:

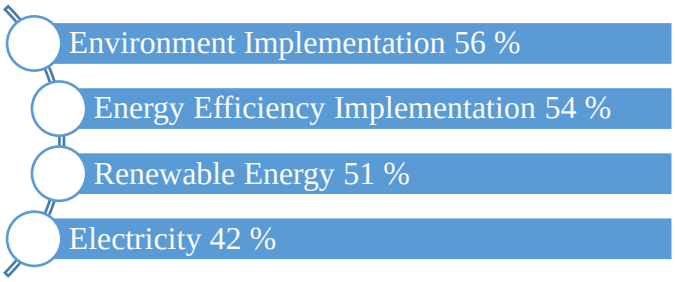


Table 5 shows the evidence that Kosovo is still riding the transition train on harmonizing its legislation and regulations with acquis. The evidence shows that electricity production is half-way through. The lowest score that Kosovo got in acquis implementation is on the regional integration, where the score of the energy community is a total of 14 % implementation[54]. The regional

[49] Energy Community Secretariat. (2018) *Annual Implementation Report*. Vienna: Energy Community.
[50] Zogaj, A., Rexha V., Alija E. et.al. (2016) The Kosovo Constraints Analysis: Office of Prime Minister, Republic of Kosovo. Prishtine: Millennium Challenge Corporation Kosovo Office. Retrieved from: https://millenniumkosovo.org/wp-content/uploads/2018/11/Constraints-Analysis-Kosovo_Final.pdf
[51] European Commission. (2019). Kosovo 2019 Report: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: 2019 Communication on EU Enlargement Policy. Brussels: Europa.eu. Retrieved from https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-kosovo-report.pdf
[52] United Nations. (2015). Paris Agreement on Climate Change. Paris. Retrieved from: https://www.fsmgov.org/paris.pdf
[53] Energy Community Secretariat. (2018) Annual Implementation Report. Vienna: Energy Community. Retrieved from: https://www.energy-community.org/
[54] Energy Community Secretariat. (2018) Annual Implementation Report. Vienna: Energy Community. Retrieved from: https://www.energy-community.org/

integration is limited for Kosovo as the dispute between KS - SRB is still not settled regarding the state's sovereignty; that is related to the energy borders of Kosovo and the negligence of Serbia to recognize those boarders. The stagnation aspect in between KS – SRB energy affairs, with a drafted and signed document inferring regional cooperation between the two countries, but not implemented yet. The evidence show that the agreement needs to be implemented fast in order for both countries enjoying energy sustainability and security[55].

Moreover, Kosovo represents extraordinary progress on its pathway to the EU integration, by being engaged in the regional corporation, coordination, and specifically reconciliation with Serbia, a trait that is not evident in the Serbian part. The progress is confirmed in the EU report, with Kosovo's involvement in "regional cooperation initiatives, such as the South-East European Cooperation Process, the Regional Cooperation Council, the Central European Free Trade Agreement (CEFTA), the Energy Community Treaty, the Coalition for the Commission Tasked with Establishing the Facts about All Victims of War Crimes and Other Serious Human Rights Violations Committed on the Territory of the Former Yugoslavia (RECOM) and the Brdo-Brijuni process"[56]. The confirmation of the transmission network administration needs to be settled by the two parties with the standards of recognizing activities reflected by the Third Energy Package. Additionally, the Regulation (EU) 543/2013 imposes market information exchange by the two states[57].

Table 5. Additional Acquis Implementation Statistics for Kosovo[58]

| Acquis Standards | Percentage Interpretation / Implementation |
|---|---|
| Wholesale Market | 33 % |
| Unbundling | 44% |
| Access to the networks | 54% |
| Retail Market | 68% |

Moreover, the table 6 is focused on the unbundling the market as an important factor to harmonization and approximation of the Kosovo regulation with the EU requirements. Unbundling in the Electricity acquis imposes "minimum obligations on energy network operators with regard to legal and functional unbundling between transmission/distribution networks on the one hand

[55] Ibid.
[56] European Commission. (2019). Kosovo 2019 Report: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: 2019 Communication on EU Enlargement Policy. Brussels: Europa.eu. Retrieved from https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-kosovo-report.pdf
[57] Energy Community Secretariat. (2018). Annual Implementation Report. Vienna: Energy Community. Retrieved from: https://www.energy-community.org/
[58] Energy Community Secretariat. (2018). Annual Implementation Report. Vienna: Energy Community. Retrieved from: https://www.energy-community.org/

and upstream generation or production)/downstream (supply) functions on the other"[59]. That is applicable to Kosovo case, where Kosovo Energy Corporation which had the monopoly of production and supply of electricity was separated into many clusters in 2013, namely the KEDS, managed and operated by KESCO, which deals with distribution network systems of energy in Kosovo; KOSTT working as the main energy transmissions network for the interstate and out of state export of electricity, and ERO the policy maker of the energy sector in Kosovo[60].

## 4.5 Price Conflicts

The government in case of shifts in price should take reasonable policy measures to provide a universal control to this affair. To determine how the government should act on such an occasion, it is recommended to look back at the historical analysis and determine the best result. The history narrates the governmental price control, which drastically failed in showing better results. It is said that "the practical effect of charging less for gas destined for the interstate market was to cause the shortages to be concentrated in states dependent on gas shipment"[61]. The idea behind price control for gas in 1938 was not a just price control as it was not regulated, therefore the permanent price control fails. All state's affairs that need regulation, and that is why the Federal Power Commission (FPC) was introduced to regulate the affairs of gas and assigned with maintaining just prices[62]. The same ideology should be applied with the power control, where a regulatory bureau is necessary in every state/district to regulate the price, the company which deals with production, and to assess on environmental undertakings. With this bureau, being impartial to political biasness, the state will be able to conceive the transition phase and adapt the new RES production. In this project, the idea of determining the obstacles to this process will be defined with a critical analyses of each of the discrepancies, and a final recommendation will be portrayed.

The competition concept started to become the new trend in Kosovo, making up 54 % implementation in 2018 in the access to the network[63]. Increase in competition resulted to Kosovo's market increase in price for electricity use. The increase in price was a challenging factor for Kosovo's energy sector development, and yet it managed to supply all households and other customers with non-stop energy supply.

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[59] Lowe,P., & Pucinskaite, I. (2007). Effective unbundling of energy transmission networks: lessons from the Energy Sector Inquiry. Competition Policy Newsletter, 23-34. Retrieved from: https://ec.europa.eu/competition/publications/cpn/2007_1_23.pdf

[60] Zogaj, A., Rexha V., Alija E. et.al. (2016). The Kosovo Constraints Analysis: Office of Prime Minister, Republic of Kosovo. Prishtine: Millennium Challenge Corporation Kosovo Office. Retrieved from: https://millenniumkosovo.org/wp-content/uploads/2018/11/Constraints-Analysis-Kosovo_Final.pdf

[61] Indep. (2019). Hydropower Plants in Kosovo: Problems and their real potential. Balkan Green Foundation. Retrieved from: http://balkangreenfoundation.org/file/repository/HIDROCENTRALET_NE_KOSOVE_PROBLEMET_DHE_POTENCIALI_I_TYRE_REAL_BGF_INDEP.pdf

[62] Tietenberg, T. (2007). *Environmental Economics & Policy*. Pearson Addison Wesley.

[63] Energy Community Secretariat. (2018). Annual Implementation Report. Vienna: Energy Community.

Table 6. Energy Price Comparison in the Region, 1 EUR per 1 Kilowatt energy (Kw/h)[64]

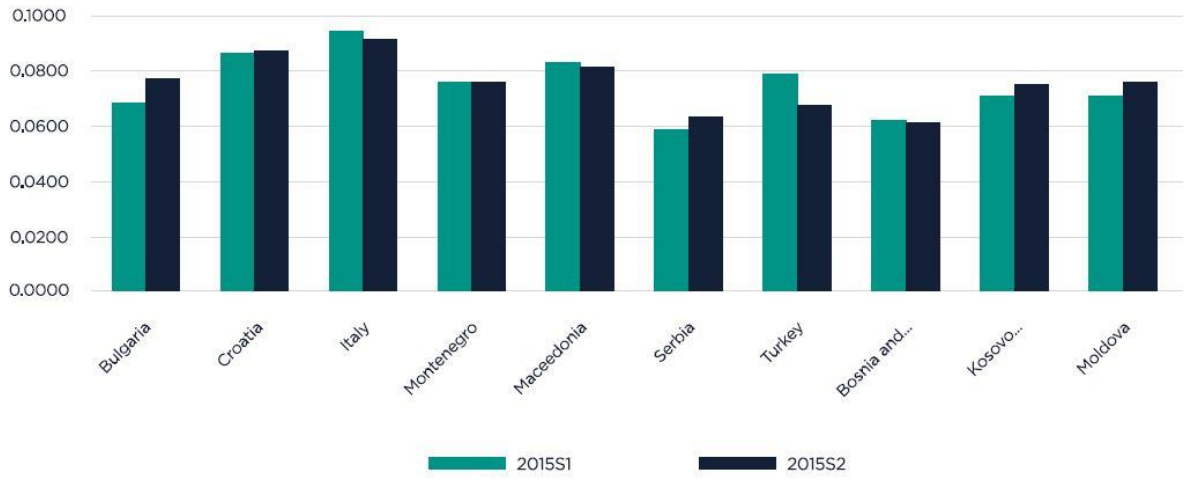


Table 7 explains the shifts in energy price. In Kosovo, the cost is dependent on carbon emission certificate price that is determined by the European Union. Price shifts in 2015 happened in the region as well, with Turkey and Italy being the most expensive in the ration 1EUR/kwh. When analyzing the regional initial price and the price shift from one semester into another, it is determined that the total price in the region is much higher than it is in Kosovo[65]. This is mainly because of the coal oriented power plants, compared to the region that use alternative energy production to some extent. This is a fact that in the short term analysis, the coal is the reasonable energy source, as it is cheaper in Kosovo due to the depreciated value of the power plants dating form 1970s and 1980s. However, when examining the long term aftermath that coal poses to the environment, economy, and to the residents, it is not rational to be a coal based country.

## 4.6 Price Increase from Kosova e Re

With the indicated plan on both the first and the second energy strategy to build a new thermal power plant (Kosova e Re), the increases in price are anticipated at a high level, despite being a coal oriented power generator. That is because Kosova e Re is anticipated to have the latest innovative technology on coal – energy production. Evidence presented on cost estimation show that per one megawatt in an hour generated from Kosova e Re, the price is projected to be 81.42 EUR, more expensive than RES and/or imported electricity from foreign countries[66].

Price increase in energy production with Kosova e Re will subsequently affect the household electricity price. An assessment with the shift in price for a RES results in better strategy for

[64] Zogaj, A., Rexha V., Alija E. et.al. (2016) The Kosovo Constraints Analysis: Office of Prime Minister, Republic of Kosovo. Prishtine: Millennium Challenge Corporation Kosovo Office. Retrieved from: https://millenniumkosovo.org/wp-content/uploads/2018/11/Constraints-Analysis-Kosovo_Final.pdf
[65] Ibid.
[66] Zogaj, A., Rexha V., Alija E. et.al. (2016) The Kosovo Constraints Analysis: Office of Prime Minister, Republic of Kosovo. Prishtine: Millennium Challenge Corporation Kosovo Office. Retrieved from: https://millenniumkosovo.org/wp-content/uploads/2018/11/Constraints-Analysis-Kosovo_Final.pdf

Kosovo's energy production. Given that solar panel prices are continuously going down, people embrace the idea that Kosova e Re and/or coal in Kosovo is not necessary for energy production. One alternative for coal exploitation as mentioned in the energy strategy is to export coal to foreign countries. That will result in a win-win situation for all stakeholders concerning the coal industry, Kosovo's economy will boost, foreign diplomatic affairs will be regulated, and the recipient country will exploit and utilize the missing element in their country, coal.

The evidence suggest that the price increase is evident, inevitable, and devastating for Kosovo's economy. It is mentioned further in the project Kosova e Re that the largest occupant of the market share in energy consumption in Kosovo is the household customer, subsequently with the largest price burden. A comparative analysis between the current price and the estimated future price generated by Kosova e Re would be 92% more expensive, or expressed in monetary terms it will change from 6 cents per kilowatt in an hour to 11.5 cents per kilowatt in an hour[67]. The indication continues to evolve by analyzing the parameters of an average household in Kosovo to determine the average consumption. The analysis claims that in energy generated by Kosova A and B is the same as with the Kosova a Re when comparing the average consumption, approximately being 312.5 KW/h in a month[68]. The final receipt in the current situation with the accounted parameters and variables is 18.75 EUR a month in total, while the estimated expense for an average household is it thought to be 35.84 EUR in total[69].

## 4.7 Results from the Interviews and Survey

This section will start by the analysis of the interview results with the representative of public institutions that deal with the management of energy production in Kosovo, namely KEK. KEK under the unbundling strategy imposed by the third energy package mentioned by the interviewee, is obliged to separate its responsibilities into other companies to prevent a fair competition. To define the unbundling term, the third energy package states that "unbundling is the separation of energy supply and generation from the operation of transmission networks"[70]. This is what Kosovo implemented in its full terms, to promote fair competition. Kosovo instituted KOSTT as the energy transmission entity, and KEDS under the KESCO Company to deal with the distribution to household consumers. That is in accordance with the third package as well where it says that "if a single company operates a transmission network and generates or sells energy at the same time, it may have an incentive to obstruct competitors' access to infrastructure, this prevents fair competition in the market and can lead to higher prices for consumers"[71].

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[67] Balkan Green Foundation. (2018). Doubling Price of Electricity if Kosova e Re happens. Prishtine. GAP, INDEP

[68] Ibid.

[69] Ibid.

[70] European Commission. (2019). Third Energy Package. Ec.europa.eu. Retrieved from https://ec.europa.eu/energy/en/topics/markets-and-consumers/market-legislation/third-energy-package

[71] European Commission. (2019). Third Energy Package. Ec.europa.eu. Retrieved from https://ec.europa.eu/energy/en/topics/markets-and-consumers/market-legislation/third-energy-package

### 4.7.1 Acquis Implementation Status

When asked the question on how is the acquis implemented in the energy sector in Kosovo, specifically the contribution of the corporation to the drafting of energy strategies and legislations for better harmonization with the acquis, the interviewee mentioned that all stakeholders take part in the strategy drafting, being the KEK, KEDS, KOSTT, ERO, MED, and the civil society. The part of KEK in the strategy drafting and implementation regards the price regulation always going hand – in – hand with the license of the regulatory office with the price limit that a company can go for MW and/or KW. A cardinal part of the public institutions in Kosovo regarding the energy sector is the estimation production plan according to the reserves that Kosovo has on lignite, and additional and accompanying information. The process of the public institutions is revealed by the table below.

Table 7. The Top – down and Bottom – up approach in energy sector in Kosovo

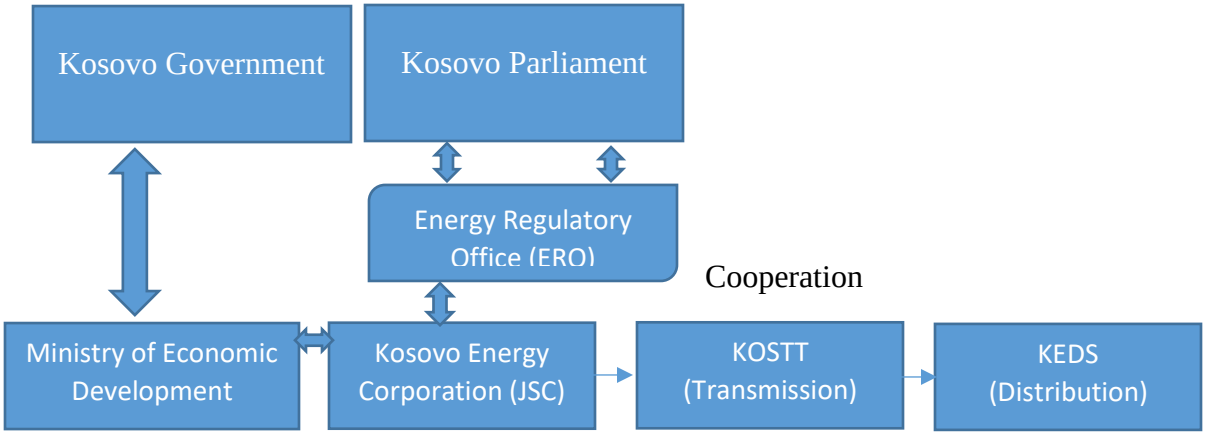


Table 8 depicts two methodologies on how the state of Kosovo issues orders and implements them in the energy sector. The process starts with the Kosovo government and parliament on issuing a law on energy, then the energy regulatory office as public independent institution observes the law and formulates the primary and secondary legislation and distributes it to the relevant stakeholders, to KEK, KOSTT and KEDS, and other private companies dealing with energy production. KEK then reports to the relevant ministry and also the regulatory office with two different reports, consent and non – consent report that explain what can KEK accept from the law and where does it lack resources to fulfill that, so that the principles and rules adapt to them. All of the mentioned stakeholders took place in negotiating term for the third energy package in Vienna[72], and applied the state's methodology on reporting the acquis implementation and obligations derived from it. The unbundling, independent regulators, and cross – border cooperation are the most distinguished fields that Kosovo invested a lot on their implementations and enforcement in the country, directives derived from the third energy package.

[72] European Commission. (2019). Third Energy Package. Ec.europa.eu. Retrieved from https://ec.europa.eu/energy/en/topics/markets-and-consumers/market-legislation/third-energy-package

### 4.7.2 Regional Market Integration in Kosovo

The cross – border cooperation, and also the directive on regional market integration is being implemented by the Kosovo side with two particular agreements. Interview results show that the first agreement is between Kosovo and Albania between the two energy corporations (KEK – KESH), which works on energy – for – energy basis of exchange. There is no monetary exchanges happening between the two countries, but the memorandum of agreement works on exporting the excessive energy produced from Kosovo vis-à-vis Albania and the other way around. In addition, Kosovo and Albania are currently in the negotiating phase, discussing the possibility of working on a common market managed by both KEK and KESH equally. The so called Albanian stock market on energy that will do the power exchange between the two countries and every other participant who desires to take place. The initial plan of APX: the Albanian Power Exchange estimated to start in the year 2020, demands from Kosovo and Albania that 30% of its energy production to be the stock, terms that are yet negotiable between the two countries. However, no other agreement with any other regional states is in place regarding the directive on regional market integration.

### 4.7.3 Coal as an Energy Source

Regarding new capacity building in Kosovo, also known as the plan Kosova e Re, with the final consent reached with one power plant with a total of 450 mw/h, the project demands from Kosovo to decommission Kosovo A power plant. Decommissioning Kosovo A will open the new road of building the new energy generator that is yet supported by coal and gas burning. The information collected through the interview suggests that the new plan on new capacity building is stagnated and has no particular action plan to restart the enforcement and realization, as until now only estimations have been made. Plans that do not include the utilization of renewable sources, however, focus on coal production. The decommissioning of Kosovo A as part of the strategy 2017 – 2026 will happen at the moment when the new plan starts the implementation and enforcement phases, until then Kosovo cannot afford stopping three thermal power plants (Kosovo A) as it will not meet the energy demands for the Kosovo market. Thus, if Kosovo A is decommissioned before the estimated Kosova e Re is in function, Kosovo will be left without electricity supply, and will be forced to import massive amounts of electricity from neighboring countries, which will devastate the budget of Kosovo leading to a possible state failure. Thus, Kosovo A decommissioning is justified with the directive of acquis for reducing carbon dioxide emissions, while replacing it with a new power plant that uses more innovative technology with higher capacity production using coal as the primary energy source. From a management perspective, it will be more problematic to manage only one power plant then three, in the sense that if one fails it will take time to reboot and with three smaller ones you can manage electric outages in a more sensible way. All in all, the circumstances of applying the Kosovo A decommissioning are challenging and demanding, and the state of Kosovo is yet waiting to construct the new coal power plant Kosova e Re.

The current power plants and the network system date from the late 1970s, so they have particular problems when it comes to production, which is why gas is used to boost the start of the engine in

some occasions. The power plants produce electricity that is managed by the KEK, and then with regards to the directive of opening the market and integrating it, KOSTT deals with transmission, KEDS with distribution to households and so on. This process has power loss due to the network system Kosovo has, and to avoid problems KEK, KESCO, and KOSTT, have agreements that allow KEK to produce more to justify the network losses, so that the end customer will get the energy demanded.

#### 4.7.4 Renewables as Energy Source

Finally, when it comes to the renewable energy production Kosovo has focused its investment in feasibility studies for solar panels in Prishtina municipality, as the starting point for harmonizing the enforcement of energy efficiency measures and directives on environmental protection derived from the documents of the energy community, stabilization association agreement, and Kosovo Energy Strategies. Thus, energy efficiency in Kosovo is enforced with the solar panel feasibility plan for public buildings in Prishtina.

### 4.8 Energy Expert Opinion on Energy Efficiency Topic

Studies have been carried out in different places in the world to determine what it is meant by the term efficiency. In the context of this research, the term efficiency is defined as achieving additional and enhanced results by exhausting less resources. This term applies to any field of study, as is it the general understanding on being competent to have better results with less resource utilization. Explicit definition on energy efficiency having a strong concentration on this project, is the clarification of energy efficiency in Kosovo to be defined as using less resources of energy production (e.g. less coal, less water, less equipment) to build better energy capacities for supplying all Kosovo with non – stop energy. Besides the supplier having the compulsory obligation to be efficient in production, the consumer has to follow the same standards to have the success on being effective of energy consumption.

### 4.9 Kosovars as Inefficient Consumers

Energy consumption in Kosovo scores high at high levels, one of the reasons being the citizen's inefficient use of electricity in their households. This reason is derived from a logical explanation, in the sense that the households are the customer leaders in Kosovo, withholding 63% of the market share[73].

Table 8. Yearly Energy Consumption 2012 – 2017 (unit: ktoe)[74]

[73] Ministry of Energy and Mining. (2011). *Kosovo Energy Efficiency Action Plan (KEEP) 2010 – 2018*. Prishtine: Official Gazette

[74] Askdata: Energy. (2018). Retrieved from Kosovo Energy Statistics: http://askdata.rks-gov.net/PXWeb/pxweb/en/askdata/askdata05%20EnergyYearly%20indicator/tab9.px/?rxid=8acaa740-d2b2-47d5-859d-09ec18aeca80

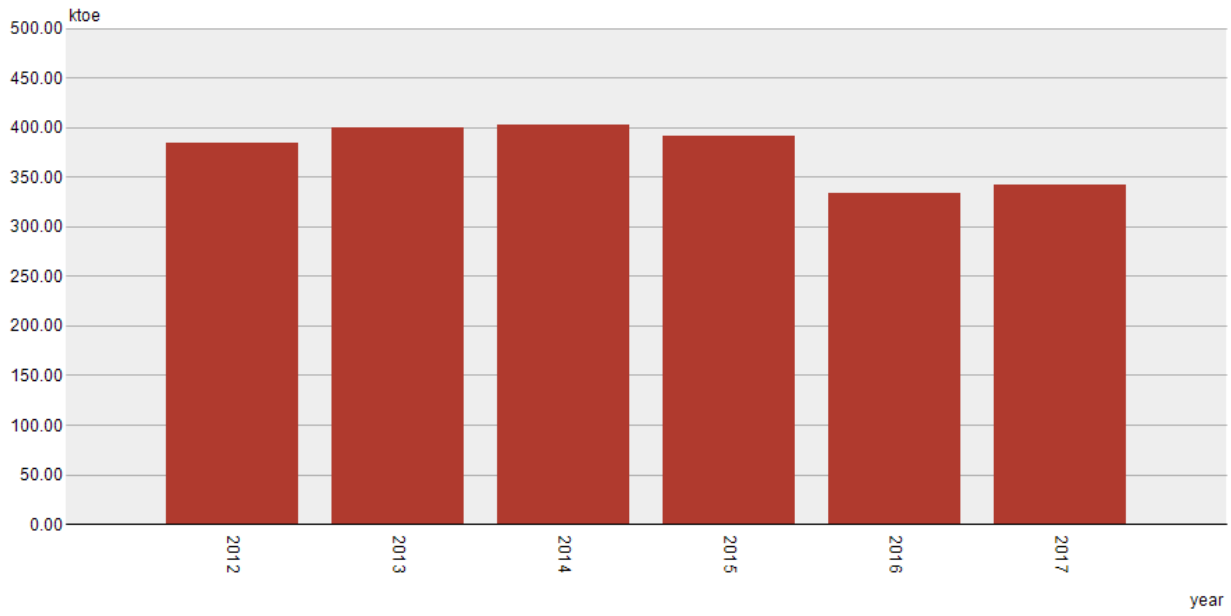


Table 9 shows the data retrieved from the Kosovo Statistics Agency on yearly energy consumption, demonstrating a standard energy consumption for 4 consecutive years, with minor differences on a yearly basis. That is as a result of no changes in policies on energy efficiency plan, and no governmental efforts to reduce the consumption by introducing awareness raising campaigns on energy efficiency. The latter is also an objective of the action plan. The data also highlight that the total consumption of energy in Kosovo is declining form an average of 400 ktoe (energy unit: kilo ton oil equivalent) to 325 ktoe consumption on average for the 2016 and 2017 period. The agency did not provide data for the last years, so the project is limited to analysis of 2018 – 2019 period. However, from the 5600550 (MWh) electricity produced in 2018, which is equivalent to 482 ktoe, it can be determined that while production is increased the consumption growths simultaneously[75]. The process of result fortitude evolves with the argument that while consumption increases the efficiency is reduced.

### 4.9.1 Energy Efficiency Measures

The first action plan on energy efficiency promotes different objectives that conform the EU standards on efficiency. The report shows that the focal points on efficiency and therefore consumption are:

- Incremental educative actions that promote efficiency
- Monitoring project pertinent to energy efficiency
- Increase Efficiency on Public Buildings
- Involve 50 experts on energy efficiency

[75] Environmental Division. (2018). *KEK Environmental Status Report*. Prishtine: Kosovo Energy Corporation. Retrieved from: http://kek-energy.com/kek/ndikimi-ne-mjedis/

Mentioned goals of the project 2010 -2018 were evidently intriguing, and achieved results on creation and integration of an agency for energy efficiency in Kosovo. The results of the agency in 2012 appear in the next action plan developed with the help of international agencies. The next report on energy efficiency shows energy savings of 3.1 %[76]. The duties of the agency were focused on developing policy frameworks on efficiency promotion and expansion, prepare reports on implementation of such policy directives, and create a monitoring system which targets energy savings. The agency is focused on harmonization of legislation together along implementation with acquis directives on efficiency. The Energy Efficiency Directive highlights the role of such national agencies on reduction of ineffective users of energy.

### 4.9.2 Cogeneration in Kosovo

This directive promotes cogeneration, amongst other methods on being efficient. Cogeneration, as the concept applied in Kosovo is defined to use heat released from power plants for the heating system; and it is planned by the KEEP 2010 - 2018 in early 2011. Nevertheless, cogeneration for heating system was a completed project in Prishtina district, covering only the capital city of the country. The acquis directive 2004/8/EC[77] promotes cogeneration in the whole country, thus, since it happened only in Prishtina, this has still efforts needed to be put in place by the government and different stakeholders that will contribute in monetary terms to conform the efficiency plan. This proclamation is evidenced by the NEEAP, that explains the partly fulfillment status of the cogeneration aspect in Kosovo[78]. The entitled intriguing goals of the action plan 2010 – 2018 are presented again in the third strategy on efficiency, with slightly different measurements. In this project plan, the focus is on acquis standards as the strategy targets efficiency on efforts of:

a) Constructing the new power plant: known as Kosova e Re which is yet a plan dated from 2005

b) Promoting Market Competitiveness

c) Introducing original and new ideas on energy efficiency measures

d) Rationalizing the utilization of RES

However, cogeneration is yet not mentioned as a key objective towards efficiency. When the analysis on the evaluation of cogeneration efficiency was conducted in Prishtina, many customers were in the first place satisfied with the new heating system, and secondly the energy started to be used less. This survey is spread to Prishtina district being the main recipient of the cogeneration capacity heating system, to determine its influence in the efficiency aspect on energy consumption.

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[76] Ministry of Economic Development. (2016). Third National Plan of Action for Energy Efficiency (NEEAP) in Kosovo. Energy Community. Retrieved from https://www.energy-community.org/implementation/Kosovo/reporting.html

[77] Ministry of Energy and Mining. (2011). *Kosovo Energy Efficiency Action Plan (KEEP) 2010 – 2018*. Prishtine: Official Gazette

[78] Ministry of Economic Development. (2016). Third National Plan of Action for Energy Efficiency (NEEAP) in Kosovo. Energy Community. Retrieved from https://www.energy-community.org/implementation/Kosovo/reporting.html

The results show that during the first two years when cogeneration started, namely in 2013 – 2014 and 2014 – 2015, customer dissatisfaction dropped from 94% to 8%[79]. Additionally, in 350 different households where the survey was conducted, energy consumption during the winter season dropped by 34 %[80].

Table 9. Changes in electricity expenditures in district heating customers[81]

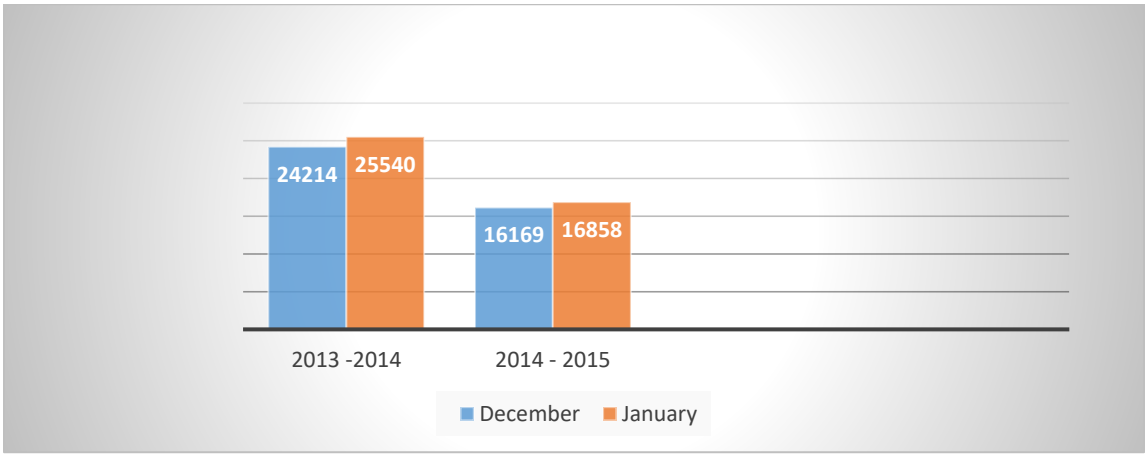


Table 10 depict the monthly prices for the winter season, and its excessive shift. It explains that with the cogeneration application, customers spend less on electricity which subsequently implies that customers also consume less energy in the long run. These results continued on the consecutive years with the same progressive pattern, contributing to energy efficiency in Prishtina city. E.g. electricity was the main source of energy for many customers in Prishtina, today many have shifted to district heating from Termokos at it is cheaper. From total expenditures in Prishtina for January 2014, the sum of 25,540 EUR became 16,858 EUR in January 2015[82]. Thus, the customers in Prishtina experienced approximately 34 % less monetary expenditures in comparing 2014 and 2015. The winter season in Kosovo for the district heating customers lasts for almost 6 months, and by a simple calculation the customers experience around one third less expenditures if they start thinking and acting efficiently. It results that people are attentive when they are provoked by monetary terms, and monetary policies and incentives. In the end it is proposed that building up a monetary incentive that is transparent and applicable to every citizen, businessperson, and institutions as a measure, has a positive possibility to increase energy efficiency in Kosovo.

[79] Gap Institute. (2015). *The impact of cogeneration on energy consumption.* Prishtine. Retrieved from https://www.institutigap.org/documents/13167_TermokosENG.pdf
[80] Ibid.
[81] Ibid.
[82] Gap Institute. (2015). *The impact of cogeneration on energy consumption.* Prishtine. Retrieved from https://www.institutigap.org/documents/13167_TermokosENG.pdf

## 4.10 RES Targets and Hydropower

It is mentioned by the INDEP institution and Balkan Green Foundation, the leading NGO's in Kosovo that publish reports and assessments regarding the energy sector, that the obligation derived by the acquis and a specific goal for Kosovo is reaching the target of 25% RES by 2020[83]. Kosovo on the other hand showed great ambition and evaluated that by 2020, RES industry will cover 29%[84]. It is certain that the written plan is not having the same implementation background, as the national strategy for implementation diverts its primary focus from 29% of RES and emphasizes the Kosova e Re strategy[85]. In addition, in order to reach the target of 29%, the focus of this plan for RES is done in a wrongful manner, with idea of building hydro power plants with no prior analysis on the field. The government is planning to utilize many of the national park areas consisted with rivers, to turn them to hydropower plants[86]. In fact, Kosovo had the old project of hydropower plant Zhur, with a potential of 295 MW, but the results suggest that that MW electricity potential can only be reached at the peak hours (from 16:00 to 18:00), and also it disrupts the flow of the river Zhur which is in violation of environmental protection directives[87]. Further evidence show clearly that the new hydro power plants that are intended to be constructed in Kosovo pose a threat to the environmental security package, as it touches the flora and fauna zones, national parks, protected zones, areas with relic and endemic flora characteristics, vegetation areas, and animal habitats[88]. There are also some social aftermaths if the planned hydropower plants start the implementation phase. In the sense of the social and economic harms possessed, the agricultural lands will no longer be useful with no water for irrigation and the underground waters from the lake/river, individuals around the areas will have to go through expropriation phase, will no longer enjoy the right proper and clean water, and will no longer enjoy the touristic advantages

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[83] Indep. (2019). Hydropower Plants in Kosovo: Problems and their real potential. Balkan Green Foundation. Retrieved from: http://balkangreenfoundation.org/file/repository/HIDROCENTRALET_NE_KOSOVE_PROBLEMET_DHE_POTENCIALI_I_TYRE_REAL_BGF_INDEP.pdf

[84] Ministry of Economic Development. (2013). National Renewable Energy Sources Action Plan (NREAP) 2011 – 2020. Retrieved from:http://www.kryeministriks.net/repository/docs/PLANI_KOMBETAR_I_VEPRIMIT_PER_BURIMET_E_RIPERTERITSHME_TE_ENERGJISE_(PKVBRE)_2011-2020.pdf

[85] Ministry of Economic Development (2018). *Energy Strategy Implementation Program 2018 – 2020*. Official Gazette. Retrieved from: http://kryeministri-ks.net/wp-content/uploads/2019/08/ENERGY_STRATEGY_IMPLEMENTATION_PROGRAM_2018-2020.pdf

[86] Indep. (2019). Hydropower Plants in Kosovo: Problems and their real potential. Balkan Green Foundation. Retrieved from: http://balkangreenfoundation.org/file/repository/HIDROCENTRALET_NE_KOSOVE_PROBLEMET_DHE_POTENCIALI_I_TYRE_REAL_BGF_INDEP.pdf

[87] Indep. (2019). Hydropower Plants in Kosovo: Problems and their real potential. Balkan Green Foundation. Retrieved from: http://balkangreenfoundation.org/file/repository/HIDROCENTRALET_NE_KOSOVE_PROBLEMET_DHE_POTENCIALI_I_TYRE_REAL_BGF_INDEP.pdf

[88] Ibid.

posed by the lake/river, amongst others[89]. In conclusion, the RES is the best solution in theory, however, this is not much applicable to Kosovo with not much water supply for electricity generation.

## 4.11 Discussion

The main research question for this study was whether there are inconsistencies between the energy regulation and its practical implementation in Kosovo. Thus, to answer the question, the results show numerous inconsistencies between the regulation and the implementation. This is also evidenced by the European Commission reports on Kosovo, explaining the general yearly progress report on the public sector in Kosovo, regarding the harmonization with the democratic values of European Union. In this sense, energy is also present on those reports, where Kosovo shows progress and stagnation from time to time. The common denominators that are yielded from the analysis are that the main discrepancies can be detected in the energy efficiency measures, environmental protection doctrines and policy – makings, RES power production enforcement, and the contract dispute of Kosova e Re coal – based power plant, as highlighted below.

- For RES: the citizen perceive that it is not much being done into promoting clean energy, generated from the renewable energy sources. Furthermore, the reports generated by the European Commission depict that RES in Kosovo is present, but not in the desired amount and standards.
- For Kosova e Re project: the project is fading. The citizens perceive that increase in price with the same efficiency of the energy produced is not logical, not worth it. Prices will be increased, something that not every citizen is aware of the fact. Coal will be still the primary source of energy, thus, pollution will continue to exist evidently in Kosovo.
- For environmental protection: KEK polluting the air, Kosova e Re will do the same. The environment is in a hazardous state being, also hydropower plant construction will destroy the natural habitat of animals, the national parks, rivers, amongst other natural treasures that Kosovo possess.
- Energy Efficiency measures: Until 2019, there are few measures taken to ensure the energy efficiency measures, with small hydropower and solar plants build. Additionally, there are some other plans that follow a strategic way of thinking, meaning building windmills in windy terrains, and install photovoltaic solar panels in public buildings. Yet, they remain only plans and estimations with no concrete realizations.

[89] Indep. (2019). Hydropower Plants in Kosovo: Problems and their real potential. Balkan Green Foundation. Retrieved from: http://balkangreenfoundation.org/file/repository/HIDROCENTRALET_NE_KOSOVE_PROBLEMET_DHE_POTENCIALI_I_TYRE_REAL_BGF_INDEP.pdf

### 4.11.1 Citizen Perception mapping

Citizen's perception about the state of the energy sector in Kosovo was measured, with a sample of 125 respondents, targeted to settle an equal gender result based survey. The purpose of it was to measure the perception of the people living in Kosovo, regarding the planned coal-based power plant project and its aftermaths; the RES utilization in Kosovo and its implementation; and the citizen's willingness to pay for certain energy sources.

Figure 2. Lens for Kosovo Energy

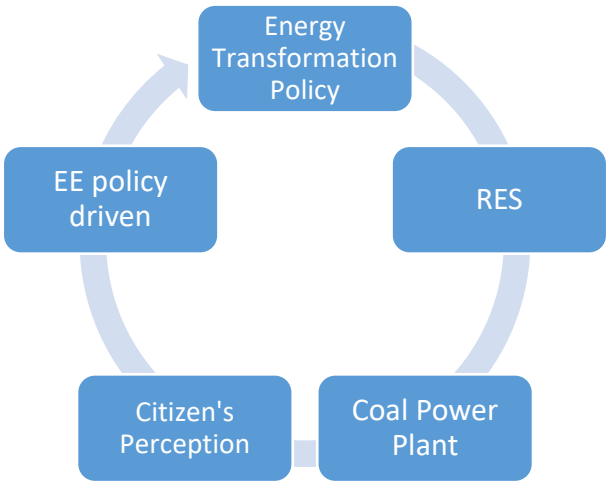



Table 10. Reflection of the awareness level of Kosovar citizens regarding energy sector

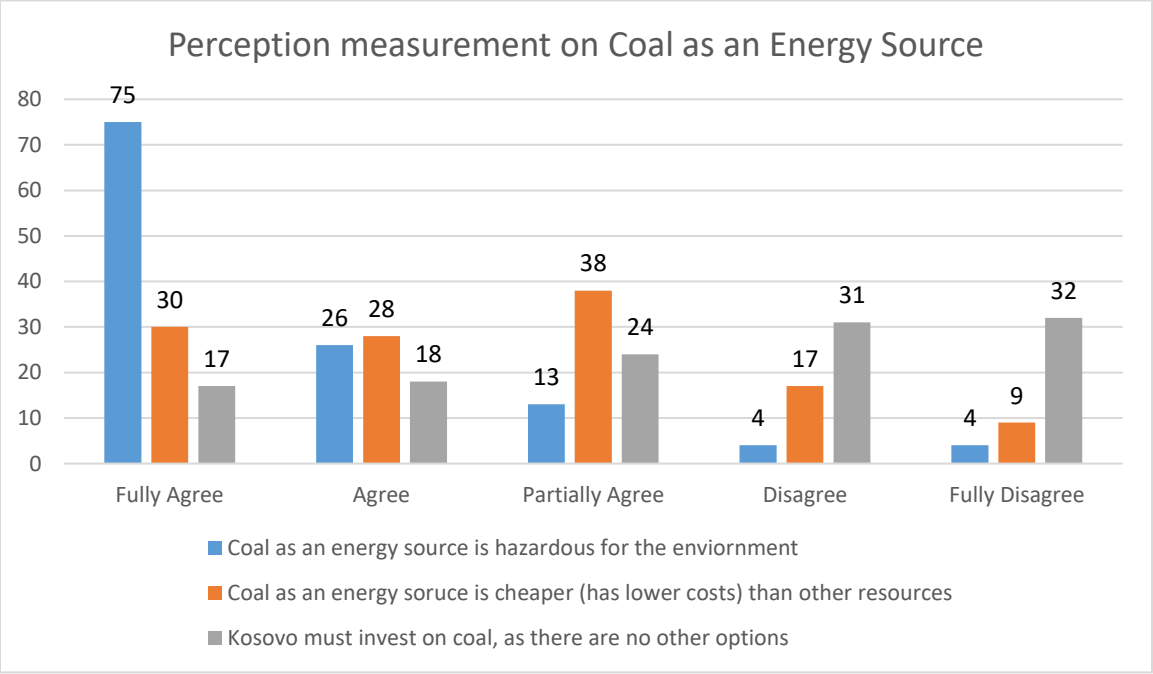
| 1. Cross – tabulation on education | | | | | | |
|---|---|---|---|---|---|---|
| | Level of Awareness | | | | | Total |
| Urban Areas: Prishtine + Mitrovice + Gjakove (83%) | 2 % less than High School Diploma | 11% High schools + Vocational Schools | 54% bachelor's degree | 31% master's degree | 2% PhD | 90% urban areas – 10% rural areas |
| Knowledge on climate change principle | 3 % had no prior knowledge | 18% not really knowing | 48% having knowledge | 30% having extensive knowledge | | 77% having high level of awareness<br>23 % not being aware of the doctrine |

| | | | | |
|---|---|---|---|---|
| Increase on energy prices after Kosova e Re project | 45 % not really knowing on price increase after Kosova e Re project would be built | 26% having knowledge | 28% having extensive knowledge | 54 % knowing on price increase estimates on energy<br>46 % not being aware on price increase estimates on energy |

Source: Survey with citizens (2019)

The second part of the survey collects information on citizens' perceptions about coal use as an energy source. It is important to mention that the results are opinion based results, and not necessarily reflect expert opinion on the energy sector.

Figure 3. Reflection of the agreement level of Kosovar citizens for coal – based energy production




Source: Survey with citizens (2019)

Out of 122 respondents, with full certainty or with 61 % of all respondents, it can be deducted that Kosovo citizens perceive that coal when used for energy production purposes, and also for heating purposes, is considered to be hazardous for the reason of releasing certain components into the air that are hazardous for the environment and beings living there. The scientific evidence suggest the same conclusion for coal, as a devastating element that harms the environments and its habitants.

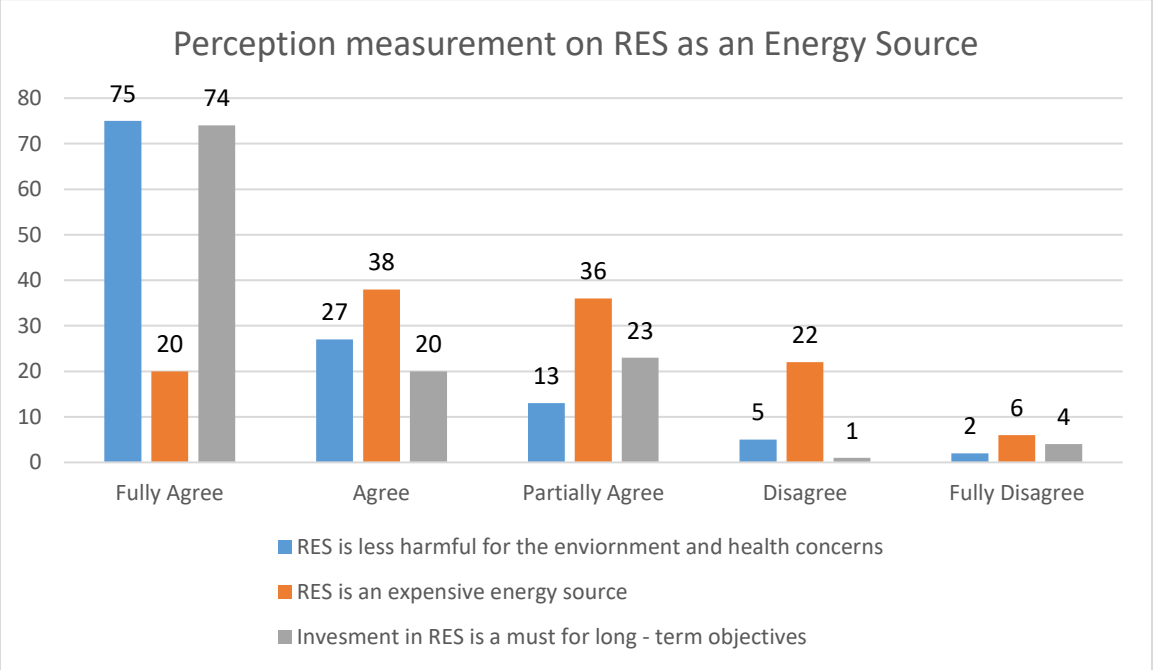
To being with, an estimated number by the scientific community suggest that "at least 800,000 people die prematurely each year as a consequence of coal", with 670,000 of them coming from China; 80,000 – 115,000 coming from India; 13,000 coming from the USA; and 23,300 coming from Europe[90]. It is concluded that coal causes respiratory effects, as inflammation and physiological stress, cardiovascular effects, chronic illnesses such as cancer, neurological effects such as inner stress, mental breakdowns, and social harms[91]. Moreover, on the brain side, coal burning causes strokes, decreased level of IQ, and diseases on the central nervous system; on the heart side it causes heart attacks, heart rate variability, and heart diseases; on the lung aspect it causes lung cancer, cough and impurities, weakened lungs, and asthma, amongst other diseases[92]. Taking into account the climate change aspect, where Kosovars responded by nearly 80% on having some knowledge on the doctrine, where coal is one of the contributors, in the sense that both "carbon dioxide and nitrous oxide are products of coal combustion"[93]. Thus, it is concluded that when it comes to knowing the aftermaths by coal usage in energy industry, Kosovo citizens are aware of these consequences.

However, Figure 3 explains that there are still people who agree that Kosovo must invest on coal, and the reason for this could be linked to the security of supply doctrine explained earlier in the project. To recall, *security of supply* is a measure imposed by the European commission that suggests non – stop energy supply to the customers, as the energy is turning out to be a luxurious item in the world application, as many elements are tied up to it. Approximately, 29 % of the respondents either fully agreed or yet agreed, and also 20 % of the respondents partially agreed to invest on a new coal fired power plant as they see no other option available. The other 51 % do not agree on investing on coal fired power plants. This divisive result can be for the reason of uncertainties occurred when dealing with such a dispute, considering that there is a lot of resistance for change when it comes to transitioning to the next generation of power production. Other reasons, might be when looking at the short term cost analysis, in the sense that for the short term objectives, coal is the cheapest energy source. However, when looking at the long – run commitments to coal, the aftermaths are devious. That is also reflected with the perception measure, while 47 % of the respondents who considered the short – term objectives agreed on coal having the lowest costs; and the other 52 % of the respondents did not agree that coal has the lowest cost: considering the environmental and health problems.

[90] Burt, E., Orris, P., & Buchanan S. (2013). Scientific evidence of Health Effects from Coal Use in Energy Generation. Chicago: University of Illinois.
[91] Burt, E., Orris, P., & Buchanan S. (2013). Scientific evidence of Health Effects from Coal Use in Energy Generation. Chicago: University of Illinois.
[92] Burt, E., Orris, P., & Buchanan S. (2013). Scientific evidence of Health Effects from Coal Use in Energy Generation. Chicago: University of Illinois.
[93] Burt, E., Orris, P., & Buchanan S. (2013). Scientific evidence of Health Effects from Coal Use in Energy Generation. Chicago: University of Illinois.

The same question is applied to the RES power production, to measure the citizens' perception regarding its practical application in Kosovo.

Figure 4. Reflection of the agreement level of Kosovar citizens for RES energy production

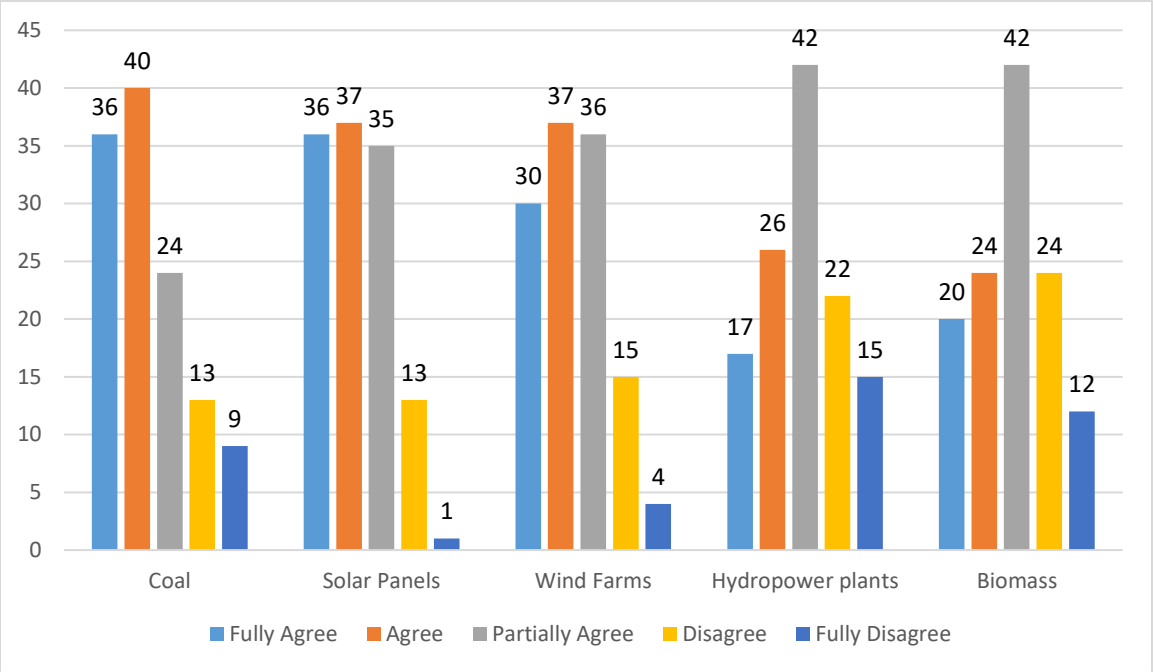



Source: Survey with citizens (2019)

Nearly 61 % of the respondents fully agreed on investing in the RES industry, with yet no specific focus on the type of RES. The reason for this high level of agreement might be because of respondents thinking that RES is less harmful for their health and the environment in general. 16 % and 19 % of the respondents stated that they "agree" or "partially agree" on RES investments respectively, because of the high costs it embraces. This correlation is being made for the reason that 16 % of the respondents fully agreed on RES being expensive, and 31 % of them agreed on the matter.

On the question of whether Kosovo has more potential to invest on coal or RES, the respondents had different views on the matter.

Figure 5. Reflection of the agreement level of Kosovar citizens for alternatives on energy production capacities

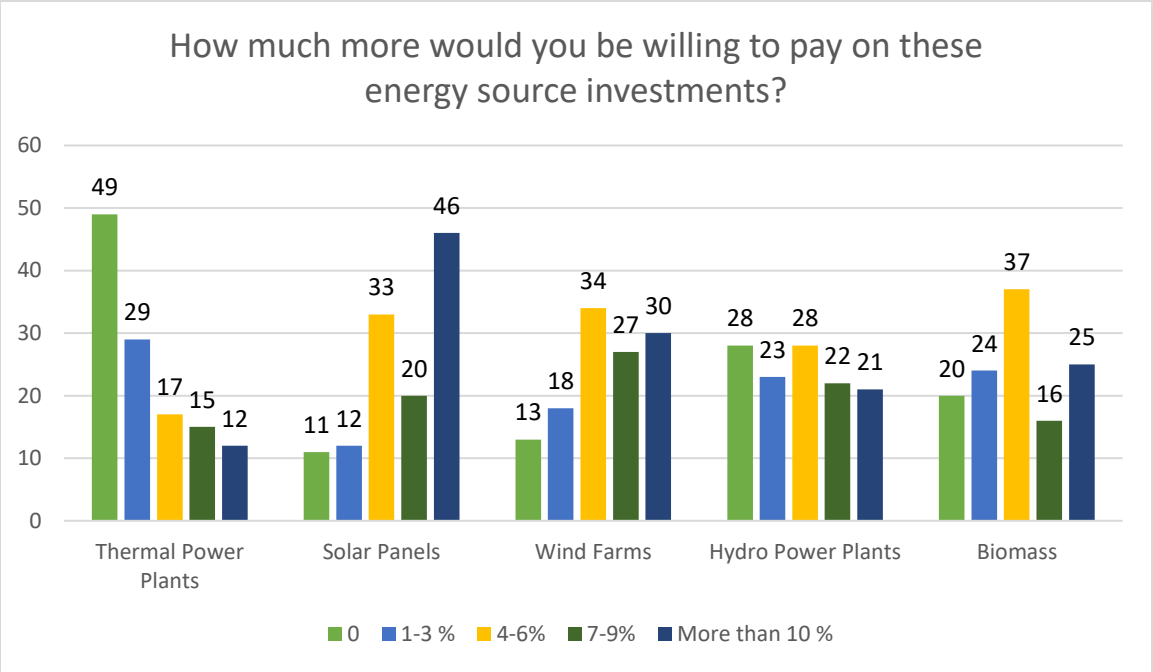



Source: Survey with citizens (2019)

The most agreed ("fully agree") potential investment in Kosovo turns out to be coal and solar panel, meaning a clean and a pollutant industry, followed by wind farms. The reason why nearly 63 % of the respondents agreed upon investing on coal – based power production may vary from the short – term costs that the industry produces to the high level of reserves Kosovo has, being on the top 5 places in the world with the largest coal reserves. In correlation to that, the reason why 60 % of the respondents agreed upon solar panel installments is the fact that Kosovo has sunny days most of the times, in comparison to windy terrains, and a clean energy source is necessary for this country, in terms of environmental costs and political and social stability in general. Uncertainty is seen with the biomass and the hydropower plants potential investments in Kosovo, for the reason of the recent events happening in the Kosovo rivers being exhausted for energy production in a wrongful manner, not taking into consideration the harms done to the environment.

The final aspect measured, is determining the level of willingness on investing on coal, solar panels, wind farms, hydropower plants, and biomass. Several ranges were given as options of determining their willingness, namely 0 %, 1 – 3 %, 4 – 6 %, 7 – 9 %, and more than 10 %, willing citizen to pay more on price increase with the new capacity generators.

Figure 6. Reflection of Kosovar citizen willingness to pay more on alternative energy source investments




Source: Survey with citizens (2019)

The results show that while 40 % of the respondents are not willing to invest a penny on energy sources from coal power plants, there is higher willingness to pay for the energy coming from solar panels and wind farms. The outlier value in this context is the hydropower plan investment, with nearly 20% willingness on all 5 variables present in the study. Thus, a repetitive pattern behavior can be detected from this study, with the citizen perception not willing to invest much on thermal power plant, however, much more willingness is present in the solar panel industry. Thus, according to citizens' perceptions, a combination of coal and solar power production seems to be the alternative solution, in the Kosovo context.

## Part III: Conclusion and Recommendations

Investing in RES and in Energy Efficiency remains the weakest themes in Kosovo energy sector. Besides customers not being efficient in consumption, the producers are not efficient in transmission and distribution, let alone production. The critiques will only focus on the environmental patterns, determining the environmental cost of coal energy production. Coal fosters air pollution, implies death to citizens living near the area, devastates the environment, and poses threat to the agricultural land, meaning that it is not a rational choice for energy utilization. However, coal in Kosovo is seen as a capacity that must be exhausted despite its low quality and low performance when conserved to energy, until the transformation policy is intact. Kosovo will be dependent on coal to some extent, but specific measures need to be taken so that it operates in a clearer method, and that is all pertinent to energy efficiency measures, and the energy *acquis* directives and regulations formulated by the energy community.

Another weakness to be addressed is the transmission and distribution section, where due to the seniority of the transmission and distribution network, electricity is lost. Moreover, the electricity in Kosovo is finding its ways into the households and/or businesses through illegal method, leading to the losses in the network. The evidence shows that transmission lost is 5 %, technical loss is nearly 14%, and commercial loss in distribution is approximately 18%[94]. There are three agreements in place among the producer, transmitter, and the distributor in Kosovo that deal with these losses in the matter that the transmitter and the distributor pays for more electricity to the producer so that the losses are covered. This is only a solution that serves in the short term; however, continuance in this manner does not show efficiency in the energy sector.

Efficiency in the sector is a double – edged sword because not only the institutions work in an inefficient way, since the customers of Kosovo are also utilizing the energy inadequately. It is argued that customers in Kosovo are inefficient, while the household consumer occupies 60% of the market share, many are reasoned to be using energy not effectively[95]. This trend needs immediate attention and a drive for change. Ideally, Kosovo as a developing country, has to focus all of its resource utilization in clean energy production. That, however, is yet a scenario that is not applicable in Kosovo, as the study shows that Kosovo does not have the 100% capacity on RES. Thus, alternative sources such as coal – based power has to play a role in the energy sector in Kosovo, until the RES gets the needed market attention. The additional source of energy to be considered in Kosovo will be through importing from the integrated regional market in the Balkans and beyond.

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[94] KOSID. (2014). A Solution through Policies in the Energy Sector in Kosovo. Prishtine.

[95] Indep. (2019). Hydropower Plants in Kosovo: Problems and their real potential. Balkan Green Foundation. Retrieved from: http://balkangreenfoundation.org/file/repository/HIDROCENTRALET_NE_KOSOVE_PROBLEMET_DHE_POTENCIALI_I_TYRE_REAL_BGF_INDEP.pdf

## 5.1 Energy Transformation Policy

The fundamental idea of this research is that Kosovo needs a climate action, which I call the Energy Transformation Policy (ETP). This will aid the environment and build a standard living for Kosovo citizens. Going green in real terms would accelerate three main pillars of the Kosovo: the economy, political justness, and social welfares. ETP ought to take a step–by–step approach for successful implementation, meaning that first Kosovo needs to address all of the strategy flaws and inefficiencies of power production.

### 5.1.1 Energy Solution Procedure in Kosovo

The first step of the ETP starts with the outdated thermal power plant Kosovo A being decommissioned, and closing once and for all. This process has been an objective of the two strategies, but was not enforced due to the security of supply concept. With the Kosovo A being closed, and also not implementing the Kosova e Re power plant project, two power plant emitters of carbon will be eliminated in the energy sector in Kosovo.

### 5.1.2 The citizen perceptions about energy mix

The citizen perception regarding the highest potential investment for energy production in Kosovo comes up to be in the coal and solar panels. The study was done with the perception measurement tools rating from fully agree to disagree, and the results show that a third of respondents, fully agree to invest on coal and solar panels respectively. Meaning that, the most reasonable recommendation for the Kosovo's energy sector from the citizen perception is the investment on coal and solar utilization for power production. The industry that is relevant to Kosovo future investments is the solar utilization, with solar panels. The photovoltaic price in general are going down. To define the term, "photovoltaics involves the direct conversation of solar energy to electricity"[96]. Moreover, on September 24th 2016, the then Kosovo Minister of Economic Development supported this alternative that the research paper is suggesting, and signed the agreement with the core idea on investments in solar panels[97]. The agreement signed in Vienna is expected to be implemented in Kosovo through the International Finance Corporation, with "the development of the 50 MW solar energy project through a public – private partnership on a competitive basis"[98]. This agreement is also believed to fulfill the acquis requirements and standards, on the expansion of power generators and the environmental protection measures.

## 5.2 The proposed recommendation: ETP

The proposed recommendation that is the most realistic project for Kosovo is to make a combination of diverse sources of energy in Kosovo, that include a diversification of the Kosovo market, and making Kosovo open for change. The ETP suggests immediate decommissioning of

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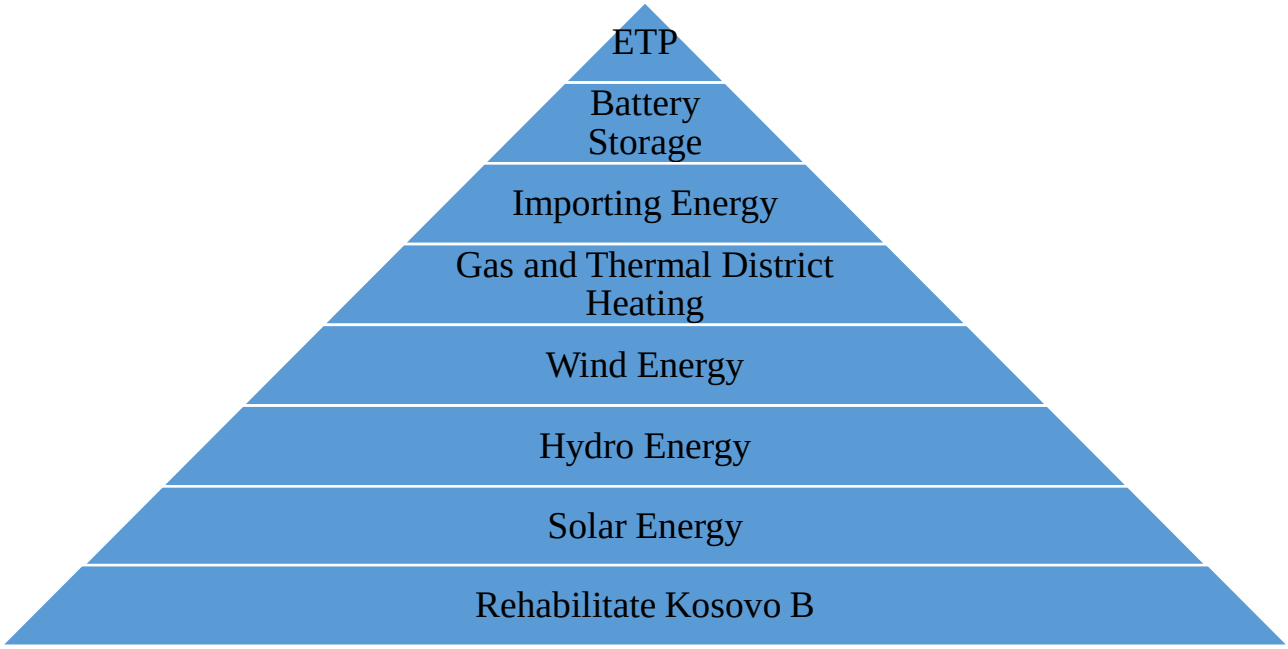
[96] KOSID. (2014). A Solution through Policies in the Energy Sector in Kosovo. Prishtine.

[97] Ministry of Economic Development. (2019, September). Minister Lluka signs the agreement on the development of the solar power plant. Retrieved from Republic of Kosovo: Government of Kosovo: https://mzhe-ks.net/en/news/minister-lluka-signs-the-agreement-on-the-development-of-the-solar-power-plant#.XeTwhuhKjIX

[98] Ibid.

Kosovo A, and immediate project closeout of the Kosova e Re power plant as the World Bank also provided many explanations why they withdrew their support from this this project with some of the reasons being linked to the environmental protection argumentation[99]. This proposal is based on including energy efficiency measures and invest in RES that remain weak points in Kosovo. The recommendation will include a diverse energy production methodology following the green standards in Kosovo starting with the high investments on the rehabilitation of Kosovo B, solar energy, a careful consideration of dam hydropower plants and/or reversible hydropower plants, windmills, gas, importing through regional network, and investments in the battery technology or storage units for energy.

Figure 7. Energy Transformation Policy




### 5.2.1 Rehabilitate Kosovo B

In regards to the coal based power plants, the changes that are to be made within the Kosovo B power plant are:

- Investments in tube filters for reduction of CO2 and particulate matter emissions
- Investments in the old network systems to reduce the network losses
- Integrate the energy market amongst Albania, Montenegro, North Macedonia, Serbia, Bulgaria, Italy, Hungary

[99] The World Bank. (2018). Evaluation of Power Supply Options for Kosovo. Prishtine. Balkan Green Foundation. Retrieved from http://balkangreenfoundation.org/file/repository/World_Bank_Study_Evaluation_of_Power_Supply_Options_for_Kosovo.pdf?fbclid=IwAR3JORECTsBKgzQNWYvSKC2OeI2_UeG-mdxJoo0IDQaneTVRfMJP5UUVJyk

- ❖ Investments in the energy stability in better planning and controlling efforts from the relevant institutions, in order to conceptualize the security of supply
- ❖ Reduce the investments in operational expenditures (wages, transportation vehicles, luxury items) in relevant public institutions, so that more investments are available for the betterment of the existing network
- ❖ Provide contingency plans for failure of an energy production unit
- ❖ Higher taxes and tariffs on inefficient apparatus related to environmental protection policies (light bulbs, old cars, diesel, etc.)[100]
- ❖ National Tree Planting Program [101]
- ❖ Comply with the energy community Large Combustion Plants Directive (LCPD) option one: meeting the Emission Limit Values (ELV)[102].

### 5.2.2 Solar Energy

In regards to renewable energy source enforcement program (RESEP), several policies need to be put in place in order for energy sector in Kosovo to prosper. Coal – based power plants should be slowly reduced in the sense of their capacity utilization as a result of their size and constrained adaptability, thus, the focus must be towards the RES[103]. This means that, a share of energy capacity will be derived from the solar industry in Kosovo. There will be resistance for change, due to the lack of knowledge that the return on investment from solar industry is much more, in the sense that electricity price will be reduce drastically, and the level of protection of the environment will be increased significantly. Therefore, there is no doubt that citizens will be willing to accept this change in energy sector in Kosovo, together with the Kosovo government.

- ➢ Solar Panel installment on public buildings, public lands, and public entities
- ➢ Promoting the investment in the solar energy sector, by introducing auction on governmental support for this sector
- ➢ Budget cuts on irrational expenditures to invest on renewable energy sources
- ➢ Incentivize private companies on solar panel installment and electricity production
- ➢ License all relevant institutions that fit to produce solar energy
- ➢ Promote RES in terms of Solar Energy, for its great return on investment (ROI)
- ➢ Be part of the Climate Change Action
- ➢ Increase the competition in the solar industry
- ➢ Expanding the environmentally protected areas

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[100] Balkan Green Foundation. (2019). *The role and responsibilities of the government in mitigating air pollution in Kosovo*. Prishtine: Henrich Boll Stiftung.
[101] Ibid.
[102] Energy Community. (2017). Large Combustion Plants Directive (LCPD). Vienna. Retrieved from: https://www.energy-community.org/documents/studies.html
[103] Buck, M. et. al. (2018). *Phasing in Renewables: Towards a prosperous and sustainable energy future in Kosovo: Challenge and possible solutions*. Berlin: Germanwatch e.V. Retrieved from: www.germanwatch.org/en/15497

- Introduce the ecological tax [104]

### 5.2.3 Hydropower Plants

In the state of Kosovo the dam hydropower plant is available if there will be a will for a big hydropower plant in the sense that the small hydropower plants are not as efficient as the big capacity ones with pump storages. Additionally, Kosovo needs citizen's will for building an artificial lake to support the energy production based on water supply. The energy expert provided the concept of the *reversible hydropower* plant that functions like a circle, where you let the water flow for electricity production and you pump water back up when the tariffs for energy usage are at the lowest state. In this way, a company would still produce energy efficiently, while saving costs for reversing the water flow, which is also a feasible concept to be implemented in Kosovo's energy sector.

### 5.2.4 Windmills

Wind power plants is also an intriguing part of the future ETP in Kosovo. Interesting enough, a Japan citizen once in Kosovo saw the opportunity of buying a parcel where the wind blows a lot in a region in Kosovo called 'Shala e Bajgores'. 20 years later the same Japanese citizen came back to invest into that part of Kosovo and create windmills that generate electricity. The risk of windmills towards the birds migrating is evident, however, the position of the windmills and other infrastructural planning will be done beforehand, following the model of EU, to avoid such environmental catastrophes. World Bank additionally supports "150 MW of new wind capacity to be constructed by 2022"[105].

### 5.2.5 Gas + Thermal District Heating Plants

It is recommended by the energy expert that the energy derived from gas should not be disregarded, as it is also part of the efficiency measures on the green standards. Gas should be integrated with either Albanian market and/or Northern Macedonia, however, it is recommended that the most economic infrastructural investment would be the connection with the North Macedonia pipeline. Taking into account the thermal district heading plan, it is more efficient if Kosovo invests into small thermal oriented district heating companies that would produce sustainable heating systems with the energy community standards by not passing the ELV. That would drastically reduce the emission by the other categories of elements burned by the households, and also would radically reduce the energy consumption during the winter season in Kosovo. It is argued that the energy consumption during winter is twice as big as the summer consumption in Kosovo. If by this method, the energy consumption is flattened and compressed to lower figures, the network loss would also drop and the systems becomes more sustainable.

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[104] Balkan Green Foundation. (2019). *13 Immediate Measures The Government Must Undertake to Address Air Pollution*. Prishtine: INDEP

[105] The World Bank. (2018). Evaluation of Power Supply Options for Kosovo. Prishtine. Balkan Green Foundation. Retrieved from http://balkangreenfoundation.org/file/repository/World_Bank_Study_Evaluation_of_Power_Supply_Options_for_Kosovo.pdf?fbclid=IwAR3JORECTsBKgzQNWYvSKC2OeI2_UeG-mdxJoo0IDQaneTVRfMJP5UUVJyk

### 5.2.6 Importing Energy: Interconnection Policy

Importing energy is not irrational for the Kosovo market, in the sense that the World Bank reports that Kosovo is currently importing roughly 17 % of its energy on average[106]. There is a well–constructed network that Kosovo has, but it needs investments on reducing the intruders into benefiting from the illegal ways and consuming energy, and reducing the technical losses due to its seniority. Additionally, Kosovo should not be seen as an isolated country when it comes to energy import–export relationship, as the market must be integrated. In this way, Kosovo complies with the security of supply concept while also investing into environmental protection measures.

### 5.2.7 Battery Storage Systems

Finally, the ETP will include investments in big batteries that will be placed around Kosovo, based on Lithium, which will store the energy produced by the companies in the energy sector in Kosovo. That would mean that the storage system will actually allow the generators to stop functioning for some hours, as the energy is already in the battery. This model is being implemented in Australia and Netherlands as well, meaning that it is feasible and Kosovo should also follow the same pathway. The battery can be used for storing the energy produced by any of the aforementioned methods, however, for the solar energy the most, as the grid systems solar–battery is easier, and "100 % sustainable, reliable, and cost effective"[107].

Thus, the examination explains that the highly conflict energy situation in Kosovo is evident and there are steps to be taken in order to save the sector from collapse, and help the state increase its economic growth. The steps to be taken are elaborated on the recommendation named ETP, the Energy Transformation Policy, which follows a strict efficient guideline to help the energy sector in Kosovo. It starts with the rehabilitation of Kosovo B, a coal power plant that will be efficient enough for Kosovo needs when the EU standards are strictly applied until the 2040 and/or 2050 deadline for coal power plants. This leaves space for development of RES utilization plan such as the solar, hydro, and wind energy production in Kosovo. ETP also includes gas and thermal district heating policies and import of energy. Finally, the policy recommendation is to introduce battery energy storage in Kosovo, which is a long term plan as mentioned, since the capacities of the economic structure of Kosovo need to be developed enough to reach that goal. However, if Kosovo were to strictly follow the economic growth that the ETP provides, this goal is applicable and attainable.

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[106] The World Bank. (2018). Evaluation of Power Supply Options for Kosovo. Prishtine. Balkan Green Foundation. Retrieved from http://balkangreenfoundation.org/file/repository/World_Bank_Study_Evaluation_of_Power_Supply_Options_for_Kosovo.pdf?fbclid=IwAR3JORECTsBKgzQNWYvSKC2OeI2_UeG-mdxJoo0IDQaneTVRfMJP5UUVJyk

[107] Seamans, T. (2019) Solar and Storage. Retrieved from Centrica: Business Solutions. https://www.centricabusinesssolutions.com/us/energy-solutions/products/solar-and-battery-storage?creative=398077181412&keyword=&matchtype=b&network=g&device=c&gclid=CjwKCAiA58fvBRAzEiwAQW-hzUYuTeC6n8m6b5wo28mHfUjBQz5l5qjThwOIhBCAzcse6-X3znSGdhoCCGkQAvD_BwE&gclsrc=aw.ds

# References


*Askdata: Energy*. (2018). Retrieved from Kosovo Agency Statistics: http://askdata.rks-gov.net/PXWeb/pxweb/en/askdata/askdata__05%20Energy__Yearly%20indicator/tab9.px/?rxid=8acaa740-d2b2-47d5-859d-09ec18aeca80

Balkan Green Foundation. (2018). *Doubling Price of Electricity if Kosova e Re happens.* Prishtine: GAP, INDEP.

Balkan Green Foundation. (2019). *13 Immediate Measures The Government Must Undertake to Address Air Pollution.* Prishtine: INDEP.

Balkan Green Foundation. (2019). *The role and responsibilities of the government in mitigating air pollution in Kosovo.* Prishtine: Heinrich Boll Stiftung.

Buck, M., Goldammer, K., Heffrron, R., Hiersemenzel, P., Kittel, M., Redl, C., . . . Wynn, G. (2018). *Phasing in Renewables: Towards a prosperous and sustainable energy future in Kosovo: challenge and possible solutions.* Berlin: Germanwatch e.V. Retrieved from www.germanwatch.org/en/15497

Burt, E., Orris, P., & Buchanan, S. (2013). *Scientific Evidence of Health Effects from Coal Use in Energy Generation.* Chicago: University of Illinois .

Council of the European Union. (2015). *Stabilisation and Association agreement between the European Union and the European Atomic Energy Community, of the one part, and Kosovo*, of the other part.* Brussels: Consilium.europa.eu.

Crewswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches.* Thousand Oaks, California: SAGE Publications. Retrieved from http://englishlangkan.com/produk/E%20Book%20Research%20Design%20Cressweell%202014.pdf

Energy Community. (2017). *Large Combustion Plants Directive (LCPD).* Vienna: https://www.energy-community.org/documents/studies.html.

*Energy Community*. (2019). Retrieved from Energy Community acquis: https://www.energy-community.org/legal/acquis.html

(2019, December 12). Energy Community Interview. (A. Kacaniku, Interviewer)

Energy Community Secretariat. (2018). *Annual Implementation Report.* Vienna: Energy Community. Retrieved from https://www.energy-community.org/

Environmental Division. (2018). *KEK Environmental Status Report.* Prishtine: Kosovo Energy Corporation. Retrieved from http://kek-energy.com/kek/ndikimi-ne-mjedis/

European Commission. (2019). *Kosovo 2019 Report: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: 2019 Communication on EU Enlargement Policy.*

Brussels: Europa.eu. Retrieved from https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-kosovo-report.pdf

European Commission. (2019). *Kosovo 2019 Report: Communication on EU Enlargement Policy.* Brussels: ec.europa.eu. Retrieved from https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-kosovo-report.pdf

European Commission. (2019). *Third Energy Package.* ec.europa.eu. Retrieved from https://ec.europa.eu/energy/en/topics/markets-and-consumers/market-legislation/third-energy-package

GAP Institute. (2015). *The impact of cogeneration on energy consumption.* Prishtine. Retrieved from https://www.institutigap.org/documents/13167_TermokosENG.pdf

Hoxha, B. B., Kurti, H., Sweeney, K. K., & Dulaj, D. (2018). Kosovo Case Study: Lignite Coal - Energy of the Past, Coalbed Methane Extraction - Energy of the Future. *European Biomass Conference and Exhibition*, 1365 - 1372.

INDEP. (2019). *Hydropower Plants in Kosovo: Problems and their real potential.* Prishtine: Balkan Green Foundation. Retrieved from http://balkangreenfoundation.org/file/repository/HIDROCENTRALET_NE_KOSOVE_PROBLEMET_DHE_POTENCIALI_I_TYRE_REAL_BGF_INDEP.pdf

Kacaniku, A. (2019). Survey with citizens .

KEK. (2019). *Kosova A power plant*. Retrieved from Kosovo Energy Corporation: http://kek-energy.com/kek/termocentrali-kosova-a/

KOSID. (2014). *A solution through Policies in the Energy Sector in Kosovo* . Prishtine.

Kosovo Assembly. (2016). *Law No. 05/L - 085: Law on Energy.* Prishtine: Official Gazette.

(2019, November 1). Kosovo Energy Corporation Interview. (A. Kacaniku, Interviewer)

KOSTT. (2013). *Agreement on the energy sector reach between Kosovo and Serbia.* Prishtine: KOSTT NEWSLETTER.

L'Huillier, B. M. (2014). What does "corporate governance" actually mean? *Corporate Governance International Journal of Business in Society*, 300-319. doi:10.1108/CG-10-2012-0073

Lowe, P., & Pucinskaite, I. (2007). Effective unbundling of energy transmission networks: lessons from the Energy Sector Inquiry. *Competition Policy Newsletter*, 23-34. Retrieved from https://ec.europa.eu/competition/publications/cpn/2007_1_23.pdf

Ministry of Economic Development. (2013). *National Renewable Energy Action Plan (NREAP) 2011 - 2020.* Prishtine: Energy Community. Retrieved from https://www.energy-community.org/implementation/Kosovo/reporting.html

Ministry of Economic Development. (2016). *Third National Plan of Action for Energy Efficiency (NEEAP) in Kosovo.* Energy Community. Retrieved from https://www.energy-community.org/implementation/Kosovo/reporting.html

Ministry of Economic Development. (2017). *Energy Strategy of the Republic of Kosovo 2017-2026.* Prishtine: Official Gazette.

Ministry of Economic Development. (2018). *Energy Strategy Implementation Program 2018 - 2020.* Official Gazette. Retrieved from http://kryeministri-ks.net/wp-content/uploads/2019/08/ENERGY_STRATEGY_IMPLEMENTATION_PROGRAM_2018-2020.pdf

Ministry of Economic Development. (2019, September). *Minister Lluka signs the agreement on the development of the solar power plant.* Retrieved from Republic of Kosovo: Government of Kosovo: https://mzhe-ks.net/en/news/minister-lluka-signs-the-agreement-on-the-development-of-the-solar-power-plant#.XeTwhuhKjIX

Ministry of Energy and Mining. (2009). *Kosovo Energy Strategy 2009-2018.* Prishtine: Official Gazette.

Ministry of Energy and Mining. (2011). *Kosovo Energy Efficiency Action Plan (KEEP) 2010 - 2018.* Prishtine: Official Gazette.

Mueller, D. C. (2007). Corporate Governance and Economic Performace. *International Review of Applied Economics*, 623 - 643. doi:http://dx.doi.org/10.1080/02692170601005598

OECD. (2015). *G20/OECD Principles of Corporate Governance.* Paris: OECD Publishing. doi:https://doi.org/10.1787/9789264236882-en

*REPOWER - KOSOVO*. (2019, September). Retrieved from USAID: https://www.usaid.gov/kosovo/fact-sheets/repower-kosovo

Seamans, T. (2019). *Solar and Storage*. Retrieved from Centrica: Business Solutions: https://www.centricabusinesssolutions.com/us/energy-solutions/products/solar-and-battery-storage?creative=398077181412&keyword=&matchtype=b&network=g&device=c&gclid=CjwKCAiA58fvBRAzEiwAQW-hzUYuTeC6n8m6b5wo28mHfUjBQz5l5qjThwOIhBCAzcse6-X3znSGdhoCCGkQAvD_Bw

The World Bank. (2018). *Evaluation of Power Supply Options for Kosovo.* Prishtine: Balkan Green Foundation. Retrieved from http://balkangreenfoundation.org/file/repository/World_Bank_Study_Evaluation_of_Power_Supply_Options_for_Kosovo.pdf?fbclid=IwAR3JORECTsBKgzQNWYvSKC2OeI2_UeG-mdxJoo0IDQaneTVRfMJP5UUVJyk

Tietenber, T. (2007). *Enviornmental Economics & Policy.* Pearson Addison Wesley.

United Nations. (2015). *Paris Agreement on Climate Change.* Paris: https://www.fsmgov.org/paris.pdf.

World Health Organization. (2003). *Climate Change and Human Health - Risks and Responses.* France: who.int. Retrieved from https://www.who.int/globalchange/environment/en/ccSCREEN.pdf?ua=1

Zogaj, A., Rexha, V., Alija, E., Prekaj, A., Olmstead, S., Osbourne, S., . . . Cutura, J. (2016). *The Kosovo Constraints Analysis.* Office of Prime Minister, Republic of Kosovo. Prishtine: Millennium Challenge Kosovo Office. Retrieved from https://millenniumkosovo.org/wp-content/uploads/2018/11/Constraints-Analysis-Kosovo_Final.pdf

# Appendices

## Appendix A: Interview Questions for Kosovo Energy Corporation Representative

1. Public sector in Kosovo has a misleading tendency to be described by the general population as simply not having capacity to maintain the work effectiveness. Due to this ambiguous public opinion, what is your opinion on the effectiveness of the energy public sector in Kosovo? Is the energy public sector ineffective?

2. Kosovo is a member of the energy community that is formed by the EU, which imposes certain rules and laws on the energy sector in Kosovo. As a public official how does acquis come up in your daily routine related to energy sector? How much do you know about the acquis directives that are specified for Kosovo energy industry? Which are the acquis directives that affect your daily work execution?

3. One of the objectives derived from the energy strategy 2007-2016 is Kosovo A decommissioning, meaning that Kosovo A thermal power plant was planned to stop being in function. That was also mentioned on the energy strategy 2017-2026, but it is still not fully implemented. What is your institutional opinion on Kosovo A withdrawal from the electric system? What are your expectations when Kosovo A will be fully dysfunctional?

4. Kosovo A is evidently an old power plant dating approximately from 1968. Could you please elaborate some of the problems that Kosovo A might have due to its seniority?

5. How about Kosovo B?

6. Evidence show that Kosovo is planning to build up a new thermal power plant, as per the energy strategy. What is your institutional opinion for the contract dispute that stagnated the process of initiating this project? With this new power plant what is the effect on the energy price? What are your concerns about Kosova e Re Project?

7. What is the expected benefit on project Kosova e Re?

8. Kosovo has the plan derived from the acquis standards and Kosovo energy strategy on the regional market integration. Please elaborate the regional market integration challenges and the degree of its implementation?

9. Studies show that Kosovo has capacity on solar and hydro renewable energy production. As the most important corporation for the energy sector in Kosovo what is the concrete realization expectancy of Kosovo utilizing these capacities? What is your institutional opinion on RES implementation in Kosovo’s energy production?

## Appendix B: Interview Questions for Energy Expert

1. Power plants wear out and after a certain period of use must be removed or replaced (ideally after 25 years). Decommissioning a power plant is often a lengthy and complex process. In Kosovo's case, decommissioning Kosova A TPP was one of the objectives in the Energy Strategy 2007-2016.

This objective was also included later on in the current Energy Strategy 2017-2026, but the process of decommissioning has not started yet. According to the EU, the decommission process will take up to 7 years and will cost about €28,400,000.

In your opinion, should Kosovo A TPP be decommissioned? If yes, what should happen next once the TPP is fully decommissioned?

2. After continuous investments by the Kosovo government and international donors, what is your opinion about the continuation of the lifespan for TPP Kosova B?

3. Kosovo is a signatory of the Energy Community Treaty (EnCT) and therefore a member of the Energy Community. In your opinion, what is the progress in approximation of laws and policies with the EU energy acquis in Kosovo?

4. In your professional opinion, what is the most convenient way on solar capacity utilization in Kosovo? What is your opinion in Hydro Power Plants in Kosovo? What are the consequences of using Kosovo water resources for building hydro power plant energy production in Kosovo?

5. In the Kosovo energy strategy 2017-2026 sustainability in energy is a frequently mentioned terminology. What are the policy steps that need to be put in implementation regarding the sustainability of energy sector in Kosovo?

6. From your professional perspective, what is the degree of implementation of promotion of RES, Energy Efficiency, and Environmental Protection measures in Kosovo?

7. Energy Regulatory Office offers feed – in tariffs for RES utilization for energy production generated from small and medium companies in Kosovo. What is the effectiveness of feed – in tariffs in regards to RES promotion?

## Appendix C: Informed Content

Informed Consent Form

RIT Kosovo

Title of Project: Towards Energy Transformational Policy in Kosovo: Dissecting Discrepancies between Energy Regulation and Implementation

Principal Investigator: Ardian Kacaniku, RIT Kosovo Student

Ulpiane, Prishtinë 10000, Kosove

044/897 355; ardiank@auk.org

1. Purpose of the Study: The main purpose of this study is to analyze the existing discrepancies between the energy regulation (energy strategies) and energy production and consumption (the practical application) in Kosovo.

2. Procedures to be followed: You will be asked to answer 7 questions during this interview.

3. Duration: It will take 20-30 minutes to complete the interview.

4. Statement of Confidentiality: Your participation in this research is confidential. The data will be used only for a research project as part of a course.

5. Voluntary Participation: Your decision to be in this research is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer.

You must be 18 years of age or older to take part in this research study. If you agree to take part in this research study and the information outlined above, please sign your name and indicate the date below. RIT Kosovo (A.U.K) Germia Campus Nazim Gafurri, 21 Dr. Shpëtim Robaj, Prishtinë 10000, Republic of Kosovo

You will be given a copy of this form for your records.

_____ _____

Participant Signature Date

_____ _____

Principal Investigator Signature Date

## Appendix D: Survey Questions

1. What is your gender?

Male

Female

Prefer not to answer

2. What is your groupage?

18 to 24 years old

25 to 34 years old

35 to 44 years old

45 to 54 years old

55 to 64 years old

65+

3. What is your level of education?

Less than a high school diploma

High school degree or equivalent

c. Bachelor's degree

d. Master's degree

e. Doctorate degree

f. Other (please specify)

4. From which Kosovo region do you come from?

Prishtine

Peje

Mitrovice

Ferizaj

Prizren

Gjakove

Gjilan

5. Do you live in urban or rural areas?

Urban

Rural

6. What is your level of awareness regarding the climate change happening in the world?

I am fully aware

I am aware

I am slightly aware

I am not aware

Prefer not to answer

7. What is your level of awareness regarding the price increase after the Kosova e Re power plant construction?

I am fully aware

I am aware

I am slightly aware

I am not aware

Prefer not to answer

8. What is your level of approval/agreeing with the following statements (1= I do not agree; 5= fully agree)?

Using coal for energy production is harmful for the environment and human health

Using coal for energy production is cheaper than any other energy sources

Investing in Kosova e Re power plan is necessary, since there are no other alternatives

Renewable Energy Sources (RES) are less harmful to the environment and health

Using RES as a source of energy is costly

Investing in RES is a must in the long run

9. What is your level of approval/agreeing with the following statements (1= I do not agree; 5= fully agree)?

Kosovo has the potential to invest in coal as an energy source

Kosovo has potential to invest in solar energy (solar PV panels)

Kosovo has potential to invest in wind energy (windmills)

Kosovo has the potential to invest in hydropower plants

10. What is your level of approval/agreeing with the following statements (1= I do not agree; 5= fully agree)?

Kosovo is advised to invest in coal

Kosovo is advised to invest in solar energy

Kosovo is advised to invest in wind energy

Kosovo is advised to invest in hydropower

11. How much are you willing to pay more in percentage to invest in these new power generation capacities? 0%; 1 - 3%; 4 - 6%; 7 - 9%; More than 10%;

Thermal Power Plants

Solar Panels

Windmills

Hydropower Plants

12. How much effort do you make to save energy on your home or business?

A lot

Fair portion of my time

None at all

Not very much

Other, Please Specify

13. How often do you turn off the light when you do not necessarily need it?

Always

Sometimes

Often

Almost never

Never

14. How is you heating system regulated in your house?

TERMOKOS

Electric system

Pellet

Wood, Coal

Other (Please Specify):

15. Do you have a thermostat in your home, e.g. in room heaters (radiators)?

Yes

No

## Appendix E: Informed Consent for Survey

Hello,

I invite you to be part of this study that revolves around the energy sector in Kosovo.

The main purpose of the study is to analyze the existing discrepancies between energy regulation and practical application in Kosovo. I am looking for your opinion on the energy sector in Kosovo.

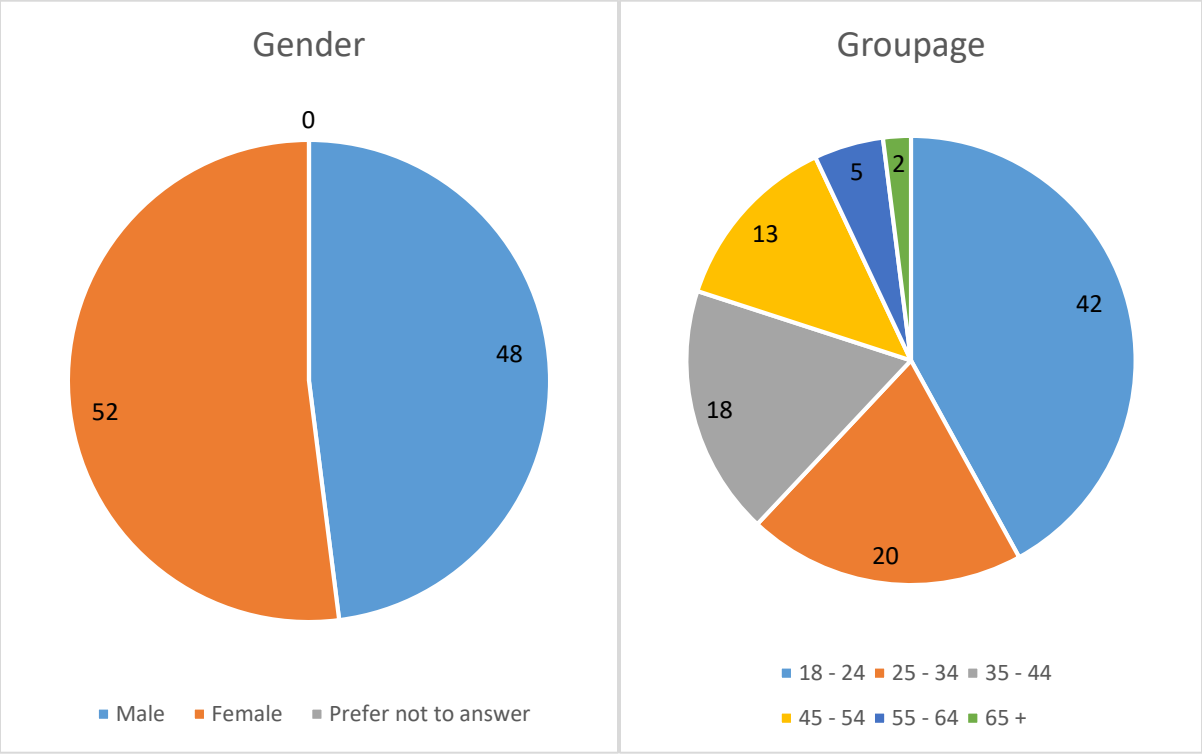
Completion of this study will not take longer than 5-6 minutes.

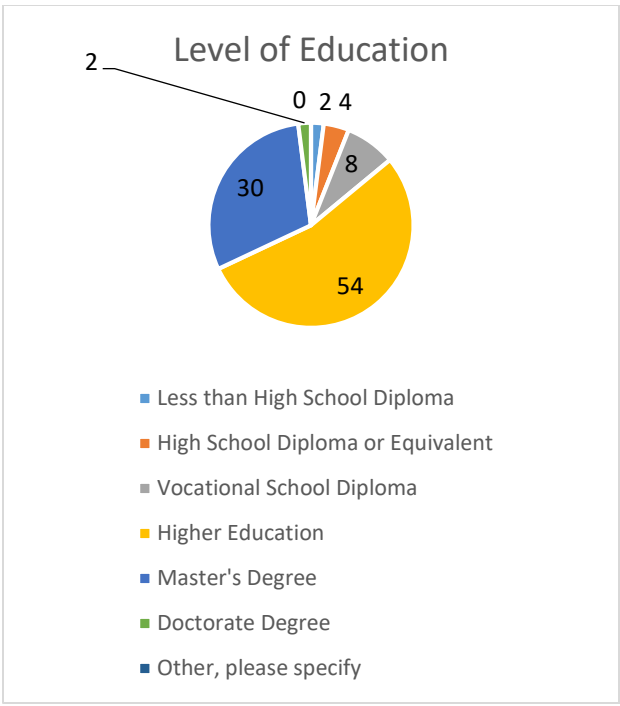
Your participation in this research is confidential. The data will only be used for one project as part of the dissertation.

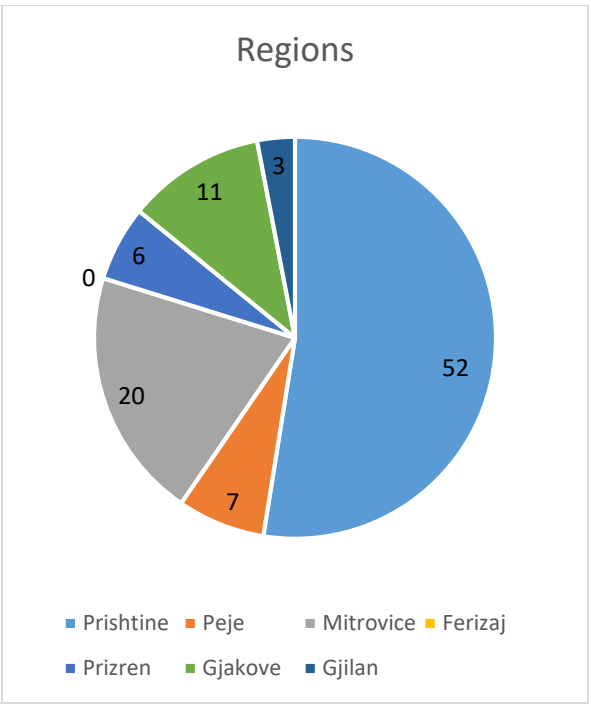
If you have any questions about this study or would like more information, you can contact me at: ardiankacaniku@gmail.com

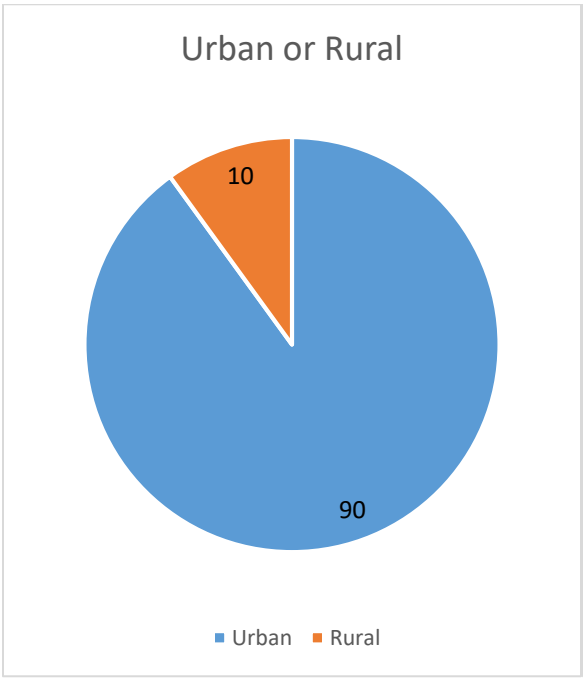
If you agree to be part of the survey, please continue below.

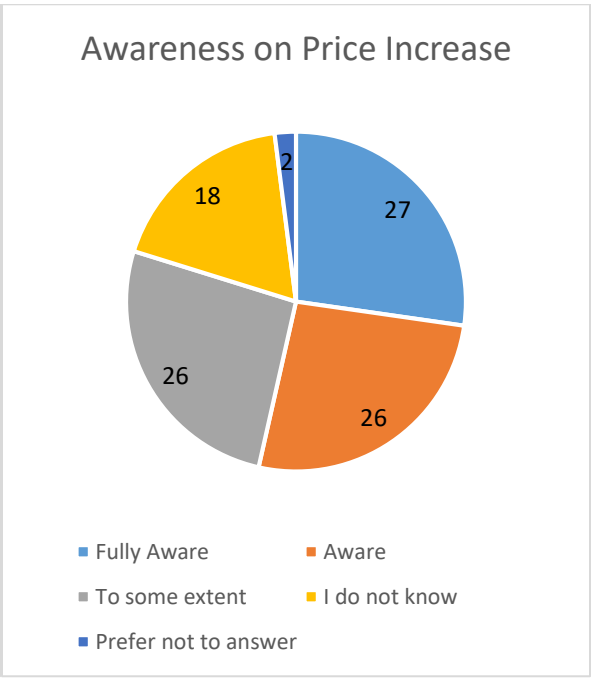
## Appendix F: Other Survey Results

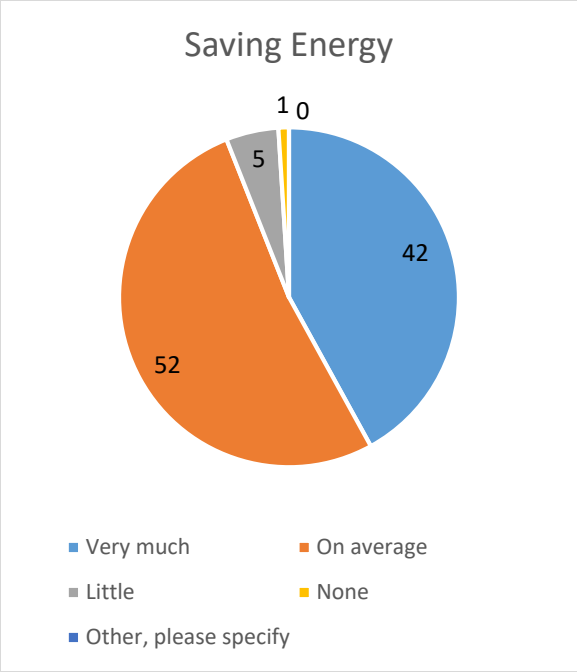


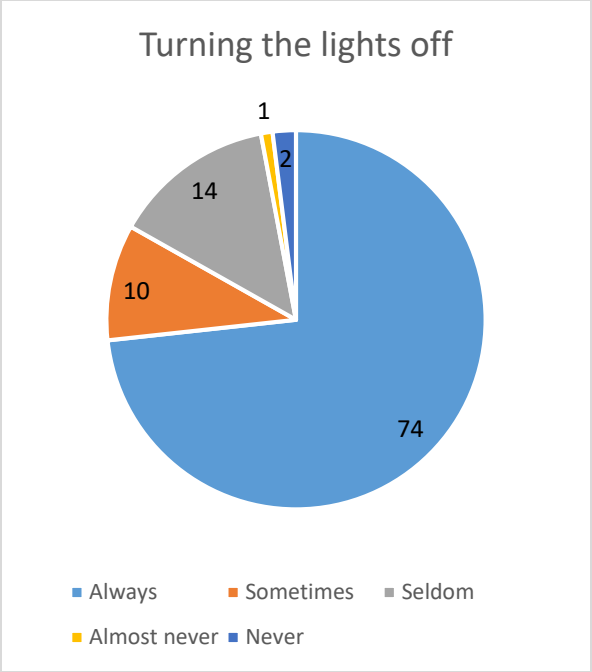

Level of Education
2
0
2
4
8
30
54
Less than High School Diploma
High School Diploma or Equivalent
Vocational School Diploma
Higher Education
Master's Degree
Doctorate Degree
Other, please specify

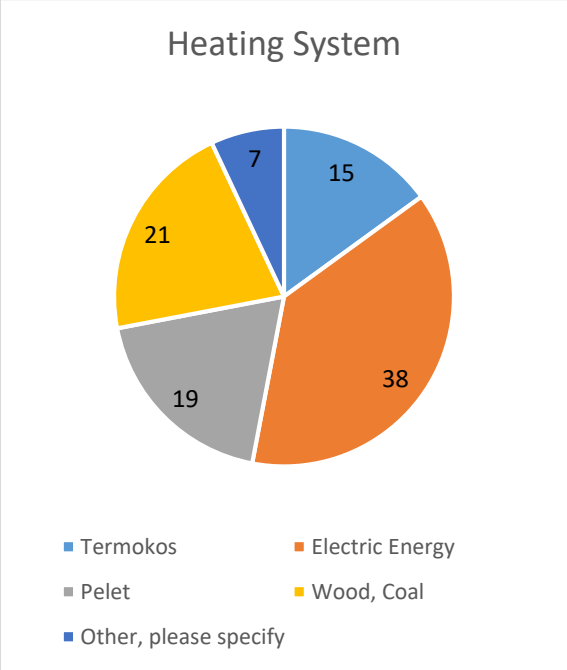

Regions
52
7
20
0
6
11
3
Prishtine
Peje
Mitrovice
Ferizaj
Prizren
Gjakove
Gjilan

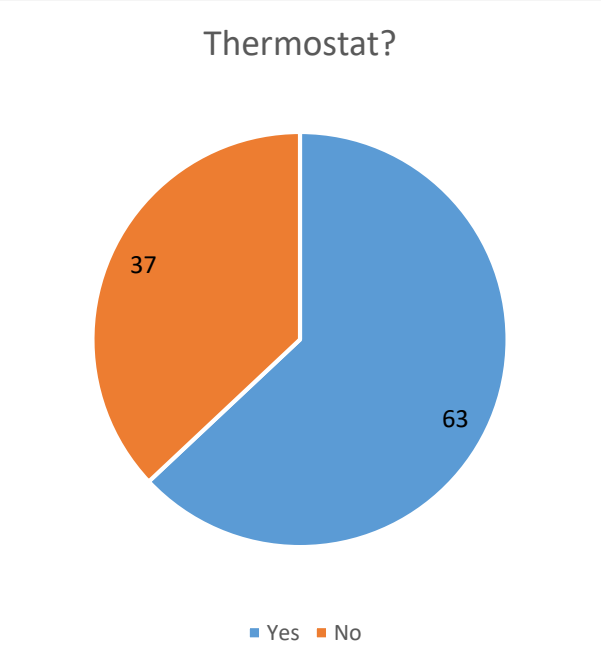

Urban or Rural
10
90
Urban
Rural


Awareness on Price Increase
2
18
27
26
26
Fully Aware
Aware
To some extent
I do not know
Prefer not to answer


Saving Energy
1
0
5
42
52
Very much
On average
Little
None
Other, please specify


Turning the lights off
1
2
14
10
74
Always
Sometimes
Seldom
Almost never
Never


Heating System
7
15
21
38
19
Termokos
Electric Energy
Pelet
Wood, Coal
Other, please specify


Thermostat?
37
63
Yes
No