

POLICY BRIEF

ECONOMIC AND HUMAN CAPITAL DEVELOPMENT IN KOSOVO & SUSTAINABILITY AND ENVIRONMENTAL PROTECTION IN KOSOVO

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I. ECONOMIC AND HUMAN CAPITAL DEVELOPMENT

a. Current situation and approaches

Kosovo boasts the distinction of having the youngest population in Europe, which at the same time represents its primary comparative advantage for growth and economic development.¹ However, the untapped potential of this asset remains a pressing concern for Kosovo.² The latter is facing various issues such as a high youth unemployment rate, poor working conditions, skills mismatch, the rapid growth of the working-age populations, and a high risk of substantial emigration of qualified individuals to third countries ‘brain drain’.³

Unemployment rates in Kosovo have improved by decreasing to 12.60 % in 2022 from 20.70% in 2021.⁴ While from 2001 to 2022 unemployment rate in Kosovo averaged 36.29%, reaching an all-time high of 57.00% in 2001 and a record low of 12.60%.⁵ The improvement of this rate is also as a result of the emigration of the population, which played a role in reducing the workforce from over 40% to 38.6%.⁶ From 2016 approx. 120,000 Kosovo citizens of working age have emigrated to Germany with work visas, which is twice higher than any other Western Balkan country.⁷ Approximately 50% of work visas have been issued for construction workers, and other industries have been accommodation activities, food services, administrative and support services.⁸

¹ European Commission, Instrument for Pre-Accession Assistance (IPA II), Kosovo EU4 Employment and Education, pg.4, accessed on 16th of December 2023 at: https://neighbourhood-enlargement.ec.europa.eu/system/files/2020-08/ipa_2020_042090.07_eu4_education_and_employment.pdf

² Ibid.

³ Riinvest, A Model for Sustainable Economic Growth, Annual Economic Forum, November 2023, accessed at: <https://drive.google.com/drive/folders/1IigracRs6cX-v0yx8W8cC224bpjyfVNP>

⁴ Trading Economics, Kosovo Unemployment Rate, accessed on 16th of December at: <https://tradingeconomics.com/kosovo/unemployment-rate>

⁵ Ibid.

⁶ Riinvest, A Model for Sustainable Economic Growth, Annual Economic Forum, pg.8, November 2023, accessed at: <https://drive.google.com/drive/folders/1IigracRs6cX-v0yx8W8cC224bpjyfVNP>

⁷ Riinvest, A Model for Sustainable Economic Growth, Annual Economic Forum, pg.8, November 2023, accessed at: <https://drive.google.com/drive/folders/1IigracRs6cX-v0yx8W8cC224bpjyfVNP>

⁸ Ibid.

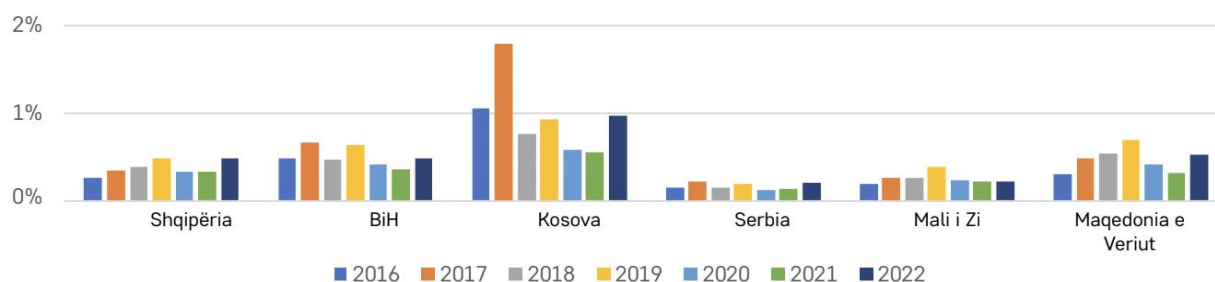


Fig. 1. Emigration rates of Western Balkan Countries in Germany 2016-2022⁹

Youth unemployment rates, on the other hand, remain persistently high, reaching 38.9%.¹⁰ The unemployment of the youth in Kosovo remains concerning, taking into consideration that the median age in Kosovo is approx. 30.5 years and 70% of the population is under the age of 35.¹¹

The working conditions in Kosovo have not experienced a corresponding improvement. Workers face a myriad of challenges, including inadequate salaries that barely meet their living expenses, unsafe work environments, and non-compliance with labor laws and other relevant regulations by their employers.¹² Although there is an established legal framework in Kosovo aimed at safeguarding employees' rights and ensuring workplace safety, the persistent issue lies in the lack of effective implementation. Recent research conducted by BIRN reveals a disconcerting trend, with an average of nearly one person losing their life in a Kosovo workplace each month.¹³ Alarmingly, only 1.5% of businesses have fulfilled their obligation to assess workplace risks.¹⁴ Over the period from 2016 to 2022, 81 workplace fatalities have been

⁹ Ibid. pg. 45

¹⁰ European Commission, Commission Staff Working Document, Kosovo* 2022 Report, 12th of October 2022, accessed at: <https://neighbourhood-enlargement.ec.europa.eu/system/files/2022-10/Kosovo%20Report%202022.pdf>

¹¹ Ministry of Foreign Affairs of Kosovo, Invest in Kosovo, accessed on the 25th of November 2023 at: <https://mfa-ks.net/invest-in-kosova/>

¹² Balkan Investigative Reporting Network, Handling of Workers' Rights Cases by the Labour Inspectorate and the Judiciary, accessed on 16th of December at: <https://birn.eu.com/news-and-events/birn-publishes-2022-report-on-handling-of-workers-rights-cases-in-kosovo-by-courts-and-labour-inspectorate/>

¹³ Ibid.

¹⁴ Ibid.

documented.¹⁵ The report sheds light on additional concerns, indicating that in 2021 alone, 1459 employees were identified as working without employment contracts, and 433 employees were not officially declared to the Tax Administration of Kosovo.¹⁶ This underscores the urgent need for more stringent implementation of existing legal measures to ensure the well-being and rights of employees in the country.

Despite the high youth unemployment rate, employers are encountering challenges in securing skilled employees to meet their specific needs. A noticeable gap exists between the requirements of the job market and the skill sets possessed by potential workers.¹⁷ Recent measurements assessing skills mismatch indicate that over 40% of young workers are engaged in positions that do not match their educational levels.¹⁸ This underscores the pressing necessity for skill development to align with the evolving demands of the job market.

The universities in Kosovo have not adjusted their curricula to align with market demands, resulting in a notable communication gap between these academic institutions and potential employers.¹⁹ Although there has been an increase in the number of students over the years, this growth has not translated into an improvement in the quality of education.²⁰ A substantial mismatch exists between the degrees offered and the actual needs of the labor market.²¹ Notably, social sciences, business, and law attract half of the students, while there is a disproportionately low enrollment in engineering, production, and construction fields.²² This disparity has raised concerns among Kosovo-based companies, consistently expressing

¹⁵ Balkan Investigative Reporting Network, Handling of Workers' Rights Cases by the Labour Inspectorate and the Judiciary, accessed on 16th of December at: <https://birn.eu.com/news-and-events/birn-publishes-2022-report-on-handling-of-workers-rights-cases-in-kosovo-by-courts-and-labour-inspectorate/>

¹⁶ Ibid.

¹⁷ Venera Demukaj, Mimoza Polloshka et. al., RIT Kosovo, A Guide for Aligning Curricular Development with Labor Market Needs, October 2022.

¹⁸ European Commission, Commission Staff Working Document, Kosovo* 2022 Report, 12th of October 2022, accessed at: <https://neighbourhood-enlargement.ec.europa.eu/system/files/2022-10/Kosovo%20Report%202022.pdf>

¹⁹ Venera Demukaj, Mimoza Polloshka et. al., RIT Kosovo, A Guide for Aligning Curricular Development with Labor Market Needs, October 2022.

²⁰ Ibid.

²¹ Ibid.

²² Ibid.

reservations about the inadequate skills and limited experience of their workforce, particularly among new entrants to the labor market.²³ Addressing this misalignment between education and market demands is crucial for fostering a more effective and responsive workforce in Kosovo.

On one side of the spectrum, Kosovo faces a dual challenge: high youth unemployment and employers grappling to find skilled workers. On the flip side, the nation contends with subpar working conditions and limited opportunities, posing a significant risk of substantial emigration of Kosovo's youth to foreign countries. This becomes particularly troubling when a considerable portion of the skilled and educated workforce opts to seek employment opportunities abroad due to constrained prospects in Kosovo, coupled with factors like political and economic instability, and, in some instances, a lack of avenues for career development or education. This trend threatens to deplete the pool of skilled workers, impede economic growth, create demographic imbalances, and widen the existing skills gap in Kosovo. The recent decision by members of the European Parliament to lift the visa regime against Kosovo starting in 2024 has increased concerns in both the private and public sectors regarding the potential emigration of Kosovo's youth to third countries. Based on the research conducted by Reinvest, 17.59% of employees have informed them of their intention to emigrate in the upcoming year.²⁴ The private sector believes that around 32.72% of the population will emigrate following visa liberalization.²⁵

Kosovo's human capital stands out as a crucial asset for economic development; however, it grapples with several challenges. The high youth unemployment rate, coupled with a skills mismatch in the market, as well as subpar working conditions and low salaries, contribute to a precarious situation. Consequently, there is a looming risk of significant emigration among the youth, who may seek better standards of living, enhanced professional and educational prospects, and greater economic stability in third countries.

²³ Ibid.

²⁴ Riinvest, A Model for Sustainable Economic Growth, Annual Economic Forum, pg.8, November 2023, accessed at: <https://drive.google.com/drive/folders/1IIgracRs6cX-v0yx8W8cC224bpjyfvNP>

²⁵ Ibid.

b. Policy recommendations

i. Long-term strategy

To tackle challenges such as high youth unemployment, poor working conditions, skills mismatch, the rapid growth of the working-age population, and the significant risk of 'brain drain'—the emigration of qualified individuals to third countries—governments should establish and execute a comprehensive, long-term national strategy. This strategy aims to align the skills sought by employers with the offerings of the higher education system while also improving working conditions. The primary focus of this strategy is to reduce the unemployment rate and prevent the emigration of talented young professionals to other countries. Achieving these objectives requires robust collaboration among the public sector, private sector, and educational institutions in Kosovo. Through close coordination, these stakeholders can work together to shape and implement policies that address the skills gap, enhance employment prospects, and create an environment conducive to retaining skilled youth within the country.

ii. Aligning curricular activities with the needs of the labor market

In addressing the lack of skillful employees, higher education institutions should align their curricular activities with the needs of the labor market. In aligning the needs of the employers with higher education, each academic program should create an Industrial Advisory Board (IAB)²⁶ consisting of representatives from relevant industries, professionals, executives, experts with significant experience in the field, and academic leaders.²⁷ Their role will involve reviewing existing curricula and providing external guidance, industry insights, and recommendations to ensure that the educational or research programs align with current industry needs and standards.²⁸ The IAB should hold regular meetings on a semi-annual basis to review the programs, curriculum, and research activities of the institution. Lastly, the board may contribute to the strategic planning of the institution, offering insights into long-term trends and helping shape the vision and mission of the academic or research organization.

²⁶ Venera Demukaj, Mimoza Polloshka et. al., RIT Kosovo, A Guide for Aligning Curricular Development with Labor Market Needs, October 2022.

²⁷ Ibid.

²⁸ Ibid.

iii. Research for market needs, innovation, and development

Beyond the establishment of Industrial Advisory Boards, it is imperative for the government to bolster its support for research initiatives by providing research grants and scholarships to institutions and individual researchers. This financial support should be directed towards projects that not only align with current market needs but also foster innovation and development within pertinent industries.

Government funding, in particular, should prioritize and incentivize collaborative research ventures between higher education institutions and industry professionals. By encouraging such partnerships, the government can facilitate the development of solutions that directly address and fulfill market demands. This collaborative approach ensures that the outcomes of research projects are not only academically rigorous but also practically relevant, contributing meaningfully to industry advancements.

The findings and innovations resulting from these research endeavors can serve as valuable inputs for the government in formulating policies. By incorporating insights from cutting-edge research, policymakers can better align market needs with the curricula of higher education institutions. This proactive approach ensures that educational programs are dynamic, responsive to industry trends, and equipped to produce graduates with the skills and knowledge essential for the evolving demands of the job market. This symbiotic relationship between research, education, and policymaking establishes a framework that not only supports academic excellence but also drives economic growth and innovation in the long run.

iv. University-Industry-Government Collaboration

To optimize the collaboration between academia and the private sector, the universities and industries in Kosovo should intensify their cooperation through strategic university-industry partnerships.²⁹ The aim is to harness and synergize their respective strengths, fostering a mutually reinforcing relationship. The following strategies should be implemented to facilitate and enhance this collaboration:

²⁹ Venera Demukaj, Mimoza Polloshka et. al., RIT Kosovo, A Guide for Aligning Curricular Development with Labor Market Needs, October 2022.

- Facilitate joint research projects aligning with the academic institution's expertise and the industry partner's needs.
- Establish research centers and institutes to promote continuous collaboration on specific research themes or fields of study.
- Encourage companies to contribute funding for targeted research projects, utilizing direct grants or research contracts.
- Explore innovative funding models to sustain collaboration, ensuring longevity and success.
- Collaborate to provide students with practical, real-world experience through internships and cooperative education programs.
- Seamlessly integrate academic learning with hands-on industry exposure, enhancing students' readiness for the professional realm.
- Leverage academic expertise in research and development for collaborative efforts in bringing new products or services to the market.
- Establish feedback mechanisms to align academic research with practical industry needs.
- Encourage universities to host incubators or accelerators that foster the growth of startups, particularly those emerging from university-industry collaborations.
- Cultivate an entrepreneurial ecosystem to stimulate innovation, critical thinking, and applied research.

Government can play a significant role in industry-university partnerships by establishing policies to incentivize and support such collaborations. The Government can support this collaboration by implementing the following strategies:

- Provide financial support for collaborative research projects between universities and industries through targeted initiatives.
- Offer grants and incentives to stimulate joint research and development efforts.
- Introduce matching funds to complement industry contributions, incentivizing businesses to invest in collaborative research and development projects with academic institutions.
- Incentivize or support internship and co-op programs, enabling students to gain practical experience in industry settings.

- Facilitate a smoother transition for students from academic learning to real-world applications.

v. Foreign Direct Investment

Foreign Direct Investment is crucial for job creation and skill enhancement, technology transfer, and knowledge exchange. In attracting foreign direct investment, the Government should establish foreign policies to promote investment in industries with high potential in Kosovo and improve the image of Kosovo so foreign investors feel safe to invest in Kosovo.

Kosovo should harness the economic potential of its diaspora to foster sustainable investment, technological innovation, and skills development. To strategically capitalize on Kosovo's diaspora for economic growth, the following multifaceted approach is proposed:

- Establish investment forums, conferences, and outreach campaigns to effectively showcase investment opportunities in Kosovo.
- Create a dedicated platform connecting individuals with innovative investment ideas to diaspora members interested in investing.
- Introduce diaspora bonds tailored for diaspora members, enabling them to invest in infrastructure projects, development initiatives, or government securities with the added benefit of a financial return.
- Formulate diaspora investment funds, managed by financial institutions or investment firms, targeting diaspora members. These funds can finance projects aligned with the country's development objectives, fostering sustainable investments.
- Develop technology and innovation hubs designed to attract diaspora entrepreneurs and professionals engaged in the tech and innovation sectors.
- Establish these hubs as focal points for collaboration, research, and business development, stimulating technological advancements.
- Create programs leveraging the skills and expertise of the diaspora to contribute to education and skills development in Kosovo.
- Implement mentorship programs, knowledge transfer initiatives, and collaborations with educational institutions to harness the diaspora's wealth of knowledge.

II. SUSTAINABILITY AND ENVIRONMENT PROTECTION IN KOSOVO

a. Current situation and approaches

Demand for energy is increasing worldwide and Kosovo is no exception. Energy production is still one of the biggest problems globally. Most of the countries have limited natural resources to sustain the domestic demand, henceforth, they rely on imports, or they are trying to increase their production capabilities. The energy sector is a big industry, and it includes key components of economic growth. Energy exists in many forms, and some of the most common ones are electrical energy, mechanical energy, heat energy, and chemical energy. These forms of energy are present in some of the most important sectors of a country like electricity, transportation, and thermal comfort (heating and air conditioning).

Energy, as a foundational principle, can undergo various transformations. Chemical energy has the capacity to generate heat, which in turn can be transformed into mechanical work. Additionally, mechanical work has the potential to generate electricity. Electrical energy, being a versatile form of energy, finds widespread use and can be transformed into diverse manifestations. According to the Statistical Review of World Energy, 84.3% of the energy comes from fossil fuels and only 15.7% from low-carbon sources like renewables and nuclear power.³⁰ Indeed, Kosovo is no exception; in fact, these figures are elevated compared to other regions. Fossil fuels, primarily coal, are responsible for 92% of energy production and 8% from renewables like hydropower plants, solar, and wind power plants (these numbers account only for electrical production, the actual energy production is higher on fossil fuels considering that most of the cars run on petrol and fossil fuels are vastly used in heating).³¹ The amount of energy produced for each source of energy is given in Figure 2.

These numbers are alarming, considering the amount of CO₂ and other pollutants produced by fossil fuels and the depletion of natural resources. Apart from pollution, this has major political

³⁰ Statistical Review of World Energy, 72nd edition, 2023, accessed at: <https://www.energyinst.org/statistical-review>

³¹ Kosovo Agency of Statistics, 2022., accessed on 15th of December 2023 at: <https://ask.rks-gov.net/Themes/Energy>

and economic implications due to aggressive policies against fossil fuels from Europe.³² Hence, Kosovo must take immediate steps to mitigate the usage of fossil fuels.

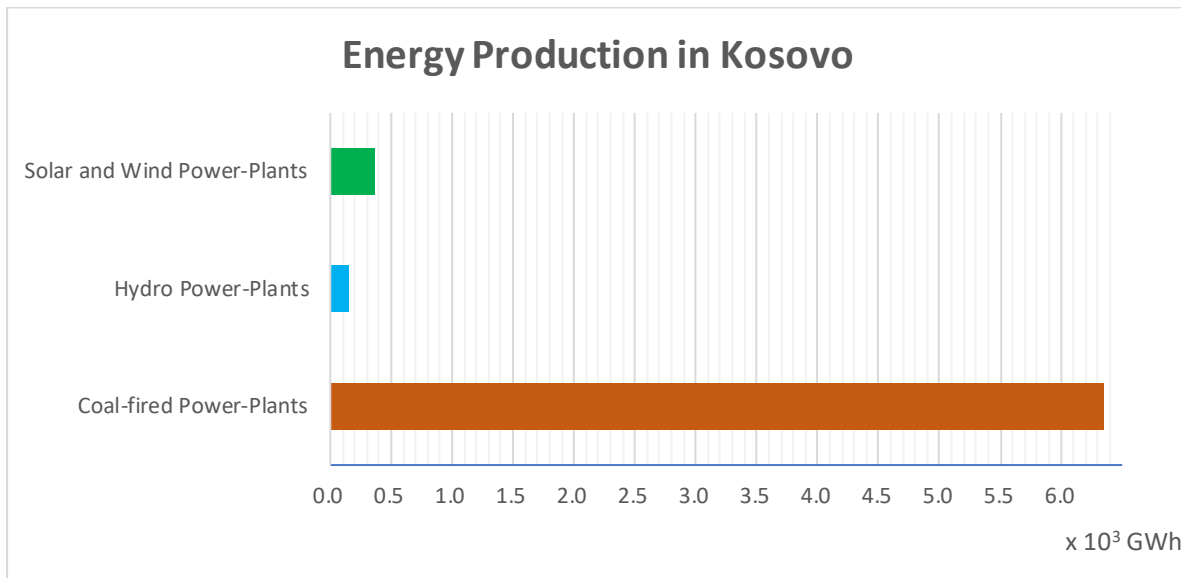


Fig. 2. Electrical energy production in Kosovo in 2022.

Renewable energy can be in the form of hydropower, wind energy, and solar energy, among others. Kosovo is not rich in terms of hydropower,³³ therefore it has to focus on solar energy and wind energy. Unfortunately, there is a lack of data regarding wind trends in Kosovo's territory, and this makes it difficult to forecast favorable locations to build wind farms.²⁴ So far, in Kosovo there are two major wind farms that can produce up to 135MW of electricity, but according to the data from energy production in 2022, this potential is not fully utilized. These projects are private investments, and the government should do more to attract other investors to build more wind power plants. On the other hand, Kosovo gets up to 2079 hours of sun during the year which can be harvested for the production of electricity.³⁴

³² COP28 Climate Change Conference, Global Renewables and Energy Efficiency Pledge, accessed on 15th of December 2023 at: https://energy.ec.europa.eu/system/files/2023-12/Global_Renewables_and_Energy_Efficiency_Pledge.pdf

³³ Lajqi, S., Durin, B., Berisha, X., & Plantak, L. (2020). Analysis of the Potential for Renewable Utilization in Kosovo Power Sector. *Environments*, 7, accessed at: <https://doi.org/10.3390/environments7060049>.

³⁴ Kosovo Academy of Sciences and Arts, Report on Electricity Production in Kosovo, 2020.

Month	Gjakove	Mitrovica	Peje	Pristine	NP Sharr Mountains
Jan	71.23	67.52	67.91	61.71	22.97
Feb	80.22	79.42	76.86	78.36	29.15
Mar	125.56	124.63	120.37	126.58	57.49
Apr	157.63	150.25	152.06	151.5	95.66
May	182.26	173.28	174.44	175.88	132.27
Jun	192.79	184.05	182.7	186.46	163
Jul	217.17	206.61	206.82	209.97	173.16
Aug	213.3	201.66	201.13	203.65	131.19
Sep	157.06	151.07	150.07	154.47	76.84
Oct	124.22	122.9	118.89	122.76	39.48
Nov	86.78	86.34	81.77	86.75	25-35
Dec	63.23	6350	58.39	59.56	20.43
Total	1,671.45	1,611.21	1,591.41	1,617.64	966.99

Table 1. Monthly and annual irradiation at optimum angle (kWh/m²).³⁵

However, current policies regarding solar power plants are discouraging for foreign and domestic investors. As of now, there hasn't been any notable project that has installed a sufficient amount of electrical power to meet the needs of an entire city or neighborhood. All these investments are from the private sector, most commonly from factories and shopping malls which were able to utilize specific funds. Installation of solar power in households is also very limited due to disadvantageous policies. Nowadays, the government has relaxed its policies on the production of electricity from solar panels for households and this might have a good impact on the future.³⁶

Transportation remains another huge concern globally. While electric vehicles are very promising, the current technology still does not meet the needs, especially in transportation of the goods since the range that electrical vehicles can run is limited. Regarding commuting

³⁵ World Bank, Energy Efficiency and Renewable Energy Project, Support for Grid Integrated Renewable Energy Generation, November 2020.

³⁶ Ministry of Environment, Spatial Planning and Infrastructure, accessed on 15th of December 2023 at: <https://mmphi.rks-gov.net/News/NewsArticle?ArticleID=186>

vehicles, the compact size of Kosovo ensures that this should not present an issue. Nevertheless, Kosovo faces more fundamental problems like the absence of superchargers and limited charging infrastructure locations for electric vehicles. Additionally, electric cars in Kosovo have added taxes, as well as carbon tax even though they should be exempted from it. Heating is another form of energy that has one of the most significant contributions to overall energy consumption. Since temperatures in Kosovo are low from October to April, the heating season in Kosovo is long and the energy consumption is high due to low average temperatures. Average temperatures in Prishtina from 2008 to 2018 are given in Table 2.³⁷

Year/Month	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
October	12.5	10.7	9.5	9.5	13.4	12.5	10.9	11.9	11	11.1	13.1
November	7.4	7.7	10.3	3.2	9	8.1	8.1	7.6	5.6	6	6.5
December	3.2	3.7	2.1	1.5	-1.1	0	1.8	1.6	-0.5	2.8	0.1
January	0	-0.6	0.5	-0.3	-1.9	2.5	2.9	-0.8	0.1	-4.9	1.3
February	3.4	1.1	2.9	0.2	-4.9	3.7	6.6	2.5	8	4.7	2
March	7	5.2	6.6	6.1	7	6.8	8.2	4.6	7.1	9.5	6.3
April	11.3	12.7	11.5	10.9	11.3	12.7	10.5	10.4	13.7	10.9	15.6
May	15.3	16.8	16	14.7	14.8	16	14.5	N/A	14.6	15.7	17.9

Table 2. Average temperature* for Prishtina for a 10-year period.

The main energy sources for heating in Kosovo are:

- Wood,
- Coal,
- Electricity,
- Biomass,
- Heat Pumps and Air Conditioners, and
- District Heating.

Wood, coal, and biomass contribute directly to carbon emissions. Likewise, extensive usage of electricity for heating, heat pumps, and air conditioners can indirectly increase carbon emissions due to the high percentage of electricity produced by fossil fuels. District heating is

³⁷ Hydrometeorological Institute of Kosovo, Meteorological Data 2001-2019, accessed on 15th of December at: https://ihmk-rks.net/uplds/docs/Meteorologji_Vlerat_mesatare_mujore_2001-2019.pdf

* Temperature is given in °C.

partially functional only in two cities of Kosovo, Prishtina and Gjakova. Gjakova's district heating produces up to 15 MW of thermal energy and 1.5 MW of electricity, and it runs on biomass.³⁸ On the other hand, Prishtina's district heating (Termokos) produces up to 140 MW from cogeneration, and an additional 14 MW is strictly in use for the University Clinical Center of Kosovo which is produced from oil-fired boilers.³⁹ Just recently, Termokos signed a deal with the central government to build a new 50 MW solar power plant to produce thermal energy.⁴⁰ This will increase the capacity of Termokos to expand their coverage and mitigate the dependence on steam from the Kosovo B power plant.

In the last three years, there have been more than 3000 pieces of wood and biomass boilers of different capacities, where biomass boilers account for 70% of this number. Enrad is the main local producer of wood and biomass, and it accounts for more than 50% of the market share. According to Enrad, the most sold biomass capacity is 26kW, while for wood-fired boilers 35kW is the most required capacity.⁴¹ Hence, in the last 3 years, there have been around 90 MW installed. From 2022 the government has been subsidizing biomass and wood boilers for households, but the cost of wood and biomass has been increasing drastically which has not been reflected in the popularity of these products. Likewise, the subsidized program was open for efficient products like heat pumps and air conditioners which are viewed as a great policy employed by the government.

While subsidizing wood-fired boilers and not subsidizing individuals who consume less than 800 kWh/month, the government is discouraging energy efficiency improvements for the majority of households in Kosovo. Coal-fired and wood-fired boilers are quite common in Kosovo. JICA's study on pollution in Prishtina shows that in 2018 40% of residential buildings used wood as a source of heat and 3% still use coal.⁴² The most common energy sources for heating for Prishtina are presented in Figure 2. Wood consumption in other cities of Kosovo

³⁸ City heater of Gjakova, Background, assessed on 15th of December 2023 at: <https://www.ngrohtorja.org/rreth-nesh/>

³⁹ Termokos, Background, accessed on 15th of December 2023 at: <https://termokos.org/v2/en/about-us/>

⁴⁰ Termokos, Signing of agreement for project Solar4 Kosovo, assessed on 15th of December 2023 at: <https://termokos.org/v2/2023/12/11/nenshkruhen-tri-marreshje-per-projektin-solar4-kosovo/>

⁴¹ <http://enrad-ks.com/enrad/en/company/> (accessed: 15/12/23)

⁴² Japan International Cooperation Agency (JICA). Republic of Kosovo Capacity Development Project for Air Pollution Control Project Completion Report. August, 2021.

* Only Prishtina and Gjakova have district heating.

may have even larger numbers since they do not have district heating like Prishtina.* This dependence on wood for heating creates more problems in deforestation and pollution. Moreover, most of the logging is still illegal and this poses added impacts on climate, erosion, soil degradation, and the economy. Uncontrolled wood can have a negative impact on the performance of heating systems as well since the amount of moisture in the wood can exceed the limits and can create more pollution from the combustion process which is highly likely to exceed all the allowed parameters.

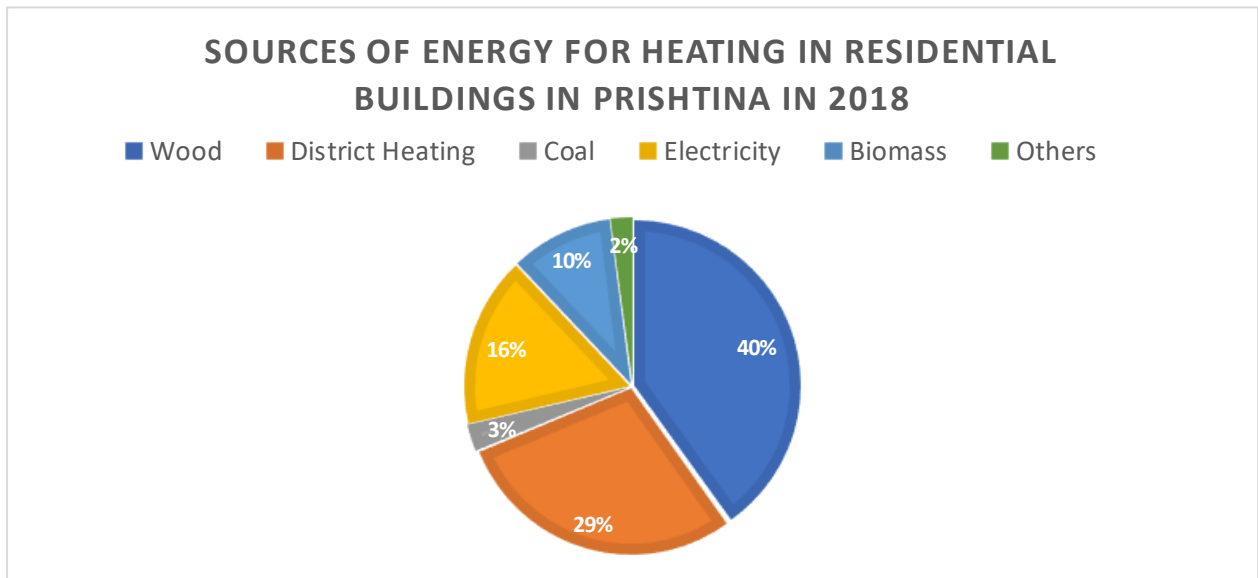


Fig. 3. Sources of energy for heating in residential buildings in Prishtina in 2018.

b. Policy recommendations

Meeting the carbon-neutral goals of the European Union by 2050⁴³ is going to be a huge challenge for Kosovo. Considering the dependence on fossil fuels, Kosovo must increase its electrical capacity from renewable sources by more than 80%. Today Kosovo produces around 7,000 GWh of electricity per year, and the electricity demand has increased more than 2000 GWh from 2009 to 2021.⁴⁴ This demand will be even larger if the government pushes forward the current subsidies for efficient equipment for heating like Air Conditioners and Heat Pumps.

⁴³ COP28 Climate Change Conference, Global Renewables and Energy Efficiency Pledge, accessed on 15th of December 2023 at: https://energy.ec.europa.eu/system/files/2023-12/Global_Renewables_and_Energy_Efficiency_Pledge.pdf

⁴⁴ Kosovo Agency of Statistics, 2022., accessed on 15th of December 2023 at: https://askdata.rks-gov.net/pxweb/sq/ASKdata/ASKdata__Energy__Monthly%20indicators/tab01.px/

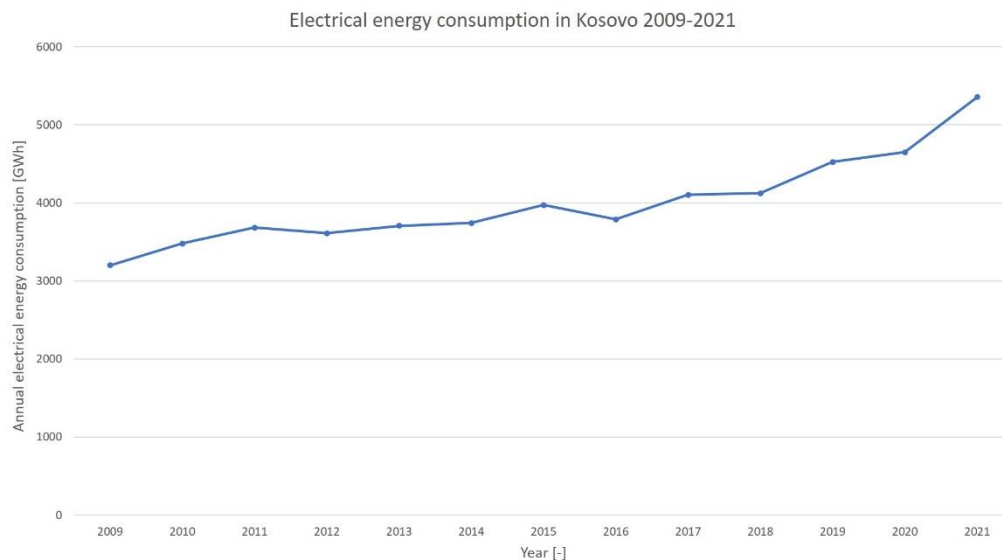


Fig. 4. Electrical energy consumption in Kosovo.⁴⁵

i. Transportation

Transportation is still one of the biggest problems in terms of pollution in Kosovo.⁴⁶ To overcome this problem, electric cars should be the future of transportation. Nonetheless, this requires more electrical power. Henceforth, apart from immediate steps that have been taken currently, the government must have a solid plan for the future as well. To meet allowed carbon emissions, Kosovo A must retire as soon as possible followed by Kosovo B. However, this will create a huge deficit in electrical generation. Overcoming this problem requires immediate action in implementing new projects on renewable energy and creating efficient transportation strategies. Some of the strategies that can be implemented can be in the form of public transport, urban planning, restricting entrance in congested areas, new parking spaces, etc.

ii. Electrical Energy

The government should invest more in data analysis, subsidies, education, and favorable policies toward efficient energy solutions. Firstly, Kosovo should create a wind map for potential locations for building new wind farms. Now, most of the data available is from the Global Wind Atlas website.⁴⁷ According to the World Bank's report on Renewable Energy

⁴⁵ "Statistical Yearbook of the Republic of Kosovo, 2022", accessed on 15th of December 2023 at: https://en.wikipedia.org/wiki/Electrical_energy_in_Kosovo#cite_note-:0-24

⁴⁶ *ibid*

⁴⁷ Global Wind Atlas, accessed on 15th of December 2023 at: <https://globalwindatlas.info/>

Generation from Kosovo 3, squared is suitable for building wind power plants.⁴⁸ Based on different factors like vegetation, slope, and ideal wind speed it is estimated that wind energy potential is around 1800 MW.⁴⁹ The wind atlas created from the World Bank report is given in Figure 5 based on potential locations where wind farms can be established.*

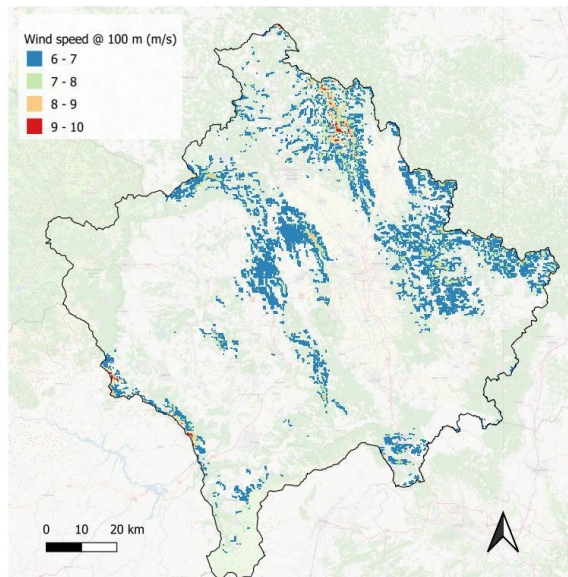


Fig. 5. Potential locations to build wind farms.⁴²

Based on this research, we can conclude that Kosovo does not have enough wind energy to fulfill its electrical energy requirements. Consequently, additional alternatives like solar energy should be considered. According to the Academy of Sciences and Arts of Kosovo research in 2020, the amount of energy that can be harvested in Kosovo's territory is 160 GWh/year on average.⁵⁰ On the other hand, more detailed research conducted by the World Bank,⁵¹ forecasts that only 3600 MW of solar energy can be installed when different factors like slope, terrain, and protected land among others are considered. The most suitable locations to build solar power plants are shown in Figure 6.

⁴⁸ World Bank. Energy Efficiency and Renewable Energy Project. Support for Grid Integrated Renewable Energy Generation. November, 2020.

⁴⁹ World Bank, Energy Efficiency and Renewable Energy Project, Support for Grid Integrated Renewable Energy Generation, November 2020.

⁵⁰ Kosovo Academy of Sciences and Arts, Report on Electricity Production in Kosovo, 2020.

⁵¹ World Bank, Energy Efficiency and Renewable Energy Project, Support for Grid Integrated Renewable Energy Generation, November 2020.

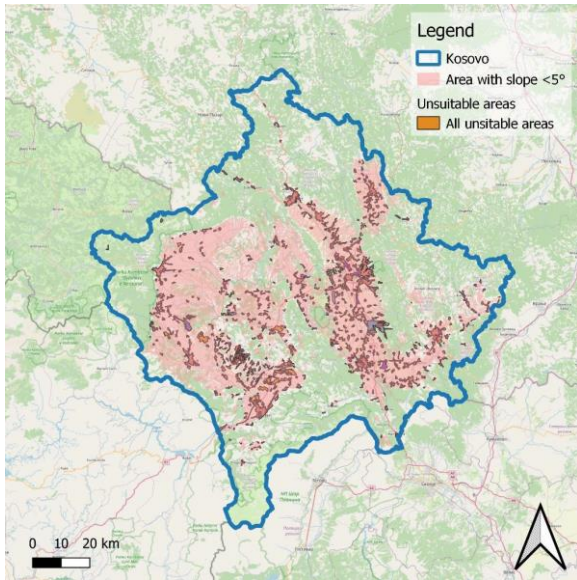


Fig. 6. The Area where the slope is less than 5° is suitable for photovoltaic solar panels.⁴⁴

From this data, Kosovo has to fully utilize all the photovoltaic and wind energy to meet the electrical energy demand. This is going to take a tremendous amount of investment from local government and international funds if Kosovo goes 100% renewable in the next 25 years. Additional policies which would help to bolster the use of renewable energy are:

- Subsidies for households to install photovoltaic panels in their homes.
- Subsidies and low-interest rate loans for commercial buildings.
- Allocating funds for research on renewables.
- Collaborating with experts on creating long-term projects and taking advantage of international funds (especially from the EU).
- Public awareness and education should be promoted in the private and public sectors.
- The government should offer long-term contracts to renewable energy producers, foreign and domestic, guaranteeing a fixed premium price for the electricity generated.
- Net metering, which allows individuals or businesses with renewable energy systems to feed excess electricity back into the grid, receiving credits or compensation.

These policies are often implemented in combination to create an effective framework for promoting renewable energy adoption.

iii. Heating

In the last two years, the government has provided subsidies for installing new efficient heating systems for individuals who have surpassed 800 kWh/month. This policy has had a good

impact on reducing the amount of energy spent on heating by using heat pumps and air conditioners. From this policy, households who have previously used electricity as their primary form of heating have benefited the most, but individuals who are using coal or wood as a source of energy were not being subsidized. This discourages individuals who are using sources of energy that are known to have large carbon emissions. In addition to improving the heating system, retrofitting the building envelope (insulation of walls, floors, windows, doors, and roof) is more important than the heating system itself. An insulated house can save up to 73% of energy if the insulation is done properly.⁵² This number could be even higher depending on the initial conditions of the house and after retrofitting the house. Currently, there are available funds from the government, Kosovo Fund for Energy Efficiency (KEEF), Millennium Foundation Kosovo (MCC), and Green Economy Financing Facility (GEFF) among others which support individuals and the public sector in improving their building envelope. Nevertheless, additional support is required to improve the efficiency of buildings even more, and some available options that can be very effective are:

- Expanding subsidies for households who spend less than 800 kWh/month.
- Supporting low-income households who cannot afford to retrofit building envelopes and new heating systems.
- Auditing and improving the quality control of appliances that are being installed by requiring proper certification like Eurovent Certification. Equipment that runs on refrigerants like R410a should be discouraged due to the high impact on the ozone layer.
- More thorough expertise is encouraged while creating the terms and conditions of the grant.
- Passive houses and nearly zero-energy buildings should be promoted to lower energy consumption while retrofitting homes.
- Updating building codes and standards to encourage adaptation of new technologies and designs.
- Grants and subsidies for businesses.
- Expanding district heating.
- Strengthen legal frameworks and enhance law enforcement capacity to solve logging problems.

⁵² Rexhepi, Fatlum, Improving Energy Efficiency in Residential Houses in Kosovo, English Language Institute, 2020.

Finally, combining these policies can create a comprehensive framework for improving energy efficiency in heating, contributing to environmental sustainability and energy security goals. The effectiveness of these measures often depends on the collaboration of governments, businesses, and individuals in adopting and promoting energy-efficient practices.

Disclaimer:

This Policy Brief is written as a reflection of the Global Policy Series held in December 2023 to mark the Hubert H. Humphrey Fellowship Program's 45th anniversary.

The first panel, "Economic and Human Capital Development Panel Discussion," included Dr. Driton Qehaja, Professor, University of Pristina, Faculty of Economics; Humphrey Alumnus, Dr. Venera Demukaj, Assistant Professor, RIT Kosovo (A.U.K); Fulbright Visiting Scholar Alumna and Mr. Arianit Fazliu, Chief Executive Officer, KUTIA X. This panel was moderated by Blerinda Veliu, Fulbright Foreign Student Program Alumna (Master's).

The second panel, "Sustainability and Environmental Protection Panel Discussion," included Mr. Bekim Ramku, Director, Kosovo Architecture Foundation/Chair, DoCoMoMo_KS; Humphrey Alumnus, Mr. Driton Hetemi, Managing Director, Kosovo Fund for Energy Efficiency and Mr. Trim Tërnavë, Energy Expert; Fulbright Foreign Student Program Alumnus (Master's). The panel was moderated by Dajana Berisha, Executive Director, Forum for Civic Initiatives and USKEB Civil Society Representative.

This Policy Brief reflects the discussions of the panels and does not represent the official views and stands of the U.S. Government/U.S. Embassy in Pristina.