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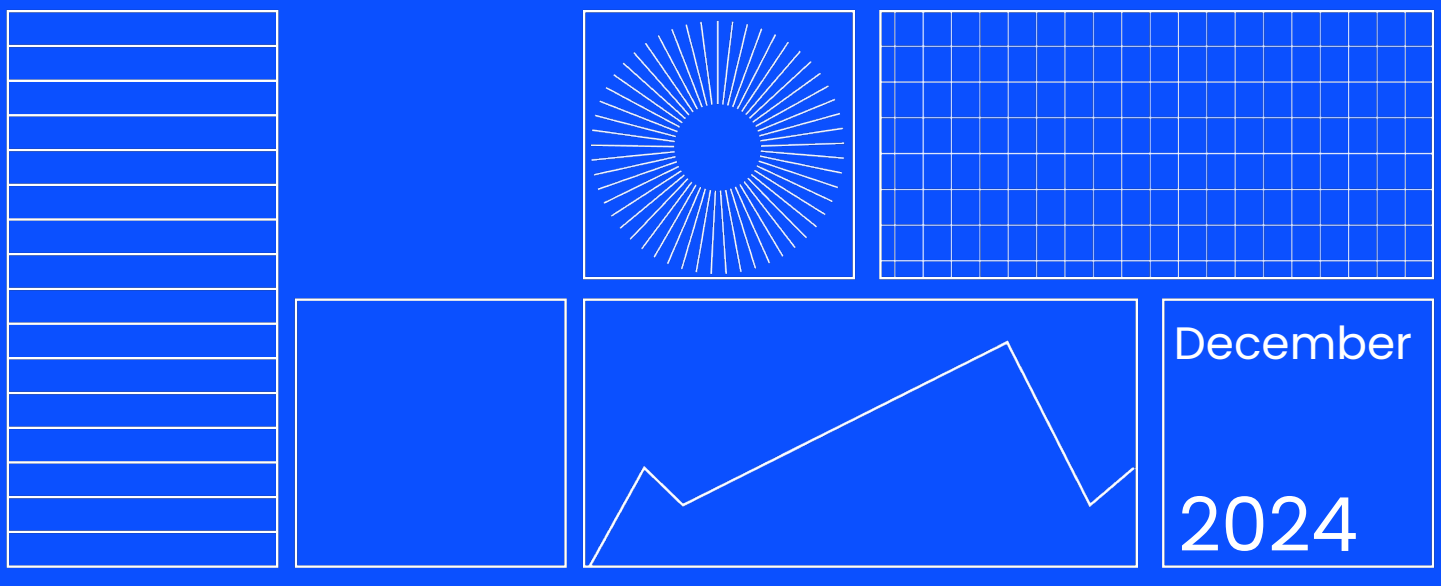
# Green Agenda Implementation and Needs Assessment

Kosovo Green Action



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# Acronyms

| | |
|---|---|
| **ALPEX** | Albanian Power Exchange |
| **BGF** | Balkan Green Foundation |
| **EE** | Energy Efficiency |
| **EEF** | Energy Efficiency Fund |
| **EGD** | European Green Deal |
| **EIP** | Economic and Investment Plan |
| **ERO** | Energy Regulatory Office |
| **FOL** | Lëvizja Fol |
| **GHG** | Greenhouse Gas Emissions |
| **KAS** | Kosovo Statistical Agency |
| **LLOMAG** | Demand in the areas of mining and generation |
| **ME** | Ministry of Economy |
| **MESPI** | Ministry of Environment, Spatial Planning and Infrastructure |
| **NDC** | Nationally Determined Contributions |
| **NDS** | National Development Strategy |
| **NECP** | National Energy and Climate Plan |
| **NFI** | National Forest Inventory |
| **ODK** | Open Data Kosovo |
| **RES** | Renewable Energy Sources |
| **RWC** | Regional Waste Company |

# Executive Summary

*This report provides a comprehensive assessment of Kosovo's progress in implementing the Green Agenda for the Western Balkans, focusing on key areas such as energy, climate resilience, waste management, and biodiversity protection.*

*The Green Agenda, aligned with the European Green Deal, sets out ambitious goals for decarbonization, circular economy, depollution, and sustainable food systems, aiming for climate neutrality by 2050. Kosovo has made notable progress but faces several challenges that require urgent attention.*

**Key Findings:**

>Kosovo has adopted the Energy Strategy 2022-2031, aiming to provide reliable, affordable, and clean energy. The government has committed to achieving 1.6 GW of renewable energy capacity and integrating energy storage systems by 2031.

>Renewable energy development has advanced, with a 100 MW solar auction completed, and a 150 MW wind energy project underway. However, the country remains heavily reliant on lignite-based power plants, which contribute significantly to greenhouse gas (GHG) emissions and air pollution.

>The adoption of Kosovo's Climate Change Strategy 2019-2028 and the first Law on Climate Change in 2024 marks an important step toward addressing climate impacts. The strategy outlines mitigation and adaptation measures aimed at reducing GHG emissions and enhancing climate resilience.

>Kosovo's GHG emissions have steadily increased, with 75% of emissions in 2020 coming from the electricity, gas, and air conditioning supply sectors. The country faces challenges in meeting its climate targets due to outdated technologies and high energy consumption in inefficient buildings.

>Kosovo adopted a Circular Economy Roadmap in 2023, setting the foundation for transitioning toward a sustainable economic model. However, waste management infrastructure remains underdeveloped, with significant gaps in recycling, hazardous waste management, and enforcement of regulations.

>The Law on Waste was approved in 2022, but implementation has been slow. Limited data on waste collection, sorting, and treatment further hampers progress.

>Kosovo is home to rich biodiversity, with approximately 45% of its land covered by forests. The country has made strides in nature conservation, with 260 protected areas covering 11.6% of its territory.

>However, there is a lack of systematic data on species protection, endangered habitats, and the effectiveness of ongoing conservation efforts.

>Kosovo faces significant challenges in water and air pollution. Only 65% of the population is connected to wastewater services, and untreated water is often discharged into rivers, posing environmental and public health risks.

>Air pollution, particularly in Pristina, remains a critical issue due to the reliance on coal and inefficient household heating systems.

Kosovo has made important strides in advancing its Green Agenda goals, particularly in the areas of energy transition and environmental legislation. However, significant challenges remain, including outdated infrastructure, insufficient data collection, and a lack of sector-specific policies.

**To accelerate progress, Kosovo must:**

**1.** Strengthen inter-sectoral coordination and institutional capacity.
**2.** Invest in modernizing infrastructure for renewable energy and waste management.
**3.** Improve data collection systems for better monitoring and reporting on environmental impacts.
**4.** Increase public awareness and engagement in climate actions to ensure a more sustainable and resilient future.

# Introduction

This report has been developed under the "Kosovo Green Action" project, which aims to enhance access to climate and energy data in Kosovo through the creation of a dedicated Green Agenda Online Platform. This platform provides a centralized resource for stakeholders to access and share crucial information related to the implementation of the Green Agenda, thereby improving transparency and fostering collaboration.

The project engages a diverse range of stakeholders in collaborative social accountability efforts, focusing on climate and energy priorities outlined in the EU-endorsed Green Agenda for the Western Balkans. It aligns with the agenda's key pillars by promoting access to information, enhancing governance, ensuring accountability and transparency within government institutions, and empowering youth to engage with climate actions. One of the project's flagship initiatives, the 'Green Forum,' serves as an interactive platform for gathering feedback and recommendations on the implementation of the Green Agenda.

Launched on February 16, 2023, this project is led by the Balkan Green Foundation (BGF) in collaboration with Open Data Kosovo (ODK) and Lëvizja FOL (FOL). It aims to drive Kosovo's transition toward climate resilience and energy sustainability, addressing critical issues in energy efficiency, renewable energy adoption, and the country's overall environmental commitments.

To provide a comprehensive overview of Kosovo's progress in implementing the Green Agenda, a mixed-methods approach was adopted. This approach combined in-depth face-to-face interviews with key stakeholders and extensive desk research. The face-to-face interviews allowed for the collection of firsthand insights, addressing specific challenges, needs, and opportunities in implementing climate and energy policies. These interviews provided in-depth perspectives on the operational realities of the Green Agenda's rollout and enabled clarification of any ambiguities, thereby enriching the overall quality of the data collected. In parallel, desk research was conducted to contextualize the findings and support the analysis with background information from existing literature, policy documents, and reports. This research helped identify best practices, policy gaps, and areas where current mechanisms could be strengthened to accelerate the transition toward Kosovo's climate goals.

This report presents a detailed assessment of Kosovo's current progress and the challenges it faces in implementing the Green Agenda. It begins with an overview of the Green Agenda itself and examines the legislative and policy framework guiding Kosovo's actions in the energy and climate sectors.

Key challenges related to decarbonization, energy transition, and climate resilience are explored, highlighting the barriers that hinder Kosovo's ability to meet its climate goals. The report addresses strategies to reduce GHG, enhance climate adaptation efforts, and improve energy efficiency. It also assesses Kosovo's circular economy efforts, waste management practices, and depollution initiatives across air, water, and soil.

This assessment further reviews sector-specific initiatives, such as the promotion of sustainable transport, and provides an analysis of climate trends and mitigation strategies. Efforts to strengthen the resilience of Kosovo's energy infrastructure, particularly regarding renewable energy adoption and reducing reliance on coal, are also explored.

By identifying the critical issues, needs, and challenges related to the Green Agenda's implementation, this report provides actionable insights into how Kosovo can enhance its energy and environmental policies. Addressing these challenges will allow Kosovo to improve energy efficiency, accelerate renewable energy adoption, and strengthen resilience to climate change, positioning the country as a leader in sustainable development and environmental protection within the region.

# Overview of the Green Agenda

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The **Green Agenda for the Western Balkans** is the blueprint for a 2050 future of climate neutrality and environmental sustainability. The **five-pillar agenda** is aligned with the ambitions of the European Green Deal and it relies on urgent regulatory reforms and significant investments. These five main pillars are:

I. Decarbonisation and climate resilience
II. Circular economy
III. Depollution: air, water and soil
IV. Sustainable food systems and rural areas
V. Biodiversity: protection and restoration of systems

The Economic and Investment Plan (EIP) promotes the implementation of the Agenda through four flagships that extend over one or more pillars. They are related to:

> Environment and climate
> Clean energy
> Sustainable transport
> Private sector development

The Green Agenda for the Western Balkans is shared between the region and the European Union, having been adopted with the Economic and Investment Plan for the Western Balkans and endorsed by the leaders of the region through the Sofia Declaration in November 2020.[1]

The **Action Plan of the Green Agenda**[2] outlines the framework for its coordination and monitoring, while the main responsibility for the implementation lies with the Western Balkan authorities following inter-sectorial and inter-institutional cooperation. The Action Plan takes into account the main political processes, international frameworks and agreements, the most recent policy developments and in particular legislative and non-legislative acts adopted at the EU level. This includes the European Green Deal ((EGD) - EU climate framework, the EU Biodiversity Strategy, the EU Farm-to-Fork Strategy, Fit for 55% Package, Zero Pollution Action Plan, etc.), the Western Balkans energy and climate objectives/ambitions for 2030 in line with the EU's intermediate climate targets to reduce GHG emissions by at least 55%, as well as many others.[3]

Kosovo has taken several important steps to implement the Green Agenda by creating laws and strategies that focus on energy efficiency, climate change, and sustainable development. These efforts are built on a mix of key laws and strategic documents, which together help the country move toward a more environmentally friendly future.

On the legal side, Kosovo has passed laws that cover important areas such as energy efficiency, electricity regulation, and promoting renewable energy sources (RES). These laws help make sure Kosovo can meet its energy needs while also reducing pollution.

At the same time, Kosovo has created strategies that work alongside these laws. These strategies set clear goals and action plans for long-term sustainability and economic development.

**1** European Commission. Implementing a Green Agenda for the Western Balkans. 2023. Source: https://neighbourhood-enlargement.ec.europa.eu/document/download/75bf7bef-0ecc-40ba-893a-4d45d4ea6ddb_en?filename=factsheet_wb_green_agenda_en.pdf

**2** Regional Cooperation Council. Action Plan for the Implementation of the Sofia Declaration on the Green Agenda for the Western Balkans 2021-2030. Source: https://www.rcc.int/docs/596/action-plan-for-the-implementation-of-the-sofia-declaration-on-the-green-agenda-for-the-western-balkans-2021-2030

**3** Regional Cooperation Council. Green Agenda for the Western Balkans Action Plan. 2021. Source: https://www.rcc.int/docs/596/action-plan-for-the-implementation-of-the-sofia-declaration-on-the-green-agenda-for-the-western-balkans-2021-2030

The table below summarizes the key laws and strategic documents that are driving Kosovo's efforts to implement the Green Agenda.

**Table 1:** Key laws and strategies supporting Kosovo's Green Agenda implementation

| Primary legislation | Strategic documents |
|---|---|
| Law on Energy Efficiency | National Development Strategy 2030 |
| Law on Pressure Equipment | Strategy of Energy 2022-2031 |
| Law on Thermal Energy | Climate Change Strategy 2019-2028 |
| Law on the Energy Regulator | Action Plan on Climate Change 2019-2021 |
| Law on Electricity | The National Energy and Climate Plan (NECP) (First draft version) |
| Law on Energy | Strategy for Industrial Development and Business Support 2030 |
| Law on Natural Gas | Circular Economy Roadmap 2023 |
| Law on Energy Performance of Buildings | Action Plan for Air Quality |
| Law on the Promotion of the Use of Renewable Energy Sources | Multimodal Transport Strategy 2023-2030 |
| Law on the Market Organisation for Agricultural Products | |
| Law on Climate Change | |
| Draft Law on Nature Protection | |
| Draft Law on Kosovo Waters | |

While Kosovo has adopted comprehensive laws and strategies to support the Green Agenda, the implementation remains inconsistent. Key challenges include limited financial resources, insufficient institutional capacity, and weak enforcement mechanisms.

**Progress**
> Law on Energy Efficiency - Improvements in public building retrofitting.
> Climate Change Strategy (2019-2028) - Adoption of mitigation and adaptation measures.
>Circular Economy Roadmap (2023) - A foundational step toward sustainability.

**Gaps and Issues**
>Financial constraints - Limited budgets allocated for environmental projects hinder infrastructure upgrades, such as waste management facilities and renewable energy systems.
>Capacity building - Municipal bodies lack training and expertise to implement laws effectively.
>Monitoring and Accountability - Weak mechanisms to track progress and enforce compliance with legislation.

**Recommendations**
> To further strengthen the monitoring mechanisms for the implementation of strategies and identify bottlenecks.
> Allocate dedicated funding to priority sectors like waste management and renewable energy.
> Organize training programs for municipal staff and stakeholders to build capacity in law enforcement and policy implementation.

# Key issues, needs and challenges in the energy and climate

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The Office of the Prime Minister (OPM) has the coordinating role for the initiatives and obligations that the Government of Kosovo takes for integration into the European Union, where the Green Agenda is also negotiated. Accordingly, the obligations are undertaken by the line ministries responsible for their respective sectors. Therefore, the commitments outlined below belong to the Ministry of Economy (ME) and the Ministry of Environment, Spatial Planning and Infrastructure (MESPI).

**Table 2** outlines the key commitments made by the ME in relation to Kosovo's Green Agenda, detailing the planned actions, their current status, and timelines for implementation.

**Table 2**: ME commitments to Green Agenda implementation

| Commitments | Details | Status/Timeline |
|---|---|---|
| Energy Strategy Implementation | Approve and start the implementation of the Energy Strategy 2022-2031 in line with the European Green Deal and the Green Agenda for the Western Balkans. Ensure consistency with the draft National Energy and Climate Plan (NECP). | Approved; implementation is ongoing. |
| Legal Framework for Clean Energy | Establish a legal framework to address challenges for a clean energy landscape (Law on Renewable Energy Sources). | Approved in Q2/2024; completed. |
| Renewable Energy Auctions | Conduct transparent and competitive auctions for Renewable Energy Sources (RES) investments. Completion of the 100 MW solar auction and identifying locations for wind and solar energy projects. | 100 MW solar auction completed (Q1/2024); further auctions in progress. |
| Energy Storage Battery Project | Collaborate on the energy storage battery project funded by the Millennium Challenge Account (MCA). | Continuous. |
| 150 MW Wind Energy Project | Initiate the 150 MW wind energy project with IMF's Resilience and Sustainability Facility (RSF) funding under a Public-Private Partnership (PPP) scheme. | In progress; successful projects will receive a 15-year Power Purchase Agreement. |
| 100 MW Solar Energy Project | Implement the 100 MW solar energy project in accordance with the project development agreement within two years of contract signing. | Project to be commissioned within two years of agreement. |

Table 3 summarizes the commitments made by the MESPI, outlining the key actions aimed at improving environmental protection, air quality, waste management, and climate change strategies. Each action includes a timeline for completion or implementation.

**Table 3:** MESPI commitments to environmental and climate protection

| Commitments | Details | Status/Timeline |
|---|---|---|
| Law on Nature Protection | Finalize and adopt the Law on Nature Protection. | Expected by Q4/2024. |
| Law on Kosovo Waters | Adopt the draft Law on Kosovo Waters. | Expected by Q4/2024. |
| Action Plan for Air Quality | Adopt and implement the Action Plan for Air Quality. | Expected by Q4/2024. |
| Air Pollution Control Measures | Design measures to control air pollution in Pristina and other sensitive areas. | Expected by Q2024/4. |
| Waste Management Capacity Plan | Develop and start implementing a plan to improve institutional capacity for waste management legislation enforcement. | Expected by Q4/2024. |
| National Waste Management Strategy | Amend the strategy to include recycling targets, hazardous waste management, and inter-municipal cooperation. | Expected by Q4/2024. |
| EU Waste Stream Directives | Transpose EU waste stream directives into Kosovo's legislation. | Expected by Q4/2024. |
| Public Awareness Campaigns | Conduct continuous public awareness campaigns on environmental issues. | Ongoing; first phase Q4/2023. |
| Climate Change Strategy | Implement the climate change strategy and the action plan. | Ongoing. |
| Greenhouse Gas Inventory | Prepare an inventory of Greenhouse Gas emissions up to 2021. | Completed by Q2/2023. |
| Recycling Targets and Waste Management | Amend the national waste management strategy for recycling and hazardous waste management. | Expected by Q4/2024. |
| EU Waste Legislation Transposition | Transpose EU waste stream directives into national law. | Expected by Q4/2024. |

Providing reliable, affordable, and clean energy is essential to Kosovo's economic development and the social well-being of its citizens. The Government of the Republic of Kosovo is committed to applying a new planning approach to address the current challenges and to lay the foundation for the future of the country's energy sector which will increasingly provide security of electricity supply, clean energy, energy efficiency, and active citizen participation and support for vulnerable groups. Kosovo's power system will be integrated into the regional and pan-European market, while its independence will be progressively ensured through RES.

Market integration with the Republic of Albania is a high priority and especially important for Kosovo. The most important first step in this direction was the full operation of the Albanian Power Exchange (ALPEX), which was concluded in 2023, followed with further integration into the regional and panEuropean market by 2030.

Due to the lack of an adequate approach to developing professional capacities and appropriate investments over the last decades, **Kosovo's energy sector now faces major challenges**, including:

>Dependence on old lignite-based electricity generation capacities, which provide inadequate reliability and flexibility, and are a major source of GHG emissions and local pollution. Currently, the share of RES in the electricity sector is only 6.3%, with RES in the energy sector dominated by bio-mass based sources used in heating.

>High energy consumption (and therefore, energy-related expenditure) relative to both the GDP and the population, due to a range of factors, including high network losses and use of inefficient buildings and outdated technologies in both residential and commercial sectors (including for space and water heating).

>High reliance on individual household heating systems based on electricity or inefficient coal- or wood-burning equipment gives rise to both significant increases in the need for electricity imports and high GHG emissions and air pollution during the cold months.

High market concentration at both the wholesale and retail levels. High market concentration at both the wholesale and retail levels will be crucial to supporting Kosovo's broader efforts to improve energy efficiency, reduce GHG emissions, and increase the share of renewable energy in the overall energy mix.

## 3.1 Energy

Kosovo has adopted the **Energy Strategy 2022-2031**.[4] Kosovo vowed to provide reliable, affordable and clean energy to secure economic development and the well-being of citizens, who it said would be at the heart of its energy future. The government aims to reach 1.6 GW in renewable electricity capacity and introduce batteries of 340 MWh in total by 2031. It opted to reconstruct at least one unit of TC Kosovo A and two units of TC Kosovo B.

According to the **Progress Report for the years 2022-2023 for the implementation of the Energy Strategy**[5], the following achievements can be assessed:

**4** Ministry of Economy. Energy Strategy of Republic of Kosovo 2022-2031. Source: https://me.rks-gov.net/wp-content/uploads/2023/04/Energy-Strategy-of-the-Republic-of-Kosovo-2022-2031-1-1.pdf

**5** Progress Report for 2022 - 2023 of Kosovo Energy Strategy Implementation Program (KESIP) for the period 2022-2025. Source: https://me.rks-gov.net/wp-content/uploads/2024/05/Raporti-i-progresit-te-Zbatimit-te-PZSEK-

| Category | Achievements in 2022 | Achievements in 2023 |
|---|---|---|
| Distribution Network Investments | - Improved electricity supply quality and reduced network losses.<br>- Installed electricity meters for better measurement and billing. | - Strengthened medium and low voltage networks, converted from 10kV to 20kV.<br>- Further improvements in measurement accuracy and billing. |
| Information Technology (IT) Upgrades | - Enhanced data protection, cybersecurity, and company productivity through IT investments. | - Continued investments in IT for the distribution network, improving data protection and system reliability. |
| Energy Efficiency (EE) | - Implemented EE measures in public buildings, saving 0.78 ktoe/year.<br>- Expanded EE efforts to 26 multi-residential buildings, with expected savings of up to 30%. | - Achieved 1.67 ktoe/year in energy savings in public buildings.<br>- Continued EE support for vulnerable families and households. |
| Heating Sector | - Expanded and rehabilitated 17,834 meters of pipes in the "Termokos" network.<br>- Installed time meters and rehabilitated 355 substations in Gjakova. | - Continued rehabilitation and expansion of the Central Heating network in Pristina.<br>- Modernized Gjakova heating system and connected new public buildings. |
| Support for Vulnerable Consumers | - Provided subsidies for vulnerable families and support for electricity bills. | - Continued subsidies for vulnerable families and support for electricity bills. |
| Legal and Policy Infrastructure | N/A | - Approved several by-laws, including:<br>- Administrative Instruction No. 01/2023 (Promotion of RES use)<br>- Administrative Instruction No. 02/2023 (RES target)<br>- Secondary legislation for prosumers. |

**Table 4:** Key achievements in the implementation of Kosovo's Energy Strategy (2022-2023)

The achievement of objectives for 2022 was seventy-three-point seven percent (73.7%), while for 2023 the achievement of objectives was fifty-one-point eight percent (51.8%).[6]

**6** Progress Report for 2022 - 2023 of Kosovo Energy Strategy Implementation Program (KESIP) for the period 2022-2025. Source: https://me.rks-gov.net/wp-content/uploads/2024/05/Raporti-i-progresit-te-Zbatimit-te-PZSEK-se-2022-2023_ENG.pdf

**Table 5:** Achievements of the objectives 2022-2023:

| | 2022 | 2023 |
|---|---|---|
| Objective 1 - Improving system resilience | **59.2%** | **51.8%** |
| Objective 2 - Decarbonization and promoting renewable energy | **68.3%** | **51.3%** |
| Objective 3 - Increasing energy efficiency | **62.8%** | **51.0%** |
| Objective 4 - Strengthening regional cooperation and market functioning | **80.0%** | **60.0%** |
| Objective 5 - Protecting and empowering consumers | **98.0%** | **45.0%** |
| Total | **73.7%** | **51.8%** |

Source: Progress Report for the years 2022-2023 for the implementation of the Strategy of Energy

All Western Balkans economies including Kosovo have set forward-looking energy and climate targets in Nationally Determined Contributions (NDCs), government strategies or other relevant documents.

**Table 6:** 2030 energy and climate targets for the Western Balkans

| **Contracting party** | **Target for share of energy from renewable sources in gross final consumption of energy, 2030** | **Maximum share of primary energy consumption in 2030 (Mtoe)** | **Maximum share of final energy** consumption in 2030 | **Target for net Greenhouse Gas Emissions compared to 1990 levels and absolute emissions in 2030** |
|---|---|---|---|---|
| Albania | %52.0 | 2.60 Mtoe | 2.40 Mtoe | +53.2%12.00 MtCO2 eq |
| Bosnia and Herzegovina | %43.6 | 6.50 Mtoe | 4.34 Mtoe | -41.2% 15.65 MtCO2 eq |
| Kosovo | %32.0 | 2.70 Mtoe | 1.80 Mtoe | -16.3% 8.95 MtCO2 eq |
| Montenegro | %50.0 | 0.92 Mtoe | 0.73 Mtoe | -55.0% 2.42 MtCO2 eq |
| North Macedonia | %38.0 | 2.30 Mtoe | 2.00 Mtoe | -82.0% 2.20 MtCO2 eq |
| Serbia | %40.7 | 14.94 Mtoe | 9.54 Mtoe | -40.3% 47.82 MtCO2 eq |

Source: Source: Energy Community

Over 70 projects in the field of energy efficiency have been prepared by the Energy Efficiency Fund (EEF) and are expected to be realized in cooperation with the municipalities of Kosovo. A good example of this is the project for the implementation of EE measures in multi-residential social facilities during the year 2023. After the selection process, a total of 31 social housing facilities were selected in a total of 14 municipalities of the Republic of Kosovo.[7]

In 2023, electricity supply was primarily generated by thermal power plants, amounting to 5,859,662 GWh. The country imported 1,238.3 GWh of electricity while exporting 241.3 GWh, resulting

**7** Three in Skenderaj, 1 in Malishevë, 2 in Drenas, 2 in Gjilan, 1 in Istog, 2 in Obiliq, 3 in Kamenica, 2 in Suharekë, 3 in Viti, 4 in Pristina, 2 in Klina, 2 in Mitrovica, 1 in Lipjan and 3 in Prizren.

in total energy consumption of 1,577.9 ktoe.

For comparison, in 2022, total energy demand stood at 6,547 GWh. Breaking down the figures for 2022:

**>Production** 6,147 GWh from transmission generators and 168 GWh from distribution generators.

**>Imports** 761 GWh, bringing the total available energy to 7,076 GWh.

**>Exports** 787 GWh, with a net import/export balance of 26 GWh.
System Deviations: 186 GWh was taken off the system, while 2,475 GWh was used for transit.

**>System Deviations** 186 GWh was taken off the system, while 2,475 GWh was used for transit.

**>Demand** National demand reached 6,547 GWh.

**>Losses** Transmission losses amounted to 118 GWh, and distribution losses were 1,403 GWh.

**>Consumption** Customers in the transmission network consumed 132 GWh, LLOMAG consumption stood at 101 GWh, and the load in the distribution at 4,794 GWh.

**Tab 7**: Maximum load Pmax (MW)

| Maximum load Pmax (MW) | Date | Time |
|---|---|---|
| 1,429 | **24.01.2022** | **23:00** |
| 1,389 | **26.01.2022** | **23:00** |
| 1,375 | **13.01.2022** | **18:00** |
| 1,349 | **22.01.2022** | **24:00** |
| 1,341 | **12.01.2022** | **19:00** |

Source: Energy Regulatory Office, Annual Report 2022

In 2023, **lignite production** totaled 6.924 million tons, while consumption reached 7.437 million tons. Both figures were lower than in 2022.[8] **Renewable Energy Source** (RES) production connected to the transmission network in 2023 amounted to 581.2 GWh, reflecting a 23.8% increase compared to 2022. RES production connected to the distribution network was 186.4 GWh, an 11.12% increase from the previous year.[9]

Regarding **thermal power plant operations** in 2023, units B1 and B2 operated approximately 70% of the time, while units A3, A4, and A5 operated at 62%, 76%, and 52% respectively. For comparison, units B1 and B2 operated around 86% of the time in 2022 and 84% in 2021.[10]

In terms of **electricity generation**, per capita electricity generation in 2023 was 3,823 kWh, down from 4,163 kWh in 2022. Total electricity generation in 2022 was 6.91 TWh, whereas in 2023 it decreased to 6.36 TWh.[11]

According to the Energy Community,

**8** Energy Regulatory Office. Annual Report 2023. Source: https://www.ero-ks.org/zrre/sites/default/files/Publikimet/Raportet%20Vjetor/01.%20Raporti%20vjetor%202023_Final%20(2)%20-%20ANG.BA.pdf

**9** Energy Regulatory Office. Annual Report 2023. Source: https://www.ero-ks.org/zrre/sites/default/files/Publikimet/Raportet%20Vjetor/01.%20Raporti%20vjetor%202023_Final%20(2)%20-%20ANG.BA.pdf

**10** Energy Regulatory Office. Annual Report 2023. Source: https://www.ero-ks.org/zrre/sites/default/files/Publikimet/Raportet%20Vjetor/01.%20Raporti%20vjetor%202023_Final%20(2)%20-%20ANG.BA.pdf

**11** Energy Regulatory Office. Annual Report 2023. Source: https://www.ero-ks.org/zrre/sites/default/files/Publikimet/Raportet%20Vjetor/01.%20Raporti%20vjetor%202023_Final%20(2)%20-%20ANG.BA.pdf

approximately 40% of households in Kosovo experience **energy poverty**. The causes range from low incomes, poor-quality housing, energy-inefficient appliances, and an inability to adapt to energy tariff changes. This results in reduced living standards and negative health outcomes for affected citizens.[12]

During the 2022/2023 season, **thermal energy** extracted from co-generation was 308,156 MWhTH, a 5% increase (13,783 MWhTH more) from the previous season, which saw 294,373 MWhTH.[13]

Thermal energy losses in the transmission network of PP Kosova B and THP Termokos during the period from October 2022 to April 2023 amounted to 6,136 MWhTH, or about 2%, with loss levels remaining consistent with the previous season.[14]

In 'Termokos' public enterprise, **the number of metered customers** reached 143, mostly commercial and institutional users. Billing during the 2022/2023 season increased by €1,209,796 (16%) compared to the 2021/2022 season, reaching a total of €8,696,879. Of this, 33% (€2,908,841) was billed through metering, while 67% (€5,788,038) was billed without metering.[15]

**Tab 8:** Energy consumption and Efficiency Metrics: 2020-2022

| Metric | 2020 | 2021 | 2022 |
|---|---|---|---|
| Energy Consumption | - | 5,117 GWh | - |
| Primary Energy Consumption | - | 2.8 tonnes | - |
| Final Energy Consumption | - | 1.7 tonnes | - |
| Final Energy Consumption in Households (per capita) | 340 ktoe | - | - |
| Final Energy Consumption by Product | - | - | 1,486.983 |
| Final Energy Consumption in Households by Type of Fuel | – | – | 555.070 |
| Final Energy Consumption in Transport by Type of Fuel | – | – | 430.051 |
| Final Energy Consumption in Industry by Type of Fuel | – | – | 19.359 |
| Share of Renewable Energy in Gross Final Energy Consumption (sector) | – | – | 2.351 |
| Energy Intensity (in the region and EU) | - | - | EU: 107.42<br>WB:6<br>356.49 |

Source: Eurostat, https://ec.europa.eu/eurostat/web/energy/database

**12** GIZ. Impact Assessment of Energy Poverty on Vulnerable Groups in Kosovo. 2022. Source: https://www.giz.de/de/downloads/giz2023-en-factsheet-energy-poverty.pdf

**13** Energy Regulatory Office . Annual Report 2023. Source: https://www.ero-ks.org/zrre/sites/default/files/Publikimet/Raportet%20Vjetor/01.%20Raporti%20vjetor%202023_Final%20(2)%20-%20ANG.BA.pdf

**14** Energy Regulatory Office . Annual Report 2023. Source: https://www.ero-ks.org/zrre/sites/default/files/Publikimet/Raportet%20Vjetor/01.%20Raporti%20vjetor%202023_Final%20(2)%20-%20ANG.BA.pdf

**15** Energy Regulatory Office . Annual Report 2023. Source: https://www.ero-ks.org/zrre/sites/default/files/Publikimet/Raportet%20Vjetor/01.%20Raporti%20vjetor%202023_Final%20(2)%20-%20ANG.BA.pdf

**BGF Assessment and Recommendations**
>Insufficient or lack of data on energy consumption patterns by sectors (household, transport and industry).

>Lack of metrics for energy efficiency across industries and buildings.

>The discrepancies in data related to energy efficiency in Kosovo stem from insufficient monitoring, outdated technologies, and a lack of systematic reporting across buildings, industries, and public infrastructure.

>To establish a centralized, sector-specific energy data collection and monitoring framework. This system should track energy consumption patterns across households, transport, and industry to enable more informed decision-making and policy development.

>To create and adopt standardized metrics for measuring energy efficiency in industries, buildings, and public infrastructure. This will help identify energy-saving opportunities, set benchmarks, and track progress toward national energy efficiency goals.

>To invest in modern technologies, such as smart meters and energy management systems, to improve the accuracy and frequency of data collection. To prioritize deployment in high-consumption sectors like industrial facilities and public institutions.

## 3.2 Climate

Kosovo's progress in climate and decarbonization was limited. However, a key achievement was the approval of the Energy Strategy 2022-2031, which lays out ambitious goals for Kosovo's energy transition. The strategy includes the following targets:

>Renovation of thermal power plants: two units of the "Kosova B" Power Plant and at least one unit of "Kosova A" will be renovated, increasing production capacity by at least 540 MW (base load) and 360 MW (reserve capacity).

>Renewable Energy Sources (RES Goals by 2031:
At least 35% of Kosovo's energy consumption will come from renewable sources.

- 1,600 MW of RES energy will be generated through new power plants, including:
- 600 MW from wind,
- 600 MW from solar,
- 20 MW from biomass,
- 100 MW from self-generating users.

Climate change has already become a threat to the environment, human health and the economy, even in Kosovo. More and more, they are causing problems to communities, damage to homes, businesses and agriculture. It is important to start taking steps to combat climate change, to protect the environment, to push economies to build a low carbon economy and high productivity, but also to make planning to adapt to climate change, ensuring communities to face with Climate Change.

Kosovo's parliament has adopted the first Law on Climate Change in 2024, envisaging a range of activities including the development of a long-term decarbonization strategy and a system for monitoring, reporting and verifying GHG emissions.

The first Law on Climate Change is aimed at improving environmental protection through the prevention and control of GHG emissions from a wide range of industrial, transportation, agricultural and other sources.

The law aims to identify issues and challenges for improving secondary legislation on climate change through the transposition of the European Union's legislation – Regulation on the Governance of the Energy Union and Climate Action, taking into account Kosovo's commitment to align its legislation with the EU and implement it in line with the Stabilization and Association Agreement with the EU.

The Energy Community Secretariat said the adoption of the law is an important step towards the fulfillment of Kosovo's climate obligations in line with the adapted

Governance Regulation, adding that crucial elements of the regulation have been reflected, along with the secretariat's engagement.

However, an opportunity has been missed to include all the 2030 Energy Community climate and energy targets as well as the 2050 national level climate neutrality objective. Enshrining them in national law would further enhance Kosovo's commitment to combating climate change.[16]

According to the Kosovo Agency of Statistics,[17] 75% of CO2 emissions in 2020 came from the electricity, gas, steam, and air conditioning supply sector.

**The main air pollutants in 2020 were:**

-CO2: 8,409 Gg,
-CH4: 23.44 Gg,
-Bio CO2: 3.338 Gg,
-N2O: 1.99 Gg.

The sectors with the highest CO2 emissions were:

-Sector D (electricity, gas, steam, air conditioning supply): 6,294 Gg (75% of total),
-Sector C23 (other non-metallic mineral products): 296.46 Gg,
-Sector C24/C25 (basic metal production and fabricated metal products): 181.88 Gg.

Kosovo has experienced changes in climate indicators between 2022 and 2023, as shown below:

**Tab 9:** Climate indicators in Kosovo (2022-2023)

| Indicator | 2022 | 2023 | Change |
|---|---|---|---|
| Rainy days in Pristina | 135 days | 156 days | +15.6% |
| Average maximum temperature (July) | 30.5 °C | 30.1 °C | - 0.4 °C |
| Average maximum annual temperature | 18.3 °C | 18.9 °C | +0.6 °C |
| Average minimum annual temperature | 6.1 °C | 6.6 °C | +0.5 °C |

Source: Hydrometeorological Institute of Kosovo, https://ihmk-rks.net/?page=2,3

These temperature increases, combined with more rainfall, reflect ongoing climate variability, posing risks for agriculture, infrastructure, and health.

In 2022, 99.83% of Kosovo's population was supplied with water through the public system, managed by the Regional Water Companies. However, 0.17% of the population still lacked access to public water services.[18]

The Industrial Waste Survey 2022[19] revealed that industrial waste generation increased by 53.1% compared to 2021, reaching 3,389,988 tons. **The largest contributors were:**

- Sector D (Electricity, gas, steam, air conditioning supply): 2,795,809 tons (120.5% increase),
- Sector C (Production): 335,452 tons (3% increase).

**16** Balkan Green Energy News. Source: https://balkangreenenergynews.com/kosovo-adopts-first-law-on-climate-change/

**17** Kosovo Agency of Statistics. Source: https://ask.rks-gov.net/Releases/Details/7754

**18** Water Services Regulatory Authority. Annual Performance Report for Regional Water Companies in Kosovo. 2022. Source: https://www.arru-rks.org/assets/cms/uploads/files/Monitorimi%20i%20Performances/KRU-Raporti%20Vjetor%20i%20Peformances%202022_Eng.pdf

**19** Kosovo Agency of Statistics. Industrial Waste Survey. 2022. Source: https://ask.rks-gov.net/Releases/Details/7739

Meanwhile, the total amount of waste processed in 2022 was 3,390,096 tons, an increase of 53.2% compared to 2021.

**The National Energy and Climate Plan** (NECP) marks a significant milestone in Kosovo's efforts to integrate and harmonize its climate, energy, and environmental policies.[20]

This comprehensive framework serves not only to summarize a range of existing policies but also acts as a critical mechanism to ensure these policies are aligned toward a unified national goal.

In line with this, the government has also adopted the **Climate Change Strategy 2019-2028**[21], which represents a foundational step in managing GHG emissions and adapting to climate change over the next decade. The strategy outlines both mitigation and adaptation measures aimed at promoting sustainable development and enhancing Kosovo's resilience to climate change impacts.

Kosovo's emissions have steadily increased[22], presenting a challenge for the country's environmental and economic stability:

-Total GHG emissions in 2008 were 9.5 Mt CO2 equivalent. By 2015, emissions had risen by 5.2%, reaching 10 Mt CO2 equivalent, largely driven by increased fossil fuel use.

-Emissions per capita in 2015 stood at 5.5 t CO2 per annum, which is just over half the EU average of 9.93 t CO2. However, emissions per unit of GDP were 0.56 kg CO2 per EUR, almost double the EU average of 0.4 kg CO2 per EUR.

These statistics highlight the economic and social challenges Kosovo faces, as it deals with relatively low but growing emissions, combined with lower GDP per capita. This situation underscores the importance of the principle of common but differentiated responsibility, as defined in Article 3.1 of the United Nations Convention on Climate Change (UNFCCC).

Kosovo is already experiencing the effects of climate change, and future impacts are expected to worsen, including:

- Increased frequency of natural hazards: such as droughts, floods, and forest fires, as climate variability intensifies.
- Higher temperatures: are expected to lead to more frequent heatwaves and an increase in forest fires, a trend already noticeable since 2000.
-Water scarcity: due to more uncertain rainfall patterns, reduced runoff, and heightened demand for water resources, which could exacerbate drought risks.
-Ecosystem degradation: leading to reduced ecosystem services and loss of biodiversity.
-New pollution threats: including emerging forms of pollution and an increase in water-related diseases.
-Kosovo must act swiftly to address these risks by implementing mitigation measures, promoting sustainable development, and preparing for the impacts of climate change.

**BGF Assessment and Recommendations:**

>Lack of sector-specific vulnerability assessments (agriculture, water and infrastructure).

>Lack of historical and future natural disaster risk data such as floods, droughts, etc.

>Lack of detailed, regularly updated emissions inventory (sector-specific).

>Lack or limited data on emissions from smaller sectors (e.g. waste management, land-use change).

**20** The National Energy and Climate Plan 2025-2030. Source: The Energy Community Secretariat

**21** Climate Change Strategy 2019-2028. Source: https://gzk.rks-gov.net/ActDocumentDetail.aspx?ActID=29356

**22** USAID. Greenhouse Gas Emissions in Kosovo. 2017. Source: https://www.climatelinks.org/sites/default/files/asset/document/2017_USAID_GHG%20Emissions%20Factsheet_Kosovo.pdf

>To conduct comprehensive vulnerability assessments for agriculture, water, and infrastructure sectors to identify specific risks and enhance sectoral resilience planning.

>To establish a national disaster risk data management system to compile, analyze, and regularly update historical and projected data on floods, droughts, and other natural hazards.

>To develop a centralized, sector-specific emissions inventory system that is updated annually to track progress and guide targeted emission reduction strategies.

>To implement mandatory reporting and monitoring frameworks for smaller sectors to ensure their emissions are accurately recorded and integrated into national climate policies.

## 3.3 Transport

Infrastructure maintenance, digitization, and regional cooperation remain key challenges in Kosovo's infrastructure sector. While some progress has been made, especially with the establishment of a national investigation body for rail transport, most advancements have occurred in road transport, with relatively little attention given to rail.

In May 2023, Kosovo approved the **Multimodal Transport Strategy**, which is expected to address challenges across various transport modes.[23]

Kosovo's **road infrastructure** includes:

- 650 km of primary roads,
- 1,310 km of secondary roads, and
- 6,000 km of local roads.[24]

By contrast, **air transport** shows notable growth. Pristina International Airport saw an increase in passenger numbers, rising from 2.99 million in 2022 to 3.42 million in 2023.

The volume of cargo transported, however, remains relatively low, at around half a million tons.[25]

In terms of **vehicle registrations,** Kosovo registered 460,105 motor and non-motor vehicles in 2023, reflecting a 9.3% increase compared to the previous year.[26] From 2021 to 2023, 585 electric cars were imported, signaling a shift toward more environmentally friendly transport options.[27]

**Tab 10:** Key transport and vehicle statistics for Kosovo (2022-2023)

| Year | Motor & Non-Motor Vehicles Registered | Increase in Vehicle Registrations (%) | Electric Cars Imported | Passengers at Pristina Airport (millions) |
|---|---|---|---|---|
| 2022 | - | - | - | 2.99 |
| 2023 | 460,105 | %9.3 | 585 | 3.42 |

**23** Ministry of Environment, Spatial Planning and Infrastructure. Multimodal Transport Strategy 2023-2030. Source: https://mit-ks.net/repository/docs/2024_05_13_195148_STMM_SHQIP.pdf

**24** Kosovo Agency of Statistics. Source: https://askdata.rks-gov.net/pxweb/sq/ASKdata/ASKdata__Transport__Annual%20indicators/tr06.px/

**25** Civil Aviation Authority. Source: https://caa.rks-gov.net/category/statistika/

**26** Kosovo Agency of Statistics. Source: https://ask.rks-gov.net/Publication/Details/7882

**27** Kosovo Customs. Source: https://dogana.rks-gov.net/OpenData/Index?id=4

The current **ecological tax** in Kosovo is a flat rate of 10 euros for all vehicles, collected as part of the annual registration process. However, to support the transition to electric mobility, Kosovo needs to gather more detailed data on public transport usage, infrastructure capacity, economic feasibility, and public attitudes toward sustainable transport. Closing these data gaps will help inform policy and drive investments in alignment with Kosovo's decarbonization and climate goals.

**BGF Assessment and Recommendations**:
>There is a lack of detailed data on public transport usage, infrastructure capacity, economic feasibility, and public attitudes, which hampers effective planning and investment in sustainable transport solutions.
>Introduce targeted incentives, such as reduced ecological taxes and subsidies for electric vehicles, to accelerate the transition to electric mobility and decrease reliance on fossil fuels.

## 3.4 Circular economy

Kosovo has undertaken an ambitious transition toward a circular economy, aiming to preserve its natural environment and rich biodiversity, valorize its resources and talent, and contribute to a more resilient and regenerative economy. This shift also seeks to create a society where everyone has the opportunity for a better quality of life.

An important milestone in this journey was the adoption of the **Circular Economy Roadmap**[28] in March 2023, which laid the groundwork for a deeper understanding of Kosovo's unique strengths, capabilities, and opportunities that can drive this transformation. The roadmap sets the stage for Kosovo to move toward a more sustainable and circular economic model.

**The National Development Strategy 2030**[29] (NDS) emphasizes the goal of developing a competitive, internationally integrated circular economy, driven by innovation and digitalization. Currently, Kosovo's economic performance is limited, with a GDP per capita of €3,772 and exports comprising only 21.6% of GDP. The economy is also marked by high CO2 intensity (0.47 kg of CO2 per unit of PPP-adjusted GDP), low gross value added from circular economy-related sectors (just 0.8% of GDP), and limited digitalization uptake, with an intensity score of 35.7, which is only half the EU average.[30]

According to the **Strategy for Industrial Development and Business Support 2030**[31], the objective is to facilitate the growth of green industries. One of the key indicators is the gross value added in circular economy-related sectors, which stood at 0.8% of total GDP in 2020, with a target of reaching 1.0% by 2026.

**BGF Assessment and Recommendations:**
>Lack of data on initiatives for youth engagement and green business ideas supported.

>Lack of data on methane emissions from landfills and waste treatment facilities.
>Lack of data on recycling, composting and waste management efficiency.

>Lack of data on investments in circular economy infrastructure and waste reduction initiatives.

**28** Ministry of Environment, Spatial Planning and Infrastructure. Circular Economy Roadmap of Kosovo. 2023. Source: https://mmphi.rks-gov.net/MMPHIFolder/DocumentsFiles/2023_8171e270-643b-4de3-9387-91794084eb8b.pdf

**29** Office of Prime Minister. National Development Strategy 2030. Source: https://kryeministri.rks-gov.net/en/national-development-strategy-2030/

**30** Ministry of Industry, Entrepreneurship and Trade. Strategy for Industrial Development and Business Support 2030. Source: https://mint.rks-gov.net/desk/inc/media/242E31B4-01F1-461C-A4FA-911B8E66E9BD.pd

**31** Ministry of Industry, Entrepreneurship and Trade. Strategy for Industrial Development and Business Support 2030. Source: https://mint.rks-gov.net/desk/inc/media/242E31B4-01F1-461C-A4FA-911B8E66E9BD.pdf

>To establish a centralized database to track and report youth-led green initiatives and green business support programs, ensuring better monitoring and promotion of youth engagement.

>To implement a methane emissions monitoring system for landfills and waste treatment facilities to collect and report accurate emissions data, supporting targeted mitigation efforts.

>To introduce standardized reporting requirements for municipalities and waste management operators to regularly report data on recycling, composting, and waste management efficiency.

>To develop an investment tracking system to monitor and evaluate funding and progress in circular economy infrastructure and waste reduction projects, enabling data-driven policy decisions.

## 3.5 Inclusion

The successful implementation of the Green Agenda relies on the active involvement of diverse population groups, including youth, women, and other vulnerable communities. Empowering these groups not only strengthens social equity but also enhances the effectiveness and sustainability of green initiatives.

Youth engagement is crucial for innovation, as young people bring new perspectives and energy to climate action. Educational programs, skill-building workshops, and participatory platforms should be prioritized to equip them with the tools to contribute meaningfully to the Green Agenda.

Through the RECONOMY program, Helvetas is actively transforming the construction sector by promoting energy-efficient technologies and eco-friendly building materials. One initiative involves establishing Green Building Councils that drive industry-wide standards and open doors to green jobs for women and youth. These councils are structured following well-established models, such as the Croatian one, and have clearly defined services for their members and focus activities. Given construction's impact on land use, waste production and energy, this initiative doesn't just improve Kosovo's infrastructure—it helps steer the entire region toward a low-carbon economy.

Helvetas has further invested in building a skilled workforce for Kosovo's expanding renewable energy sector. With demand for trained professionals in solar and wind energy anticipated to grow 25-30% annually, Helvetas, through the Enhancing Youth Employment (EYE) project, partnered with ELING, a leader in solar installations, to create the first solar panel installation training program in the country.

The program is designed to increase diversity within the renewable energy field, equipping participants—particularly women—with both theoretical and hands-on training. The project plans to train up to 100 individuals annually, fostering an inclusive, skilled workforce ready to lead Kosovo's green energy transition.[32]

Similarly, ensuring gender equality is essential. Women often play a central role in resource management, particularly in agriculture and rural areas. However, they face systemic barriers to participation in policy and decision-making processes. Inclusive policies that support women-led initiatives and provide access to green financing and entrepreneurship opportunities are vital for sustainable development.

Lastly, other vulnerable groups, such as those affected by poverty or disabilities, must be included through targeted interventions. These might involve affordable access to renewable energy, vocational training in green sectors, and active consultation in policy frameworks to ensure no one is left behind.

**32** HELVETAS, https://www.helvetas.org/en/switzerland/how-you-can-help/follow-us/blog/sustainable-economy/building-a-greener-kosovo-a-path-to-sustainable-growth

**BGF Assessment and Recommendations:**
>Lack of data on the participation rates of youth, women, and vulnerable groups in green economy initiatives, decision-making processes, and green entrepreneurship activities.

>Limited initiatives targeting women-led businesses and youth-driven innovations within the green economy sectors such as renewable energy, circular economy, and sustainable agriculture.

>Gaps in educational and capacity-building programs designed specifically to empower these groups to actively contribute to the Green Agenda.

>Insufficient financial support mechanisms for marginalized groups to access green technologies or start green enterprises.

>To develop a data collection framework to systematically track and report the participation of youth, women, and vulnerable groups in green economy initiatives, decision-making, and entrepreneurship.

>To launch targeted programs that provide technical and financial support to women-led businesses and youth-driven innovations in renewable energy, circular economy, and sustainable agriculture.

>To design and implement specialized educational and capacity-building programs focused on equipping youth, women, and vulnerable groups with the skills needed to contribute to the Green Agenda.

>To establish dedicated green finance schemes, such as grants and low-interest loans, to enable marginalized groups to adopt green technologies and launch sustainable enterprises.

## 3.6 Waste management

In August 2022, Kosovo's Assembly approved the **Law on Waste**[33], aligning the country's legal framework with the European Directive on Waste Management. However, the implementation of this law has been slow. Despite their significant environmental impact, the coal ash storage lake of the Kosovo Energy Company and the Mirash landfill in Obiliq remain operational.

According to reports from municipalities and waste operators[34], 462,809,790 tons of waste were collected in 2022. Based on the population served, the national waste generation rate was calculated at 0.65 kg per capita per day, or 238.36 kg per capita per year[35]. This marks a decrease from the 13.76 kg per capita per year reported in 2021.[36]

In 2022, the amount of waste deposited compared to 2021 in the total of all landfills has marked an increase of 12,932.36 tons, or expressed as an increase of 2.6%.

In the landfills managed by CLMK, the amount of waste deposited for 2022 is 386533.29 tons/year, marking an increase of only 2.8% compared to 2021. Meanwhile, in other sanitary landfills managed by RWCs, the amount of waste deposited is 116,354.49 tons/year, or 2% more compared to 2021.
In total, the amount of municipal waste deposited in sanitary landfills reaches

**33** Ministry of Environment, Spatial Planning and Infrastructure. Law No.08/L-071 on Amending and Supplementing the Law No.04/L-060 on Waste. 2022. Source: https://gzk.rks-gov.net/ActDetail.aspx?ActID=62435

**34** Kosovo Environmental Protection Agency. Report of the Municipal Waste Management in Kosovo. 2024. Source: https://www.ammk-rks.net/assets/cms/uploads/files/REPORT%20OF%20THE%20MUNICIPAL%20WASTE%202022.pdf

**35** Kosovo Environmental Protection Agency. Report of the Municipal Waste Management in Kosovo. 2024. Source: https://www.ammk-rks.net/assets/cms/uploads/files/REPORT%20OF%20THE%20MUNICIPAL%20WASTE%202022.pdf

**36** Kosovo Environmental Protection Agency. Report of the Municipal Waste Management in Kosovo. 2024. Source: https://www.ammk-rks.net/assets/cms/uploads/files/REPORT%20OF%20THE%20MUNICIPAL%20WASTE%202022.pdf

502,887.72 tons/year, with an increase of about 2.6%, respectively 12,932.19 tons more waste than in 2021.

While there is some recycling activity in Kosovo, municipalities have been unable to provide precise data on the extent of these efforts. Private companies are known to recycle materials such as nylon, plastic, and metals, though much of this waste is collected informally, making it difficult to accurately estimate the amount being recycled.

**BGF Assessment and Recommendations:**
>Kosovo lacks detailed data on the overall efficiency of its waste management systems. This includes information on the collection, sorting, treatment, and disposal processes, which is crucial for optimizing operations and reducing environmental impact.

>There is a lack of detailed data on waste generation categorized by households, industries, and other sectors.

>Kosovo lacks comprehensive data on the generation, treatment, and disposal of hazardous waste.

>To implement a national waste management monitoring system to track and report data on collection, sorting, treatment, and disposal processes, improving operational efficiency and reducing environmental impact.

>To establish a sector-specific waste data reporting framework to categorize and analyze waste generation from households, industries, and other sectors, enabling targeted waste reduction strategies.

>To develop a hazardous waste tracking system that records data on the generation, treatment, and disposal of hazardous materials to ensure proper management and compliance with environmental standards.

## 3.7 Water

Kosovo's hydrography is a valuable natural resource, consisting of both surface water and groundwater. The geological composition of the soil and geographical structure largely determine the natural distribution of the hydrographic network. Kosovo is home to a diverse network of rivers, both large and small, as well as artificial and natural water accumulations. However, water resources are unevenly distributed across the country, with studies indicating that the Dukagjini Plain has richer water resources compared to other regions.

The regional water companies (RWCs) vary in their coverage of water supply services[37], as is shown in the table below.

**Table 11:** Water supply and sewerage coverage by RWCs

| RWC | Water Supply Coverage | Sewerage Coverage |
|---|---|---|
| Gjakova | 99% | - |
| Prishtina | 83% | 79% |
| Peja | 85% | - |
| Hidromorava | 61% | - |
| Hidroregjioni Jugor | 66% | - |
| Bifurkacioni | - | 74% |
| Hidrodrini | - | - |

**37** Water Services Regulatory Authority. Annual Performance Report for Regional Water Companies in Kosovo - 2022. 2023. Source: https://www.arru-rks.org/assets/cms/uploads/files/Monitorimi%20i%20Performances/KRU-Raporti%20Vjetor%20i%20Peformances%202022_Eng.pdf

The condition of Kosovo's sewerage infrastructure remains inadequate, with 35% of the population still not connected to the system[38]. Out of 156.8 million cubic meters of water distributed by the RWCs, around 75% is discharged untreated into rivers, posing a serious threat to both the environment and public health. Wastewater service coverage has stagnated, with only 65% of the population receiving these services. The coverage has remained unchanged at most RWCs, except for RWC 'Prishtina'. RWCs 'Hidrodrini' and 'Hidromorava' have particularly low service levels, indicating significant room for improvement, while RWC 'Prishtina' and 'Bifurkacioni' show better coverage rates of over 79% and 74%, respectively.[39]

Orthophosphate levels were found in significant quantities, particularly in the Sitnica River at two sampling locations. The highest concentration was recorded in the village of Hallaq during autumn, at 1.42 mg/L P-PO4. During the spring, the Mirusha River exhibited the highest orthophosphate values, reaching 1.36 mg/L. The river Lumbardhi of Prizren showed the highest values of BOD5, with 62.6 mg/L in the spring and 102.5 mg/L in autumn. Similarly, the Mirusha River in Gjilan recorded BOD5 levels of 53.6 mg/L in spring and 115 mg/L in autumn.[40]

In 2019, household water supply amounted to 49,014,648 cubic meters, while institutions consumed 6,922,027 cubic meters. Water usage for irrigation reached approximately 70 million cubic meters. Large industrial enterprises, which use water for technological processes, cooling, sanitation, and other needs, account for more than 30% of total water consumption in Kosovo.[41]

Kosovo has yet to develop a comprehensive wastewater treatment system, though wastewater treatment plants are currently under construction. According to the Water Services Regulatory Authority (WSRA), wastewater collection services within RWC service areas covered 65% of the population in 2022.[42]

**BGF Assessment and Recommendations:**

>Gaps in detailed monitoring of air pollution sources such as industry, transportation, household and energy use.

>Lack of data on water quality, contamination levels, and sources of water pollution.

>Lack of soil pollution data related to agriculture and industry, affecting both public health and agricultural productivity.

>To establish an integrated air quality monitoring network that tracks pollution from industry, transportation, household, and energy sources to enable targeted mitigation strategies.

>To implement a comprehensive water quality monitoring system that regularly assesses contamination levels and identifies pollution sources to improve water resource

**38** Water Services Regulatory Authority. Annual Performance Report for Regional Water Companies in Kosovo - 2022. 2023. Source: https://www.arru-rks.org/assets/cms/uploads/files/Monitorimi%20i%20Performances/KRU-Raporti%20Vjetor%20i%20Peformances%202022_Eng.pdf

**39** Water Services Regulatory Authority. Annual Performance Report for Regional Water Companies in Kosovo - 2022. 2023. Source: https://www.arru-rks.org/assets/cms/uploads/files/Monitorimi%20i%20Performances/KRU-Raporti%20Vjetor%20i%20Peformances%202022_Eng.pdf

**40** Let's Do It Peja. Surface Water Quality in the Four River Basins of Kosovo - Areas Signaled by the Community. 2023.

**41** Kosovo Environmental Protection Agency. The State of Water in Kosovo. 2020. Source: https://www.ammk-rks.net/assets/cms/uploads/files/ANGLISHT_WEB_uji(1).pdf

**42** Kosovo Environmental Protection Agency. Annual Report on the State of Environment. 2023. Source: https://www.ammk-rks.net/assets/cms/uploads/files/ANNUAL%20REPORT%20on%20the%20State%20of%20the%20Environment%202022%20ENG%20-%20Final.pdf

management and public health.

>To conduct regular soil contamination assessments in agricultural and industrial areas to monitor pollution levels and inform policies that protect public health and agricultural productivity.

## 3.8 Sustainable food systems and rural areas

The food system encompasses "the chains of market and non-market activities and actors involved in food production, aggregation, transportation and storage, processing, catering, distribution, preparation, and consumption."

A significant challenge over the last decade has been transforming conventional food systems into those that are both sustainable and inclusive. This challenge is also present in Kosovo, where the food system faces several obstacles, including a lack of monitoring of food production, the prevalence of highly processed foods that do not support a healthy and nutritious diet, and inadequate food waste management, among others.[43]

**BGF Assessment and Recommendations:**
>Insufficient systems to track and monitor food production processes hinder the ability to ensure food safety, quality, and sustainability throughout the supply chain.

>The widespread consumption of highly processed foods contributes to poor dietary habits, reducing access to healthy and nutritious diets.

>Limited infrastructure and strategies for managing food waste lead to inefficiencies, environmental impacts, and missed opportunities for resource recovery and redistribution.

>To implement a centralized system to monitor food production, ensuring quality, safety, and sustainability from farm to table.

>To launch awareness campaigns and policy incentives to encourage the production and consumption of minimally processed, nutrient-rich foods.

>To establish programs for food waste reduction, recycling, and redistribution, involving public-private partnerships to minimize environmental impacts and improve food security.

## 3.9 Agriculture

Agriculture plays a vital role in Kosovo, particularly for the country's rural population. More than half of Kosovo's land is agricultural, providing the majority of food and employment for rural communities, primarily through small family plots used for subsistence farming.[44] Agriculture contributes 7.4% to Kosovo's GDP, equivalent to €658 million. In 2022, according to the Kosovo Agency of Statistics (KAS), the utilized agricultural area totaled 420,482 hectares.[45] The majority, 51.6%, is composed of meadows and pastures, followed by 44.8% arable land. Gardens, tree plantations, vineyards, and nurseries make up the remaining 3.6% (or 15,079 hectares).[46][47]

**43** INDEP. Kosovo's Food System: Its Sustainability and Missing Policies. 2021. https://indep.info/wp-content/uploads/2021/11/INDEP_KAS_Sistemi-ushqimor-i-Kosoves-ENG.pdf

**44** Ministry of Agriculture, Forestry and Rural Development. Green Report 2023. Source: https://www.mbpzhr-ks.net/repository/docs/Green_Report_2023.pdf

**45** Ministry of Agriculture, Forestry and Rural Development. Kosovo Agriculture in Numbers. 2023. https://www.mbpzhr-ks.net/repository/docs/Kosovo_Agriculture_in_numbers_2023.pdf

**46** Ministry of Agriculture, Forestry and Rural Development. Kosovo Agriculture in Numbers. 2023. https://www.mbpzhr-ks.net/repository/docs/Kosovo_Agriculture_in_numbers_2023.pdf

**47** Ministry of Agriculture, Forestry and Rural Development. Kosovo Agriculture in Numbers. 2023. https://www.mbpzhr-ks.net/repository/docs/Kosovo_Agriculture_in_numbers_2023.pdf

In 2022, plant production was valued at €654 million, reflecting a 23% increase compared to 2021 (€532 million). This growth was driven by the increased value of cereals, forage plants, vegetables, garden products, fruit trees, and potatoes. On the other hand, livestock products reached a value of €315 million, representing a 14% increase compared to 2021 (€277 million).[47]

ORGANIKA, the only association in Kosovo that supports its members in obtaining organic certification, was established in 2013 and currently has 32 members, including 28 organic-certified companies.[48] Most of Kosovo's organic-certified products are Non-Wood Forest Products (NWFP).[49] While exports consist primarily of semi-processed goods or raw materials, only 9% of organic products are exported as fully processed and packaged goods ready for end-consumers. Fertilizers and soil improvers account for 12% of organic exports.[50]

Between 2016 and 2022, 833,326 hectares of agricultural land were treated with pesticides.[51] In 2019, agriculture accounted for 8% (or 706 thousand tonnes CO2 equivalent) of total GHG emissions.[52] The main contributors to these emissions in 2019 were:

>Enteric fermentation (animal digestive processes) – 67%;

>Emissions from animal manure management – 10%, and

>Emissions from soil management – 12%.

**BGF Assessment and Recommendations:**

>Lack of data on digitalization of land lots and on the categorization of lands.

>Lack of data on programmes which support innovation in urban agriculture, on promotion of green low carbon intensity products and inclusion of the members that are left behind in the community.

>Lack of data about share of women among owners or rights-bearers of agricultural land, by type of tenure (%).

>Agro-ecology as a concept should be integrated within the policy framework.

>To develop a national digital land registry system to map, categorize, and manage land lots, enhancing transparency and efficiency in land use planning.

>To establish a centralized database to track and evaluate programs that support urban agriculture, green low-carbon products, and the inclusion of marginalized groups, enabling better program design and monitoring.

>To conduct a national survey to collect gender-disaggregated data on land ownership and tenure, ensuring gender-inclusive policy development in the agricultural sector.

>To incorporate agro-ecology principles into national agricultural policies to promote sustainable farming practices, biodiversity conservation, and climate resilience.

**48** Organika. Source: https://organika-ks.org/en/home/

**49** Ekoconnect. Report on the Status of Organic Agriculture and Industry in Kosovo. 2022. Source: http://www.eko-connect.org/tl_files/eko/p/Projekte/MOE-Laenderberichte/Country-Report-Organic-KOSOVO-EkoConnect-2022.pdf

**50** Ministry of Agriculture, Forestry and Rural Development. Green Report 2023. Source: https://www.mbpzhr-ks.net/repository/docs/Green_Report_2023.pdf

**51** Ministry of Agriculture, Forestry and Rural Development. Green Report 2023. Source: https://www.mbpzhr-ks.net/repository/docs/Green_Report_2023.pdf

**52** Ministry of Agriculture, Forestry and Rural Development. Green Report 2023. Source: https://www.mbpzhr-ks.net/repository/docs/Green_Report_2023.pdf

## 3.10 Biodiversity

Kosovo, despite its small size, boasts rich biodiversity. Its geographical position, geological factors, hydrology, and climate all contribute to its diverse biological ecosystem, which includes a wide range of flora, fauna, and vegetation, as well as relict, endemic, and other significant species.
According to various studies[53], Kosovo is home to over 3,000 types of vascular flora. Additionally, 223 species of mushrooms have been identified, spread across 143 genera and 43 families.

In terms of fauna, research and literature note that Kosovo is inhabited by over 300 wild vertebrate species, including:
-Over 30 species of fish,
-Over 20 species of amphibians,
-Over 25 species of reptiles,
-Over 200 species of birds, and
-Over 100 species of mammals.[54]

According to the National Forest Inventory (NFI) conducted in 2012, Kosovo forests has increased by 5% between 2002-2012 reaching to 481.000 ha (44.7 % of the total land area of Kosovo). In terms of ownership, 62 % of the forests owned by state and the remaining by private landowners. The forest coverage in Kosovo is bigger than that of neighboring countries (Albania 28%, Macedonia 39%, Montenegro 40%, and Serbia 31%). In 2021, 87 forest fires were recorded in public and private forests, affecting an area of approximately 2,653 hectares.[55]

Kosovo also takes significant steps toward nature conservation. As of 2022, there are 260 protected areas in the country, covering a total of 126,115.8 hectares, which accounts for 11.6% of Kosovo's total area.[56]

**Kosovo's biodiversity is rich but faces several pressing challenges:**

**1.** Deforestation - Illegal logging and inadequate reforestation efforts contribute to habitat loss, soil erosion, and reduced carbon sequestration capacity. This issue is exacerbated by weak enforcement of forestry laws.[56]

**2.** Endangered species and habitats - Data on threatened species is scarce, complicating conservation efforts. Certain endemic species, such as the Balkan lynx, are at high risk due to habitat fragmentation.

**3.** Legal gaps - The absence of updated laws addressing modern conservation needs limits the ability to protect biodiversity effectively.

**BGF Assessment and Recommendations:**

>Lack of systematic data on species protection, endangered species, and habitats under threat.

>Lack of data on ongoing conservation projects and their effectiveness in ecosystem restoration.

>To develop and implement a national deforestation mitigation plan, including stricter penalties for illegal logging.

>To conduct a national biodiversity census to identify endangered species and critical habitats.

**53** Kosovo Environmental Protection Agency. The state of nature report 2018-2021. Source: https://www.ammk-rks.net/assets/cms/uploads/files/RAPORTI%20PER%20GJENDJEN%20E%20NATYRES%202018%20-%202021%20ALB.pdf

**54** Kosovo Environmental Protection Agency. The state of nature report 2018-2021. Source: https://www.ammk-rks.net/assets/cms/uploads/files/RAPORTI%20PER%20GJENDJEN%20E%20NATYRES%202018%20-%202021%20ALB.pdf

**55** Ministry of Agriculture, Forestry and Rural Development. Policy and Strategy on Forestry Development 2022-2030. 2021. Source: https://www.mbpzhr-ks.net/repository/docs/Policy_strategy_on_forestry_dev_in_Kosovo_2022_2030.pdf

56 Ministry of Agriculture, Forestry and Rural Development. Policy and Strategy on Forestry Development 2022-2030. 2021. Source: https://www.mbpzhr-ks.net/repository/docs/Policy_strategy_on_forestry_dev_in_Kosovo_2022_2030.pdf

# Conclusions

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## 4. Conclusions

This report highlights the progress made by Kosovo in advancing the Green Agenda for the Western Balkans, a vital framework designed to address climate change, energy transition, and environmental sustainability. Despite Kosovo's strides in adopting policies and legal frameworks aligned with European standards, the report identifies numerous challenges that hinder further progress. Key achievements include the adaptation of the Energy Strategy 2022-2031, which focuses on increasing renewable energy capacity, improving energy efficiency, and reducing GHG emissions. Kosovo has also made advancements in waste management, circular economy initiatives, and biodiversity protection. The development of renewable energy projects, such as solar and wind power, as well as the adoption of the Climate Change Strategy 2019-2028, mark important milestones toward climate resilience.

However, the report outlines critical gaps, particularly in the areas of sector-specific vulnerability assessments, waste management infrastructure, water quality monitoring, and air pollution control. Insufficient data on emissions and energy consumption across different sectors, coupled with outdated technologies and infrastructure, pose additional barriers. The reliance on lignite-based power plants and inefficient heating systems contributes significantly to Kosovo's GHG emissions and air pollution, requiring urgent attention and investment.

To ensure the successful implementation of the Green Agenda, Kosovo must strengthen inter-sectorial cooperation, enhance data collection and monitoring systems, and accelerate the adoption of cleaner technologies. Addressing these challenges will not only improve environmental protection but also position Kosovo as a regional leader in sustainable development. The report concludes that continued investment in renewable energy, infrastructure modernization, and public awareness campaigns will be crucial to achieving Kosovo's long-term sustainability goals.