Policy Platform

For sustainable use of forest biomass for energy in Serbia and Bosnia and Herzegovina

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HEINRICH BÖLL STIFTUNG
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Policy platform for sustainable use of forest biomass for energy in Serbia and Bosnia and Herzegovina

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INTRODUCTION

This policy platform is grounded in the recognition that the biomass for energy is a contentious but unavoidable policy issue in the Western Balkans. The most recent Joint Research Centre of the European Commission analysis shows that it is very difficult to achieve both carbon and biodiversity benefits by any type of forest conversion.[1] The policymakers and scientists recognize that diverging values, worldviews, and ethical perceptions of natural resources and their management are a core part of the debate. However, these will not be solved by more scientific research, because science is a social endeavour where value-choices and judgements are inevitable. Serbia and Bosnia and Herzegovina are no exception, as the road to the sustainable use of forest biomass for energy that contributes to climate change mitigation while protecting the biodiversity faces potential trade-offs. Transparency is a key for the design of a context-specific strategy. Cooperation with policymakers and co-creation of useful results with all stakeholders should be welcomed. This policy platform is an early attempt in this direction.

To enhance inclusive approach and transparency this policy platform is underpinned by the conducted desk research and the literature review of the current state of knowledge, regulation, and practice on sustainable forest biomass for energy use in the EU and beyond. The sources, trends, and pathways of forest biomass harvesting and utilization, as well as the existing policies, guidelines, and standards that regulate and promote its sustainability are reviewed and considered. The research served to prepare the public dialogue with national, regional, and international actors along three major discussion pillars: ***knowledge, economics, and policy***. The policy platform is enriched with the highlights and conclusions of the open and diverse exchange on the topic among interested parties that took place at the conference NetOdrživo. The dialogue provided recommendations to kick start the sustainable use of forest biomass for energy in Serbia and Bosnia and Herzegovina.

1 https://publications.jrc.ec.europa.eu/repository/handle/JRC122719

This policy platform provides a clear and concise evidence and a non-exhaustive catalogue of needed activities that are essential to move on with the sustainable use of forest biomass for energy production in Serbia and Bosnia and Herzegovina. It does so by considering the state of the affairs of the traditional biomass use for energy in Serbia and Bosnia and Herzegovina including its harmful environmental, social, and economic consequences. Furthermore, it builds on the understanding of the current business practices and a significant potential in the forestry sector, a proven need for a long-term reconstruction of degraded forests, a vast territory of marginal and low-quality land that could be used for short rotation energy crops and finally the twin requirement of renewable energy deployment and energy security in the specific context of these two WB countries.

Figure 1 *Wood biomass for energy in Serbia and Bosnia and Herzegovina. Where we are in a physical world?*

THE BUILDING BLOCKS OF THE POLICY PLATFORM: KNOWLEDGE, ECONOMICS, POLICIES

Serbia and Bosnia and Herzegovina have a significant potential for sustainable use of biomass from forests and the wood processing industry. **This potential is currently underutilized. These two countries do not have formal, explicit policy on biomass for energy despite its enormous societal significance. An urgent decision on the use of biomass for energy is needed in both countries as well as the development of appropriate policies.** An overall legal, strategic and policy framework including the quantity and quality of data provision are insufficient to secure a good groundwork for the countries to come up with such a policy.

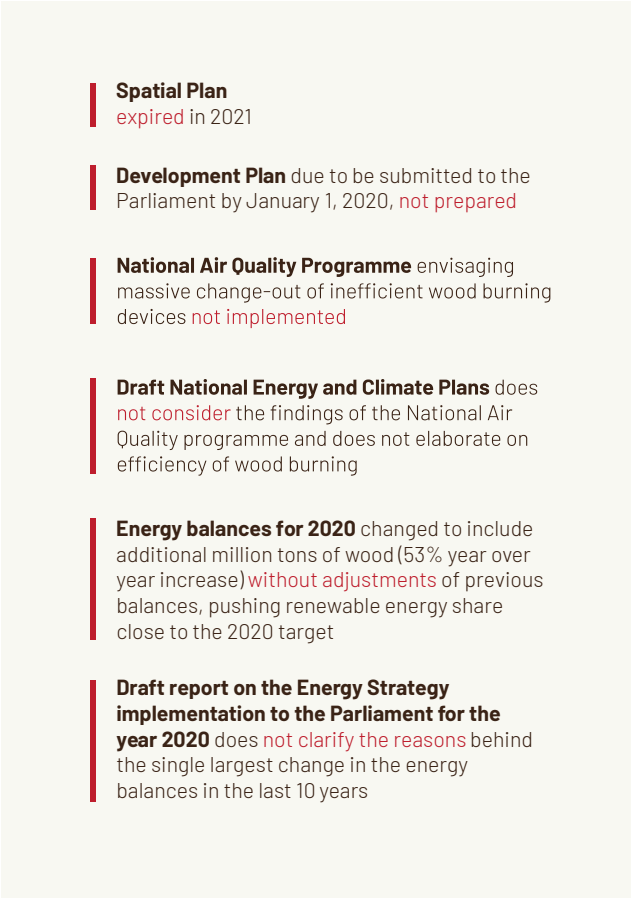

Figure 2 *Major legal, institutional, and strategic gaps - the case of Serbia*

Current biomass usage: quantity and quality

Traditional biomass is the key source of energy in the Western Balkans and the key source of renewable energy production in Serbia and Bosnia and Herzegovina. In 2020, primary solid biofuels accounted for 39% and 64% of all residential energy consumption in Serbia and Bosnia and Herzegovina respectively.

Invisible hundreds of thousands - household energy consumption in the Western Balkans

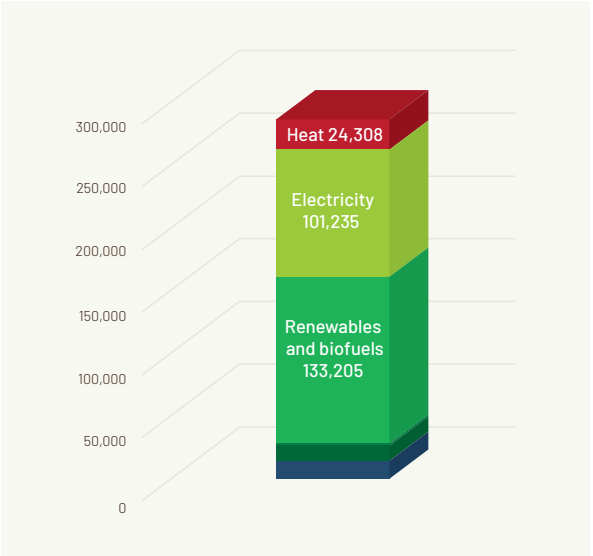

Figure 3 *Energy consumption in households in the Western Balkans, Eurostat*[2]

Millions of tonnes of cut wood are behind these numbers every year for decades. The wood is burnt inefficiently and produce enormous amounts of waste heat and pollution. At the same time, the modern use of biofuels and biowaste is negligible. It accounted only for 1% of domestic electricity supply in Serbia and 0% in Bosnia and Herzegovina in 2020. Despite these contrasts, the current policies do not address any of these aspects in a systemic manner.

2 https://ec.europa.eu/eurostat/databrowser/view/NRG_D_HHQ__custom_2920041/bookmark/table?lang=en&bookmarkId=36e7b119-c46a-47b3-9c3d-aac3d44470d4

The two countries pursue renewable energy policies driven primarily by the requirements to comply with the obligations stemming from the Energy Community Treaty.[3] These policies do not address biomass despite its absolute dominance in the renewable energy production. **Biomass is only used as a 'statistical buffer' to display the increase in the renewable energy share without real substantial change in the biomass consumption quantity or quality.**[4]

Invisible hundreds of thousands - renewable energy production

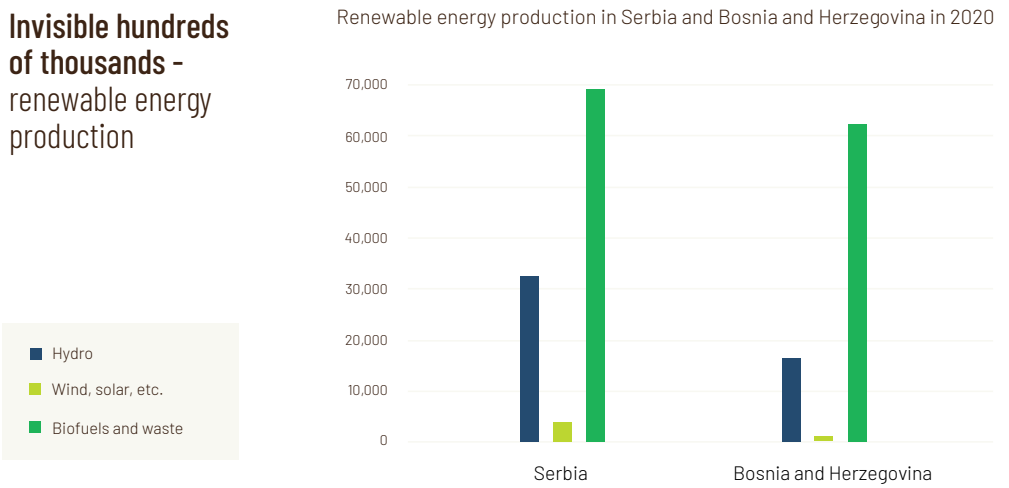

Figure 4 *Renewable energy production in Serbia and Bosnia and Herzegovina in 2020, IEA, Energy statistics data browser*[5]

3 https://www.energy-community.org/legal/treaty.html

4 https://www.mdpi.com/1996-1073/16/4/2077

5 https://www.iea.org/data-and-statistics/data-tools/energy-statistics-data-browser?country=SERBIA&fuel=Energy%20supply&indicator=TESbySource

Forests stock: quantity and quality

In Serbia and Bosnia and Herzegovina the wood is burnt extensively and inefficiently. At the same time, based on the on available data both countries are missing on the opportunity to fully harness the potential of their climate and natural conditions and current land use practices to grow as much forests as possible.[6] The most recent data from National Forest Inventory of Serbia are yet another proof of that.[7] As stated during the Net0drživo conference Serbia and Bosnia and Herzegovina have too much poor-quality forests on a good quality land.

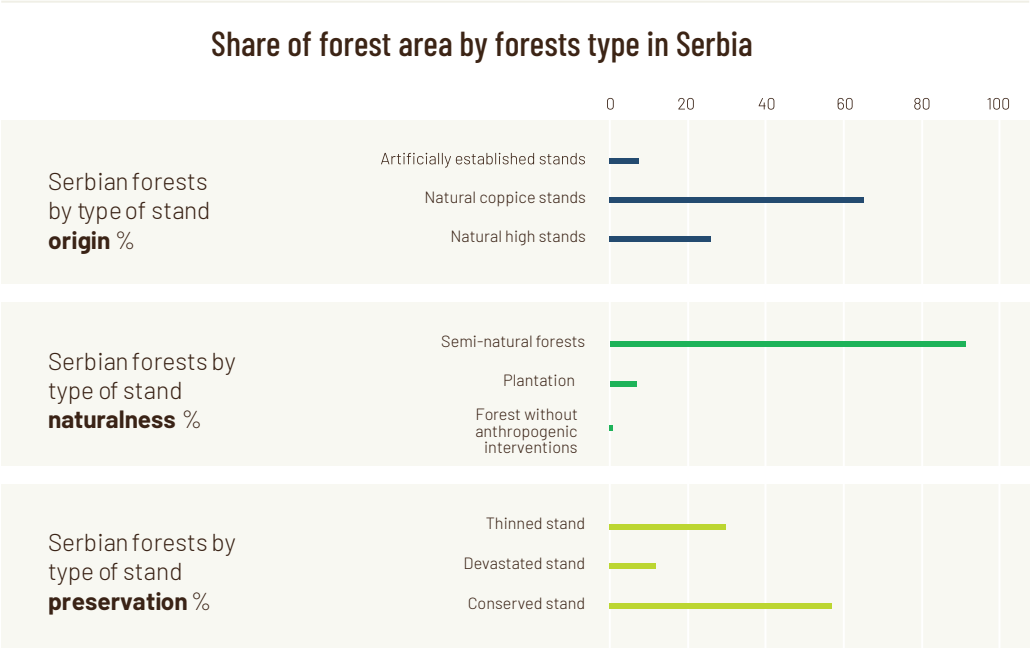

Figure 5 *Share of forest area by forests type in Serbia, source: Results of National Forest Inventory, 2023*[8]

6 Reader may find more information in another RES Foundation brief from this series: Strategic, legal, and institutional framework and data quality for sustainable woody biomass use in Serbia and Bosnia and Herzegovina

7 https://upravazasume.gov.rs/oglasna-tabla/naredbu-o-proglasenju-prirodne-nepogode-i-merama-zastite-i-sanacije-suma-ostecenih-vetrolomima-i-vetroizvalama-2/, Bosnia and Herzegovina does not have a recent forest inventory.

8 https://upravazasume.gov.rs/oglasna-tabla/naredbu-o-proglasenju-prirodne-nepogode-i-merama-zastite-i-sanacije-suma-ostecenih-vetrolomima-i-vetroizvalama-2/

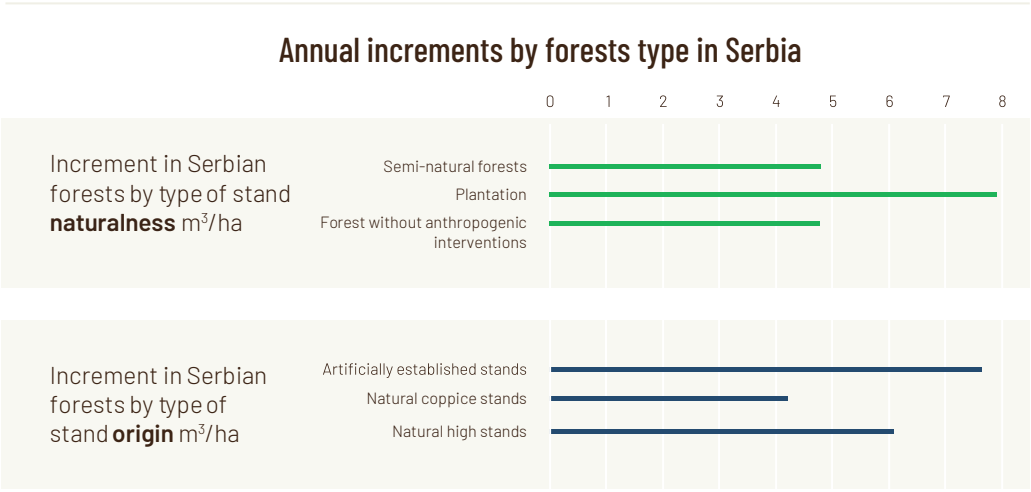

Figure 6 *Annual increments by forests type in Serbia, source: Results of national forest inventory, 2023*[9]

Carbon stock of our forests is also affected by inefficient burning. In five years, region could reduce its net GHG emissions for more than eight million tonnes of CO2 by improving efficiency of burning, saving annually 5% of wood used.

5% efficiency improvement of wood burning - GHG saving effect

Total saving effects (t-CO2-eq/a) from sequestration and emission reduction

Cumulative saving effects

Year 1	Year 2	Year 3	Year 4	Year 5
501,459	1,579,904	3,180,774	5,317,320	8,003,130

50% of saved wood remains unharvested	25% wood panels	25% other energy use

Figure 7 *Total saving effects (t-CO2-eq/a) from sequestration and emission reduction. Source: Accelerating the change-out of obsolete household heating devices in the Western Balkans, RES Foundation, 2022*[10]

9 https://upravazasume.gov.rs/oglasna-tabla/naredbu-o-proglasenju-prirodne-nepogode-i-merama-zastite-i-sanacije-suma-ostecenih-vetrolomima-i-vetroizvalama-2/

10 https://smarterstoves.resfoundation.org/wp-content/uploads/2022/02/Smarter_Stoves_Report.pdf

Increased requests for sustainability

Emerging EU policy framework with the most recent adoption of the Renewable Energy Directive (RED III) strengthens the sustainability criteria to reduce the risk of unsustainable bioenergy production. It mandates the implementation of the so-called 'cascading principle'.[11] In line with this principle, woody biomass should be used according to its highest economic and environmental added value in the following order of priorities: wood-based products, extending their service life, re-use, recycling, bioenergy, disposal. **The studies underpinning this major piece of legislation highlight numerous constrains and risks of unsustainable use of forests related to carbon sequestration and biodiversity.**

Figure 8 *Cascading principle of biomass use*[12]

No support without the policy

A responsible government in good governance framework must have a plan for sustainable use of biomass for energy under any circumstances and envisage implementation mechanisms to support that. RED III of the European Union formalise the obligation to address biomass for energy policy in National Energy and Climate Planning process.[13]

11 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32023L2413&qid=1699364355105

12 https://saf.org.ua/en/news/1399/

13 For details see RES Foundation's publication The use of biomass for energy in the EU- Policy brief

However, forest biomass is still not a part of the dialogue and decision making within this process in the WB countries. For example, the draft National Energy and Climate Plan in Bosnia and Herzegovina envisages modest biomass energy production in power and heat facilities to achieve policy targets and does not address any of the aspects of traditional biomass use, while in Serbia neither the use of biomass for power production nor more efficient use of traditional biomass is elaborated upon in the draft National Energy and Climate Plan.

To design a comprehensive policy response, following the adoption of the RED III, the implementation and knowledge gaps that need to be considered in Serbia and Bosnia and Herzegovina include:

1. Implementation of the RED II has not advanced, as the beginning of the implementation coincided with the revision of the Directive that introduced more stringent sustainability criteria.

2. Comprehensive assessments are required of the benefits and impacts on the environment and socio-economic pillars (greenhouse gas emissions, biodiversity, and ecosystem services) of possible sustainable forest biomass for energy use scenarios, including through natural capital accounting. It is needed to conduct stringent risk assessments for different biomass utilization scenarios and identify potential negative impacts (e.g., deforestation, soil degradation) and develop mitigation strategies.

3. Agriculture and forestry production depend on climate conditions, which are now in flux. Changing weather conditions related to average temperatures, precipitation, extreme weather and climate events (e.g. droughts, floods, frost) are already influencing crop yields in many European regions and lead to severe forest damage. It is uncertain how climate change will impact future global biomass production and how the impact will be distributed. Intergovernmental Panel on Climate Change scenario modelling points to a significant global reduction in biomass production throughout the coming decades in some European regions.[14] This raises questions about whether the EU can sustain current levels of biomass production under more challenging climate conditions. Considering the climate scenarios of the region of Western Balkans it is of outmost importance to project the impact of climate change to biomass production in this region.

4. Future research should develop methodologies for prioritising the bioenergy pathways that can bring significant greenhouse gas emission reductions in relation to fossil fuel use in biomass production, transport and conversion, as well as efficiencies of conversion.

14 https://op.europa.eu/en/publication-detail/-/publication/ff64cd11-7f88-11ee-99ba-01aa75ed71a1/language-en

CHARTING THE WAY FORWARD

This public policy platform responds to the assessed and presented baseline situation on the sustainable biomass use for energy in Serbia and Bosnia and Herzegovina by offering a road map for essential decision-making and accountability. It can also serve as a guide for the governance model as well as communication tool for a variety of stakeholders to start harnessing the potential of biomass, mitigate climate change, stimulate economic growth, and ensure environmental sustainability.

With the right policies and support, Serbia and Bosnia and Herzegovina can harness its significant biomass potential to create a sustainable energy mix. This will not only contribute to their energy security but also promote climate change mitigation measures, environmental sustainability, and economic development.

The key recommendations and components of the comprehensive policy platform that would facilitate informed and effective decision-making and implementation would consist of the following:

Public participation, transparency, accountability, and stakeholder engagement

- Engage diverse stakeholders: policymakers, industry representatives, scientists, environmental NGOs, and local communities
- Ensure transparency in policy formulation, implementation, and reporting
- Publish progress reports, policy documents, and stakeholder feedback
- Conduct periodic reviews and adapt policies based on scientific evidence and stakeholder feedback
- Educate citizens about the importance and benefits of sustainable use of forestry biomass
- Involve schools, media, and local communities in promoting responsible biomass use

Political will and commitment

- Secure political support by addressing the issue in the National Development Plan or equivalent strategic policy document endorsed by the Parliament
- Ensure a long-term commitment to its implementation

Design policy or programme with clear goals, metric and monitoring framework, enable policy integration and design policy instruments

- Implement, in the shortest possible time, the eco-design requirements for local space heaters using solid fuels and implement a massive change-out scheme of technically obsolete devices
- Align forestry biomass policies with broader policy goals (e.g., climate action, biodiversity conservation)
- Examine a context specific policy framework and possible mandate for the reconstruction and conversion of large areas of different low-grade forests in Bosnia and Herzegovina and Serbia
- Examine a context specific policy framework and possible mandate for the facilitation of use of marginal land for short rotation plantations for energy
- Avoid conflicting policies across sectors
- Base policy decisions on scientific evidence, best practices, and impact assessments
- Define specific, measurable, achievable, relevant, and time-bound policy goals
- Metrics could include increased sustainable biomass utilization rates, reduced deforestation, and improved carbon sequestration
- Develop evidence-based guidelines for sustainable biomass harvesting, emphasizing ecosystem services and biodiversity conservation
- Encourage the WB countries to adopt common definitions, standards, and monitoring protocols
- Promote integrated land-use planning to balance biomass production with other forest functions
- Establish indicators to track progress toward sustainable biomass goals and reporting on forest health, biomass utilization rates, and carbon emissions
- Explore financial incentives for sustainable forestry practices
- Encourage private-sector investments in sustainable biomass supply chains

Robust and transparent data collection and analysis for ex ante and ex post policy evaluation

- Establish a centralized data repository on forestry biomass, including forest health, biomass stocks, and utilization patterns
- Analyse data to identify trends, gaps, and areas for improvement
- Standardize methodologies for assessing carbon emissions and sequestration associated with biomass utilization
- Report on the carbon balance of the forests in each WB country and biomass-based energy systems

Knowledge sharing and capacity building

- Establish an online repository for research papers, reports, and case studies related to forestry biomass
- Organize training sessions on sustainable forest management, biomass certification, and carbon accounting and risk assessment
- Foster knowledge exchange among policymakers and practitioners

By implementing this platform, the two Western Balkan countries can make informed decisions that balance environmental, social, and economic considerations, ensuring a sustainable future for its forests and biomass resources and bringing a diverse range of benefits.

Utilised natural potential for growing forest resources facilitated by enhanced research and innovation

Reduced air pollution and climate change mitigation

Sustainable biomass supply chains generate investments, technology transfers and job creation

Sustainable forest management reflecting changing climate conditions

Reconstruction of degraded forests, better use of marginal land and control of erosion

Significant improvement in energy efficiency and enhanced energy security

Novel legal and institutional framework harmonised with the EU

Figure 9 *Possible benefits of integrated policies on sustainable use of woody biomass for energy*

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