

Policy Brief

The use of biomass for energy in the EU

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The use of biomass for energy in the EU - Policy brief

This brief is the first of four briefs prepared within the framework of project ***„Woody biomass: win-win or lose-lose? Energy, climate and air pollution effects of biomass to power projects in the context of selected Western Balkan countries.“***

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DEFINITIONS

Primary forests or other wooded land: is namely forest and other wooded land of native species, where there is no clearly visible indication of human activity, and the ecological processes are not significantly disturbed; and old growth forests as defined in the country where the forest is located.¹

Plantation forests: means a planted forest that is intensively managed and meets, at planting and stand maturity, all the following criteria: one or two species, even age class, and regular spacing; it includes short rotation plantations for wood, fibre and energy, and excludes forests planted for protection or ecosystem restoration, as well as forests established through planting or seeding, which at stand maturity resemble or will resemble naturally regenerating forests.²

BACKGROUND

The European Green Deal (EGD) establishes the objective of becoming climate neutral in 2050 in a manner that contributes to the European economy, growth, and jobs. This objective requires a greenhouse emissions reduction of 55% by 2030 as confirmed by the European Council in December 2020. This in turn requires significantly higher shares of renewable energy sources in an integrated energy system.³

In July 2021, the European Commission adopted the 'Fit for 55' package, adapting existing climate and energy legislation to meet the new EU objective of a minimum 55% reduction in greenhouse gas (GHG) emissions by 2030.⁴

One element of the package was the revision of the Renewable Energy Directive (RED II) to help the EU deliver the new 55% GHG target. Under RED II that was in force since 2018⁵ the EU was obliged to ensure that at least 32% of its energy consumption comes from renewable energy sources by 2030.

1 RED III, Article 29, para 3

2 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32023R1115> Article 2 (11)

3 https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/delivering-european-green-deal_en

4 <https://www.europarl.europa.eu/news/en/press-room/20220909IPR40134/parliament-backs-boost-for-renewables-use-and-energy-savings>

5 https://eur-lex.europa.eu/legalcontent/EN/TXT/?uri=uriserv:OJ.L_.2018.328.01.0082.01.ENG&toc=OJ:L:2018:328:TOC



The overall objectives of RED II revision

- to achieve an increase in the use of energy from **renewable sources** by 2030
- to foster better **energy system integration**
- to contribute to climate and environmental objectives including the **protection of biodiversity**
- to address the intergenerational concerns associated with **global warming and biodiversity loss**

Figure 1 The overall objectives of the revision of RED III⁶

As a result of the revision the new Renewables Energy Directive (RED III) was adopted in October 2023. The agreement on the revised Renewable Energy Directive sets the EU's **binding renewable energy target for 2030 at a minimum of 42.5%**, up from the current 32% target. In practice, this would **almost double the existing share of renewable energy in the EU**. It is also agreed that Europe will aim to reach 45% of renewables in the EU energy mix by 2030.

The revised RED III includes a further targeted strengthening of the biomass sustainability criteria and takes up recommendations of the report "[The use of woody biomass for energy production in the EU](#)",⁷ by the Commission's Joint Research Centre.⁸ The revised Directive includes the extension of no-go areas for forest biomass to protect in particular primary and old-grown forests, as well as wet- and peatland. It also requires avoiding the use of roots and stumps and to minimise large clear-cuts. The proposed rules introduce an obligation on EU countries to design their national support schemes in accordance **with the biomass cascading principle whereby woody biomass is used according to its highest economic and environmental added value**.

⁶ <https://data.consilium.europa.eu/doc/document/ST-10746-2021-INIT/en/pdf>

⁷ European Commission, Joint Research Centre, Camia, A., Giuntoli, J., Jonsson, R., et al., The use of woody biomass for energy production in the EU, Publications Office, 2021, <https://data.europa.eu/doi/10.2760/831621>

⁸ <https://www.researchgate.net/profile/Sarah-Mubareka> <https://forest.jrc.ec.europa.eu/en/people/>
<https://forest.jrc.ec.europa.eu/en/people/person/28/detail/>
<https://forest.jrc.ec.europa.eu/en/people/person/66/detail/>



Agreeing on the sustainability criteria for forest biomass was a major sticking point for the RED III negotiators because:

- The first advocacy coalition pushed for further strengthening of the existing criteria to ensure sustainability of biomass, for example the Parliament proposed to exclude primary woody biomass from the EU's renewable energy targets, arguing that the focus needs to be on regrowing forests as carbon sinks in the face of climate change.⁹ As part of its input to the trialogue on the Renewable Energy Directive III, the EU Parliament brought forward several proposals that would affect the business-as-usual biomass utilisation for energy purposes. Even though biomass can still be counted as renewable, three main changes to the status quo were proposed:
 - a new definition of primary woody biomass and its eligibility for energy purposes,
 - a cap of the share of primary woody biomass to contribute to renewable targets of the EU,
 - the removal of all subsidies for primary woody biomass in all energy uses.
- The second advocacy coalition pushed for continuation of the implementation of the existing sustainability provisions, given they were only introduced by RED II and operationalized in 2022.¹⁰

The final agreed text does not ban the use of forest biomass for energy, but it does include significant updates to strengthen the sustainability requirements.¹¹

⁹ Position of the European Parliament adopted at first reading on 12 September 2023 with a view to the adoption of Directive (EU) 2023/... of the European Parliament and of the Council amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652

¹⁰ Mandatory sustainability criteria for biomass used in heat and power were only introduced to the previous version of the directive - RED II - that was transposed by the Member States in 2021, and for which implementing regulation was adopted only in December 2022.

¹¹ <https://www.euractiv.com/section/biomass/opinion/will-the-eus-renewables-directive-change-the-landscape-for-forest-biomass/>

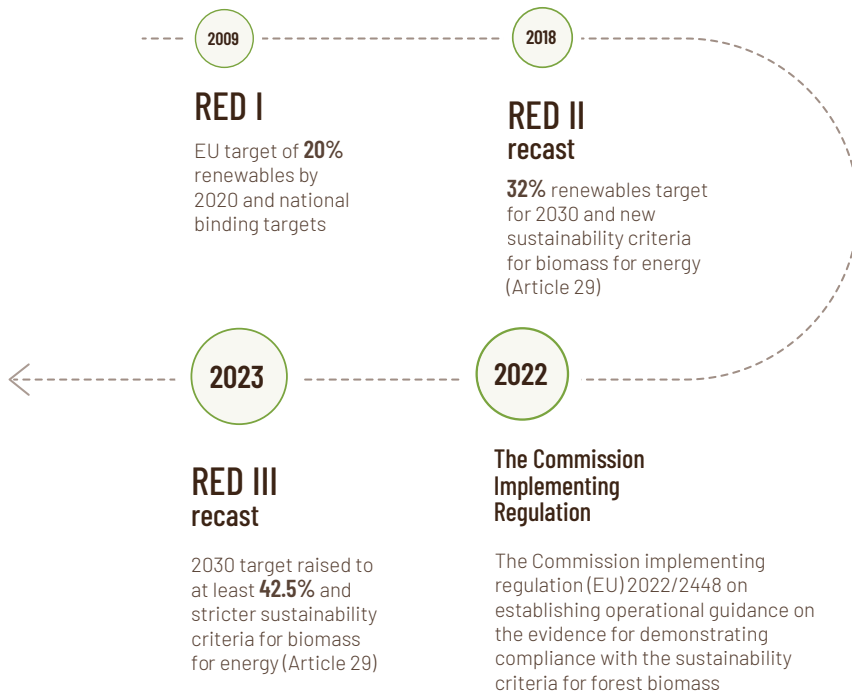


Figure 2 Timeline of renewable energy legislation in the EU

The [‘Fit for 55’ legislation, now fully adopted](#), sets the EU on a path to reach its climate targets by 2030. The overall package includes emissions reduction targets across a broad range of sectors, a target to **boost natural carbon sinks**, and an **updated emissions trading system** to cap emissions, put a price on pollution and generate investments in the green transition, and **social support for citizens and small businesses**. To ensure a **level playing field** for European companies, the Carbon Border Adjustment Mechanism ensures that imported goods pay an equivalent carbon price on targeted sectors. The EU now has **updated targets on renewable energy and energy efficiency**, and will **phase out new polluting vehicles by 2035**, while **boosting charging infrastructure and the use of alternative fuels** in road transport, shipping and aviation.¹² This came ahead of the crucial COP28 UN Climate Conference, and next year’s European elections.¹³

12 https://ec.europa.eu/commission/presscorner/detail/en/ip_23_4754

13 https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/delivering-european-green-deal_en

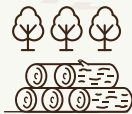
RED II AND NEW SUSTAINABILITY CRITERIA FOR BIOMASS FOR ENERGY SINCE 2018

For biomass to be effective at reducing greenhouse gas emissions it must be produced in a sustainable way. Biomass production involves a chain of activities ranging from the growing of feedstock to final energy conversion. Each step along the way can pose different sustainability challenges that need to be managed.

Series of sustainability and GHG emission criteria



Agriculture waste and residues, requiring evidence of the protection of soil quality and soil carbon, and for **agriculture biomass**, requiring evidence that the raw material is not sourced from highly biodiverse forests.



Forest biomass, requiring bioenergy generators to demonstrate that the country of origin has laws in place **a)** avoiding the risk of unsustainable harvesting and **b)** accounting of emissions from forest harvesting.

If such evidence cannot be provided, bioenergy generators need to demonstrate sustainability compliance at the level of the biomass sourcing area.



New biofuels plants need to deliver at least 65% fewer direct greenhouse gas (GHG) emissions than the fossil fuel alternative. New biomass-based heat and power plants need to deliver at least 70% (80% in 2026) fewer GHG emissions than the fossil fuel alternative.



Bioelectricity, requiring that large scale plants (above 50 MW) apply highly efficient cogeneration technology, or apply Best Available Techniques (BAT) or achieve 36% efficiency (for plants above 100 MW-), or use carbon capture and storage technology.

Figure 3 Directive (EU) 2018/2001 defines a series of sustainability and GHG emission criteria

Sustainability criteria for forest biomass

RED II lays down new sustainability criteria for forest biomass used for the production of energy, in order for the latter to be accounted against European targets and national contributions, be part of renewable energy obligations and to be eligible for public support.¹⁴

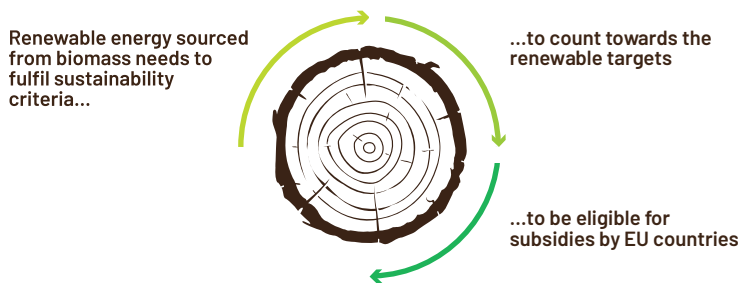


Figure 4 Sustainability criteria for forest biomass RED II

It extends sustainability criteria to cover also large-scale biomass for heat and power, in addition to biofuels and bioliquids for transport. In this context, forest biomass used for the production of energy is to be considered sustainable if it fulfils the sustainability criteria laid down in the Commission implementing regulation (EU) 2022/2448 on establishing operational guidance for Member States and economic operators on how to demonstrate compliance with the new sustainability criteria for forest biomass, set out in Article 29 of the Directive. The implementing regulation was adopted in December 2022. Article 29(6) and (7) of Directive (EU) 2018/2001, deal specifically with forest harvesting and emissions from land use, land-use change and forestry (LULUCF).¹⁵

Moreover, Directive (EU) 2018/2001 requires Member States to consider the available sustainable supply of biomass and take due account of the principles of the circular economy and of the waste hierarchy established in Directive 2008/98/EC of the European Parliament and of the Council¹⁶ when developing support schemes for renewable energy, in order to avoid unnecessary distortions of raw materials markets.

¹⁴ https://joint-research-centre.ec.europa.eu/welcome-jec-website/reference-regulatory-framework/renewable-energy-recast-2030-red-ii_en

¹⁵ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32022R2448>

¹⁶ https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32022R2448#ntr2-L_2022320EN.01000401-E0002



BIOMASS AND THE RENEWABLE ENERGY TARGETS IN THE EUROPEAN UNION

Most of the time, wind and solar or energy carriers and technologies such as hydrogen or batteries make it to the headlines. However, the larger part of the EU's renewable energy mix is made up of biomass. As defined in the RED III, biomass represents the biodegradable fraction of products, waste and residues from biological origin from agriculture, including vegetal and animal substances, from forestry and related industries, including fisheries and aquaculture, as well as the biodegradable fraction of waste, including industrial and municipal waste of biological origin.¹⁷

Biomass currently contributes around 60% of EU renewable energy, across the electricity, heat and transport sectors. There is no doubt biomass will be needed to meet the increased renewable energy target of 42.5% in 2030.¹⁸

- Biomass for energy (bioenergy) continues to be the main source of renewable energy in the EU, with a share of almost 60%. **The main sector in which biomass is being used in the EU is the heating sector** with both centralised district heating plants and networks common in Scandinavian countries and decentralised wood stoves in houses in many other EU countries, such as France or Germany. The heating and cooling sector is the largest end-user, using about 75% of all bioenergy.
- Bioenergy contributes to the EU's energy security, as most of the demand is met from domestically produced biomass (about 96% in 2016).
- Forestry is the main source of biomass for energy (logging residues, wood-processing residues, fuelwood, etc.). Wood pellets, mainly for heating and electricity production, have become an important energy carrier.
- Germany, France, Italy and Sweden are the largest bioenergy consumers in absolute terms, while the Scandinavian and Baltic countries, as well as Austria, consume the most bioenergy per capita.
- Bioenergy can play a key role in achieving the EU's renewable energy targets for 2030 and beyond. However, biomass for energy must be produced, processed, and used in a sustainable and efficient way in order to optimise greenhouse gas savings and maintain ecosystem services, all without causing deforestation or degradation of habitats or loss of biodiversity.¹⁹

¹⁷ <https://data.consilium.europa.eu/doc/document/PE-36-2023-INIT/en/pdf>

¹⁸ <https://www.euractiv.com/section/biomass/opinion/will-the-eus-renewables-directive-change-the-landscape-for-forest-biomass/>

¹⁹ Brief on biomass for energy in the European Union, <https://publications.jrc.ec.europa.eu/repository/handle/JRC109354>

Bioenergy in the EU in 2020

biofuels and waste account for **26%** of total domestic **energy production** (the largest share except nuclear)

primary solid biofuels account for **17%** of all residential **energy consumption**

biofuels and renewable waste accounted for **6%** of domestic **electricity supply** (larger share than solar PV)

biofuels and renewable waste accounted for **29%** of all **heat** supplied (second largest share following natural gas)

Figure 5 Bioenergy in the EU in 2020. Source: IEA²⁰

However, the relationship between terrestrial ecosystems, biomass, and climate change mitigation is very complex. Since the same biomass resource can have multiple and often competing uses choices will need to be made about which types of biomass should be considered for what purpose; consideration will also need to be given to the impacts of such choices on GHG emissions. At the same time, biomass use can be a driver of land management, land use, and land use change, which has consequences for biodiversity and nature. In addition, climate conditions and climate change impacts determine which type of biomass can be grown and where. This requires land management to increase ecosystem resilience and protect against biomass losses. All of these land operations impact the amount of carbon that can be sequestered over time and the size (in terms of number of hectares) of a carbon sink.²¹

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

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

RED III - STRICTER SUSTAINABILITY CRITERIA FOR BIOMASS FOR ENERGY - 2023

The amended RED III Directive entered into force on 20th November 2023. Final transposition date for the Directive is set at 21/05/2025.²² The Directive strengthens the sustainability criteria for the use of biomass for energy, in order to reduce the risk of unsustainable bioenergy production. There are four key updates to be aware of, but the implementation of these updates may be limited by significant exemptions.

1. The first one is to ensure that Member States implement the so-called ‘cascading principle’. The concept was mentioned in RED II, but the updated directive now provides more concrete detail on how this principle should be implemented. Member states will ensure that the cascading principle is applied, with a focus on support schemes and with due regard to national specificities.

In line with the cascading 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.²³



Figure 6 Cascading principle of biomass use²⁴

²² <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32023L2413>

²³ https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:L_202302413

²⁴ <https://saf.org.ua/en/news/1399/>



The detail on the cascading principle is surely a strong step towards steering limited forest biomass resources towards their highest value use – both from an economic and a carbon sink perspective.²⁵ However, the proof of whether the European industry can deliver a sustainable contribution of biomass fuels will be in the implementation, and whether the strengthened RED III criteria can be implemented without being undermined by the exemptions.²⁶

2. The second one concerns the strengthening of sustainability criteria to protect biodiversity and habitats and the definition of 'NO GO' areas

The mandatory sustainability criteria for forest biomass are extended with more detail on what is regarded as sustainable harvesting, such as no conversion of forest land into plantations, minimising large clear cuts, no use of roots or stumps and no degradation of primary or old growth forest. Furthermore, Member States may not grant direct financial support for the use of saw logs, veneer logs, industrial grade roundwood, stumps or roots for energy. These additions, in combination with the link to reporting domestic forest supply and compatibility with LULUCF (land-use, land-use change and forestry) targets, provide at least a strengthening of protections for natural habitats and biodiversity in comparison to REDII.²⁷

RED III directive envisages (Paragraph 6 article 29) that biofuels, bioliquids and biomass fuels produced from forest biomass taken into account for RE shares of the MS, RE obligations or financial support for the consumption of biomass need to be harvested in the country which has national or sub-national laws applicable in the area of harvest as well as monitoring and enforcement systems in place ensuring also that forests in which the forest biomass is harvested **do not stem from the lands** that have the statuses of: **primary forest and old growth forests as defined in the country where the forest is located; highly biodiverse forest; highly biodiverse grasslands; heath land; peatland.**²⁸

25 <https://www.euractiv.com/section/biomass/opinion/will-the-eus-renewables-directive-change-the-landscape-for-forest-biomass/>

26 Implementation can be undermined by the exemptions. For example plants already operating in 2020 producing heat and power could be exempted from the minimum GHG saving requirements until 2030. Furthermore, Member States may also count energy from biomass fuels that comply with the previous (less stringent) RED II criteria towards their renewable energy targets until the end of 2030, if support was already granted to that installation before the Member State has transposed the RED III.

27 <https://www.euractiv.com/section/biomass/opinion/will-the-eus-renewables-directive-change-the-landscape-for-forest-biomass/>

28 RED III, Article 29, para 3.



RED III NO GO AREAS

- **Primary forest and old growth forests**
as defined in the country where the forest is located
- **Highly biodiverse forest**
- **Highly biodiverse grassland**
- **Heath land**
- **Peatland**

Figure 7 RED III No go areas

3. Lowering the thermal input threshold for sustainability criteria and not supporting electricity-only installations

Thirdly, under RED III, Member States will not be allowed to grant new or renewed support for electricity-only installations using forest biomass (with certain exceptions).

In addition, the capacity threshold for installations that need to comply with the sustainability criteria for biomass fuels is lowered from 20 MW to 7.5 MW, and a new threshold is added for installations producing gaseous biomass fuels.²⁹

Biomass fuels shall fulfil the sustainability and greenhouse gas emissions saving criteria used in the case of solid biomass fuels, in installations producing electricity, heating and cooling **with a total rated thermal input equal to or exceeding 7,5 MW** (Paragraph 1, subparagraph 4a, Article 29).

4. Prescribed GHG emissions savings

GHG emissions savings from the use of biofuels, bioliquids and biomass fuels are prescribed for both the existing and new facilities (started operating before or after the Entry into force of the RED III). Prescribed GHG savings and the dates for achieving them vary depending of the type of biofuel, date of entry into operation and capacity of the plant and are presented in the Table 1.

²⁹ <https://www.euractiv.com/section/biomass/opinion/will-the-eus-renewables-directive-change-the-landscape-for-forest-biomass/>

Table 1 Prescribed GHG savings as per Article 29 of the amended directive for different biomass use

BIOMASS USE	START DATE OF OPERATION	PLANT CAPACITY	GHG SAVINGS	GHG SAVINGS DUE DATE
for electricity, heating and cooling production from biomass fuels	since the date of entry into force of this amending Directive (21 st May 2025)	all	at least 80 %	starting date of operations
	before 1 January 2021	equal to or exceeding 10 MW	at least 80 %	after they have been operating for 15 years, not sooner than from 1 January 2026 but not later than from 31 December 2029
	between 1 January 2021 and the date of entry into force of this amending Directive (21 st May 2025)	equal to or exceeding 10 MW	at least 70 %	From the date of entry into force (21 st May 2025) till until 31 December 2029
			at least 80 %	from 1 January 2030
for electricity, heating and cooling production from gaseous biomass fuels	between 1 January 2021 and the date of entry into force of this amending Directive (21 st May 2025)	equal to or lower 10 MW	at least 70 %	before they have been operating for 15 years
			at least 80 %	after they have been in operation for 15 years
	before 1 January 2021	equal to or lower 10 MW	at least 80 %	after they have been operating for 15 years and at the earliest from 1 January 2026
biofuels, biogas consumed in the transport sector, and bioliquids produced in installations	on or before 5 October 2015	N/A	at least 50 %	Already effective
	from 6 October 2015 until 31 December 2020	N/A	at least 60 %	Already effective
	from 1 January 2021	N/A	at least 65 %	Already effective



BIOMASS IN ENERGY IN THE WB REGION AND IMPLICATIONS OF THE NEW SUSTAINABILITY CRITERIA

Biomass is the key source of energy in the Western Balkans with improving statistical coverage of its use. Since the introduction of mandatory renewable energy targets in the Western Balkan, countries used creative biomass data manoeuvring to bring renewable energy share close to the 2020 target without a major policy change or innovation in this sector. In this manoeuvre, the traditional form of biomass played the most critical role. For example, if we take the share of renewable energy in the final energy consumption as one of the indicators and compare the Western Balkan countries, we notice that a major portion of the increase in renewable energy shares among the WB countries is the result of creative data management and not innovative renewable energy policy making. The policy framework is set by the 2009 Renewable Energy Directive, and each WB country had a mandatory 2020 target that was determined using the same methodology. Four WB countries corrected their data on biomass consumption in the energy balances for the years in the run-up to 2020, without correcting the balances that served to establish the baseline for the renewable energy target. This is with the exception of North Macedonia that revised its biomass share for energy balance downward, reducing its baseline and subsequently its 2020 target, and Albania that has nearly 100% of RES share coming from hydro energy. Serbia was the last country in the region to use this manoeuvre in its official statistics. To illustrate, the primary production of energy from wood fuels recorded in the energy balance increased by 36.9% (roughly for more than one million tons of wood) in only one year's time from 2019 to 2020.³⁰

Traditional biomass is the fuel of choice for the largest share of households in the WB, it represents the largest quantity in household energy in general, and in household space heating in the contracting parties to the Energy Community treaty. Individual heaters (stoves, ovens, masonry stoves) are the most widespread devices used for heating in the Western Balkan region. Almost three million households rely on heat produced in such devices. Biomass will continue to be used for heating in the Western Balkans for the foreseeable future regardless of anything one thinks or does about it.

³⁰ Young, J.; Macura, A. Forging Local Energy Transition in the Most Carbon-Intensive European Region of the Western Balkans. *Energies* 2023, 16, 2077. <https://doi.org/10.3390/en16042077>

Real life efficiency of devices used is estimated to be in the range from 30-40%. 65% seasonal efficiency is minimal type test efficiency required for eco-design certified appliances while benchmark value set by the regulation is 86%. Even when deviations of real-life efficiency from lab tests are taken into consideration, there is a significant space for improvement. Real life efficiency may be increased in certain instances by 100% and more.

Real life emissions of PM, OGC and BaP when measured vary dramatically, due to various reasons including type of testing and operator’s skills. From what we know, replacement of the devices with eco-design certified, may bring reductions in emissions that may go as high as 90%. Wood moisture can influence the increase of emissions of particulate matter by a factor of eight in new appliances.

While burning wood is considered carbon neutral, wood burning efficiency yields significant climate benefits. Saved wood may continue to grow in the forest and capture the same or higher amounts of carbon before harvested, it may end in wooden products and continue to capture carbon or it may displace other energy sources. 5% annual wood savings due to increased efficiency of heating may lead to more than four million tonnes of CO2 saved in the Western Balkan in year 5 after the initiation of the programme.³¹

Bioenergy in SERBIA in 2020

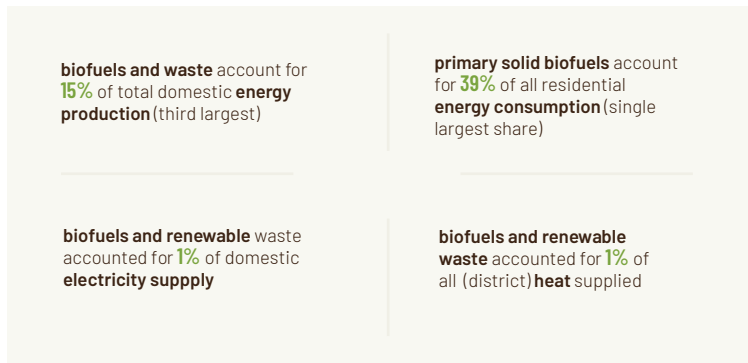


Figure 8 Bioenergy in Serbia in 2020. Source: IEA³²

31 Accelerating the change-out of obsolete household heating devices in the Western Balkans, <https://www.resfoundation.org/accelerating-the-change-out-of-obsolete-household-heating-devices-in-the-western-balkans/>

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

Bioenergy in BOSNIA AND HERZEGOVINA in 2020

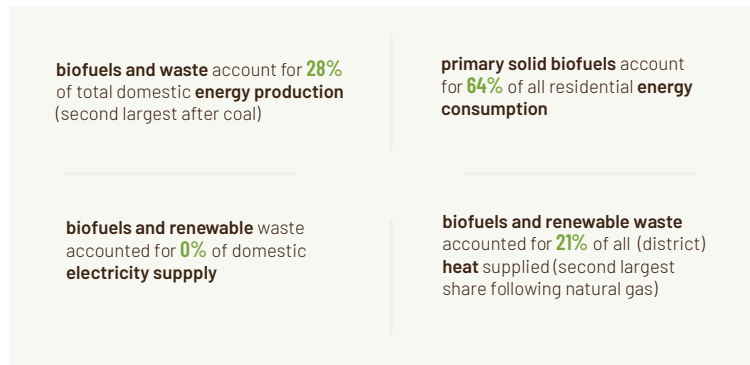


Figure 9 Bioenergy in Bosnia and Herzegovina in 2020. Source: IEA³³

In Serbia and Bosnia and Herzegovina the full transposition of the RED II is still not finalised. For full transposition of the Renewable Energy Directive (RED II, Directive (EU) 2018/2001), Serbia should ensure a simplified and swift permit-granting process by designating one or more contact points to provide guidance to applicants. 2023 Progress Report of the EU for Serbia states that Serbia made no progress in introducing a national scheme to verify the sustainability criteria for biofuels, bioliquids and biomass fuels. The share of RES in the transport sector is still below 1% while the target for 2020 was 10%.³⁴

New RED III brings new obligations and focus on forest biomass, especially concerning the National Energy and Climate Planning process that is still not a part of a dialogue and decision making in these countries. RED III directive stipulates that:

- The production of biofuels, bioliquids and biomass fuels from domestic forest biomass shall be consistent with Member States' commitments and targets laid down in Article 4 of Regulation (EU) 2018/841 of the European Parliament and of the Council* and with the policies and measures described by the Member States in their integrated national energy and climate plans submitted pursuant to Articles 3 and 14 of Regulation (EU) 2018/1999.
- Member States shall include an assessment of the domestic supply of forest biomass available for energy purposes in 2021-2030 as part of their final updated NECP .
- Member States shall include an assessment of the compatibility of the projected use of forest biomass for the production of energy with the Member States' targets and budgets for 2026 to 2030 as part of their final updated NECP.

³³ <https://www.iea.org/data-and-statistics/data-tools/energy-statistics-data-browser?country=WORLD&fuel=Energy%20supply&indicator=TESbySource>

³⁴ https://neighbourhood-enlargement.ec.europa.eu/serbia-report-2023_en



- Member States shall include a description of the national measures and policies ensuring compatibility with those targets and budgets as part of their final updated NECP.

Draft NECP of 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.³⁵ Serbian draft NECP does not mention either use of biomass for power production or more efficient use of traditional biomass.³⁶ Urgent decision on use of biomass for energy is needed in both countries as well as development of appropriate policies.

IMPLEMENTATION AND KNOWLEDGE GAPS FRAME THE NEXT STEPS

1. Implementation of the RED II has not advanced, as the beginning of implementation coincided with the revision of the directive targeting sustainability criteria;
2. More detailed statistics are needed on the use of biomass from agriculture, forestry and waste for energy purposes (e.g. energy crops, agricultural and industrial residues and by-products, biowaste, wood waste, sewage sludge, etc.).
3. Differences in reporting (e.g. biomass supply or energy consumption, volumes or energy units) hinder the comparison and equivalent breakdown of the biomass feedstock used and bioenergy production.
4. Scarce and/or incomplete data on biomass trade for energy use needs to be addressed.
5. Comprehensive assessments are required of the benefits and impacts on the environment and socio-economic pillars (greenhouse gas emissions, biodiversity and ecosystem services), including through natural capital accounting.
6. Comprehensive assessments are required to detail how biomass can help us reach climate and environmental objectives in the WB, and how climate change might affect biomass production potential in the region of Western Balkans.

³⁵ http://www.mvteo.gov.ba/data/Home/Dokumenti/Energetika/Nacrt_NECP_BiH_loc.pdf

³⁶ https://www.mre.gov.rs/extfile/sector/en/213/INECP_Serbia_ENG.pdf



7. 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, etc.
8. 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.³⁷ 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.

³⁷ <https://op.europa.eu/en/publication-detail/-/publication/ff64cd11-7f88-11ee-99ba-01aa75ed71a1/language-en>

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