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Wiser with Wood

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A guide on how to transpose the EU's revised Renewable Energy Directive (RED III) to better protect forests, the climate, public health and other wood-using industries

COVER IMAGE: MARCUS WESTBERG

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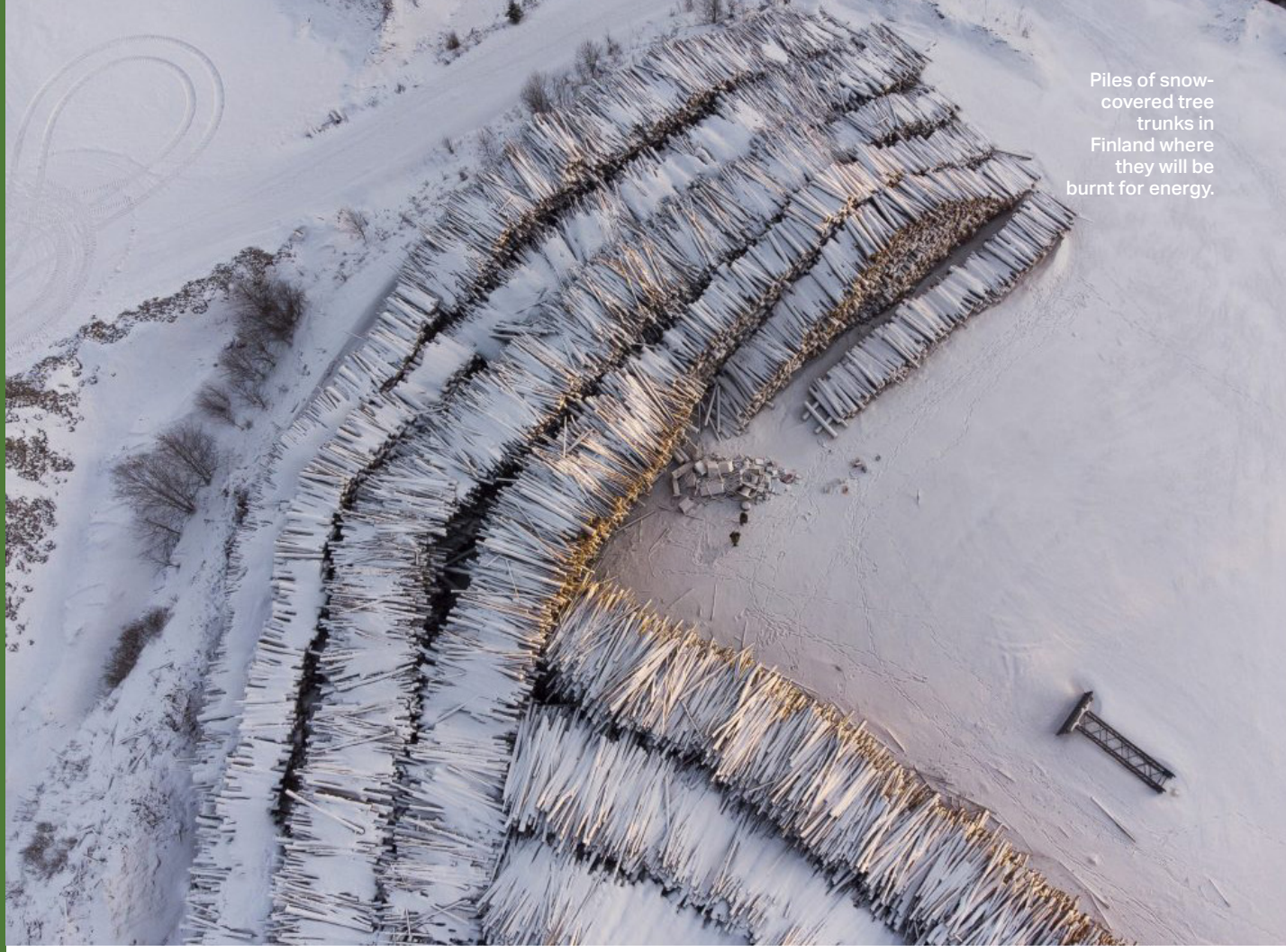
Introduction



Piles of snow-covered tree trunks in Finland where they will be burnt for energy.

PHOTO: FOREST DEFENDERS ALLIANCE

Of all the land ecosystems, forests are the most essential for buffering the impacts of the climate and biodiversity crises. They capture atmospheric carbon dioxide (CO_2), host biodiversity, cool and clean the air, purify and store freshwater, help deliver many EU citizens' material needs and contribute to their health and well-being. **Preserving and increasing forests' resilience** will therefore improve future living conditions across Europe.

Unfortunately, however, for the last two decades, the EU has classified – through its Renewable Energy Directive (RED) – energy produced from burning wood (also called "woody biomass") as equivalent to cleaner renewable energy sources like wind and solar. This decision has turned the burning of wood for energy into a large industry that consumes huge amounts of European (and global) forests and European taxpayers' money.

Today, millions of trees are cut down and burned in Europe, supported by large renewable energy market incentives. Every year, EU citizens pay billions of euros to subsidise and reward energy operators who degrade European forests, deprive other industries of wood supplies and pollute the air. In 2005, **about 42 per cent** of the EU wood harvest was burnt, it is now **more than half.** Over the same time period, the amount of CO_2 captured by European forests, Europe's land carbon sink, has kept **decreasing.** In 2020, the EU **reported** that its direct biomass emissions (including biofuels) amounted to 597.6 million tonnes of CO_2 – almost as much as the entire German economy.

This policy of treating energy produced from burning wood as 'renewable' energy worthy of public subsidies worsens the climate and biodiversity crises at a time when public budgets should be investing in forest protection and a clean and just energy transition.

The first EU legal incentives for burning wood, adopted in 2001, then 2003 and 2009, were blind to the origin, type, possible climate impacts, and other economic uses of woody biomass.

The revised RED adopted in 2018 (RED II) introduced "sustainability criteria" for woody biomass, with the intention that only the energy produced from wood satisfying these criteria would continue to benefit from market incentives.

Nevertheless, the insufficiency of these criteria was clear enough[1] that the European Commission proposed to tighten them as part of its "Fit for 55" Green Deal, and published its **proposal** for the revised RED II (RED III) in July 2021.

The European Commission insisted in **its legislative proposal for RED III** that there was a "growing recognition of the need for alignment of bioenergy policies with the cascading principle of biomass use" and that "Member States' support schemes for bioenergy should therefore be directed to such feedstocks for which little market competition exists with the material sectors, and whose sourcing is considered positive for both climate and biodiversity, in order to avoid negative incentives for unsustainable bioenergy pathways"[2].

The text of RED III, adopted in October 2023, followed a stark confrontation about the sustainability of forest biomass between the European Parliament and several EU Member States.

The European Parliament's **position,** supported by a 60 per cent majority in plenary, was to end governmental support to energy from primary woody biomass (wood directly removed from forests), and stop counting it towards national renewable energy targets (minus exceptions for fire and pest prevention). It also demanded strong implementation of the cascading principle proposed by the European Commission. The Council's **general approach,** on the other hand, was much less ambitious – citing the Ukraine war and the context of rising energy prices – and this stance largely **prevailed** in the final negotiations. In response to the climate crisis and Russia's invasion of Ukraine, **the EU decided to almost double its renewable energy production in less than a decade, from 22.2 per cent of renewable energy in the overall energy mix in 2021 to a target of 42.5 per cent in 2030.**

1 The European Commission's **impact assessment** coming with its July 2021 legislative proposal for revising RED II argued that "the current REDII sustainability criteria for bioenergy need to be reinforced in a targeted way in light of the increased climate and biodiversity ambition of the EU Green Deal".

2 **European Commission, COM(2021) 557 final, 2021/0218 (COD)** - Proposal for a Directive of the European Parliament and of the Council amending Directive (EU) 2018/2001 of the European Parliament and of the Council, Regulation (EU) 2018/1999 of the European Parliament and of the Council and Directive 98/70/EC of the European Parliament and of the Council as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652 - Recital 4.

In a context where wood burning is still the largest source of renewable energy used in the EU (about 42% of the reported supply[3]), and the existing volumes logged in forests are excessive, will this result in yet additional logging, exacerbating the climate and biodiversity crisis? The risk is real, as the adopted RED III text fails to explicitly cap the volume of wood that Member States can count as renewable energy.

But RED III also introduces important limitations to using woody biomass for energy, in particular by excluding some sensitive biomass feedstocks, removing the possibility to support electricity-only biomass plants (minus exemptions), introducing a more explicit reference to the cascading principle and obliging Member States to ensure consistency between their projected biomass use and their land carbon sink targets. As the carbon sinks of many Member States **are collapsing,** and Member States need these carbon removals to **reach their GHG reduction targets under the EU Effort Sharing Regulation,** they will face significant financial penalties if their land carbon sinks degrade too much. It is therefore in Member States' interest to phase out biomass incentives as much and as soon as possible, and invest more in other sources of renewable heat and power. **Crucially, RED III requirements are a minimum bar only. Member States can go further if they wish** – some like the Netherlands have already done so.

This Guide identifies RED III's legal requirements in the context of woody biomass for energy, describes Member States' margins of manoeuvre, and proposes ways to better protect forests, the climate, public health and other wood-using industries from the problems created by the EU's biomass policy. We hope it is a useful resource for EU Member State policy- and decision-makers who now need to adapt the RED III's requirements to their national context and priorities. **It is important to emphasise that this Guide does not address wider transposition opportunities and risks associated with RED III beyond the specific context of woody biomass for power, including for example how Member States should approach renewable energy planning under RED III generally. This guide also does not address the entire range of policies which Member States can and should adopt to reduce energy demand, which is critical to meaningfully address the interrelated biodiversity, pollution, and climate crises. It is critical that Member States also tackle overall energy demand to protect our forests.**

3 Woody biomass constitutes **69.6 per cent** of total bioenergy use in the EU, which itself represents about **60 per cent** of the EU's renewable energy supply in 2019 – woody biomass therefore represented about 42% of the EU's renewable energy supply that year.

Synthesis & recommendations

RED III requirements	Transposition recommendations for Member States
The cascading principle[4] Member States must design their support schemes so as to ensure that woody biomass is used according to its highest economic and environmental added value in the following order of priorities: (1) wood-based products; (2) extending their service life; (3) re-use; (4) recycling; (5) bioenergy; and (6) disposal. There are possible exceptions to this principle (for wood coming from natural disasters or when there are no other options than bioenergy locally), but Member States must justify why they applied the exceptions when they did and the Commission will publish their justifications.	Member States should focus on implementing this principle to maximise value creation from the scarce wood resource in local supply chains. The future bioeconomy may increase demand further as other sectors look to replace fossil fuels-based commodities. Member States should ensure that documentation of their use of the exceptions clause is exhaustive and up to date. The case of the Flanders region in Belgium (see **dedicated section)** demonstrates that meaningful implementation of the cascading principle is possible by involving other wood-using sectors in determining whether the burning of specific wood supplies should benefit from subsidies.
Ban on support for electricity-only biomass installations, with exceptions Member States can no longer provide direct financial support to electricity produced in biomass-only power plants. There are possible exceptions if these plants are in a Just Transition or outermost region or if they use Bioenergy with Carbon Capture and Storage (BECCS) – a technology that is still to be demonstrated at scale, and which presents the same risks to forests as conventional biomass electricity production.[5]	On average, electricity production from biomass-only power plants achieves only 30 per cent efficiency. With cheaper and cleaner renewables plus storage now available for dispatchable power generation, and given the significant environmental, economic and health impacts caused by biomass electricity production – and the equally high-risk and unproven nature of BECCS – Member States should refrain from providing new financial support to any forms of electricity production from woody biomass. They should also rapidly phase out existing governmental support mechanisms.
More installations to meet more criteria. Member States must adopt measures to ensure that all installations above 7.5 megawatt (MW) use fuels complying with RED III's sustainability and greenhouse gas savings criteria, and that economic operators have implemented appropriate procedures to ensure they also comply. All installations burning wood whose rated thermal input is below 50 MW are eligible for support without particular energy efficiency requirements.[6]	To include most operators, Member States should lower the RED III compliance threshold to 1 MW. Member States should support citizens insulating their homes, and end incentives for purchasing domestic wood fuels-based stoves and boilers, as they contribute disproportionately to air pollution. Member States should also impose energy efficiency requirements on plants smaller than 50 MW, and greenhouse gas emissions savings criteria high enough to exclude long-distance biomass imports, the way the UK did in 2018 by introducing a requirement of a 96 per cent reduction lifecycle emissions (from fossil fuels burned during biomass manufacture and transport) compared to smokestack emissions from coal plants.

4 Article 3(3) RED III.
5 Article 3(3d) RED III.
6 Article 29(1), letter (a) of 4th subparagraph) RED III.

Direct financial support is banned for energy produced using certain feedstocks (saw logs, veneer logs, industrial grade roundwood, stumps and roots).[7]

Industrial grade roundwood is defined as all wood suitable for industrial purposes, minus wood "unsuitable for industrial use as defined and duly justified by Member States according to the relevant forest and market conditions".[8]

Under both RED II and RED III, Member States can and should extend this ban to all forest biomass (also known as primary woody biomass, meaning wood directly removed from forests such as stemwood, treetops and branches.)

In application of the cascading principle, biomass incentives should be limited to energy from burning residues of wood processing industries that do not have other uses, such as black liquor (from paper mills).

When adopting the definition that roundwood is wood "not suitable for industrial use", Member States should anticipate the expected new industrial uses, as markets can change rapidly. It is important not to endanger small and medium sized enterprises (SMEs) working with specific types of wood. The definition should be regularly revised and based on scientific input, including sources that are financially independent from industry.

Sustainability criteria for forest biomass

Member States must adopt measures to ensure that economic operators use biomass that does not come from unsustainable biomass feedstocks.

These measures must incorporate the following minimum sustainability criteria:

- Territorial exclusions ("No-go zones") that protect lands with high biodiversity (such as primary and old growth forests) or high carbon stock (such as wetlands and peatlands) from forest biomass fuel extraction (with exceptions). Member States need to transpose these territorial exclusions in their national legislation, and in particular adopt a definition of "old growth forests" if they do not have one already.[9]

- Sustainable harvesting criteria (including obligations to harvest biomass in accordance with sustainable forest management principles and with defined thresholds for clear cuts and deadwood extraction, or avoiding degradation of primary forests), which must be transposed if absent in national legislation.[10]

- Land Use, Land Use Change and Forestry (LULUCF) criteria, to ensure that "the production of … biomass fuels from domestic forest biomass shall be consistent with Member States' commitments and targets laid down in Article 4 of [LULUCF] Regulation (EU) 2018/841", that requires Member States to "ensure that emissions [in the land use sector] do not exceed removals".[11,12]

The EU adopted a collective -310 megatonne (Mt) target for 2030 in the LULUCF Regulation's 2022 revision, 15 per cent more than the EU land carbon sink that year.

Member States can and should adopt additional sustainability criteria to RED III's that adequately protect lands and ecosystems with environmental or biodiversity value, for example by removing **primary woody biomass** from the scope of their national renewable energy policy.

Member States should adopt a definition of "old growth forests" in their national legislation that is based on science. The best example would be the one proposed by the European Commission. They should also broaden no-go zones to "continuously forested areas", with flexibilities when appropriate, which would be one of the most effective ways to protect their forests from perverse impacts caused by biomass incentives as it would limit these to residues of wood processing outside forests.

Member States need to better anticipate the consequences of the climate and biodiversity crisis and plan a wood harvest that will allow their forests to maintain their resilience and carbon sink role.

Several European countries (such as Switzerland or Slovenia) ban clear cuts entirely because of their severe impacts on forests' soils and resilience. All EU Member States should reassess their approach to clear-cutting, i.e. consider potential area limitations and restrictions based on the forest habitat type and geomorphological and hydrological context.

Deadwood plays a crucial role in forests' resilience and carbon storage function. Member States should make sure that coarse woody debris, in particular, is not removed from forests for bioenergy.
Member States should adopt measures that effectively limit excessive logging and contribute to the restoration of forests, to ensure they continue playing their crucial role as carbon sinks. Woody biomass fuels coming from an EU country failing to meet its national LULUCF target, because its land carbon sink keeps degrading for instance, should not meet RED III's sustainability criteria.

7 Article 3(3c)(a) RED III.
8 Article 2(1a) RED III.
9 Article 29(3) and (4) RED III.
10 Article 29(6) RED III.
11 Article 29(7), (7a) and (7b) RED III.
12 Article 4, LULUCF

Ensuring operators' compliance with sustainability and greenhouse gas savings criteria. Member States must ensure the compliance of economic operators with RED III criteria for forest biomass, and that operators have employed relevant auditing procedures. Information about the geographic origin and feedstock type of biomass fuels per fuel supplier must be made available to consumers "in an up-to-date, easily accessible, and user-friendly manner on the websites of operators, suppliers or the relevant competent authorities and shall be updated on an annual basis.".[13]	In addition to RED III requirements, Member States should develop robust national systems (with dissuasive penalties for non-compliance) to independently monitor operators' compliance, not only with the RED's sustainability and greenhouse gas criteria, but with all of RED III's requirements (in particular the exclusion of direct support to energy from industrial grade roundwood).
Monitoring forest biomass use. To properly assess economic operators' compliance with RED III criteria, Member States must have access to up-to-date information on the origin of forest biomass used for energy (its legality and sustainability) and the emissions associated with the harvesting of forest biomass and domestic supply of forest biomass. There are additional mandatory traceability and sustainability requirements in the EU Deforestation-free Products Regulation (EUDR).[14]	Member States must develop a monitoring system with up-to-date, complete and accurate data on the national use of forest biomass in energy production.
Indicative EU renewable energy target of 49 per cent for renewable heat in buildings[15] To decarbonise the building sector (a major source of greenhouse gas emissions in the EU through heating and cooling), Member States must "determine an indicative national share of renewable energy produced on-site or nearby as well as renewable energy taken from the grid in final energy consumption in their building sector in 2030 that is consistent with an indicative target of at least a 49 % share of energy from renewable sources in the building sector in the Union's final energy consumption in buildings in 2030."	To avoid a serious increase in air pollution, Member States should stop granting biomass incentives to the residential sector (for example in the form of support to purchase wood stoves and boilers) and instead redirect financial support to cleaner non-fossil alternatives (such as insulation, heat pumps, solar thermal and geothermal) to make sure that neither public health nor the environment are harmed by actions to reach this target.
Acceleration areas for renewable energy projects Member States can designate "renewables acceleration areas", where renewable energy projects can be developed with simplified environmental impact assessments.[16] RED III recognises the particular risks associated with the biomass burning industry, and Member States can exclude biomass plants from these acceleration areas.	Member States should exercise their right to exclude biomass plants from renewable energy acceleration areas.

13 Article 30(3) 3rd subparagraph RED III.
14 For more information see https://www.fern.org/publications-insight/what-is-the-eu-regulation-on-deforestation-free-products-and-why-should-you-care/
15 Article 15a, 1 RED III.
16 Article 15c(1) RED III.

Forests are often clearcut to meet the increased demand for bioenergy.

PHOTO: MARK GUSEV / SHUTTERSTOCK

1. What are the problems with the woody biomass sector?

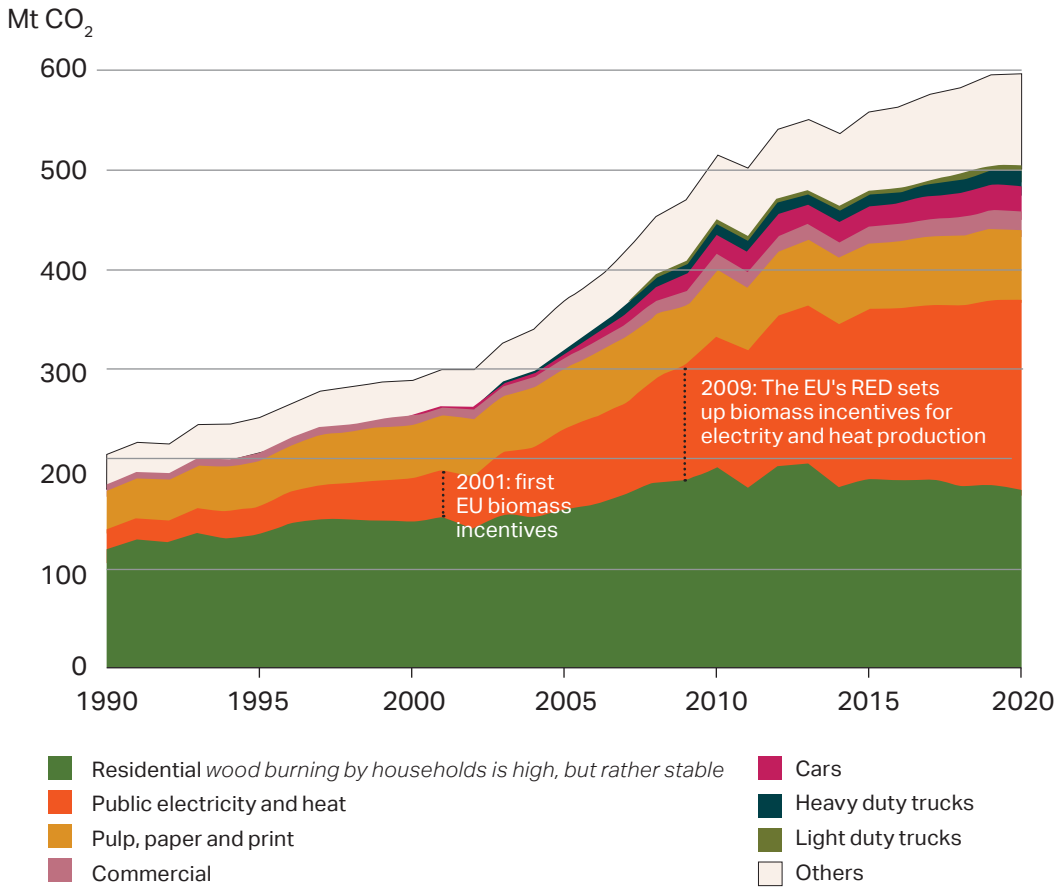
Burning wood, or "woody biomass" for energy constitutes about 42 per cent[17] of the EU's renewable energy mix. The first EU incentives for producing energy from burning biomass were introduced in **2001** (for electricity production) and **2003** (for transport biofuels), before the **2009 Renewable Energy Directive** broadened them to the whole energy sector.

17 Woody biomass constitutes **69.6 per** cent of total bioenergy use in the EU, which itself represents about **60 per cent** of the EU's renewable energy supply in 2019 – woody biomass therefore represented about 42% of the EU's renewable energy supply that year..

This policy has driven a fast increase in biomass combustion emissions in the EU, now almost twice those of 2001. Emissions from burning wood in the power and heat sectors grew the fastest, and are now comparable to the wood burning emissions of all households in the EU (see Figure 1). EU imports of wood pellets, a condensed wood fuel, have **more than doubled** in the past decade.

However, there are significant financial, environment, public health and economic reasons why **woody biomass is a false solution to achieving Member State's renewable energy targets** and why ongoing support for the woody biomass industry does not make sense.

Figure 1 – direct CO_2 emissions from biomass combustion in the EU (27)
adapted from the original by climate scientist Glen Peters



1.1 Poor use of taxpayers' money and public budgets

The biomass burning industry is not economically viable in the energy sector without government support. In electricity production, electricity-only biomass plants only achieve **30 per cent efficiency on average;** the industry's average capital and operating costs are now **far above** those of wind and **solar plus storage.** For heat, the costs of heat pumps, the main alternative source of renewable heat, are now on average **comparable** to that of biomass installations for continuous low and medium heat (typically used for heating buildings).

This support is considerable. Subsidies paid by Member States rewarding energy operators for burning wood amounted to **€16 billion** of taxpayers' money in 2020 alone. In addition, the legal exemption of biomass emissions from the Emissions Trading System (ETS)[18] was estimated to have led to **€12 billion** of lost revenue. The total amount of public financial support for the biomass industry is therefore in the order of €28 billion per year.

In contrast, only **€2.4 billion** of EU funds were spent by EU Member States for either creating forests or supporting existing forests over the whole six-year period between 2014-2020.

1.2 Damaging to European forests, biodiversity and the environment

The policy of treating – and subsidising – biomass energy as renewable energy under the RED also has dire consequences on biodiversity, because it rewards the extraction of any tree in a forest, including those that are the most precious for biodiversity. Currently, **most natural habitats and species have a bad or poor conservation status in the EU.** Policies that incentivise the destruction of forests will likely exacerbate the declining state of nature in the EU.

At the same time, EU Member States have **committed to increase their land carbon sink** by about 15 per cent by 2030 compared to current levels. However, **land carbon sinks have also been seriously decreasing in the past decade as a result of increased logging** (recent estimates show that the tree canopy extent and tall forest areas in Europe are declining, in particular in Baltic and Scandinavian countries) and natural disturbances caused by the climate and biodiversity crisis. Maintaining incentives for domestic woody biomass industries will have dire consequences for forests, the EU's main land carbon sink, because **EU Member States (still) have much stronger incentives to generate energy than to protect forests under EU law.** If Member States prolong their biomass

18 The EU's Emissions Trading System (ETS) regards biomass as having zero carbon emissions when it is burned, thereby excluding bioenergy emissions - as long as they are compliant with the sustainability criteria.

incentives under the RED III, it will likely add even more pressure on forests and further undermine Member State efforts to achieve their LULUCF land carbon sink targets.

1.3 Damaging to public health

Human health also suffers from the expansion of the biomass industry, as wood burning releases fine particle air pollution, which is a **health hazard** in urban or confined environments and even inside residents' homes. Modern and well-maintained wood pellet installations and domestic appliances tend to **release less air pollutants per unit of energy produced** than traditional wood-burning stoves and chimneys, but their proliferation limits these efficiency gains. The World Health Organisation's latest guidelines on air quality **suggest** opting for non-combustion-based energy systems whenever possible. National policies that incentivise households or industry to convert to woody burning energy systems, like **subsidising** the purchase of wood pellet stoves and boilers for domestic heating, risk worsening public health outcomes and exacerbating respiratory illnesses, especially in densely-populated urban areas. Wood pellet production facilities also release large amounts of health-damaging dust and particles, creating **health risks for residents near such facilities.** Increasing air pollution is likely to increase demands on public health services and resources, providing further justification to reconsider using public budgets to subsidise industries that create health risks.

1.4 Damaging to other higher-value wood-using industries

Woody biomass burning incentives have dramatically increased demand for wood, as converting coal-fired power plants to burning wood requires enormous volumes. This expansion cuts into the wood supplies of other wood-using industries.
Companies and industry federations in the wood panel industry, the pulp and paper industry, the furniture industry, and increasingly the chemical industry have recently **complained** about the excessive demand and competition for wood caused by renewable energy incentives for woody biomass.

A representative of a Polish wood panel industries federation **said:**

> *Our industry of wood-based panel manufacturers has a vital interest in using any type of wood, because we are able to use even really poor quality wood. [...]For us, the big competition is the burning of wood and the burning of primary forest biomass, because this burning is covered by subsidies. Companies that generate energy receive subsidies from the state treasury for green certificates or carbon dioxide emission rights. These are large amounts and we are not able to compete with them in the purchase of wood.*

This has been well noted by the European Commission itself, with a high official in charge of the bioeconomy **stating** that "bioenergy should be restricted to areas where no other alternatives are economically or technologically feasible."

These other wood-using industries often generate more local economic value from the same wood supply than the wood burning industry, which needs governmental support to operate. But biomass subsidies are increasingly pricing them out of the market and this is reflected in data on wood use: the proportion of the EU wood harvest used for energy increased from **about 42 per cent** in 2005 to **more than 50 per cent** today.

Incentivising energy operators to burn wood for energy not only increases CO_2 emissions, and logging levels while disadvantaging other wood-using sectors, it also contributes to the biomass **'availability gap'** that endangers achievement of EU circular economy goals.

1.5 Undermining the clean energy transition

In May 2022, the EU's **declaration** to the United Nations Framework Convention on Climate Change (UNFCCC) stated that it had released 2,701 million tonnes of CO_2 from the energy sector in 2020. However, this did not include emissions from biomass energy production, which is reported in the LULUCF sector under UNFCCC accounting rules. Including biomass burning emissions would have added 596 million tonnes of CO_2 in 2020 – increasing the EU's energy sector emissions by 22 per cent, to 3,297 million tonnes. **This accounting method (attributing biomass CO_2 emissions to the LULUCF sector rather than the energy sector) enables EU Member States to claim higher levels of emissions reductions in the energy sector than they have actually achieved.**

> **Including biomass burning emissions would have added 596 million tonnes of CO_2 in 2020 – increasing the EU's energy sector emissions by 22 per cent, to 3,297 million tonnes.**

This misrepresentation of energy sector emissions benefits some Member States more than others – especially when it comes to achieving their renewable energy targets. For instance, countries like Hungary, Sweden, Finland and Romania still rely on burning woody biomass to reach more than half their renewable energy targets. In contrast, Member States like Ireland, Malta and Cyprus hardly use it at all (see Figure 2).

As noted above, there are strong policy justifications for EU governments to invest in sources of renewable energy other than wood burning to replace fossil fuels. This would not only avoid the negative financial, environmental, public health and economic impacts of the biomass industry, but facilitate more coherent energy policy across the EU and serve, rather than undermine, the necessary transition to a clean and sustainable energy system in the EU.

Estimation by Fern of the share of woody biomass in EU Member States' 2020 renewable energy consumption

Sources: ***EU Joint Research Centre, Eurostat***

		Solid biomass fuels used in electricity production (ktoe)	Solid biomass fuels used in heating and cooling (ktoe)	Total solid biomass fuels (ktoe)	2017 share of primary biomass in total biomass use for heat & power	2020 primary woody biomass use (ktoe)	Total 2020 renewable energy consumption (ktoe)	2020 proportion of primary woody biomass ise in the country's renewables consumption	2020 proportion of solid biomass in the country's renewables consumption
MT	Malta	0.0	1.4	1.4	21.62%	0.3	56.1	0.5 %	2.50%
CY	Cyprus	0.0	36.5	36.5	10.71%	3.9	273.9	1.4 %	13.33%
IE	Ireland	37.2	179.7	216.9	25.15%	54.5	1,551.3	3.5 %	13.98%
LU	Luxembourg	22.8	123.5	146.3	21.14%	30.9	358.9	8.6 %	40.76%
SE	Sweden	816.5	8,130.0	8,946.5	24.40%	2,183.2	20,690.4	10.6 %	43.24%
BE	Belgium	285.4	1,169.5	1,454.9	32.81%	477.3	4,391.0	10.9 %	33.13%
ES	Spain	390.5	3,658.4	4,048.9	47.90%	1,939.5	16,458.2	11.8 %	24.60%
NL	Netherlands	497.4	1,024.8	1,522.2	42.37%	645.0	5,326.8	12.1 %	28.58%
AT	Austria	258.0	3,977.5	4,235.5	28.86%	1,222.4	9,893.8	12.4 %	42.81%
DE	Germany	965.3	10,148.0	11,113.3	46.45%	5,161.9	40,044.2	12.9 %	27.75%
PT	Portugal	275.7	1,822.6	2,098.3	41.58%	872.6	5,471.1	15.9 %	38.35%
EL	Greece (provisional)	1.8	858.8	860.6	75.50%	649.7	3,405.8	19.1 %	25.27%
FI	Finland	925.2	6,841.0	7,766.2	28.09%	2,181.3	10,901.1	20.0 %	71.24%
FR	France	340.4	8,821.1	9,161.5	58.40%	5,350.6	26,502.9	20.2 %	34.57%
IT	Italy	384.4	7,033.6	7,418.0	62.59%	4,643.2	21,900.5	21.2 %	33.87%
DK	Denmark	369.9	2,464.6	2,834.5	47.15%	1,336.5	5,948.3	22.5 %	47.65%
LV	Latvia	44.7	1,242.6	1,287.3	34.36%	442.3	1,687.9	26.2 %	76.27%
SK	Slovakia	96.3	1,026.8	1,123.1	45.00%	505.4	1,872.5	27.0 %	59.98%
SI	Slovenia	13.3	501.7	515.0	60.53%	311.7	1,120.1	27.8 %	45.98%
RO	Romania	42.4	3,431.5	3,473.9	50.00%	1,737.0	6,060.8	28.7 %	57.32%
EE	Estonia	150.1	762.7	912.8	43.56%	397.6	1,157.9	34.3 %	78.83%
PL	Poland	596.1	7,892.2	8,488.3	50.00%	4,244.2	11,926.5	35.6 %	71.17%
LT	Lithuania	32.1	1,145.5	1,177.6	50.00%	588.8	1,518.8	38.8 %	77.53%
HR	Croatia	48.1	1,150.2	1,198.3	73.60%	881.9	2,090.9	42.2 %	57.31%
CZ	Czechia	214.9	2,796.2	3,011.1	73.60%	2,216.0	4,507.6	49.2 %	66.80%
BG	Bulgaria	126.0	1,296.2	1,422.2	95.92%	1,364.2	2,430.7	56.1 %	58.51%
HU	Hungary	143.1	1,614.4	1,757.5	95.76%	1,682.9	2,567.0	65.6 %	68.47%
Total EU 27					**86,228.6**	**41,124.9**	**210,115.0**	**19.6 %**	**41.0%**

If countries follow the waste-hierarchy, instead of supporting the burning of whole trees, they would focus on encouraging energy creation from the dust and other waste created by wood-processing plants such as this pine wood sawmill.

PHOTO: JUAN ENRIQUE DEL BARRIO / SHUTTERSTOCK

2. Transposing RED II and RED III: requirements and possibilities

While RED III gives Member States discretion to financially support the biomass industry without breaching internal market and State Aid Rules, it does not require them to do so. In other words, Member States are not obliged to create incentives for burning wood, and can end incentives they have created in the past. This choice presents a crucial opportunity for Member States to phase-out public support for the woody biomass industry. The Netherlands did this in February 2021, when the country **decided** to no longer grant financial support to dozens of future woody biomass heat plants.

Under RED II, Member States could provide financial support to energy companies burning wood as long as the wood these companies used met the Directive's woody biomass sustainability criteria (the installations burning it were of a minimum efficiency;

and overall greenhouse gas emissions savings achieved a minimum threshold compared to fossil fuels).

The RED II's sustainability criteria for forest biomass, introduced to identify which types of wood could be burned for energy operators to keep benefiting from renewable energy incentives, were intended to ensure:

- The legality of harvesting operations;
- Forest regeneration in harvested areas;
- Regulation of protected areas;
- Biodiversity preservation;
- Soil quality preservation;
- the long-term productive capacity of the forest was maintained; and
- CO_2 emissions and removals with regards to LULUCF.

CO_2 emissions from wood matching these sustainability criteria were exempt under the EU ETS (for all energy operators subject to the ETS), but emissions from non-compliant biomass feedstocks were counted like those of fossil fuels (and economic operators needed to purchase corresponding CO_2 credits).

Member States are not obliged to create incentives for burning wood, and can end incentives they have created in the past.

However, **these criteria have not ensured the sustainability of the woody biomass industry because they are "risk-based" and focus on legal compliance rather than the sustainability of industry outcomes.**

In other words, energy operators aiming to demonstrate compliance with RED II's sustainability criteria needed to show that the legal framework, in the country of origin of the wood they used, aimed for the same objectives as the Directive. They needed to demonstrate compliance with the RED II criteria only where there was no national laws regulating forest management in the country of origin, which is rare.

Under RED II, Member States had to conduct a risk analysis to check whether the legislation of the country of origin of the fuel and its implementation satisfied RED II's criteria[19]. If so, all woody biomass fuels coming from that country were deemed to comply.

Under RED II, Member States had to "require economic operators to show that the sustainability and greenhouse gas emissions saving criteria [...] have been fulfilled" and "take measures to ensure that economic operators submit reliable information", but no details were specified as to how Member States should do this.

The **Commission's Implementing Regulation (EU) 2022/2448** for RED II aimed to clarify how to implement sustainability criteria, but did not establish concrete steps for Member

19 Article 30(3) RED II.

States to ensure that economic operators comply with their requirements, relying instead on third-party certification schemes **recognised** by the European Commission. Reliance on certification schemes have been the source of some challenges in the forest sector, where it has been **documented** that some of them **suffer** from structural conflicts of interest, weak implementation and/or low reliability.

RED III has kept the RED II's general approach, but complemented it with a few general principles, tightened many of its elements (in particular the sustainability and greenhouse gas savings criteria), and introduced stricter additional provisions – albeit sometimes with significant flexibility in how Member States implement them:

- The introduction of the cascading principle now requests Member States to design their support schemes to prioritise non-energy uses of wood (with certain exceptions), the idea being to prioritise higher added value industries in the wood sector[20].
- Member States need to ensure consistency between their planned use of biomass and their national carbon sink targets[21].
- There is now a general ban on providing financial support to electricity obtained from wood burning in electricity-only plants (with exceptions)[22].
- There is now a general ban on providing financial support to energy produced from certain biomass feedstocks[23].

Crucially, however, the RED III proposes a considerable acceleration of renewable energy deployment, with an overall renewables target of 42.5 per cent by 2030 and national targets in the building sector "consistent with an indicative target of at least a 49 per cent share of energy from renewable sources".[24] While it is imperative that fossil fuels are phased out as fast as possible and these targets go in the right direction, in our view, the sustainability safeguards for forest biomass were not sufficiently developed in the adopted version of RED III. This means that **it is very important that Member States adopt better measures in their transposition to avoid that these higher targets and corresponding incentives end up exacerbating the negative local, national and EU-wide impacts of the biomass industry.**

2.1 Renewables acceleration areas

Reflecting these ambitious renewable energy deployment objectives, RED III also encourages Member States to create "renewables acceleration areas",[25] which require an environmental assessment (among other checks) at the beginning, but in

20 Article 3(3) RED III.
21 Article 29 (7a)-(7c) RED III.
22 Article 3(3d) RED III.
23 Article 3(3c)(a) RED III.
24 Article 15a (1) RED III
25 Article 15c RED III.

which future renewable energy projects are exempted from certain EU environmental law requirements. Such areas must be included in official plans adopted by national Competent Authorities within 27 months from RED III's entry into force. Considering the risks associated with the biomass industry, Member States remain free to – and should – exclude biomass plants from these "renewables acceleration areas" in their transposition of RED III.

As stated in the introduction, this Guide does not seek to address the wider risks and opportunities related to the implementation of renewables acceleration areas beyond the specific context of woody biomass for power.

2.2 Implementing the cascading principle

RED II already **stipulated** that support schemes for woody biomass should be "designed with due regard to the waste hierarchy as set out in Article 4 of Directive 2008/98/EC to aim to avoid undue distortive effects on the raw material markets".

RED III goes further: the Directive now includes a definition of the cascading principle, introduced as a fundamental concept guiding the use of woody biomass in the economy:

> "Member States shall design support schemes for energy from biofuels, bioliquids and biomass fuels in such a way as to **avoid incentivising unsustainable pathways and distorting competition with the material sectors, with a view to ensuring that woody biomass is used according to its highest economic and environmental added value** in the following order of priorities:
>
> *(a) wood-based products;*
> *(b) extending the service life of wood-based products;*
> *(c) re-use;*
> *(d) recycling;*
> *(e) bioenergy; and*
> *(f) disposal."*[26]

The rationale for this rule is both environmental and economic: wood products store carbon (instead of releasing it to the atmosphere, as burning wood does, and wood-based industries are beneficial to the EU economy.

To adapt the implementation of the cascading principle to their local circumstances, Member States can derogate from the principle when no other use of woody biomass is

26 Article 3(3) RED III.

Kvarteret Taklampan, a residential building located near Stockholm in Sweden, uses wood for decoration, structure, insulation and cladding.

PHOTO: ALEXANDERSTOCK23 / SHUTTERSTOCK

economically viable or environmentally appropriate, and in duly justified circumstances, such as fire risk prevention activities or cases where "the local industry is quantitatively or technically unable to use forest biomass for an economic and environmental added value that is higher than energy production".[27]

RED III also includes a practical guide for implementing the cascading principle: it prohibits financial support to energy produced from "industrial grade roundwood". However, Member States must adopt their own definition of this term and should do so in a way that covers all types of wood that could be used by local industries (and not restricting it to industrial-grade roundwood only).

In addition, Member States can adopt rules for the process for making decisions on using roundwood for energy on a case-by-case basis. In doing so, Member States should note that the exclusion of a certain roundwood supply from the cascading principle (and allowing roundwood to be burned for energy) must follow requirements stipulated by the Court of Justice of the EU, **which ruled that** such derogations must be interpreted strictly so that general rules are not negated.[28] The way the Flanders region in Belgium has implemented the cascading principle (under RED II) is a good reference (see the Case Study below).

Additional measures to ensure the proper implementation of the cascading principle could include promoting policies which reduce energy demand(and therefore woody biomass) altogether, adopting strong rules on sorting and recycling wood waste (to exclude wood suitable for non-energy industrial purposes) and incentivising efficiency improvements in wood processing (to increase the volume of industrial-grade wood that is recovered and reducing the volume that is considered 'waste' and only suitable for burning as biomass). Likewise for smarter wood processing: more efficient wood processing can increase overall industry efficiency, reduce pressure on forests, and reduce volumes of by-products destined for burning in the energy sector. Member States may also consider adopting economic incentives that could stimulate the growth of circular economy initiatives.

27 Article 3 – (3a & 3b) RED III
28 Judgment of the Court of Justice of the EU, 28 October 2022 in Case C-435/22 PPU (ECLI:EU:C:2022:852), 120-121 and the case law cited.

Case study - Flanders' implementation of the cascading principle

In Belgium, the implementation of the cascading principle is delegated to sub-national regions. The Flanders region has adopted an **approach** that limits biomass incentives to energy from a list of "non-industrial" woody biomass categories, and excludes subsidies to energy produced from "industrial wood" (biomass can be subsidised if produced from "wood streams not used as industrial feedstock").

"Non-industrial" woody biomass categories are bark, fine dust (<0.2 millimetres (mm)), fine prunings, small twigs (both <4 centimetres (cm)) or stumps (max 30 cm above ground level; energy from burning stumps is now excluded from support under RED III).

Flanders defines "industrial wood" as the outcome of a process involving both the Flemish energy and waste agencies as well as the other wood-using industries. The process is the following:

- Energy producers submit the dossiers provided by their wood suppliers to the Flemish Energy Agency;
- The Agency shares these dossiers with industry federations representing the paper, panels, furniture and woodworks industries (Cobelpa and Fedindustria), asking for their advice (with a 30 day deadline), as well as with OVAM (Flanders' public waste agency).

If these industries object and can show they could use the relevant wood supply, the Flemish Energy Agency's advice is negative.

If they do not react or cannot show that the wood could be used, the Agency's advice is deemed positive.

Uniform positive advice from all the parties consulted is binding on the Flemish Government, which then grants **green certificates** (one of the main ways Belgium supports renewable energy producers) to the energy producers for the energy they produce from burning the wood. But if one of these industry federations can demonstrate that their industry can use the wood, no green certificates are issued.

2.3 Conditions for supporting biomass burning installations

Some Member States provide high levels of financial support to biomass burning installations, which need to meet a cumulative list of criteria. Under RED II, only installations whose capacity was above 20 MW needed to comply with RED II's sustainability and greenhouse gas savings criteria for biomass. RED III has gone further by lowering this threshold to 7.5 MW.[29]

Under both RED II and RED III (the relevant provision, Article 11, has not changed), Member States need to restrict their support to installations with a minimal efficiency rate:

- all installations burning wood and whose rated thermal input is below 50 MW are eligible for support without energy efficiency requirements – although Member States are allowed to impose energy efficiency requirements on smaller plants.
- Installations with a rated thermal input equal to or exceeding 50 MW need to apply more criteria, inherited from RED II. They either need to be cogeneration plants (producing both electricity and heat), use BECCS technology (if and when it materialises) or, if they are producing only electricity and meet one of the exceptions mentioned above, achieve:
  - for those between 50 and 100 MW, energy efficiency levels associated with the Best Available Techniques (BAT) for large combustion plants (listed in the **Commission's Implementing Decision (EU) 2017/1442);** or
  - for those above 100 MW: a net-electrical efficiency of at least 36 per cent.

RED III has introduced a new restriction on the provision of subsidies to electricity-only installations, which are now banned from direct financial support unless they meet certain exceptions. It has also introduced a general ban on direct financial support to energy produced from certain sensitive biomass feedstocks.

Member States can go beyond these minimum requirements if they wish.

A grand-fathering clause[30] allows Member States to continue supporting biomass installations that have been supported before the entry into force of RED III, in compliance with the RED II's sustainability and greenhouse gas emissions saving criteria as they were on 29 September 2020, until the end of 2030 (at the latest) but with a strict additional condition: the support must have been "granted in the form of a long-term support for which a fixed amount has been determined at the start of the support period and provided that a correction mechanism to ensure the absence of overcompensation is in place."

29 Article 29 (2) RED III
30 Article 29 (15) RED III

2.3.1 BAN ON ELECTRICITY PRODUCTION FROM BIOMASS

RED III introduces serious restrictions for electricity-only biomass installations, which can no longer be financially supported by Member States when they burn forest biomass (defined in Article 2 as "biomass produced from forestry").[31]

The rationale is that electricity production from wood burning is an inefficient process **(30 per cent** efficiency on average).

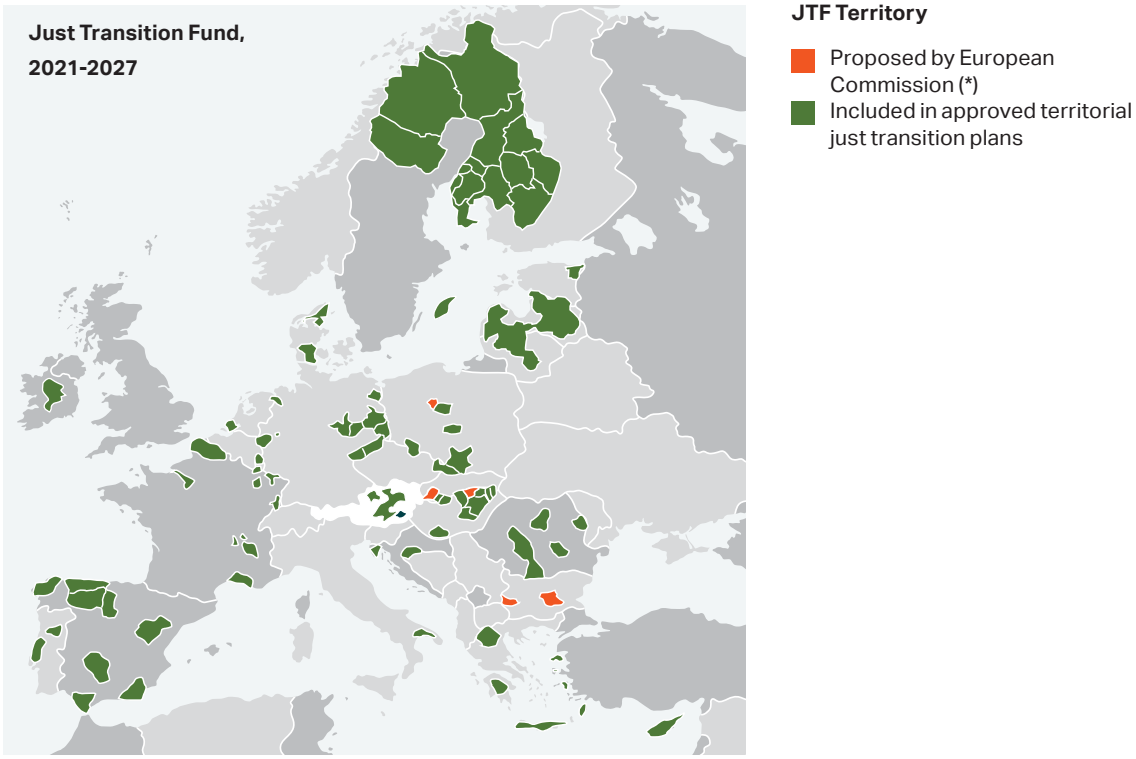
The ban comes with three exceptions that apply when:

- installations are located in "just transition regions" (see green zones on the **map** below (Figure 4)),
- installations will use BECCS technology (if it ever matures),[32]
- installations are located in an outermost region (Guadeloupe, French Guiana, Martinique, Réunion, Saint-Barthélemy, Saint-Martin, the Azores, Madeira and the Canary Islands) (though this exception will be deemed to be phased out as fast as a transition is possible without endangering the reliability of the local energy supply, which responsible Member States (France, Spain, Portugal) will need to define).

RED III specifies that tax benefits are not considered as direct financial support.

31 Article 3(3)(b) RED III.
32 It should be noted that **not a single power plant in the world** operates a commercial installation capturing CO2 from wood burning. It seems that no satisfactory chemical process for the separation of CO2 from wood combustion flue gases has **yet been identified** for biomass burning plants.

Figure 4: Just Transition regions in the EU.



2.3.2 GREENHOUSE GAS SAVINGS EMISSION CRITERIA

RED II introduced greenhouse gas savings criteria, an emissions reduction threshold that biomass burning installations must achieve compared to a fossil fuel-burning scenario. **RED III includes higher greenhouse gas emissions saving criteria.**[33] However, as long as wood burning emissions are counted as zero (which is the case for all woody biomass fuels meeting RED III's sustainability criteria), **these criteria do not include emissions from the act of biomass burning,** only those from the biomass supply chain.

These revised criteria depend on the installation's power as well as when it started operating:

- for **new installations** that start operation **after the RED III's entry into force (December 2023),** the emissions saving should be at least 80 per cent;
- for **existing installations** with a total rated thermal input equal to or exceeding 10 MW that started operation from 1 January 2021 to the entry

33 Article 29(10) RED III

into force of RED III, emissions saving must be at least 70 per cent until 31 December 2029 and at least 80 per cent from 1 January 2030;

- for existing installations with a total rated thermal input equal to or exceeding 10 MW that started operation before 31 December 2020, emissions savings must be at least 80 per cent once they reach 15 years of operation, at the earliest from 1 January 2026 and, at the latest, from 31 December 2029.

The higher 80 per cent emission savings may exclude wood pellets imported from North America, whose climate impact is **among the worst,** but uncertainties remain whether even an emissions savings requirement of 80 per cent would exclude relatively high supply chain emissions. To address this uncertainty, Member States can adopt a threshold that would be certain to exclude at least long-distance biomass imports, as the UK did in 2018 when it **adopted** a greenhouse gas limit of 29 kilogrammes of CO_2 equivalent per megawatt hour (kg CO_2e/MWh), for new biomass projects eligible to compete for Contracts for Difference.[34] This threshold, assuming a **coal baseline** of 850 kg CO_2e/MWh, represents an emissions savings threshold of 96 per cent.

Member States can adopt a threshold that would be certain to exclude at least long-distance biomass imports

2.4 Conditions for supporting energy from woody biomass fuels

Just as biomass installations need to satisfy efficiency and emissions saving criteria to be eligible for government support, the biomass fuels they burn also need to meet certain "sustainability criteria".

RED III has somewhat tightened these criteria, and added a list of biomass feedstocks that are excluded from biomass incentives in all cases.

34 According to **calculations** by the US non-governmental organisation Partnership for Policy Integrity (PFPI) based on industry data, average supply chain (fossil lifecycle) emissions for the woody biomass burned at the Drax power station in the UK, which imports more than 95 per cent of its biomass from overseas, were 128 kg CO2e/MWh between 2012 and 2017.

2.4.1 PROHIBITION OF DIRECT FINANCIAL SUPPORT TO ENERGY PRODUCED FROM CERTAIN WOODY BIOMASS FEEDSTOCKS

RED III stipulates that any energy obtained from burning "saw logs, veneer logs, industrial grade roundwood, roots and stumps" cannot be eligible for direct financial support.[35]

The first two categories aim to implement the cascading principle: saw logs and veneer logs typically command a higher market value than biomass fuels, though a **small proportion** of biomass industry feedstock has come from saw-quality wood being turned into wood pellets and wood chips, a practice made profitable by biomass incentives and high energy prices. Excluding support to energy from saw logs and veneer logs aims to end this practice.

RED III defines "industrial grade roundwood" as "saw logs, veneer logs, round or split pulpwood, as well as all other roundwood that is suitable for industrial purposes, excluding roundwood the characteristics of which, such as species, dimensions, rectitude and node density, make it unsuitable for industrial use as defined and duly justified by Member States according to the relevant forest and market conditions".[36]

This definition is the result of a political compromise found between the European Parliament and the European Council as a replacement for the Parliament's proposed exclusion of "primary woody biomass", which was unacceptable to some Member States. Again, the idea is to implement the cascading principle by excluding from biomass incentives all types of wood that could be used by other industries, such as the production of paper, cardboard, panels, chemicals, construction and insulation materials.

Member States must justify when industrial grade roundwood (as defined above) can still be used for energy production.

The way Flanders implements the cascading principle (noted above), with local wood-using industries vetting the biomass industry's wood supply for biomass incentives to be granted by public authorities, is a good example of a workable scheme capable of responding dynamically to present and future local circumstances.

The prohibition from burning "stumps and roots" aims to prevent the worst effects of biomass incentives on forest ecosystems, as the extraction of stumps and roots is disproportionately damaging to forest soils, resilience and regeneration.

35 Article 3 (3c) RED III
36 Article 2 (1a) RED III

According to EU's Joint Research Center, only half the wood used for bioenergy comes from leftovers from the forest industry and consumers - of the rest, at least 37% comes from tree trunks, treetops, branches, and similar and 14% is unknown (but unlikely to be leftovers)

PHOTO: PHOTO: BIAŁOWIEŻA FOREST, POLAND. BY DARIA ANDREEVA, FERN

2.4.2 SUSTAINABILITY CRITERIA APPLICABLE TO WOODY BIOMASS FUELS

RED III has kept RED II's general architecture of the sustainability criteria for forest biomass (including the risk-based/"legality test" approach and the reliance on voluntary certification schemes). However, it brings more details and requirements to the sustainable harvesting and LULUCF criteria (with binding elements beyond mere legality) and adds a criterion of "no-go zones".

However, these are minimum requirements: Member States are free to adopt additional sustainability criteria at their discretion.[37] The European Parliament's position was to exclude primary woody biomass[38] from the RED's sustainability criteria altogether, which is a sensible and justifiable approach for Member States to follow.

No-go zones

RED III has extended the scope of the legality criteria to include "no-go zones" for sourcing forest biomass that protect high-value areas in terms of biodiversity and carbon stocks (these areas were first defined to exclude the production of agricultural biomass). Paragraphs 3 to 5 of Article 29 require that **the laws and monitoring and enforcement**

37 Article 29 (14) RED III

38 The European Parliament's Environment Committee adopted the following definition for primary woody biomass, which includes exemptions for fire risk prevention and the prevention of active pests:
"'primary woody biomass' means all roundwood felled or otherwise harvested and removed. It comprises all wood obtained from removals, i.e., the quantities removed from forests, including wood recovered due to natural mortality and from felling and logging. It includes all wood removed with or without bark, including wood removed in its round form, or split, roughly squared or in other form, e.g., branches, roots, stumps and burls (where these are harvested) and wood that is roughly shaped or pointed.
This does not include woody biomass obtained from sustainable wildfire prevention measures in high-risk fire prone areas and woody biomass extracted from forests affected by active pests or diseases to prevent their spread, whilst minimising wood extraction and protecting biodiversity, resulting in more diverse and resilient forests."

systems in the country of origin for any woody biomass must also ensure that forest biomass is not produced in areas that have one of the following statuses in or after January 2008 (regardless of whether the land still has that status):

- Lands with a high biodiversity value.[39] These are:
  - "primary forest and other wooded land, 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".
    This point is particularly important because not all EU countries have a definition of "old growth forests" in their national legislation, and will therefore need to craft one as part of the transposition.[40]
  - "highly biodiverse forest and other wooded land which is species-rich and not degraded, and has been identified as being highly biodiverse by the relevant competent authority, unless evidence is provided that the production of that raw material did not interfere with those nature protection purposes; (...)"
  - "highly biodiverse grassland spanning more than one hectare that is:

    (i) natural, namely grassland that would remain grassland in the absence of human intervention and that maintains the natural species composition and ecological characteristics and processes; or

    (ii) non-natural, namely grassland that would cease to be grassland in the absence of human intervention and that is species-rich and not degraded and has been identified as being highly biodiverse by the relevant competent authority, unless evidence is provided that the harvesting of the raw material is necessary to preserve its status as highly biodiverse grassland;"
  - heathland.

39 Article 29 (3) RED III

40 The European Commission has proposed in recent **guidelines** the following definition for old growth forests: "A forest stand or area consisting of native tree species that have developed, predominantly through natural processes, structures and dynamics normally associated with late-seral developmental phases in primary or undisturbed forests of the same type. Signs of former human activities may be visible, but they are gradually disappearing or too limited to significantly disturb natural processes." In the United States of America, a first generic definition was developed in 1989, with more specific definitions being **developed regionally:** "Old-growth forests are ecosystems distinguished by old trees and related structural attributes. Old growth encompasses the later stages of stand development that typically differ from younger stages in a variety of characteristics that may include tree size, accumulations of large dead woody material, number of canopy layers, species composition and ecosystem function." (United States Department of Agriculture (USDA) Forest Service 1989).

- Lands with a high carbon stock,[41] which includes wetlands ("land that is covered with or saturated by water permanently or for a significant part of the year") and peatlands[42] (with a caveat: "unless evidence is provided that the cultivation and harvesting of that raw material does not involve drainage of previously undrained soil.").

The exclusion of forest biomass from 'no-go zones' is important for EU Member States that produce bioenergy from domestic biomass feedstocks because they will need to introduce this exclusion in their national legislation. In addition, domestic producers of forest biomass must issue a 'statement of assurance, underpinned by company-level internal processes'. Such statements aim to confirm compliance with the 'no-go zones' requirement and streamline the verification of biomass sourcing information that economic operators must provide to Member States, and potentially help Member States identify cases of non-compliance.

For the countries that do not exclude the extraction of biomass fuels from these zones in their own legislation (or there isn't enough evidence that they do), the criteria applies directly at "forest sourcing area level", with stricter scrutiny, and biomass producers need to provide evidence (for instance via voluntary schemes) that "management systems" at this level ensure that no wood comes from these no-go zones. Energy operators also need in this case to issue a 'statement of assurance, underpinned by company-level processes' that the biomass fuels they burn do not come from these zones.

Member States can broaden these no-go zones, in particular to "continuously forested areas, namely land spanning more than one hectare with trees higher than five metres and a canopy cover of more than 30 per cent, or trees able to reach those thresholds in situ",[43] which is land recognised in RED III as having high-carbon stock (but not included this time in the no-go zones for forest biomass production). Broadening the no-go zones in this fashion, keeping the flexibility needed for sanitary or fire risk reduction interventions, would be one of the most effective ways to protect forests from biomass incentives as it would exclude forests themselves from RED III's scope, and thereby limit biomass incentives to byproducts of wood processing industries outside forests.

41 Article 29(4) RED III.
42 Article 29(5) RED III.
43 Article 29(4)(b) RED III.

Sustainable harvesting criteria

RED III has expanded and somewhat tightened the sustainable harvesting criteria introduced in RED II, but kept the risk-based approach (compliance with national legislation aiming for equivalent objectives is sufficient for energy operators to comply with RED III criteria):

> "(iv) that harvesting is carried out considering maintenance of soil quality and biodiversity, in **accordance with sustainable forest management principles,** with the aim of **preventing** any adverse impact, in a way that avoids harvesting of stumps and roots, degradation of primary forests, **and of old growth forests as defined in the country where the forest is located,** or their conversion into plantation forests, and harvesting on vulnerable soils, that **harvesting is carried out in compliance with maximum thresholds for** large clear-cuts **as defined in the country where the forest is located, and with locally and ecologically appropriate retention** thresholds for deadwood extraction and that harvesting **is carried out in compliance with** requirements to use logging systems that minimise any adverse impact on soil quality, including soil compaction, and on biodiversity features and habitats; and;
>
> (v) that harvesting maintains or improves the long-term production capacity of the forest;"

As with the no-go zones, Member States need to adopt their own definition of "old growth forests". They also need to adopt a maximum threshold for large clear cuts and retention thresholds for deadwood suitable to the local context when they do not already have such elements in their domestic legislation.

Several European countries (such as **Switzerland** or **Slovenia**) ban clear cuts entirely, because of their severe impacts on forest soils and resilience. All EU Member States should reassess their approach to clear-cutting, i.e. consider potential area limitations and restrictions based on the forest habitat type and geomorphological and hydrological context.

Deadwood plays a **critical role** in maintaining biodiversity and ecosystem resilience, as well as other critical forest ecosystem processes, such as nutrient cycling and carbon transfer from trees to soil stocks. The EU Joint Research Centre has **shown** that it is particularly essential to leave coarse woody debris in forests to maintain biodiversity and **reduce** fire risk as it can hold a lot of moisture (when lying on the ground).

The aim of the new sustainability criteria introduced in RED III is to avoid using woody biomass that comes from, or contribute to, degraded forests. While RED III does not define forest degradation, this concept has been recently defined in EU law within the EU Regulation on deforestation-free products (EUDR), and applies consistently regardless of the country of origin of the biomass:

"'forest degradation' means structural changes to forest cover, taking the form of the conversion of:

(a) primary forests or naturally regenerating forests into plantation forests or into other wooded land; or

(b) primary forests into planted forests;"[44]

The legal framework and related monitoring and enforcement systems of the country of origin must reflect the above restrictions imposed by RED III. If there is not enough evidence that they do, biomass harvested in that country is considered high-risk. In such a case, economic operators must provide more detailed evidence to show that the above-mentioned criteria apply directly to "management systems at the forest sourcing area level".

Woody biomass fuels that are harvested in contradiction of these harvesting criteria, in countries that do not have laws and monitoring and enforcement systems to implement them, do not meet the RED III sustainability criteria (and energy operators in the EU cannot receive biomass incentives for the resulting energy). The details on how such compliance is verified - either by demonstrating existence of relevant laws or management systems on-the-ground - are included in Articles 3 and 4 of the Commission's Implementing Regulation (EU) 2022/2448.

LULUCF criteria

Because logging forests degrades their function as a carbon sink, a link had already been introduced in RED II with the **EU LULUCF Regulation,** which defines carbon sink targets for Member States. RED II foresaw that for the LULUCF criteria for forest biomass to be met, source countries had to be a Party to the **Paris Agreement** (whereby they commit to "conserve and enhance" their carbon sinks under Article 5 of the Agreement), and have LULUCF rules in place that provide evidence that their forests have balanced carbon accounts (that land emissions don't exceed removals).

Many Member States tend to **underestimate** the impact that expanding forest biomass extraction from forests has on their carbon sinks. It is important to note that the EU land sink has kept degrading since 2009.

To try and counter this dangerous trend, RED III goes beyond the RED II legality requirement by adding that **forest biomass production in a given EU Member State must be "consistent" with the Member State's 2030 LULUCF target, as defined by the LULUCF Regulation whose revision entered into force in May 2023.**[45] In our interpretation, this means that wood coming from an EU country failing to meet its national LULUCF target should not meet this LULUCF criteria.

44 Article 2(7) EUDR.
45 Article 29 (7a) RED III

New text added to the RED III LULUCF criteria (Article 29, 7a, 7b) explains how Member States must plan, monitor and report on the use of forest bioenergy to demonstrate consistency with the LULUCF targets and each country's integrated national energy and climate plans (NECPs) (required under Articles 3 and 14 of **Regulation (EU) 2018/1999,** known as the Governance Regulation and which must be finalised by the end of June 2024; see section 2.5).

2.5 How operators must comply with RED III criteria

Auditing mass balance systems - the role of private certification

The fundamental obligation on Member States stemming from RED III is to verify if economic operators comply with the requirements related to biomass feedstocks. Both RED II and the Commission's Implementing Regulation **((EU) 2022/2448)** already provided some clarity as to how Member States should ensure the compliance of economic operators with the sustainability and greenhouse gas emissions saving criteria: operators must provide reliable and verifiable information that the requirements have been fulfilled.

For this purpose, operators are required to use a mass balance system which enables them to gather specific information about a biomass consignment (which can consist of materials of different origin). Precisely, it allows the mixing of different raw materials and fuels with varying sustainability and energy characteristics, while maintaining information about their attributes, and ensuring that the overall mix has consistent sustainability qualities over time.

A mass balance system must ensure that information on compliance with sustainability and emissions saving criteria submitted by economic operators is accurate. To achieve this, operators must, upon request of Member States, provide data so that an adequate and independent audit can be performed to verify that "the [mass balance] systems used by economic operators are accurate, reliable and protected against fraud".[46]

There are three ways to proceed:

- First, the information can undergo first or second party auditing (i.e. internal audits or audits run by an economic operator on its supplier).
- Second, the information can be audited by **third-party voluntary schemes,** supervised by national Competent Authorities regarding compliance with the Commission's auditing rules. Here, **it is important to note that schemes that have been recognised by the Commission as providing**

46 Article 30 (3) RED III

'accurate data' automatically confirm an operator's compliance with the sustainability and emissions saving criteria.[47]

- Third, the information can be audited by **national schemes,** set up by Member States and run by their Competent Authorities.

Member States are obliged to ensure that **operators have employed relevant auditing procedures,** on which some detailed rules are further specified in the **Commission's Implementing Regulation (EU) 2022/996.** Additionally, information about the geographic origin and feedstock type of biomass fuels per fuel supplier must be made available to consumers "in an up-to-date, easily accessible, and user-friendly manner on the websites of operators, suppliers or the relevant competent authorities and shall be updated on an annual basis."[48]

RED III further strengthens the role of national and voluntary schemes: it enables installations with a total rated thermal input between 7.5 and 20 MW to demonstrate their compliance with the sustainability and emissions saving criteria through **simplified national or voluntary verification schemes,** governed by specific requirements.

Importantly, **the EUDR does not allow mass balance systems for providers of woody biomass fuels to demonstrate compliance with their EUDR obligations that the production of their biomass products did not cause deforestation or forest degradation (after 31 December 2020).** Operators and non-SME traders will be required to exercise due diligence to ensure their biomass products meet these requirements and will be responsible for their compliance even if they use third party certification schemes.

2.6 Monitoring and reporting requirements

Monitoring of the use of forest biomass in energy

The EU and its Member States **must develop** a monitoring system that provides them with up-to-date, complete and accurate data on the national use of forest biomass for energy, and update the system annually. Such information should allow them to conclude whether supplies of forest biomass have contributed to forest degradation or increased greenhouse gas emissions. The absence of such information makes it **nearly impossible** for national authorities to successfully implement any related policy.

47 As for RED II, relying on third-party voluntary certification schemes is problematic: suffering from structural conflicts of interest (the certifier is paid by the company wanting to sell its product), they have been **repeatedly shown** to not be able to prevent deforestation and forest degradation.
48 Article 30(2)(c) RED III.

This database should contain information on both the forestry and energy sectors, including:

The origin of forest biomass

Member States must verify whether the forest biomass fuels used for energy meet the sustainability criteria[49]. To do so, it is in our view that national Competent Authorities should be guaranteed access to accurate, up-to-date, and verifiable information about the laws and management systems in the countries of harvest. The authorities should also be well-informed about the areas that are most vulnerable to unsustainable biomass harvesting that might not be protected by the laws of the country of harvest, such as primary forests and other rare ecosystems.

At the same time, based on the **Commission's Implementing Regulation (EU) for RED II 2022/2448,** Member States must actively seek evidence of a significant lack of law enforcement in the country of harvest. Such investigations should entail a regular review of legal assessments, reports and infringement procedures launched by the European Commission or the judgements of the Court of Justice of the European Union, international or national governmental organisations, including information provided by non-governmental and scientific forest expert organisations.

Such a database could be merged with other monitoring systems developed under EU environmental laws dealing with forests, such as the EUDR. The EUDR imposes an obligation on economic operators who either import forest biomass from third countries or obtain it in the EU, to ensure that the fuel has not been linked to deforestation, illegal logging or forest degradation, as defined in the law. It also requires Competent Authorities to continuously monitor flows of forest biomass and assess them in light of the risk of being linked to illegal logging, deforestation or forest degradation.

The European Union (EU) Regulation on deforestation-free products (EUDR) entered into force in June 2023 and prohibits companies from putting products on the EU market unless they are deforestation-free and legally produced. It also bans the export of such products within and from the EU.

The EUDR applies to wood, palm oil, soy, coffee, cocoa, rubber and beef as well as most of the products derived from these commodities like hides, leather, chocolate, wood pellets, charcoal and (printed) paper. Large companies have until December 2024 to prepare themselves before the prohibition becomes active (small companies have until June 2025).

49 Article 30(3) RED III.

The emissions associated with the harvesting of forest biomass and domestic supply of forest biomass

Member States must estimate a trajectory on domestic forest biomass supply in their national energy and climate plans (NECPs) submitted in accordance **with Regulation (EU) 2018/1999** ('Governance Regulation').

Under RED III, NECPs must now contain a detailed strategy to ensure consistency between biomass production and use and land sinks targets adopted under the LULUCF regulation.[50] This strategy is composed of:

- "(a) an assessment of the domestic supply of forest biomass available for energy purposes in 2021-2030 in accordance with the criteria laid down in this Article [Article 29];
- (b) 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 laid down in Article 4 of Regulation (EU) 2018/841; and
- (c) a description of the national measures and policies ensuring compatibility with those targets and budgets."

These new requirements overlap to a large extent with the current requirements under the Governance Regulation for forest biomass data in NECPs:

- estimated trajectories on bioenergy demand, disaggregated between heat, electricity and transport, and on biomass supply by feedstock and origin (distinguishing between domestic production and imports), as well as an assessment of its source and impact on the LULUCF sink;[51]
- specific measures on financial support for the promotion of the production and use of energy from renewable sources;[52]
- specific measures on the promotion of the use of energy from biomass, especially for new biomass mobilisation taking into account biomass availability (domestic and imported) and other biomass uses by other sectors (agriculture and forest-based sectors), and on the sustainability of biomass production and use;[53]
- projections of the development of the energy system and emissions and removals as well as air pollutants under the planned policies and measures at least until 10 years after the period covered by the plan are required.[54]

50 Article 29(7b) RED III.
51 Annex I to the Governance Regulation, Section A: National Plan, 2.1.ii
52 Annex I to the Governance Regulation, Section A: National Plan, 3.1.2.iii
53 Annex I to the Governance Regulation, Section A: National Plan, 3.1.2.vii
54 Annex I to the Governance Regulation, Section A: National Plan, 5.1.2.i

Conclusion

The acceleration of the climate and biodiversity crises, including increased wildfires and pest outbreaks, has led to further questions about the status of wood burning as a source of energy.

The EU's biomass policy has driven a near-tripling in direct CO_2 emissions from biomass between 1990 and today, to a point where direct EU biomass emissions are now close to those of the whole German economy. Meanwhile, European forests are capturing less and less CO_2, in particular because of increased logging to supply a biomass industry that national governments are spending billions of euros per year to support, in the hope of reaching their EU renewable energy targets.

The way bioenergy is regulated, including in RED III, should be reconsidered by all relevant levels of the decision-making process. Member States now have the opportunity to implement an effective framework that incorporates both the legal requirements and scientific knowledge.

EU Member States now have 18 months to transpose many of the RED III requirements into national law.

During this time they have the power to stop squandering billions of euros every year that contribute to deforestation and to focus instead on promoting policies which reduce the need to burn wood. They can invest in better forest management, on preserving and restoring forests' resilience in the face of the climate and biodiversity crises. They can, and should, adopt solutions that support EU citizens, in particular the poorest households who typically live in the worst-performing buildings, to better insulate their homes and replace their heating systems in a way that does not force them to pay upfront costs which they often cannot afford.

This is a matter of justice.

88% of the EU citizens support the green energy transition, in response they are expecting lower bills and cleaner air – not decimated forests, unpayable renovation bills and a continuation of the burning economy.

RED III may not be strong enough to ensure the protection of forests and EU citizens' future, but Member States have at least gained the power to do so within their territories.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