

BEYOND BIOENERGY

A civil society statement on EU Bioenergy policy

We love fire.
We love the glow.
We love the heat.

We love sitting around it
to be together, telling
each other stories.

Gazing into the embers and
forgetting the passing of time.

Finding comfort in the power
and protection it gives.

Countless generations
have harnessed its power
in ever more mighty machines.

Fire made us who we are.

But it may also be our undoing.
In trying to get off fossil fuels, the EU is now
burning millions of tonnes of trees and crops as
fuel in power stations and cars.

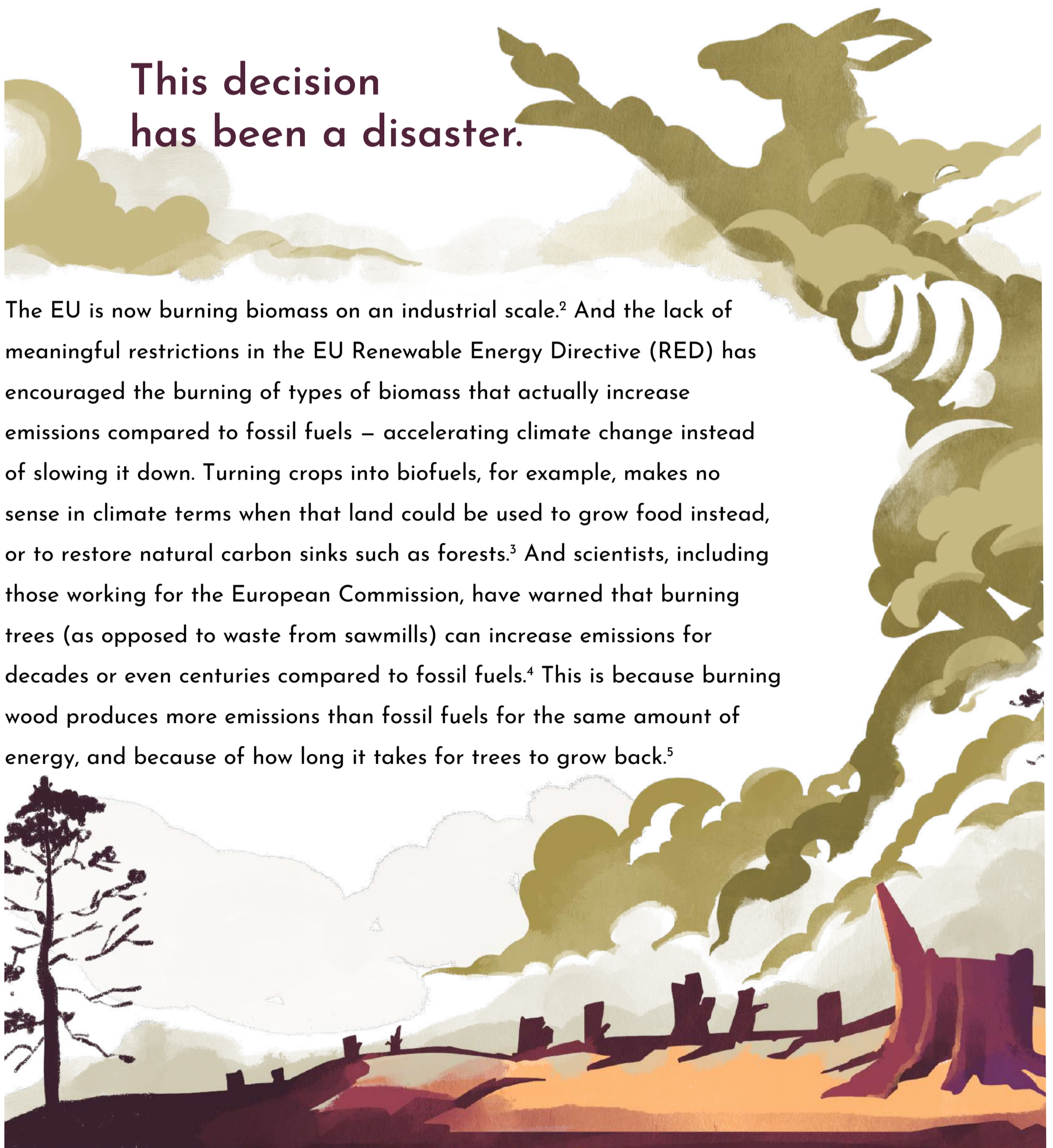
It is time to heal our relationship with fire.

Humans have been burning wood and other organic material, known as biomass, for thousands of years, and in Europe our demand for wood and crops has contributed to deforestation, forest degradation and other harmful land use changes such as soil degradation. Globally, about 30% of the CO₂ added to the atmosphere since 1850 has come from land use change.¹

But when industrial societies started burning fossil fuels, they released carbon that had been stored for millennia. This put us on the road towards the climate crisis now endangering our very survival. In search of alternative energy sources, EU policymakers created incentives for renewable energy such as wind and solar power. But they also classified the burning of all forms of biomass for energy, including trees and crops, as renewable 'bioenergy', creating comparable incentives for it and counting it as zero carbon at the point of combustion.

This decision has been a disaster.

The EU is now burning biomass on an industrial scale.² And the lack of meaningful restrictions in the EU Renewable Energy Directive (RED) has encouraged the burning of types of biomass that actually increase emissions compared to fossil fuels – accelerating climate change instead of slowing it down. Turning crops into biofuels, for example, makes no sense in climate terms when that land could be used to grow food instead, or to restore natural carbon sinks such as forests.³ And scientists, including those working for the European Commission, have warned that burning trees (as opposed to waste from sawmills) can increase emissions for decades or even centuries compared to fossil fuels.⁴ This is because burning wood produces more emissions than fossil fuels for the same amount of energy, and because of how long it takes for trees to grow back.⁵



This is not an argument for continuing to burn fossil fuels, but we cannot achieve a safe planet by switching from fossil fuels to biomass.

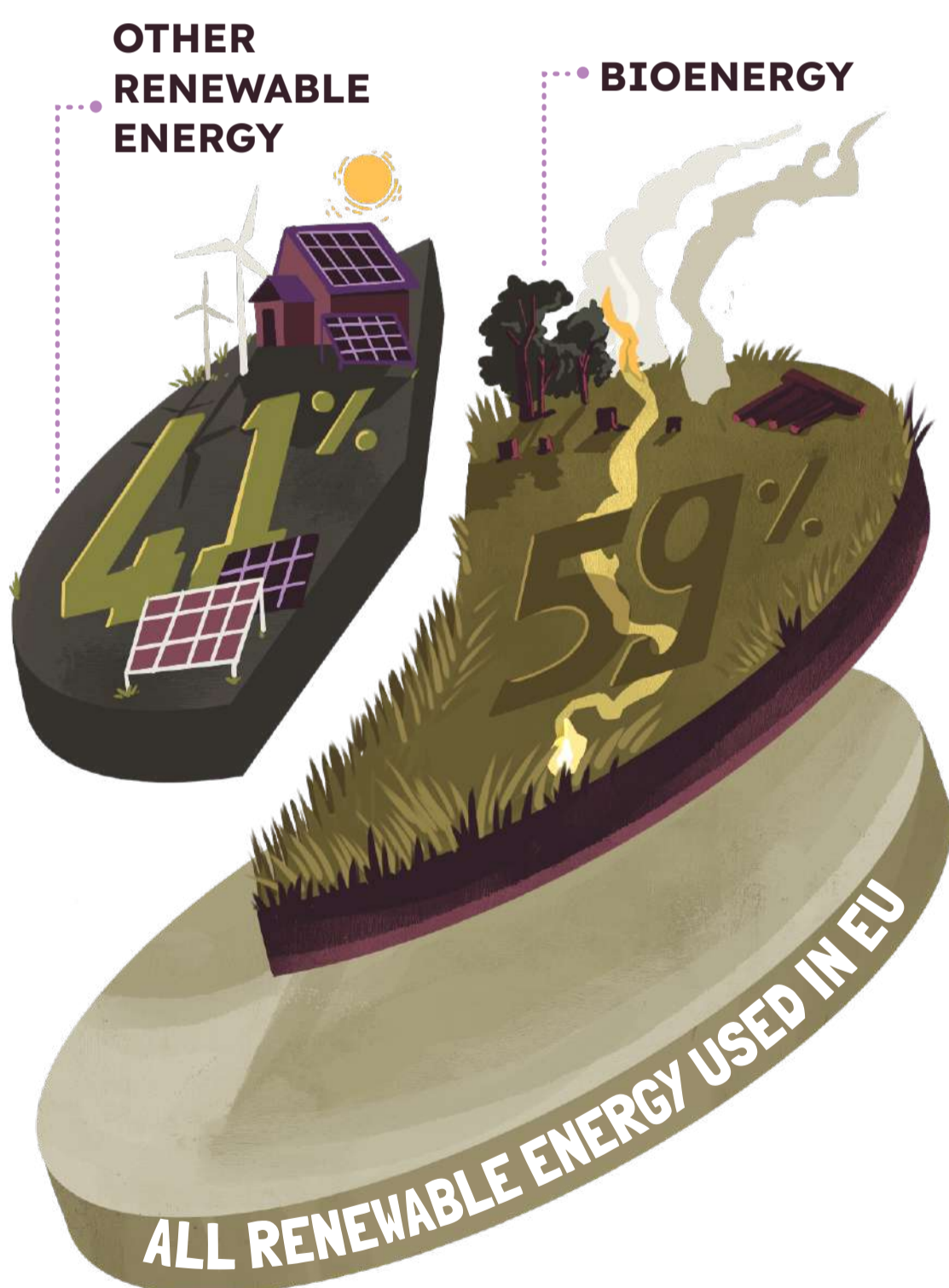
EU emissions from burning biomass for energy have tripled since 1990,⁶ and this has come at a huge cost. Today, bioenergy still represents about 59% of the EU's renewable energy⁷ with national governments spending billions subsidising its use for transport, electricity and heat. In 2022 alone, EU Member States allocated €15 billion in direct subsidies to using biomass as an energy source.⁸

Such subsidies have dramatically increased the existing pressures on forests and other

landscapes. Over the past decade, the EU's land carbon sink has collapsed by almost a third,⁹ as irreplaceable natural ecosystems have been logged for products and energy and then replaced by monoculture tree plantations,¹⁰ as removal of forest biomass has increased,¹¹ and as arable fields and grassland have been turned over to biofuel and biogas crops. These practices have decimated nature and released vast amounts of greenhouse gases into the atmosphere.

Food production and communities have also been displaced as the price of biomass has skyrocketed, leading to increased food insecurity, human rights violations and land grabs around the globe.¹² Using crops (including food and feed crops) for biofuels threatens food security by impacting food availability, food prices and their stability, and the social and environmental sustainability of food systems. Instead of making the transport sector truly sustainable, the EU has so far relied mainly on using food for fuel.¹³ Biomass burning also continues to be a major cause of air pollution, which seriously affects people's health.^{14 15}

Despite being made aware of these concerns, the European Commission is projecting a further 30% expansion of biomass and waste use for energy by 2040,¹⁶ relying in part on the development of biogenic carbon removal technologies such as bioenergy with carbon capture and storage (BECCS), and is considering incentivising an increase in biochar¹⁷ production. While BECCS and biochar might under certain circumstances have a role



to play in climate mitigation, they have yet to be proven and may not actually remove additional carbon from the atmosphere¹⁸, particularly if they rely on burning trees and crops. Instead they may simply shift a fraction of the carbon that would otherwise remain stored in products, forests or other landscapes to another storage form, all while increasing biomass demand and hence the overall pressure on forests and agricultural land. This is particularly risky given that forests are one of the only things we have on land at present that is actually removing carbon from the atmosphere.

The European Commission is presently revising its Bioeconomy Strategy,¹⁹ a plan that acknowledges the value and scarcity of biomass resources. There is no time to wait. The EU needs to change its Bioeconomy Strategy and its renewable energy policy to implement the principles of fairness, consistency, efficiency, and sufficiency.

Fairness



The Global North has, and continues to, consume more than its fair share of resources at the expense of the Global South, particularly Indigenous Peoples and rural communities around the globe. Vulnerable communities face land grabs associated with efforts to gain access to biomass and critical raw materials in high demand for energy production. The EU partly meets its renewable energy demand by cutting down ancient forests, diverting crops for energy production and clear-cut forestry which destroys biodiversity. The consequences of this overconsumption disproportionately affect people living in poverty, both within the EU and globally.

Moreover, low-income households who rely on firewood to heat their homes - and who are therefore most exposed to air pollution - need and deserve public support to switch to cleaner, sustainable heating systems. Without this they risk remaining 'locked-in' to harmful, inefficient and - if incentives for industrial-scale biomass continue - increasingly expensive biomass use.

Consistency



The EU's bioenergy policies are meant to support the achievement of the EU's climate goals, but by incentivising burning trees and crops, these policies directly undermine them. Such indiscriminate incentives for biomass use in the Renewable Energy Directive, rather than being adequately controlled by the Land Use, Land Use Change, and Forestry (LULUCF) Regulation, in fact make achieving the LULUCF targets harder.²⁰ And while the RED allows subsidies for the burning of trees and crops, the Nature Restoration Law and the EU Regulation on Deforestation-free Products require Member States to protect more nature and forests, including outside of the EU. These examples highlight a clear lack of policy consistency which civil society has been denouncing for years,²¹ and which has recently been highlighted as a climate risk by the European Scientific Advisory Board on Climate Change (ESABCC).²²

To ensure consistency, all legislation and policy should ensure a just transition and be measured against:

- (i) the Paris Agreement's goal of keeping the average global temperature rise to a maximum of 1.5 degrees;
- (ii) the EU's biodiversity strategy and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) objective of conserving at least 30% of all terrestrial, inland water and coastal and marine areas by 2030.

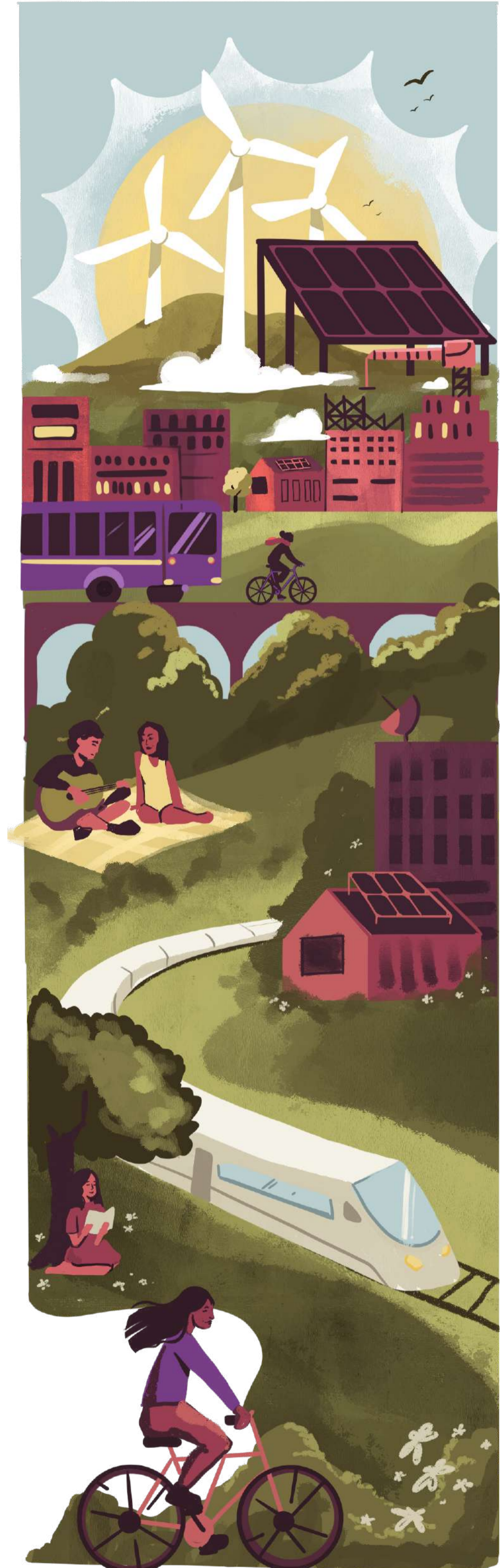
This is not the case today. To reach its environmental, climate and social goals, the EU urgently needs to align its bioenergy policies with these international agreements by stopping incentives for burning trees and crops for energy.

Efficiency

Burning trees and crops is an inefficient use of biomass, land, and public funds.

For example, it takes 40 times more land to power a car with biofuels than with solar energy. It takes an area almost the size of Denmark to meet the EU's biofuel consumption.²³ Solar panels could produce the same energy, at lower cost, using just 2.5% of this land, freeing up enough space to meet the calorie needs of at least 120 million people²⁴ - or space to store carbon in natural ecosystems. Moreover, renewable energy sources such as solar and wind already offer lower electricity production costs, and these costs are still decreasing. In contrast, power generation from biomass has not meaningfully reduced production costs²⁵ and biomass is likely to be an increasingly expensive resource. Yet the EU still encourages Member States to provide incentives for it.

Public funding should support more effective practices to halt and mitigate climate and environment breakdown, such as human-centred urban planning, electrifying the transport and heating sectors, improving public transport, insulating our homes, updating the electricity grid, boosting energy demand flexibility and improving energy storage. To minimise rebound effects,²⁶ it is crucial that efficiency gains be directed toward reducing raw material use rather than increasing production.



Sufficiency



Infinite material growth on a finite planet is impossible. To stay within planetary boundaries and ensure wellbeing for all, the EU cannot simply replace fossil fuels with harmful sources of bioenergy.²⁷ To facilitate effective decarbonisation pathways, the EU must break away from a simplistic pursuit of endless economic growth as measured by GDP,²⁸ and set and prioritise demand reduction policies, including sufficiency strategies.²⁹ A more sustainable economy also requires a rapid and radical reduction in inequality. It must ensure that the wealthiest regions and individuals, who contribute most to pollution and the climate crisis, contribute most to the solutions. Overconsumers - especially the richest in

society - must reduce their consumption most and fastest.³¹

Demand reduction strategies must also include energy and material demand reduction targets³² while promoting low-energy lifestyles to curb the emissions of the wealthier parts of society. These strategies could and should lower Europe's final energy demand significantly,³³ allowing the region to meet its energy needs more fairly and sustainably without depleting natural resources or harming the environment.

A way forward

There is widespread recognition that urgent action is needed to combat the climate crisis. Yet the EU still refuses to change its harmful bioenergy policies in a meaningful way. We cannot fight fire by burning forests, protect species and store carbon by destroying natural habitats, or ensure food security by burning crops for fuel.

The EU must stop rewarding the destruction of climate and nature, and instead support the shift towards wiser uses of biomass. It must end all incentives for burning trees and crops, implement the cascading principle so that burning biomass for energy is a last resort³⁴ and ensure that scarce biomass resources are used in sectors with no other options.³⁵

Achieving a more sustainable society requires fundamentally reorganising our economy to be dramatically more equal, and to break free from the linear model of extraction and resource depletion, where natural resources are continually removed and consumed faster than they can regenerate. This means re-embedding resource use within societal purposes: for instance, working with countries and local communities to access and use raw materials fairly. It means prioritising resource demand reduction and supporting existing and scalable solutions, including fair access to electrification, sustainably produced wind and solar power, energy storage, public transport and insulation.

Above all, it means designing consistent, efficient, sufficiency-oriented and fair policies that radically reduce inequality, increase wellbeing and keep us within planetary boundaries.³⁶



We love fire, but we love our planet too.

We love its land, its forests and its nature.
That's why we must learn to use them more
wisely, more efficiently, and more fairly.

We can still enjoy fire, but we must stop
burning our house down.

Agora Association
AirClim
Association For Promotion Sustainable Development
Association pour la Conservation et la Protection des Écosystèmes des Lacs et l'Agriculture Durable
Aurora Sweden
Biofuelwatch
BirdLife Europe and Central Asia
Bond Beter Leefmilieu
CAN Europe
Canopea
Castlemaine Residents Against Biomass
Centro de Documentación en Derechos Humanos "Segundo Montes Mozo S.J."
CESATA Amigos de la Tierra
Changemaker Finland
Climate Communications Coalition
Comite Schone Lucht
Common Forest
Denkhausbremen
Deutsche Umwelthilfe e.V.
Dogwood Alliance
Earth Thrive
EcoNexus
Ei polteta tulevaisuutta
Environment East Gippsland inc.
European Environmental Bureau
Fair Finance International
Fern
Forests NOW
Forum Ökologie & Papier
Fridays For Future Sweden
Fundacja Bycie w Lesie
Fundacja Dzika Ziemia
Fundacja Kultury Pozytywka
Fundacja Mysikrólik-Na Pomoc Dzikim Zwierzętom
Fundacja Szkatułka
Global Forest Coalition
Green Global Future
Hiilivapaa Suomi / Coal-Free Finland
Independent Forest Monitoring Fund
Inicjatywa Dzikie Karpaty (Wild Carpathians Initiative)
Inicjatywa na rzecz Lasów Mikołowa
Las Wokół Miast
Latvijas Ornitológijas biedrība
Leefmilieu
Lubuskie Stowarzyszenie na Rzecz Kobiet BABA
Luontoliitto Forest Action Group
Metsäliike / Forest Movement Finland
MOKUDO Lesne Kapiele
NABU (Nature and Biodiversity Conservation Union) Germany
Natural Heritage Foundation - Poland
Natural Resources Defense Council
Natuur & Milieu
Opolskie Towarzystwo Przyrodnicze
Oxfam
Partnership for Policy Integrity
Pivot Point, A Nonprofit Corporation
Pracownia na Rzecz Wszystkich Istot
Proselva
Protect the Forest
Quercus - Associação Nacional de Conservação da Natureza
RAC France
Recycle Lebanon
ROBIN WOOD
Skiftet
Society for Sustainable Development Design
Solutions for Our Climate
South East Region Conservation Alliance
SPEA - Sociedade Portuguesa para o Estudo das Aves
Stowarzyszenie Atmosfera
Stowarzyszenie Carpatica
Stowarzyszenie MULTIFORM
Stowarzyszenie Nasz Las Tulecki
Stowarzyszenie Stołeczne Towarzystwo Ochrony Ptaków
Sweden's Environmental Association of Law (Miljöjuristerna)
The Australian Foundation for Wilderness
The Climate Lab
Transport & Environment
United Kingdom Without Incineration Network
VšĮ Žiedinė ekonomika
Water Justice and Gender
WWF
ZERO - Associação Sistema Terrestre Sustentável

Acknowledgements

Authors:

This statement was drafted by Oxfam, Fern, WWF, Protect the Forests Sweden and Healthy Indoor Environment and Green Global Future. For further information, please contact Julie Bos at julie.bos@oxfam.org, Martin Pigeon at martin@fern.org or Sofia Ghezzi at sghezzi@wwf.eu.

Design:

Rae Zachariah | www.raezack.com

Date: 5 March 2025

- 1) Global Carbon Project (2023), <https://robbieandrew.github.io/GCB2023/>
- 2) See for example the photos here from a majority of EU Member States: https://docs.google.com/presentation/d/15oGRwlpQR_lcmQCktZBxC16Ws3li5hD2/edit#slide=id.p7
- 3) Transport & Environment and Oxfam, Biofuels: An obstacle to real climate solutions (March 2023) https://www.transportenvironment.org/uploads/files/202303_IFEU-Study_TE_Briefing_EN_2024-04-29-153303_muae.pdf
- 4) For more detail on the climate impacts of different sources of bioenergy, together with references, see this WWF Guidance for EU Member States on Bioenergy Plans and Policies (June 2024) <https://wwfeu.awsassets.panda.org/downloads/wwf-briefing-bioenergy-final.pdf>
- 5) It can also be because felled trees that are not suitable for making products would store carbon for a long time if left in the forest, and much of the carbon released as they decayed would end up in the soil, not the atmosphere.
- 6) European Environment Agency, The European Biomass Puzzle (March 2023) <https://www.eea.europa.eu/publications/the-european-biomass-puzzle>
- 7) European Commission, EU Bioenergy Sustainability Report (October 2023) https://energy.ec.europa.eu/news/bioenergy-report-outlines-progress-being-made-across-eu-2023-10-27_en
- 8) Member States spend from €34 to €48 billion per year on action that harms nature. See WWF, Harmful subsidies report (May 2024) <https://www.wwf.eu/?13738416/Member-States-use-billions-of-EU-subsidies-to-fund-nature-harming-activities---new-WWF-study>
- 9) The proportion of the European wood harvest that ends up being burnt continues to increase compared to the proportion of harvested wood used for material uses. See PFPI, National Energy and Climate Plans and Carbon Sink Analysis for EU Member States (April 2024) <https://www.pfpi.net/wp-content/uploads/2024/04/PFPI-analysis-of-draft-NECPs-April-2024.pdf>.
- 10) As an example, see Fern, Sweden's industrial forestry model is inflicting damage on its migrant workforce as well as nature (June 2023) <https://www.fern.org/story-articles/duped/>.
- 11) Grassi, Cescatti, and Ceccherini, JRC study on harvested forest area: resolving key misunderstandings (2021) <https://iforest.sisef.org/contents/?id=ifor0059-014>; Turubanova et al. Tree canopy extent and height change in Europe, 2001-2021, quantified using Landsat data archive (2023) <https://www.sciencedirect.com/science/article/pii/S0034425723003486>
- 12) For more details on the food security impacts of biofuels see Oxfam, Biofuel Blunders: Time to fix two decades of EU policies driving food insecurity (September 2024) <https://policy-practice.oxfam.org/resources/biofuel-blunders-time-to-fix-two-decades-of-eu-policies-driving-food-insecurity-621622/>.
- 13) There are better ways to use land than for biofuels. For example, if Europe used its land to grow crops for food instead of fuel, we could feed 120 million people daily - 43% of the people facing acute hunger worldwide. See Oxfam & T&E, Biofuels: An obstacle to real climate solutions (March 2023) <https://www.oxfam.org/en/research/biofuelsan-obstacle-real-climate-solutions>.
- 14) HEAL, Infographic on health and climate threat from wood burning (2024) <https://www.env-health.org/new-infographic-on-the-health-and-climate-threat-from-wood-burning/>
- 15) https://rgo.dk/wp-content/uploads/GTD_Pollution-from-wood-burning_2022-1.pdf
- 16) Fern, EU 2040 climate target - what does it mean for forests? (February 2024) https://www.fern.org/fileadmin/uploads/fern/Documents/2024/Fern_EU_2040_climate_target_what_does_it_mean_for_forests.pdf

- 17) Biochar is a form of charcoal created through the pyrolysis of biomass and intended for use as a soil amendment.
- 18) European Academies of Science Advisory Council, "Look before you Leap": European Science Academies Caution against Subsidies for Bioenergy with Carbon Capture and Storage (BECCS) (April 2022)
<https://easac.eu/news/details/look-before-you-leap-european-science-academies-caution-against-subsidies-for-bioenergy-with-carbon-capture-and-storage-beccs>
- 19) European Commission, Bioeconomy Strategy (2020)
https://research-and-innovation.ec.europa.eu/research-area/environment/bioeconomy/bioeconomy-strategy_en.
- 20) See page 6 of this briefing paper for an explanation of why the EU's LULUCF rules don't solve the problem of weak bioenergy criteria in the RED
<https://wwfeu.awsassets.panda.org/downloads/wwf-briefing-bioenergy-final.pdf>.
- 21) WWF, Policy consistency for climate - The EU case (October 2023)
https://wwfeu.awsassets.panda.org/downloads/policy-consistency---final-report_1.pdf.
- 22) European Scientific Advisory Board on Climate Change (ESABCC), Report on immediate implementation and continued action to achieve EU climate goals (January 2024)
<https://climate-advisory-board.europa.eu/news/eu-climate-advisory-board-focus-on-immediate-implementation-and-continued-action-to-achieve-eu-climate-goals>.
- 23) The production of crops for biofuels for European consumption requires 5.3 Mha of land, an area almost the size of Denmark. The 5.3 Mha takes into account the land-use needed for production of co-products of biofuel production. Without this inclusion European biofuel consumption would require 9.6 Mha of land. Transport & Environment and Oxfam, Biofuels: An obstacle to real climate solutions (March 2023)
<https://www.transportenvironment.org/articles/biofuels-an-obstacle-to-real-climate-solutions>.
- 24) Oxfam and Transport & Environment, Biofuels: An obstacle to real climate solutions. (March 2023)
<https://www.oxfam.org/en/press-releases/land-used-european-biofuels-could-feed-120-million-people-daily>.
- 25) TMP Climate, Biomass case study, 2024, <https://asktmp.com/2024/09/09/751/>
- 26) The German Environment Agency (UmweltBundesamt) defines rebound effects as follows: 'efficiency increase oftentimes reduces product or service costs, which can in turn ramp up consumption (due to reduced prices), thus partly canceling out the original savings.
<https://www.umweltbundesamt.de/en/topics/waste-resources/economic-legal-dimensions-of-resource-conservation/rebound-effects>
- 27) Doughnut Economics Action Lab, About Doughnut Economics, <https://doughnuteconomics.org/about-doughnut-economics>.
- 28) Joint NGO briefing: Beyond GDP <https://www.wwf.eu/?6721241/This-is-the-moment-to-go-beyond-GDP>
- 29) The International Panel on Climate Change (IPCC) describes sufficiency policies as "a set of measures and daily practices that avoid demand for energy, materials, land and water while delivering human wellbeing for all within planetary boundaries". They are discussed further in Chapter 5, IPCC AR6 Report 2022, <https://www.ipcc.ch/report/ar6/wg3/>.
- 30) Oxfam, Climate Equality: A planet for the 99% (November, 2023)
<https://policy-practice.oxfam.org/resources/climate-equality-a-planet-for-the-99-621551/>
- 31) The richest 1 percent of the world's population produced as much carbon pollution in 2019 as the five billion people who made up the poorest two-thirds of humanity. Oxfam, Climate Inequality: Planet for the 99% (November 2023)
<https://policy-practice.oxfam.org/resources/climate-equality-a-planet-for-the-99-621551/>
- 32) See for example this civil society proposal for a binding EU material footprint reduction target: négaWatt Association, CAN Europe, ECOS, RREUSE, the European Youth Forum, Friends of the Earth Europe, Zero Waste Europe, and Seas at Risk, White paper on sustainable resource management in the EU. (February 2024)
<https://www.youthforum.org/files/Letter-Sustainable-Resource-A4-ENG-FIN.pdf>
- 33) See the PAC Scenario <https://www.pac-scenarios.eu/> and Clever Scenario, Climate neutrality, Energy security and Sustainability: A pathway to bridge the gap through Sufficiency, Efficiency and Renewables (June 2023)
https://clever-energy-scenario.eu/wp-content/uploads/2023/10/CLEVER_final-report.pdf.
- 34) Article 3 of the RED sets out the cascading principle
https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:L_202302413#d1e4629-1-1
- 35) For example as a source of carbon molecules in the biochemical industry: <https://materialeconomics.com/node/3>
- 36) Remaining within planetary boundaries is an official EU policy goal, part of its Green Deal. See Decision (EU) 2022/591 of the European Parliament and Council of 6 April 2022 on a General Union Environment Action Programme to 2030 L 114/22.