Removing carbon from forests at the expense of the land sink is not a permanent removal from the atmosphere

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Why the proposed EU Delegated Act on methodologies for permanent carbon removals should be rejected

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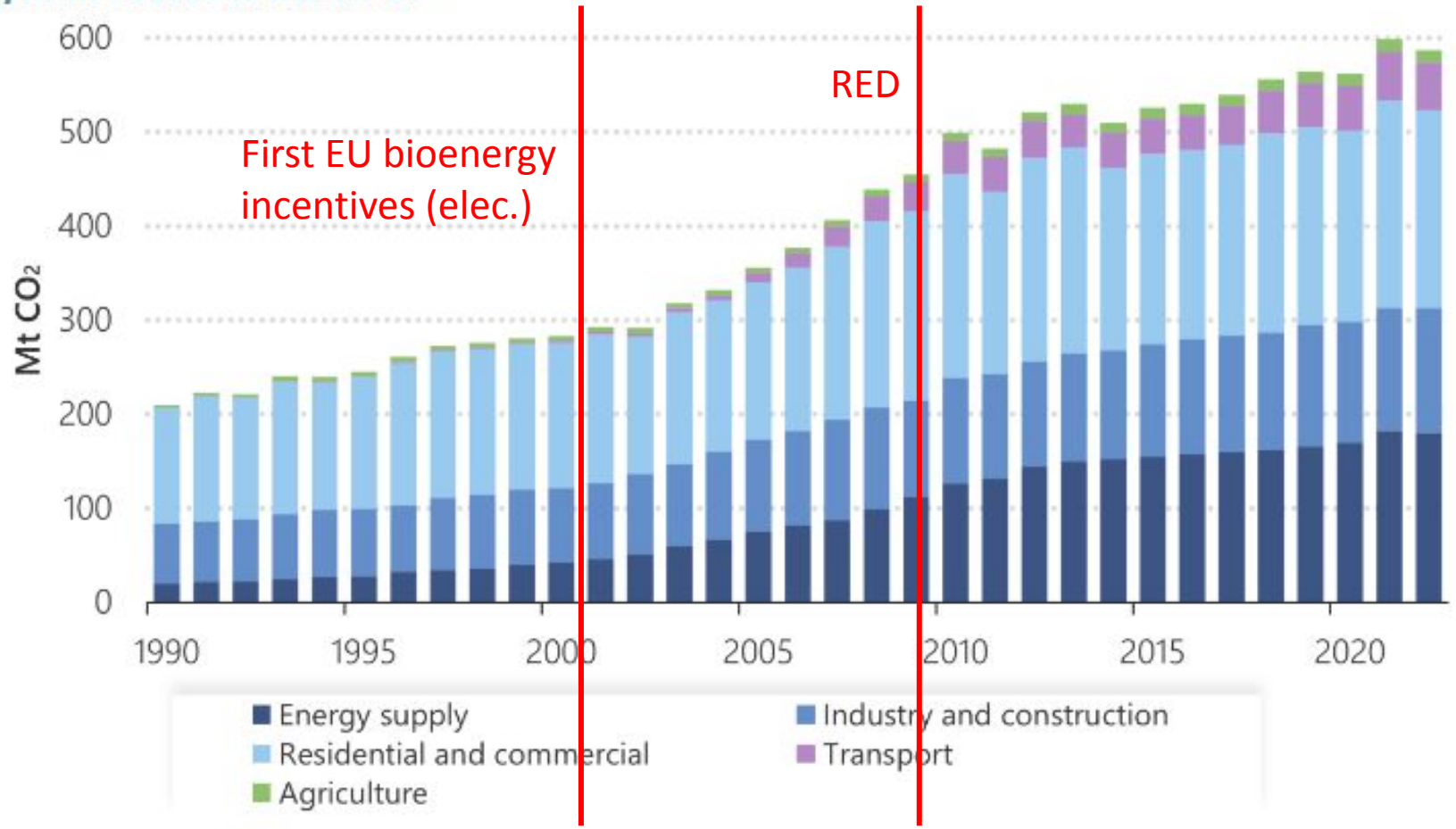
Context: “renewable” is not the same as climate-friendly

Figure 21 Annual CO_2 emissions from combustion of all types of biomass for energy purposes in different sectors in the EU-27



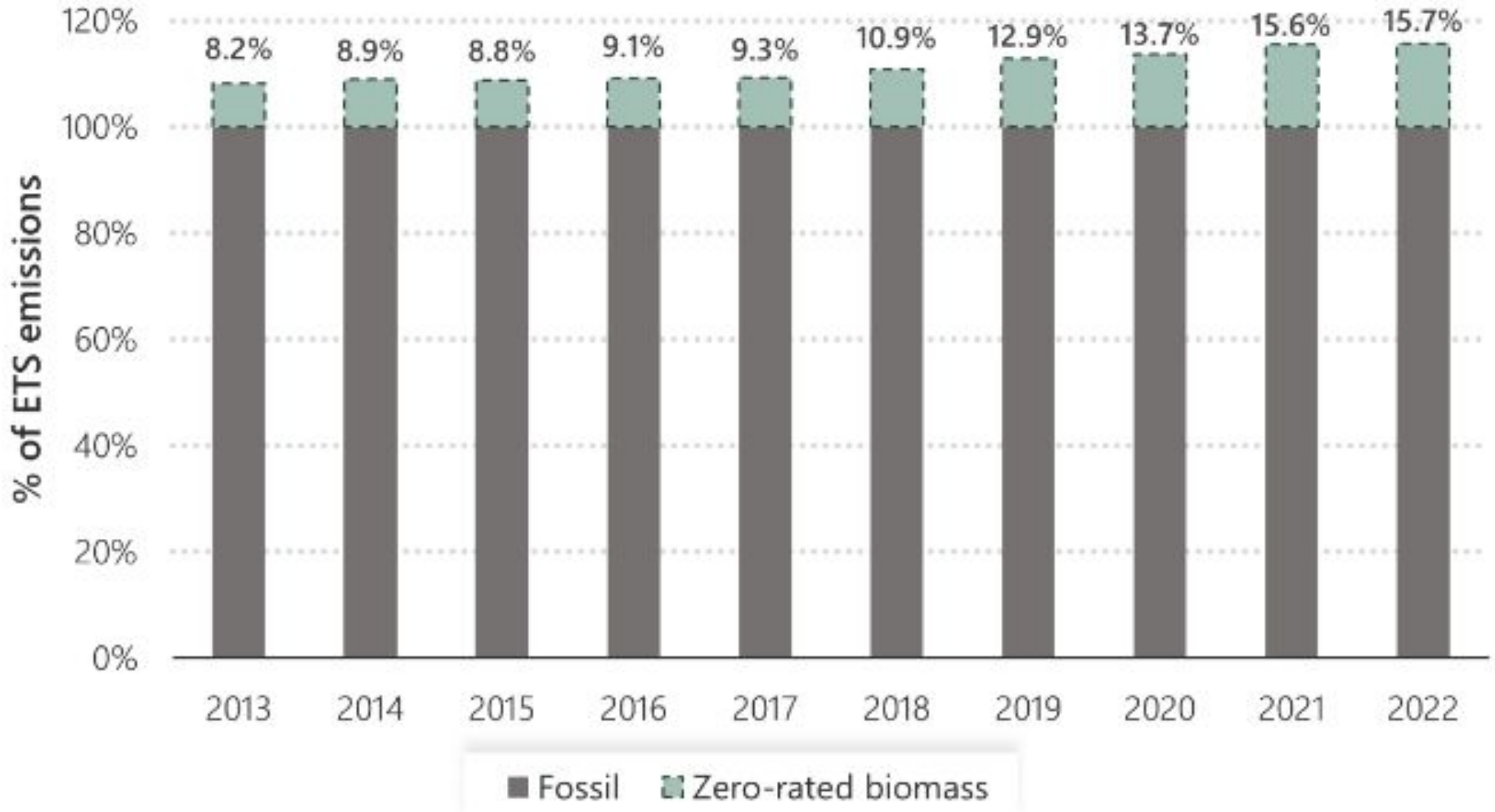
Source: EEA based on European Commission (2023)

Notes: CO_2 emissions from biomass combustion are reported as a Memo Item in national GHG inventories and are not included in national GHG emissions total

Adapted from
ESABCC, *Scaling up carbon dioxide removals – Recommendations for navigating opportunities and risks in the EU* - 2025

Context: “renewable” is not the same as climate-friendly (2)

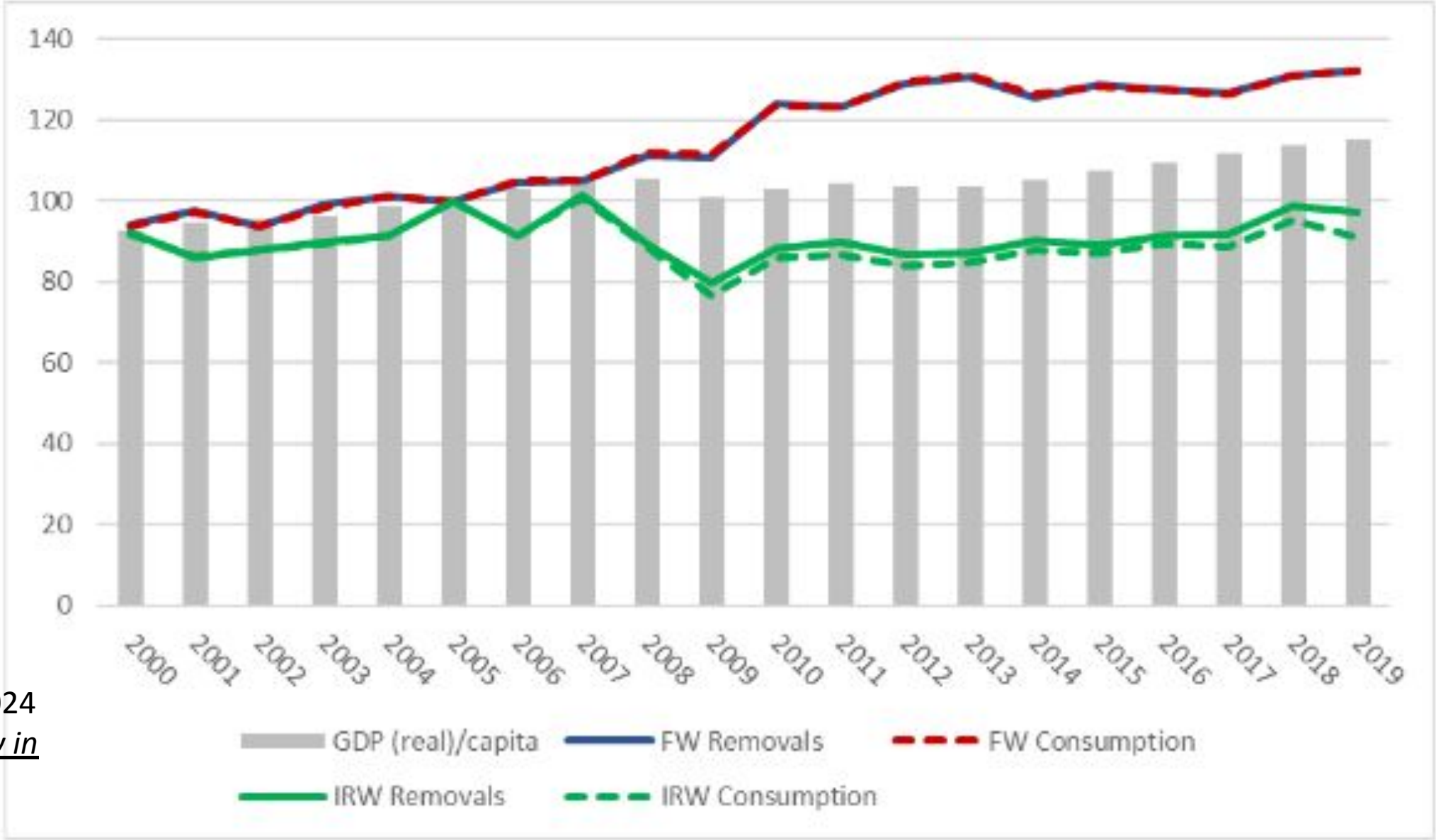
Figure 23 Biomass emissions in EU ETS installations (% of total emissions in the EU ETS)



Source: EC, 2023b, p.23

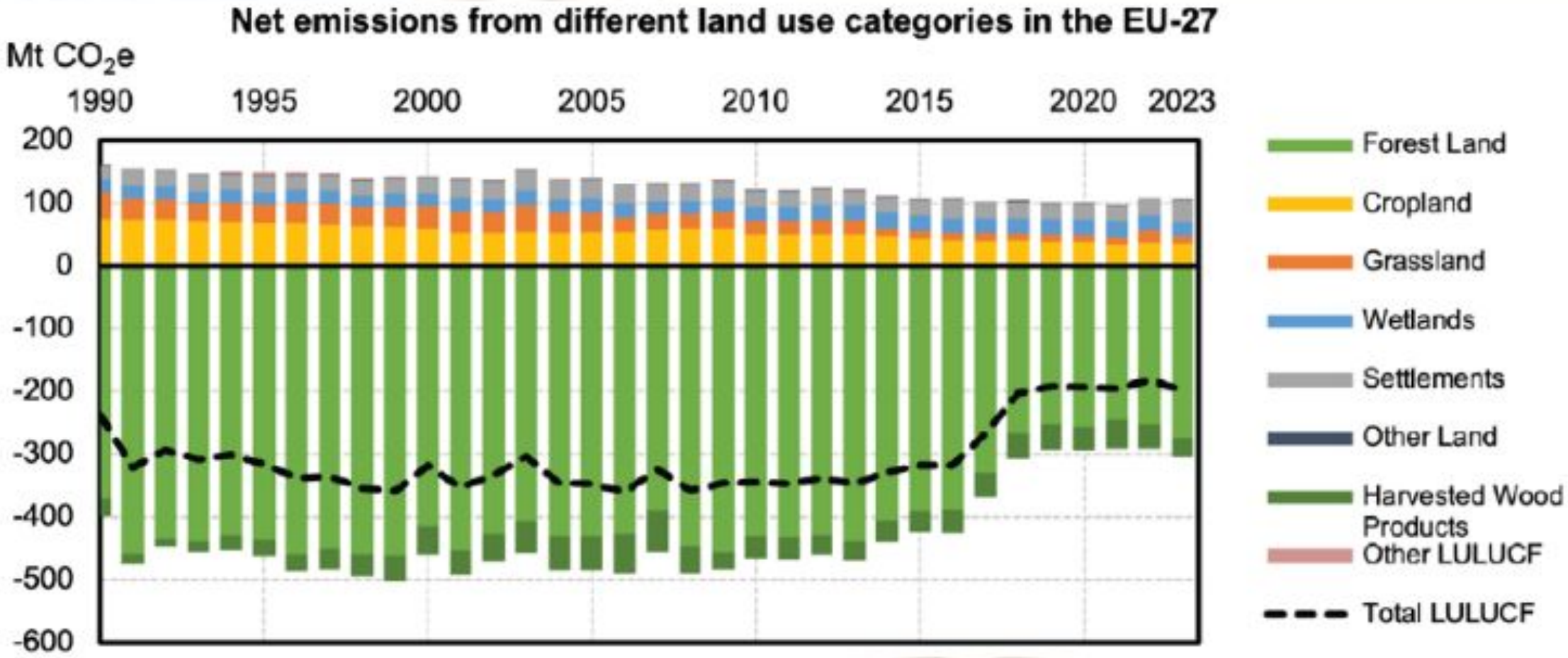
Note: Labels not shown if fuel never reaches a share above 3% of the total

Energy uses are growing faster than material uses: policy incentives make a difference – not just “residues”



Adapted from: Jonsson 2024
Strategic wood availability in Europe

This contributes to undermining the EU carbon land sink: EU bioenergy incentives are undermining EU climate targets



Source: Rougieux et al. (Ch 4.2) *in EC-JRC et al. 2025*

European Scientific Advisory Board on Climate Change (ESABCC):
"Don't use current RED for BECCS because RED undermines LULUCF"

EU 'sustainability' criteria for using wood for energy as defined in current Renewable Energy Directive (RED) are a (bad) political compromise, not science.

Scaling up carbon dioxide removals
Recommendations for navigating opportunities and risks in the EU

European Scientific Advisory Board on Climate Change

7 Reversing the decline of the land sink in a changing climate

- **Bioenergy use needs to be balanced with other priorities.** The decrease in the LULUCF sink is partly linked to increasing bioenergy use in the EU. Sustainable deployment of BECCS requires the EU to balance overall biomass demand with environmental limits by improving resource efficiency and biomass sustainability. Current policies, including REDII/III, do not sufficiently encourage an efficient biomass value chain, and face implementation challenges which undermine efforts to achieve sustainable bioenergy and BECCS deployment towards net zero.

The Delegated Act's clauses on biomass sustainability for BioCCS & biochar mostly rely on the RED criteria

4.2. Biomass sustainability

(a) All biomass, biofuel, bioliquid or biomass fuel that is used to generate the CO_2 captured by the activity or as a feedstock for biochar production and any additional biomass, biofuel, bioliquid or biomass fuel consumed to produce energy for the activity shall comply with the following requirements:

But DG CLIMA did… just that

- Feedstocks used to generate carbon removal units must comply with Article 29 RED sustainability requirements (*legality test*)
- Operators must report « to the level required in [RED] reporting, in national guidance and in relevant industrial standards », and comply with national measures (and derogations) implementing the cascading principle for the use of woody biomass as introduced in RED III (2023)
- « *Voluntary schemes approved by the Commission… shall be treated as providing accurate data for the demonstration of compliance* » [for sustainability requirements] – <u>compliance goes through private certification</u>

An attempt at damage control:

two small additions for "Avoidance of unsustainable demand for biomass raw material"

This will not be sufficient to protect forests from increased logging

1. For BioCCS: an economic test to avoid new bioenergy plants being built primarily for the purpose of generating carbon credits, or overconsuming biomass for that purpose. But <u>non-energy applications (waste, etc) are not covered</u>.

(a) "*operators shall demonstrate that the facility would still be economically viable without the carbon removal activity*"

(b) "*the operator shall demonstrate that the nameplate energy generation capacity of the facility has not increased by more than the amount necessary to supply energy for the capture process*"

2. For biochar: restriction of eligible feedstocks to "waste" and "residues" to prevent dedicated logging… but using the RED definitions for these, that are routinely abused by operators.

These, according to RED criteria, are forestry “residues”: any wood that doesn’t have a higher market value as something else than bioenergy.

Burning these trees is subsidised

They were removing CO2 from the atmosphere

Turning them into biochar won’t

Capturing some emissions from their combustion in a BECCS installation would not be a removal from the atmosphere, but enable continued RED subsidies

Linz AG CHP Plant, Austria, 2021

Biomassekraftwerk Bischofferode power plant Germany, 2022

Pics: Forest Defenders Alliance, 2022

Biochar

Charcoal with a fancier name…

but no MRV!

Why?

- In the DA, biochar is considered a permanent form of carbon removal, like DACCS & BioCCS. But when biochar is applied to soils (main use case foreseen) it undergoes various forms of erosion over time (wind, water, ploughing, fungi, bacteria etc). There is a reason it was considered a form of carbon storage in long-lasting products in initial CRCF Expert Group discussions! It moved one day to "permanent removals" status without explanations…

- Biochar is charcoal powder/pyrolysed biomass! Much cheaper to produce than DACCS & BioCCS (represents 80-90% of 'durable' carbon credits on voluntary markets), but charcoal production has long been a source of deforestation (about 7% today) and forest degradation (largest driver in some African countries) while it can be imported to the EU for generating CRCF credits.

- Its use in agriculture is ancient. It can be beneficial (enhances soil moisture retention, fertility…), but also risky (application is irreversible, increases soil alkalinity, can contain toxic contaminants…). Documenting its effects would have been very useful for farming.

- DG CLIMA relied on the assumption that a more durable fraction of biochar (inertinite) was not going to erode over time, as if storing biochar deep in a disaffected coalmine and applying it in agricultural soils was not going to change its fate. This is simply not true. At the very least, biochar will move… But no monitoring required after soil application (was considered unfeasible).

Importing the missing supply?

Unfortunately, the global demand for wood is already excessive…

Figure S.2:
The planetary boundary for global wood consumption: comparing the sustainable*1 supply capacity and the risk corridor to consumption levels

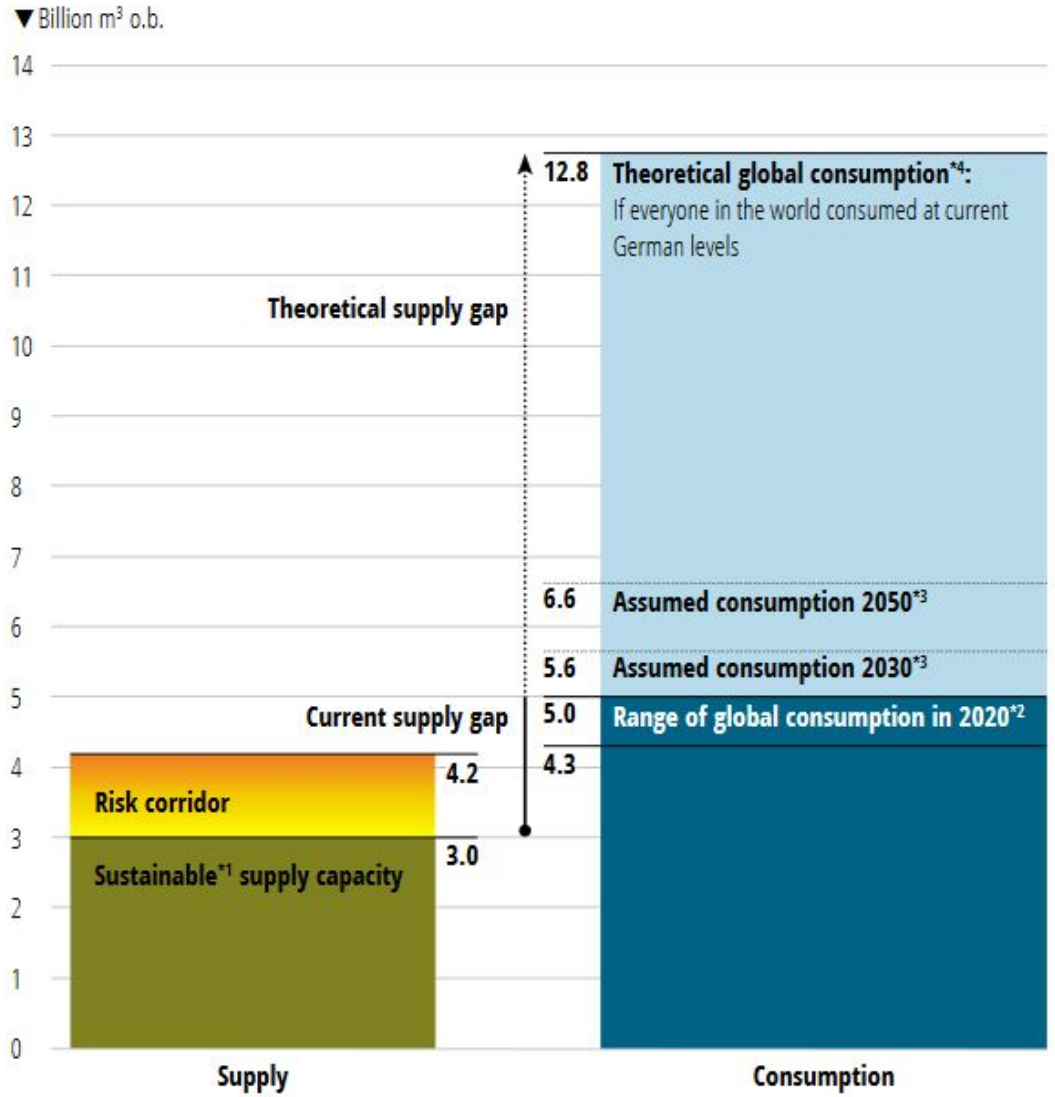
Notes:

*1 Sustainability here refers to quantity considerations, which is only one consideration when aiming for holistic forest management.

*2 Global consumption in 2020 is depicted as a range to depict uncertainty in conversion values (e.g. adjustments for bark and harvest losses), share of global consumption that stems from the sources outside the forest (e.g. roadsides), illegally sourced timber and statistical data uncertainty.

*3 The global consumption values in 2030 and 2050 depict the highest boundaries respectively and are based on an extrapolation of historical trends over the decade 2010–2020.

*4 The average annual German consumption level between 2015 and 2020 was taken as a reference for calculating "current consumption" because calamities (including massive beetle outbreaks) caused a spike in German harvests in 2020.



From Beck-O'Brien, M., Egenolf, V., Winter, S., Zahnen, J., Griesshammer, N. (2022). *Everything from wood – The resource of the future or the next crisis? How footprints, benchmarks and targets can support a balanced bioeconomy transition*. WWF Germany.

CRCF credits must be certified by voluntary certification schemes complying with recently adopted EU rules.

But considering these and the RED precedent, the credits will not be trustworthy.

Voluntary carbon markets have been experiencing this for the past 25 years…

1. The CRCF certification rules replicate known failures of RED voluntary schemes and voluntary carbon markets.

2. Supervision of carbon credits certification under the CRCF is not fit for purpose.

3. CRCF certification rules will be undermined by conflicts of interests at the structural, institutional and personal levels.

4. Mandatory auditing requirements are too weak.

5. Sanctions are only foreseen for operators, not auditors or certification bodies.

6. Complaints are handled by certification schemes themselves with no transparency.

Thank you

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