Comments on State Aid Consultation
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Introduction

Please accept this feedback on the EU's Forest Reference Levels from the Partnership for Policy Integrity, a US-based NGO with multiple staff in the EU and working with allies across Europe and the world for the protection and restoration of natural forests.

The following comments pertain to the allocation of state aid to renewable energy projects using biomass.

A number of activities designed to promote environmental benefits are eligible for state aid, but projects receiving state aid are supposed to meet certain requirements (requirements that could now be subject to revision). Facilities burning biomass can benefit in two general ways from state aid – by direct incentives, such as construction grants or payments for renewable energy generation, and by being exempted from certain taxes and fees such as the obligation to pay for carbon allowances under the EU's carbon trading program (this is considered "aid" in that it releases facilities from an obligation to make payments). Forest biomass as defined under the RED II (meaning biomass that is sourced directly from forests – a category that does *not* include mill residues)[1] is a subset of all solid biomass that is burned for heat and power. Based on a variety of metrics – the net greenhouse gas (GHG) emissions of forest biomass over climate-mitigation-relevant timeframes; impacts to forests; air pollution emissions – granting state aid for burning forest biomass clashes with the provisions of the *existing* guidelines for state aid, in that it causes significant environmental damage. The same is true for the category of solid biomass as a whole, which even if derived from true residues and wastes entails significant air pollution emissions. The fact that state aid nonetheless continues to be granted demonstrates that the guidelines need to be improved, *and* that they need to be better enforced.

The promotion of biomass is already inconsistent with existing state aid guidelines

The fundamental reason for granting state aid is to encourage environmentally friendly activities that might not otherwise occur, with particular emphasis on the reduction of GHG emissions by renewable energy.

[1] Definitions at Article 2 of RED II

The damage being caused by burning forest wood for energy, including the surge in GHG emissions that it causes, is well documented elsewhere. See Paper Tiger[2] for an overview of how biomass use has increased in the EU, and how even scientists working for the European Commission admit that claims that biomass burning "reduces" emissions are largely false.

We did not comment on the inception impact assessment (IAA) for state aid, but reviewed it prior to responding to this consultation to understand what is being considered as changes to the rules governing state aid. Upon review, we determined that burning biomass for energy undermines three goals that are mentioned in the second paragraph of the IAA, of a carbon neutral economy, a circular economy, and a zero pollution economy.

- Burning biomass is not carbon neutral[3], and the more the EU relies on it for renewable energy, the more emissions will increase in reality while appearing to decrease on paper. As the 2016 European Commission impact assessment on bioenergy sustainability[4] acknowledged, burning biomass can increase emissions for centuries: "*compared to crops which regrow over short periods, forest biomass is part of a much longer carbon cycle. A forest stand typically takes between decades and a century to reach maturity. Recent studies have found that when greenhouse gas emissions and removals from combustion, decay and plant growth (so-called biogenic emissions from various biological pools) are also taken into account, the use of certain forest biomass feedstocks for energy purposes can lead to substantially reduced or even negative greenhouse gas savings compared to the use of fossil fuels in a given time period (e.g. 20 to 50 years or even up to centuries)*."

- Biomass rarely contributes to a true circular economy; in fact, the kinds of materials that are too degraded or contaminated to be recycled into new products also tend to constitute the largest sources of heavy metals and other air toxics when burned for energy. Burning is not "recycling."

- And it is ludicrous to see biomass combustion promoted as part of a "zero pollution" effort. Burning wood and other biomass for energy provides a relatively small portion of the EU's energy overall, but a disproportionately large share of particulate pollution. The following section is from Paper Tiger[5]: "*The issue of air pollution from residential wood-burning has been brought more into focus by the COVID-19 pandemic. Air pollution in the*

[2] http://eubiomasscase.org/wp-content/uploads/2020/07/RED-II-biomass-Paper-Tiger-July-6-2020.pdf

[3] See http://iopscience.iop.org/article/10.1088/1748-9326/aaac88 for an explanation of why even burning forestry residues is not carbon neutral; also see https://apps-scf-cfs.rncan.gc.ca/calc/en/bioenergy-calculator for an interactive model that allows the user to explore net emissions increases relative to fossil fuels under different biomass use scenarios

[4] European Commission. 2016. Impact Assessment: Sustainability of Bioenergy. Accompanying the document Proposal for a Directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources (recast). Brussels. At https://eur-lex.europa.eu/resource.html?uri=cellar:1bdc63bd-b7e9-11e6-9e3c-01aa75ed71a1.0001.02/DOC_1&format=PDF

[5] http://eubiomasscase.org/wp-content/uploads/2020/07/RED-II-biomass-Paper-Tiger-July-6-2020.pdf

EU currently kills around 500,000 people in the EU each year.[6] Particulate matter in the 2.5 micrometre size class ($PM_{2.5}$) is the pollutant with the highest impact in terms of premature deaths. The most recent EU report on air quality in Europe finds that $PM_{2.5}$ pollution alone was responsible for about 374,000 premature deaths in the EU-28 in 2016, and that particulate matter from households, commercial establishments and institutions, which is mostly from burning solid fuels (including wood) for heat, is responsible for 39% of total PM.[7] Emissions of mercury and some other toxic pollutants are actually increasing, partly due to "re-emissions"; such re-mobilization is responsible for 60% of mercury emissions in the EU,[8] with domestic wood burning likely a significant source.[9] Residential wood-burning poses a particular danger because emission sources are located in homes and close to the ground. Achieving the WHO air quality standard for $PM_{2.5}$ in the EU-28 would decrease premature mortality by 27%.[10] Unfortunately, because death rates from the virus are higher in polluted areas,[11] death rates connected to air pollution can reasonably be expected to increase in the future."

The EU's existing policy framework that is supposed to protect against forest, climate, and air quality impacts of biomass is largely ineffectual, a scaffolding erected to appease environmental NGO's while essentially giving the biomass and forestry industry everything they asked for. The IAA continues to rely on that framework, for instance suggesting that more transparency may be needed from member states about how projects receiving state aid contribute to environmental protection, and that the basis for this might be the EU's sustainable finance taxonomy (SFT). However, like nearly every other existing EU policy on biomass, the SFT is a house of cards that is based on a misplaced faith in "sustainability" of biomass as a guarantor of climate and other environmental benefits, as the proposed SFT criteria are based on the RED II biomass sustainability and GHG criteria. These criterial do not provide any meaningful environmental protections, simply constituting greenwashing of business-as-usual of the highest order. This is covered in detail in the Paper Tiger report,[12] but in summary:

1. Logging and burning forest wood adds CO_2 to the atmosphere faster than trees can grow to resequester it, therefore burning biomass always adds net GHG to the atmosphere over some period of time, except for those rare cases where materials would be burned without energy recovery in any case. For the overwhelming majority of cases where forest biomass is used as fuel, the net impact of biogenic CO_2 from combustion will persist for decades to centuries. No amount of sustainability criteria can alter this fact.

[6] Carvalho, H. 2019. Air pollution-related deaths in Europe - time for action. Journal of Global Health 9(2):020308. At https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6858990/

[7] European Environment Agency. 2019. Air quality in Europe - 2019 report. EEA Report No 10/2019. Luxembourg: Publications Office of the European Union, 2019. At https://www.eea.europa.eu/publications/air-quality-in-europe-2019

[8] Ibid.

[9] Huang, Jiaoyan, et al. 2011. "Mercury (Hg) emissions from domestic biomass combustion for space heating." Chemosphere 84 (11):1694-1699. At http://www.sciencedirect.com/science/article/pii/S0045653511005091

[10] European Environment Agency. 2019. Air quality in Europe - 2019 report.

[11] See https://projects.iq.harvard.edu/covid-pm

[12] http://eubiomasscase.org/wp-content/uploads/2020/07/RED-II-biomass-Paper-Tiger-July-6-2020.pdf

2. Even if the sustainability criteria *were* meaningful, the RED II criteria only apply to a fraction of the wood burned in the EU, exempting for instance all wood and wood pellets burned for residential heating (about 60% of the total) and all facilities smaller than 20 MW.

Unfortunately, the current Guidelines document does not acknowledge that burning biomass emits CO_2, and thus largely dismisses altogether the idea that the aid itself could be promoting environmental harm:

3.2.6. (90): *Aid for environmental purposes will by its very nature, tend to favour environmentally friendly products and technologies at the expense of other, more polluting ones and that effect of the aid will, in principle, not be viewed as an undue distortion of competition, since it is inherently linked to the very objective of the aid, that is to say making the economy greener.*

Part of the problem may be that the definition of biomass employed in the Guidelines emphasizes the use of wastes and residues as fuel, and fails to explicitly recognize the growing role of wood that is sourced directly from forests, as is increasingly the case for the wood pellet industry in the EU and North America. To read the definition in the Guidelines, it would seem that biomass is just sourced from a few scraps lying around:

" 'biomass' means the biodegradable fraction of products, waste and residues from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as biogases and the biodegradable fraction of industrial and municipal waste;"

Provisions calling for environmental improvement in the existing Guidelines

The existing guidelines, published in 2014, refer to the "Resource Efficiency Roadmap," which calls for policies that among other things "*fight against climate change and limit the environmental impacts of the use resources*" (sic). The Guidelines point out that "*It should be recalled that the Resource Efficiency Roadmap as well as several Council conclusions call for a phasing out of environmentally harmful subsidies. These Guidelines should therefore consider negative impacts of environmentally harmful subsidies*." (page 2, guidelines).

Subsidies for forest biomass *should* be phased out. Instead, however, over recent years, subsidies allocated to burning forest wood and other biomass have soared and now constitute several billion per year. The problem appears to be both the inadequacy of the guidelines themselves, but also the historic failure to enforce those aspects that appear moderately protective.

The Guidelines document at 3.1 lays out (page 11) a series of several conditions for state aid to be granted. Here we list (A – C), those provisions of the existing guidelines that are most notably violated by allocating subsidies to combustion of solid biomass and especially forest biomass.

Requirements for an activity to be eligible for state aid:

A. Contribution to a well-defined objective of common interest. (Later at 3.2.1.1 the document explains, "(30) *The general objective of environmental aid is to increase the level of environmental protection compared to the level that would be achieved in the absence of the aid*.")

With regard to use of renewable energy, the main "environmental benefit" is a reduction in GHG emissions. If the counterfactual for a biomass scenario is continued use of fossil fuels, then a legitimate and scientifically based assessment of biomass emissions would acknowledge that burning biomass causes an increase in CO_2 and air pollution emissions per MWh of energy generated, and where biomass is sourced from forests, the impacts on the ecosystem itself may be extreme. While this is in no way intended to excuse or downplay the damage associated with continued use of fossil fuels, it is difficult to envision very many scenarios where use of forest biomass as a substitute for fossil fuels would provide an unambiguous "environmental benefit."

The carbon accounting methodology in the Guidelines is skewed to ensure consistent calculation of a benefit, however, because member states are supposed to quantify, for renewable energy or other "abatement technologies," "*the amount of greenhouse gases or pollutants that are permanently not emitted in the atmosphere (resulting in reduced input from fossil fuels)"* as well as the increase in the level of environmental protection, as constituted by the reduction in pollution.

Regarding greenhouse gas pollution, this standard is unscientific and biased. Obviously, the actual goal of incentivizing renewable energy is to reduce greenhouse gas emissions to the atmosphere generally. The EU's new climate and land use legislation and regulations recognize that atmospheric CO_2 concentration is a function of both emissions by sources and sequestration and storage by sinks, with the primary sink being forests. By focusing solely on the reduction of GHG from fossil fuels, the Guidelines ignore the net GHG emissions impact of logging and burning forest wood – even though burning biomass emits as much or more CO_2 as fossil fuels at the smokestack per unit energy, and offsetting this net impact can require decades to centuries of forest regrowth. The logical construct here is also flawed, because the assumption is made that fossil fuels are consistently displaced, which is only true in limited circumstances (see Leturcq 2020[13] for a good explanation of the myth of substitution). In any case, wind or solar might also be capable of replacing fossil fuels and producing genuine reductions in net GHG emissions, but the sole focus on counting avoided fossil fuel emissions and ignoring biogenic

[13] Leturcq, Philippe. 2020. "GHG displacement factors of harvested wood products: the myth of substitution." Scientific Reports 10 (1):20752. At: https://doi.org/10.1038/s41598-020-77527-8.

emissions deemphasizes such alternatives, placing highly emitting biomass on an equal footing with zero-emissions technologies.

Regarding conventional air pollution, the requirement to solely show how emissions from fossil fuels are reduced is just as or perhaps even more absurd. As is the case for CO_2, burning biomass generally emits as much or more conventional air pollution per unit final energy at the smokestack as burning fossil fuels, and in some cases dramatically more.

B. Need for state intervention where aid brings about an improvement that the market alone can't deliver

Focusing here on biomass use where the fuel is genuinely a waste or residue of an industrial process, such as sawdust, offcuts, or black liquor, it seems likely that since much of this material would be burned for waste disposal and energy generation whether or not state aid is provided, it is questionable whether such activities deserve state aid. Ostensibly the actual need for state aid would be taken into account during review when a member state applies for aid for a project, but all biomass fuels of any origin (except peat) have a blanket exemption from regulations and taxes on carbon emissions, with no justification required. Even if the aid is required to make energy recovery happen, however, burning biomass of any type emits CO_2 and air pollution, so the allocation of billions of euro each year to this technology, even with fuels derived from wastes and residues, undermines important environmental objectives.

C. Appropriateness of aid measure to address the objective of common interest

At 3.2.3.1 the Guidelines document points out that "*State aid is not the only policy instrument available to Member States to promote increased levels of environmental protection or to achieve a well-functioning secure, affordable and sustainable European energy market. It is important to keep in mind that there may be other, better placed instruments to achieve those objectives.*" It further states that different measures to remedy market failures may counteract each other.

Burning biomass will always emit CO_2 and air pollution, undermining environmental goals. This provision of the Guidelines acknowledges that such contradictions exist.

Related issues – CCS and BECCS

Carbon capture and storage, and especially carbon capture and storage paired with biomass (BECCS) should not be receiving state aid. Simply pumping CO_2 belowground with no assessment of lifecycle emissions required to determine if there is a net reduction in emissions at all is an invitation to fraud and waste. In fact it is nearly impossible for BECCS using forest wood as fuel to produce any "net negative" emissions for the same reason that using such biomass in an unmitigated facility is not carbon neutral. Until and unless really strict science-based

assessments of lifecycle impacts are required, *none* of these speculative technologies should be receiving state aid.

State aid for biodiversity

We note that on one the online questionnaire, one of the questions is whether there should be state aid extended to biodiversity. In fact since at least for forest ecosystems, biodiversity and carbon storage tend to co-vary, prioritizing biodiversity is also a climate measure. Overall, the higher a forest's level of ecosystem integrity, the greater its stability, resilience, and resistance to threats, and the greater its climate mitigation benefit and adaptive capacity. Restoring and protecting forests absolutely should be eligible for state aid; in fact, if the EU removed subsidies from burning forests for energy, and re-allocated them to protecting and restoring forests, this would go a long way toward realizing the EU's environmental and climate goals, instead of undermining them as is now the case.

Recommendations

Eliminate state aid for forest biomass. Because air pollution and significant net CO_2 emissions from burning forest biomass are inevitable, the simplest resolution is to eliminate subsidies for this activity. This would not mean that wood-burning would cease, since even without subsidies, residential wood-burning would persist, and many facilities would likely continue to burn certain residues and wastes even if they did not receive state aid. But eliminating eligibility for forest biomass for state aid would solve the problem of how to negotiate and reconcile the so-called "benefits" of bioenergy (which are based on faulty carbon accounting, myths, and obfuscations) with the multiple ways that burning biomass undermines environmental goals.

Assess net GHG profile of any other biomass receiving state aid. Additionally, the state aid requirements should acknowledge the differing net CO_2 profiles of different types of biomass fuels. Accordingly they should include assessment of full net CO_2 and other pollutant emissions from projects, employing full biogenic carbon accounting as appropriate, to determine the net GHG impact of projects over timeframes relevant to meeting EU targets for emissions reductions.

Develop strong criteria for allocation of state aid to protecting and restoring forests. The criteria must favor genuine protection, and be based on the best science. There is no time left for anything else.