Ensuring bioenergy comes clean in the Clean Energy Package

BY BIRDLIFE EUROPE, FERN, AND TRANSPORT & ENVIRONMENT

European climate and energy policies are built on the myth that all bioenergy - being a renewable energy source - is good for the climate and good for the environment. As the use of bioenergy in the EU is expected to more than double by 2020 compared to 2005, it's becoming clear that bioenergy is not the clean dream we all hoped it would be. In some cases it can even increase CO2 emissions (compared to fossil fuels) and in numerous instances it threatens nature by putting additional pressure on already burdened agricultural land and forests.

As the demand for bioenergy grows (pushed by policies), the bioenergy industry is increasingly using problematic and harmful sources of biomass for energy such as agricultural crops or whole trees directly from forests. The best potential for sustainable bioenergy lies in different kinds of waste and residue biomass, such as agricultural residues, manure or by-products from forest industries when they don't have other existing uses and are collected at moderate levels.

The policy opportunity

The growth in bioenergy use is driven by the EU's renewable energy targets and policies which are now under review. Until 2020, only biofuels used in transport have limited sustainability criteria to comply with but most other bioenergy use requires no safeguards.

The most harmful biofuels made of food and feed crops have been capped to 7% of the energy consumption in transport as a result of the 2015 reform of EU biofuel policies, but no other limitations are in place.

The recast of the Renewable Energy Directive is an opportunity to put bioenergy use on the right track from 2020 until 2030. While the Commission proposal recognizes some of the growing sustainability challenges of bioenergy, it still fails to put forward real measures to address these problems, leaving the future of bioenergy uncertain. The proposal:

► Introduces new targets for renewable energy in heating and for advanced biofuels in transport without appropriate safeguards.

► Slips away from earlier EU Commission commitments to phase out land based biofuels.

► Suggests insufficient criteria for sourcing of biomass and sustainable management of forests but no criteria to limit the use of the most environmentally risky biomass sources and to ensure smart end-use of the biomass resources.

► Lacks a proper assessment of the biogenic GHG emissions from land and forests caused by bioenergy use and relies on other sectors and countries to account for the emissions from the land sector, without correcting the energy policies responsible for growing biomass demand.

HOW TO IMPROVE THE RENEWABLE ENERGY DIRECTIVE ON BIOENERGY

1) Phase out land-based biofuels

The Commission proposal (Article 7(1), Annex X) would decrease the amount of food and feed crop based biofuels in transport counted towards the renewable energy target from the 7% cap in 2020 to 3.8% in 2030 of final energy consumption in the transport sector.

This would, however, only be a minor reduction from the current consumption levels of biofuels (4.9% in 2014) and still does not address the use of non-food crops grown on agricultural land. It also does not tackle the use of food crops for electricity and heating (with the exception of bioliquids), even if these have very similar impacts in terms of Indirect Land Use Change and carbon emissions.

50% of all biogas in the EU is made out of maize

and other food and feed crops even though biogas could also be made from wastes such as sewage and manure.

While EU legislation limits the use of food crops such as maize for transport biofuels, it places no limits for their use for electricity or heating.

Source: CE Delft 2016

How to fix it:

► Fully phase out all land based biofuels by 2030, starting with vegetable oil based biodiesel.

► Maintain the earlier commitment to allow no further public support for biofuels from food and feed crops after 2020 (as stated in the Energy State Aid Guidelines).

► Include new measures to phase out solid and gaseous biomass fuels from food, feed and other crops using agricultural land in heating and electricity.

2) No targets for advanced biofuels without real safeguards

The Commission proposal (Article 25(2)) has a target of 6.8% for advanced, alternative fuels consumption in transport by 2030. This consists of renewable fuels of non-biological origin, waste-based fossil fuels and renewable electricity in transport, a minimum sub-target for advanced biofuels and biogas (3.6%) and a maximum share (1.7%) of used cooking oil, animal fat and molasses.

The proposed new targets risk repeating the same mistakes made in the 2020 policy framework by prioritizing quantity over quality. The target even includes non-renewable fuels and prioritizes advanced biofuels over renewable electricity.

The target of 3.6% for advanced biofuels covers everything listed in the Annex IX (Part A) of the Directive. These feedstocks have not been through any kind of objective scientific analysis of their GHG impacts or sustainability, and include feedstocks, such as energy crops, even if grown on agricultural land, all kinds of woody biomass, as well as molasses and tall oil, which both have significant existing industrial uses.

How to fix it:

► Without credible safeguards for advanced biofuels, there should not be a specific volume target.

► The list of feedstocks in Annex IX should be re-evaluated in a scientific manner, excluding feedstocks with high biogenic carbon emissions (e.g. from ILUC and forest carbon stocks) and significant existing competing uses.

► Compliance with the waste hierarchy and the cascading use principle as well as environmental sustainability should be ensured when incentivising any use of wastes and residues for energy.

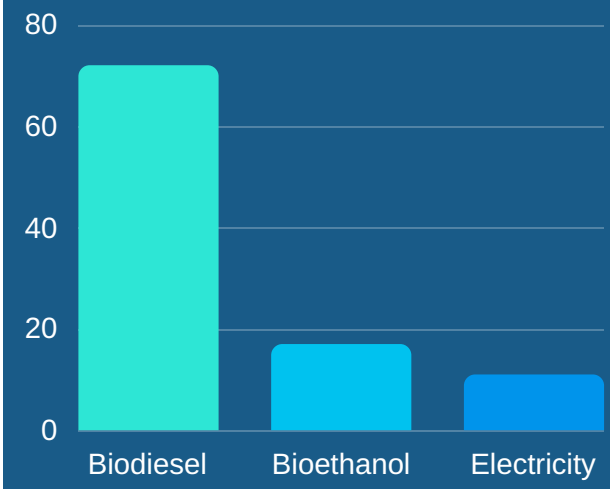
3) True sustainability of agriculture and forestry biomass

The Commission proposal (Article 26(3-6) extends the existing biofuels sustainability criteria (with some modifications) to all agricultural biomass, including in heating and electricity but only for the biggest installations with a fuel capacity above 20 MW.

For forest biomass used in energy, new criteria are proposed including requirements for national legislation on 'sustainable forest management' but there is no criteria on how the 'sustainably grown' wood can be used. It also requires that the country of origin of forest biomass accounts for its emissions in the land use (LULUCF) sector. If no national level legislation exists, compliance with the requirements can be demonstrated on the forest holding level alone. However good this sounds on paper, these criteria do not truly address the risks related to climate or biodiversity.

89% of renewable energy consumed in transport is biofuel

Renewable energy consumption in EU transport (2015)



Roughly 50% of biodiesel is rapeseed oil and 25% is palm oil

Source: Renewable Energy Progress report 2017

How to fix it:

► Sourcing restrictions from protected areas, primary forests and high biodiversity areas in Article 26(2) should also be applied to forest biomass, and not only to agricultural biomass. Irrespective of the kind of forest management, high-carbon woody feedstocks like whole trees, logs over 10 cm in diameter and stumps from forests should be excluded from renewable energy incentives.

► Sustainability criteria for the removal rates of residues should be introduced.

► Extend the criteria to also cover small and medium sized installation with fuel capacity from 1 MW upwards.

Biomass and biogas will be among the most expensive sources of renewable electricity by 2030

Study by CE Delft has shown that while the societal net costs of most other renewable energy sources for electricity are quickly dropping, the costs of electricity from biomass and biogas is stagnating - making biomass electricity several times more expensive than onshore wind power and solar PVs, even more expensive than offshore wind power.

Source: CE Delft 2017

4) Only efficient biomass burning should be supported

The Commission proposal (Article 26(8)) requires electricity production from big (> 20 MW), new bioenergy installations to be high efficient cogeneration (of heat and power) to qualify for the renewable energy targets and support.

Excluding inefficient electricity biomass generation is a step in the right direction but the proposal includes various caveats from this requirement and would be implemented only 3 years after the adoption of the legislation.

How to fix it:

► Remove caveats on the basis of 'security of supply of energy' from the provision as these are too easily exploited as well as 'grace periods' for the requirements to come into force.

► Exclude biomass electricity produced together with fossil fuels (e.g. co-firing with coal) from support schemes for renewable energy.

► Only highly efficient energy production from biomass, with a minimum conversion efficiency of 85% as per the recommendation of the current Renewable Energy Directive for commercial energy applications.

5) Ensure real GHG savings from bioenergy use

The Commission proposal (Article 26(7)) only includes GHG savings requirements for the supply chain of bioenergy. This does not reflect the real climate impacts of bioenergy used. The methodology covers only emissions from transport, processing and direct land use change but ignores all other biogenic emissions from forests as well as from ILUC.

Annual carbon absorption by EU's forests is expected to decline by 75% by 2050

The EU's forest sinks will decline from absorbing more than 200 Mt CO_2 annually (2010) to only 50 Mt CO_2 in 2050 as a result of increasing forest harvests, including for energy use, assuming current climate policies stay in place without new safeguards for bioenergy.

Source: ReceBio follow-up study 2017

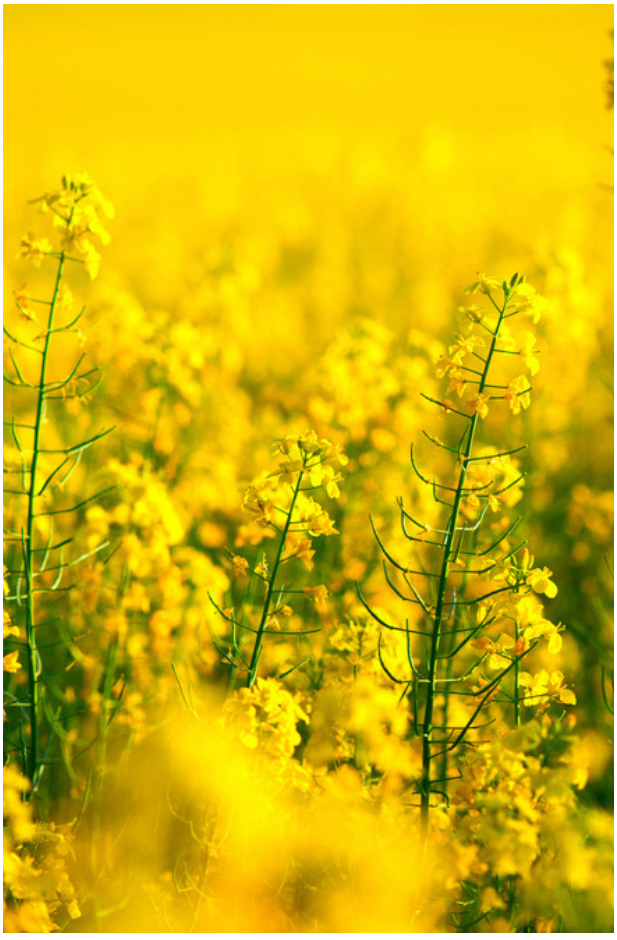
For forest biomass, the proposal also requires that the sourcing country accounts its emissions in the land sector (LULUCF). However, 'book keeping' of emissions does not yet ensure that emission are actually reduced. Separating the energy sector (that benefits from renewable energy support schemes) from responsibility over emissions in the land sector does not provide the right incentives for bioenergy use.

How to fix it:

► Place restrictions to ensure emission savings from bioenergy together in the energy policies by excluding high carbon biomass feedstocks such as food crops and trees from renewable energy incentives.

► Use supply chain criteria to encourage efficiency in manufacturing and processing.

► True GHG savings criteria and thresholds should only be set if they are able to capture emissions from carbon stock changes in land and forests, from indirect land use change and displacement of other uses.



THE FUTURE OF SUSTAINABLE, RENEWABLE ENERGY?

Bioenergy can play a sustainable role in the European renewable energy mix, but only to a limited extent and only with clear safeguards that limit its use to residues, wastes and by-products of other processes without significant existing uses.

Given the limited availabilities of these raw materials, the role of bioenergy needs to be lower than often projected in the EU's energy scenarios. More careful consideration is also needed on how and where in the energy sector to use the sustainably available resources in the most effective way in line with the principles of the waste hierarchy and cascading use of biomass.

A sustainable renewable energy mix therefore requires increased investments into solar and wind power and other, truly carbon free renewable energy sources together with stronger efforts for energy saving and the electrification of the transport sector.

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