Biomass

Title

Europe plans to produce more than half of its renewable energy from bioenergy sources by 2020, which is more than 10% of the total energy consumption. BirdLife fully supports the need to move away from fossil sources, but there are significant risks associated with this increased use in bioenergy, which are currently neglected in the policies driving the use of biomass.

The use of biomass is not 100% carbon neutral and the use of certain types of biomass might even lead to carbon emissions exacerbating climate change. The current greenhouse gas (GHG) accounting systems don't fully acknowledge all the emissions, which is misleading when developing policies to halt climate change.

Biomass is also a limited resource and it is not only the energy sector which needs it.
If uncontrolled, the expansion and intensification of forest management and logging activities to produce biomass can lead to further degradation of forest ecosystems.

In order to succeed, EU bioenergy policy must be developed within an overall framework that reduces overall energy demand and increases energy efficiency, which seeks to minimize energy production from combustion sources.

Biomass can still play a role in the mix of renewable energies in Europe, but the supply of biomass for energy production needs to be constrained to what can be sustainably supplied from the forests.

It is also crucial to use sustainable biomass efficiently through “cascading use”, i.e. when biomass is used for material products first and the energy content is recovered from the end-of-life products. At each stage of the cascading sustainable biomass should be dedicated in priority to sectors where there is no other sustainable alternative to achieve emissions reduction.

We advocate for a mandatory sustainability scheme to be developed to regulate the production and use of biomass for energy. A sustainability scheme should prevent extraction of energy biomass from valuable ecosystems, such as pristine forests, lands with high carbon stocks and high-biodiversity value, wetlands and peat lands. It should also take into account the upfront carbon debt of wood-based bioenergy and the length of time required for the emissions to become carbon neutral.

Carbon Accounting

Direct Land Use Change (DLUC)
DLUC are the emissions that come from changes in direct land use, such as emissions from converting a forest into agricultural land.

Indirect Land Use Change (ILUC)
ILUC are indirect emissions caused by market mechanisms. If a farmer previously was growing food on his land and now uses the land to grow fuel instead, we can ask how the demand for food is now met. This demand can either be met by growing the food somewhere else or food prices have increased so much that people will eat less and hence the demand for food “disappears”.

The way to calculate ILUC emissions is through modelling, as you have to estimate the emissions. We use models often in policy making, for example to calculate employment figures or inflation, so it is a normal procedure. The outcome of the models (so-called ILUC factors) are currently not taken into account in EU legislation and we continue to produce biofuels that are cheap but are not necessarily saving emissions.

Based on the precautionary principle, however, Europe should include ILUC emissions in its sustainability criteria. Otherwise it is ignoring a massive loophole in its climate policy and damaging people and the environment worldwide. The European Commission has proposed not to include the ILUC emissions, but instead to just report on the emissions and to cap the amount of biofuels that can count towards the target. This is with the intention of trying to limit the amount of first generation biofuels that are stimulated by the Member States. This was a very important signal to the rest of the world that Europe no longer sees first generation (so called food-based) biofuels as the future. However, it will also be important to further tighten the safeguards around biofuels after 2020.
Read the briefing NGOs wrote about the outcome of the ILUC legislation.

Carbon debt
Bioenergy is often presented to be carbon neutral, relying on the assumption that the carbon released when burning wood or other types of biomass is soon recaptured by trees, vegetation and soils. In reality it takes time (from years to decades, depending on the kind of biomass) for the carbon released to be recaptured again by plant and tree growth and by the soil.

It is also possible that all the carbon released will never be fully recaptured, for example in the case when an old growth forest is replaced by a forest with shorter rotation and smaller carbon stock. The concept of carbon debt refers to the delay in time for the carbon to be recaptured or the amount of carbon that actually never will be recaptured by regrowth. Currently, under EU climate targets carbon debt is ignored and all biomass is assumed to be fully carbon neutral.

Read about where we are in the adoption of the carbon debt principle into the current EU bioenergy policy.

Read More

- Biofuels
- Bioenergy Policies of the EU
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Publications, Briefings and Position Papers

- Bioenergy: carbon accounting time bomb (2010)
- Joanneum Research Study (Zanchi G, Pena N., Bird N., The upfront carbon debt of bioenergy, Graz, Joanneum Research - June 2010)
- Joint EU NGOs briefing on biomass sustainability for energy (2012)

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