

Bioenergy and forests

Briefing Note 03

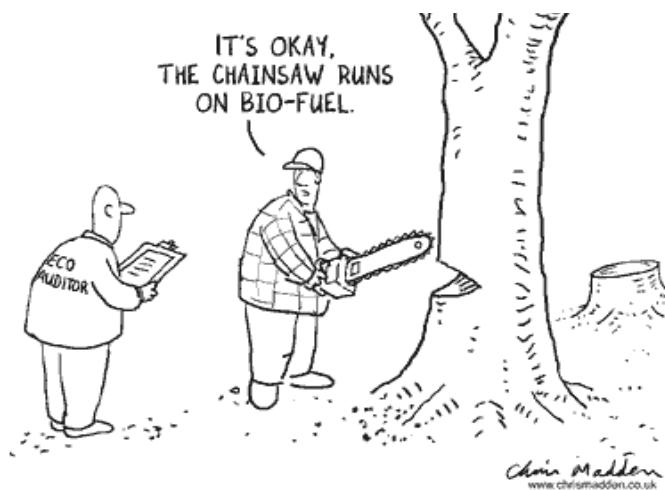
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Briefing Note

03

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Volunteering for disaster: Why biomass criteria must be ambitious and legally binding



When the Renewable Energy Directive was discussed in 2008, the European Parliament explicitly demanded the addition of 'sustainability' criteria for biomass (other than agrofuels and bioliquids). In response, the European Commission was mandated to produce a report on a 'sustainability scheme for biomass' by the end of 2009 and if appropriate, accompany it with proposals for a 'biomass sustainability scheme'.

As 2009 draws to a close, the European Commission is finalising its report on a sustainability scheme for biomass, but considering voluntary recommendations rather than binding biomass criteria. Having voluntary rather than obligatory criteria will inevitably lead to wide variations between EU Member State schemes. Many analysts expect that the coming years will see increased demand for wood for energy production, and if there are no binding criteria attached to a further mobilisation of wood, this could lead to serious harm for forests in the EU. Moreover, a lack of binding criteria in the EU could lead to ancient forests outside the EU being opened up, and this is in total contradiction with previous EU initiatives to combat deforestation.

HOW MUCH BIOMASS IS CURRENTLY AVAILABLE?

According to the Renewable Energy Roadmap, meeting the 20 per cent renewable energy objective can be expected to double the biomass use for heat and power generation by 2020. In addition to increasing pressure on forests in the EU and declining biodiversity, this will inevitably lead to an increase of imports of biomass from outside the EU.

Even though studies are increasingly showing that competition for land resources is growing, the idea that wood biomass is inexhaustible still seems to underpin the European Commission's approach to biomass for energy production. Availability of biomass in the EU is difficult to estimate as reliable statistics on the production and use of wood are difficult to get and lack harmonisation. Many studies overestimate the potential for additional wood mobilisation and underestimate the impact of the use of dead wood and logging residues on soil and biodiversity.

New plantations and short rotation coppice¹ (SRC) are assumed to contribute to increased biomass availability. However, the potential should not be overestimated as land availability is limited and plantations will never be able to deliver sufficient quantities of wood in the short term (by 2020). There are also clear risks attached to turning to plantations and SRC for increased biomass supply - large-scale plantations cause negative environmental and often also social impacts.

BIOMASS STRATEGIES COULD DEPLETE FOREST CARBON STOCKS

Increased forest protection is needed to secure the resilience of forests in the EU to climate change and to protect the current carbon storage capacity of forest ecosystems. Bioenergy strategies, based on increasing harvesting levels and the additional use of forest residues for bioenergy purposes might lead to a depletion of the forest carbon storage capacity² and so counteract climate change objectives. There are already indications that Europe's forests could turn into a carbon source rather than a carbon sink.

Because biomass use for heat and energy production is being recommended as part of a directive aimed at reducing greenhouse gas (GHG) emissions, it is essential that all relevant emissions are taken into account, such as those from land use, land use change and also forest management. The Kyoto Protocol accounting rules contain a far reaching flaw - they fail to account for either CO₂ emitted from smokestacks or changes in emissions from land use when biomass for energy is harvested or grown.³ This error can lead to perverse incentives to clear land and displace the world's natural forests.⁴ As scientific evidence shows that biomass should not be considered a 'carbon neutral' energy source, and that emissions from biomass use often outweigh uptake if management practices are unsustainable, the European Commission cannot justify any proposal based on the assumption that biomass for energy is 'carbon neutral'.

SUSTAINABILITY CRITERIA FOR BIOFUELS ARE NOT SUITABLE FOR BIOMASS

It is expected that Member States will refer to the 'biofuel' criteria as a basis for biomass. However, the current 'biofuel' criteria are not only too weak; they are also not suited for biomass for the following reasons:

1. The GHG methodology for biofuels and bioliquids is not applicable to biomass. The GHG performance levels for biomass should be much more ambitious and inefficient energy conversion technologies should be excluded. Emissions from land use and forest management need to be taken into account. The development of an Indirect Land Use Change (ILUC) factor that will take into account the emissions caused by indirect land use change needs to be extended to all uses of bioenergy.
2. The no go areas need to be redefined as they presently have shortcomings and loopholes.
3. There are no criteria guaranteeing good forest management in the 'sustainability' criteria for biofuels and bioliquids. These criteria should ensure that forest operations outside the no go areas are environmentally sound, socially just and contribute to the objectives of the Renewable Energy Directive.

CONCLUSIONS

Biomass has always been an important source of energy and it will be part of the future energy mix. It should only be considered renewable however if it is part of an EU energy framework that focuses mainly on reducing energy use and a transition to a low-carbon energy infrastructure. Its production must also ensure carbon conscious forest management.

The growing demand for resources (land and wood) and the use of biomass for energy production cannot be discussed in isolation; consideration must also be given to whether, given the scarce availability of resources, using wood for energy production is the most efficient and environmentally sensible use.

At least in the short term, there is an urgent need for a set of binding biomass criteria that do not lead to negative environmental and social impacts, and effectively contribute to reducing GHG emissions.

ENDNOTES

1. Short rotation coppice is generally applied to plantations where the stands are harvested several times in a short-term rotation before the plantation is renewed. They are formed by wood species that re-sprout when cut down at the stem base.
2. Cherubini, F.; Bird, N.; Cowie, A.; Jungmeier, G.; Schlamadinger, B.; Woess-Gallasch, S. (2009). Energy- and greenhouse gas-based LCA of biofuel and bioenergy systems: key issues, ranges and recommendations.
3. Science , October issue 2009.
4. Wise, M.; Calvin, K.; Thomson, A.; Clarke, L.; Bond-Lamberty, B.; ands, R.; Smith, S.J.; Janetos, A.; Edmonds, J. (2009). Implications of limiting CO₂ concentrations for land use and energy. Science vol 324, pg 1183-1186.



Without binding criteria for biomass, destructive practices such as harvesting of nutrient rich deadwood could be increased.
Image: Harri Hölttä

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