



# BIOFUELS

## Handle with care



### An analysis of EU biofuel policy with recommendations for action

## Summary

For many policymakers biofuels must have seemed like a dream-come-true. The arguments put forward by supporters were plentiful and powerful. Carbon Dioxide emissions ( $\text{CO}_2$ ) could be cut because the biofuel crops absorb  $\text{CO}_2$  while they grow and energy security could be guaranteed because biofuels can be grown at home or imported from stable regions rather than oil states. The car industry also liked them because they took political focus away from vehicle fuel efficiency as a route to cutting  $\text{CO}_2$  emissions. Cars require only minor modifications to become green-looking 'flexfuel' models. Farmers liked them because it created another market for their products and even oil companies came to like them, because it enabled them to look more "green".

The EU and other regions hurried to put in place volume targets and financial incentives to force the market to adopt biofuels. However, in the rush, the full impacts of their production were not well understood. And, by focusing

on a single nascent technology, rather than on the goal - carbon emissions reductions - the dream soon turned to a nightmare. It has now become clear that there is no simple answer to the question of whether biofuels are truly a sustainable alternative to fossil fuels. The evidence, much of it published in the last three years, suggests that in the vast majority of existing cases, they are not. A change to current policy is needed.

This report follows the adoption, at the end of 2008, of the European Union's mandatory 10% renewable energy target for transport, to be reached by 2020. It attempts to assess the environmental implications of that policy. Its key finding is that if the target is, as is widely accepted, almost completely to be met through the use of biofuels, it is highly unlikely to be met sustainably. In short, there is a very substantial risk that current policy will cause more harm than good.

One of the most important reasons for this is the failure to account for the environmental impact of indirect land use change (ILUC). When agricultural land is converted for biofuel production, land elsewhere will be converted for agriculture, releasing lots of CO<sub>2</sub> emissions, hence the term 'indirect' land use change. Assessing the impact of ILUC and incorporating it in biofuels policy is critically important to ensuring biofuels really do reduce carbon emissions and do not indirectly increase them.

It's not too late to fix the policy. The sustainability criteria in the EU law should be redefined to ensure that all environmental and social impacts are taken into account, thereby promoting only the biofuels that bring genuine overall benefits. Subsequently, the volume targets for biofuels should be replaced with a target for greenhouse gas (GHG) reduction for transport fuels. In this way support for transport fuels would be based on their climate performance, rather than their name. This way, the policy would actually be in line with its original purpose, to contribute to the EU's fight against climate change.

**The report's key conclusions are as follows:**

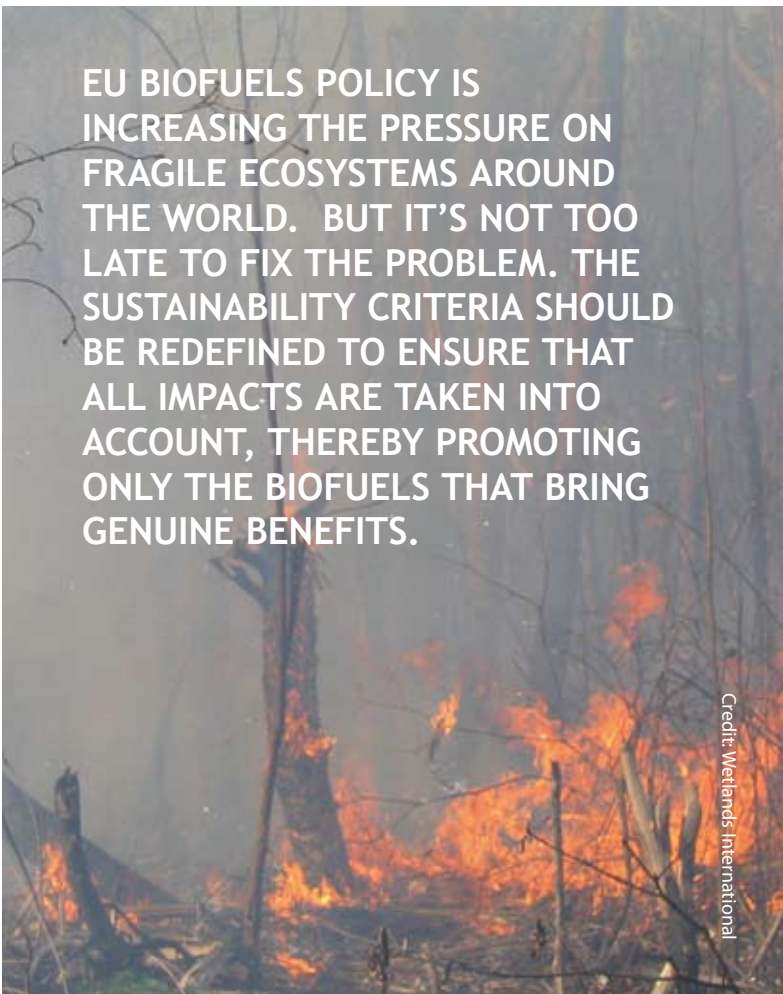
- > The estimated global impact of the increased use of biofuels, resulting from this EU policy, on land use change and biodiversity are very significant. Meeting the 10% transport target using predominantly biofuels would require the combination of a large increase in the area of land devoted to biofuel crops and an unprecedented increase in the intensity of farming. Together this would adversely affect carbon stock and biodiversity, through habitat conversion and intensification of farming methods. Such additional pressure on ecosystems and biodiversity would come at a time when the world is already facing an unprecedented collapse in the numbers of species.
- > While the 'sustainability criteria' in the renewable energy law were ostensibly put in place to ensure, inter alia, that only biofuels that reduce GHG emissions by at least 35% compared to fossil fuels would qualify for government support, in practice the Directive is more likely to increase transport emissions than reduce them. That is due to the failure to address indirect land use change (ILUC) mentioned above and because of weak and opaque verification mechanisms that are intended to prevent direct land use change.
- > As the main justification for public policies supporting biofuels is reduced GHG emissions, it is essential that this issue is properly addressed by EU policymakers and that ILUC factor is included in the GHG emissions calculation associated with biofuels.
- > The sustainability criteria also fail to effectively mitigate against the risk of widespread impacts on biodiversity, and on vulnerable communities in some of the poorest regions of the world.
- > The process of monitoring and verifying the sustainability

of biofuels that are sold on the European market is dependent on good governance in producer countries and robust enforcement and monitoring of standards. Even if the law's certification schemes are implemented correctly (and there are many doubts over enforcement), they will not resolve the numerous sustainability concerns, most notably indirect impacts on land use change and biodiversity.

- > The current process for calculating GHG emissions from biofuels and, in particular, the default GHG savings values assigned to different types and production pathways of biofuels, is opaque and raises questions about the independence, credibility and validity of the process.
- > Many fundamental uncertainties in the law will only be fully resolved as part of the comitology (technical committee) process, with little or no democratic oversight from the European Parliament or other interested stakeholders such as environmental groups. This also raises questions about the transparency and legitimacy of the process.

Overall, the legislation contains many uncertainties and issues yet to be resolved. The shortcomings of the current law do not only damage the environment, they are also likely to hamper the development of an environmentally and economically sustainable future for renewables in transport.

In order to correct the potentially negative impacts of the policy, we have formulated a set of specific recommendations for decision-makers and investors on the following pages.



EU BIOFUELS POLICY IS INCREASING THE PRESSURE ON FRAGILE ECOSYSTEMS AROUND THE WORLD. BUT IT'S NOT TOO LATE TO FIX THE PROBLEM. THE SUSTAINABILITY CRITERIA SHOULD BE REDEFINED TO ENSURE THAT ALL IMPACTS ARE TAKEN INTO ACCOUNT, THEREBY PROMOTING ONLY THE BIOFUELS THAT BRING GENUINE BENEFITS.

# Recommendations

## For European Policy

- > The EU should scrap the energy-based target for renewables (biofuels) in transport and replace it with a GHG reduction target, provided that robust calculation to include emissions from both direct and indirect land use change from biofuels is included.
  - > Regardless of the future of the overall targets, an absolute priority is to include estimates for the carbon impact of ILUC in the regulation. Only with scientifically robust calculation of ILUC effects, and proposals to avoid them in the sourcing of all biomass for energy, are current policies likely to reduce GHG emissions from transport. In doing this the EU should learn a lesson from California, which has adopted ILUC factors for different biofuel crops based on scientific assessment open to public scrutiny. In addition, further safeguards are needed to reduce biodiversity risks due to ILUC.
  - > The policy as currently framed risks encouraging a short term 'bubble' in almost all kinds of biofuels. But in the medium and longer term, there can be no market for fuels that are responsible for the release of large amounts of carbon. A change to the law is therefore urgent to ensure that the industry only invests in biofuels that are sustainable when all environmental impacts (particularly ILUC) are taken into account. Such a precautionary approach would be perfectly in line with EU law and would give long-term security to the industry.
  - > The Commission should ensure transparency and involvement of all relevant stakeholders in the future legislative process, which has to clarify numerous uncertainties in the law. Only with openness and transparency will the law and its implementation regain credibility.
- > Set no new binding targets for biofuels for the next few years and abolish or lower existing ones in order to avoid a massive lock-in to biofuel streams that are highly unlikely to be viable in the medium term. This can be achieved by not planning for an increase in biofuel use when drawing up national Renewable Energy Action Plans until at least the 2014 review.
  - > Promote non-biofuel renewable energy sources in transport, including renewable electricity.

## For industry and investors

- > Concentrate investment in areas that reduce energy demand in the transport sector. This creates the best conditions to meet a future with higher energy prices and drastic increases in GHG emission reduction requirements.
- > Only invest in biofuels that demonstrably do not pose significant land use issues and do not risk social and/or conservation conflicts, such as biofuels derived from wastes or some residues.
- > Avoid investments in biofuels that narrowly pass the GHG threshold and pose ILUC issues – such investments are likely to be lost once the EU includes ILUC effects in the law.
- > Slow down on other biofuel investments, including those that qualify as 'second-generation' feedstock until land use issues have been properly addressed in the sustainability standards (due by the end of 2012).
- > Invest in other promising renewable and low-carbon energy sources in transport, including renewable electricity in transport (e.g. trains, ships, plug-in hybrids, battery electric vehicles etc.) These hold promise for real and lasting GHG emissions reduction.

Since the biofuel industry is highly dependent on government support, investor security and high oil prices, it is important to make clear that the law does not give clearance for any biofuel production. Security of investments crucially depends on environmental sustainability. Investors in biofuels should therefore think twice before putting their money into the development of feedstocks that require large areas of land or are unsustainable in any other way.

## For EU Member States

- > Develop legislation, taxation policy and other measures that limit energy demand in the transport sector. These measures would include substantial increases in vehicle efficiency alongside a move away from car-dependency, e.g. by improving the public transport system, making walking and cycling more attractive, and more effective strategic and local planning to reduce the need to travel. Similar efficiency stimulation is needed for freight transport where specific fuel consumption of trucks must be reduced and more sustainable alternatives to road transport encouraged.



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