



# IPC Policy Focus

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## Biofuel Policies in the U.S. and EU

This policy brief draws from the September 2011 IPC Discussion Paper "Farm Policy in the US and the EU: The Status of Reform and the Choices Ahead" by David Blandford, Tim Josling, and Jean-Christophe Bureau. The authors thank IPC Chief Executive Charlotte Hebebrand for her assistance with this brief. Funding for this set of papers was provided from both sides of the Atlantic: IPC is grateful for support from the RISE Foundation ([www.risefoundation.eu](http://www.risefoundation.eu)), and for additional support from the Farm Foundation ([www.farmfoundation.org](http://www.farmfoundation.org)) under its Small Grants Program.

**In recent years both the US and the EU have embarked on ambitious biofuel policies that have become complements to traditional farm programs.** The policies have been successful in introducing plant-based fuels into the mix of energy sources for transportation. In the US this has been the result of the mandated blending of renewables (which has primarily affected ethanol derived from corn) with petroleum products, sweetened by tax credits, and with protection from imports. In Europe the use of biodiesel from domestic oilseeds such as rapeseed and overseas production of tree oils such as palm oil has been integrated into the transport sector by mandated incorporation. **The development of renewable sources of energy certainly has considerable popular appeal among those who are concerned by the current reliance on fossil fuels and its implications for climate change, although there are differing views on the actual contribution of biofuels to climate change mitigation. The political appeal of the policies is strengthened by the opportunity they provide for increasing farm prices and incomes. On the other hand, the price-enhancing effect of using existing crops as energy feedstocks is not welcomed by livestock producers and food consumers.**

As the U.S. deliberates on its 2012 farm bill and the EU prepares for a post 2013 Common Agricultural Policy, it is useful to also take stock of U.S. and EU biofuels policies, since these affect agricultural markets, arguably more than traditional farm programs. Whereas some biofuel related components are cov-

ered in the farm bill and the CAP, others fall under separate energy legislation. This brief will provide an overview of key biofuels policies and debates on both sides of the Atlantic and conclude with some recommendations.

### ***Border Measures and Subsidies***

The US has a 54 cent per gallon import tariff on ethanol, presently set to expire at the end of 2011. It also provides a 45 cent per gallon subsidy for blenders. A recent bill in the Senate called for a repeal of the tax credit for ethanol blenders and of the special tax on imported ethanol.<sup>1</sup> The need to cut government expenditures will likely contribute to a lowering, if not elimination of the ethanol subsidy, and a reduction and possible elimination of the ethanol tariff may also be forthcoming.

Whereas the EU encourages the use of biomass for renewable energy production, in particular with the target of 10 percent of transport fuel in each member state under the Directive for Renewable Energy (RED), the use of biofuel (liquid or gas) in transport, subsidies and tax breaks in the EU are administered at the member state level. These have generally been reduced recently, in particular in the UK, Germany and France. The member states apparently find it easier to pass the costs on to gasoline and diesel at the retail level. So in effect, the burden of the biofuels program now predominantly falls on the consumer.

<sup>1</sup> An amendment to a Senate Bill that would have eliminated the tax credit and the special import duty passed by a vote of 73 to 27 but the Bill as a whole failed. Nevertheless the vote acts as an indication of the possible fate of the ethanol policy in any eventual budget and deficit reduction package.

EU tariffs on biodiesel are set at 6.5% but there are concerns that strict EU sustainability criteria may negatively impact imports of certain types of feedstocks and biofuels. The EU tariff on ethanol is also quite high ((€19.2 / hectoliter for the HS6 code 2207103 and €10.2 / hectoliter for the code 220720).

### ***Biofuels Mandates***

EU biofuels policy has evolved over the years from modest support for ethanol production as an agricultural by-product to the elaboration of mandates for renewable fuels (Swinbank, 2009). The EU passed legislation in 2008 that mandated the use of biofuels in the transportation sector. As a part of a “Climate Change Package”, the 2009 RED established an EU-wide binding target of 10 percent of transport energy from renewable sources by 2020 (EU 2009), along with a requirement that 20 percent of all energy come from renewable sources (up from 8 percent in 2009).<sup>2</sup> Implementation is in the hands of member states, many of which have legislation in place to achieve these levels. In the United Kingdom, for example, electricity suppliers must source a specified proportion of their supplies from renewable sources or pay a penalty (the “buy-out” price), creating a financial incentive (borne by the consumer) to generate electricity from renewable sources. A similar situation exists in France, where oil companies pay a high gasoline tax if they do not use the amount of biofuels indicated by the mandate.

The U.S. Energy Policy Act of 2005 introduced mandates for the use of renewables in transportation fuel. The mandated quantities were expanded substantially under the Energy Independence and Security Act (EISA) of 2007. The US renewable fuel standard (RFS-2) provides volume targets for different kinds of biofuel: consumption of 1 billion gallons of biodiesel (3.15 Mtoe [million tons of oil equivalent]), 3.5 billion gallons of non-cellulosic advanced biofuels (7 Mtoe), and 15 billion gallons of conventional biofuels (30 Mtoe) by 2020. Mandates under the Renewable Fuel Standard (RFS) in EISA also foresee a substantial increase in biofuel production from cellulosic sources. The mandate of 100 million gallons in 2010 (which was not enforced because of insufficient supplies) is scheduled to increase to 16 billion gallons by 2022. There is considerable doubt as to whether this will actually be achievable because of technical challenges and a lack of commercial viability.

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### ***Qualifying for the Mandates***

**In order to be responsive to biofuel critics, who are concerned about the net greenhouse gas reductions actually provided by biofuels, both the US and EU have put into place guidelines that must be met for biofuels to count towards fulfilling the mandate.**<sup>3</sup> For biofuels to count towards meeting the U.S. mandate, they must save 20 percent of emissions relative to fossil fuels. The EU RED includes more ambitious sustainability criteria for biofuels. They must provide at least 35 percent carbon emission savings compared to fossil fuels.<sup>4</sup> This requirement is progressive as it increases to 50 percent in 2017 and 60 percent in 2018 for new biofuel installations.

The issue of how to account for indirect land use change (ILUC)—the shifts in agricultural production and the process of expanding cultivation on forest and pasture land to compensate for lands grown to use biofuels—arises when calculating the greenhouse gas savings from biofuels. In the US, both the California Environmental Protection Agency (CEPA) and the US Environmental Protection Agency (EPA) released some life cycle analyses including ILUC that showed that US corn ethanol did not pass the bar. This triggered intense lobbying activity by corn and ethanol producers. A group of US Senators was harshly critical of the methodology used in the EPA’s 2009 draft Regulatory Impact Analysis, with particular focus on the ILUC calculation, claiming

<sup>3</sup> This approach is seen as less problematic from a WTO perspective than banning certain types of biofuels.

<sup>4</sup> In addition, they must avoid harm to land with high biodiversity value or high carbon stock.

<sup>2</sup> In 2009, through Directive 2009/28/EC on the promotion of the use of energy from renewable sources (the RED), the EU adopted targets for a 20% overall share of renewable energy by 2020, and a 10% share for renewable energy in the transport sector. While previous targets were only indicative, these targets are mandatory. At the same time, through Directive 2009/30/EC (“the Fuel Quality Directive”) the EU adopted a mandatory target of a 6% reduction in the greenhouse gas intensity of fuels used in transport by 2020.

that it understated the potential benefits of bioethanol. A bipartisan group led by Senators Harkin and Grassley called on the EPA to refrain from premature ethanol emission regulation. In 2010 the EPA released new figures, in which ethanol from corn produced by recent plants using natural gas rather than coal, has been found to save 21 percent of emissions, and thus passes the ILUC test. Older plants benefit from “grandfathering” and even though they do not reach the bar they seem to face little threat from any new requirements on net emission reductions.

The EU RED and the Fuel Quality Directive required the European Commission to compile a report “reviewing the impact of indirect land-use change on greenhouse gas emissions” and to seek ways to minimize it. The report would be accompanied by proposals for a concrete methodology for calculating indirect land-use change, which could be applied to other commodities. The Commission has so far relied on the work undertaken by IFPRI and INRA as well as the Commission’s Joint Research Center. The Commission released its report in December 2010, in which it “recognises that a number of deficiencies and uncertainties associated with the modeling, which is required to estimate the impacts, remain to be addressed, which could significantly impact on the results of the analytical work carried out to date.” The Commission indicates that it will “continue to conduct work in this area in order to ensure that policy decisions are based on the best available science and to meet its future reporting obligations on this matter”.<sup>5</sup> The Commission planned to present the Impact Assessment, together with a legislative proposal for amending the Renewable Energy Directive and the Fuel Quality Directive as necessary, by no later than July 2011, but to date this has not been presented.

Considerable uncertainty persists on both the methodology and the equivalent in GHG emission of the ILUC effect of EU bioethanol and biodiesel (Edwards et al. 2010). Given the financial interests at stake, no quick decision can be made. However, the recent studies suggest that if one counts ILUCs,  
<sup>5</sup> Report from the Commission on indirect land-use change related to biofuels and bioliquids COM(2010)811 final 22.12.2010.

EU rapeseed and sunflower will have a hard time satisfying the required minimum EU threshold for emission reductions under the mandate (Al Riffai et al. 2010, Edwards et al. 2010).<sup>6</sup> Such a finding could have major implications: it could lead to the exclusion of most EU biodiesel production from counting towards the ten percent target if the products were unable to pass the bar.<sup>7</sup> Ethanol production is not necessarily sheltered either, even though there are more limited ILUC effects. For sugar beet this is due to high yield per hectare, and for wheat ethanol, even though its production is currently declining, the replacement of other animal feedstuffs by its byproducts. Rapeseed oil producers claim that this is also the case for biodiesel, and that the rapeseed cake should generate a negative ILUC factor, offsetting changes in land use elsewhere but this argument is contested by environmental groups. Some of these groups, including Transport and Environment and Friends of the Earth, sued the Commission in 2010 for failing to release studies investigating the impact on biofuels on the environment. **The ILUC issue might cause a serious dent to the EU biofuel support policy, which is now the EU policy that affects agricultural markets to the greater extent, given that most of the CAP traditional market support instruments have been dismantled and that most direct payments have become decoupled from production.** However, the ILUC threat to the EU biodiesel industry appeared to become more remote with the July 2011 Commission announcement approving seven voluntary schemes for certifying the sustainability of locally produced and imported biofuels. The approval relied on commitments for inspection and control that the supply of biofuel will meet sustainability criteria outlined in the RED for the next five years. These commitments, however, do not include ILUC (only direct land use changes), which means that ILUC consideration are not expected to have concrete impacts until 2017.

<sup>6</sup> Report from the Commission on indirect land-use change related to biofuels and bioliquids COM(2010)811 final 22.12.2010.

<sup>7</sup> US soybean and biodiesel producers have also expressed their concerns about a potentially strict finding.

### ***Biofuel Policies: Conclusions and Recommendations***

- Since an array of biofuels policies have important pass through benefits to agricultural producers on both sides of the Atlantic, **these should also be considered as farm policies under the EU's CAP and the US farm bill are being reviewed.**
- **Greater transparency around subsidies is required as farm and biofuel policies are considered.** Whereas both the US and EU do notify some biofuel related support to the WTO, the main schemes for encouraging the up-take of biomass for energy purposes are not reported as agricultural subsidies. (Josling, Blandford and Early (2020)). Swinbank (2009), for example, argues that the EU schemes are not required to be notified under the Agreement of Agriculture, but concludes that if they were, they would account for about 16 percent of the EU's total amber box support. For the US, Josling, Blandford and Earley (2010) have estimated that the price enhancement effect of policy measures for ethanol translates into a subsidy of roughly \$3 billion per year for US corn producers.
- **It is time to phase out subsidies and reduce tariffs, in particular given concerns about the impact of biofuel production on food prices.**
  - If biofuels have a constructive long-term place in an overall fuel strategy, aimed primarily at reducing the use of fossil fuels, removing rather than imposing restrictions on imports, would be a much more consistent policy.
  - A case can be made for some assistance in the early development of bio-energy on the basis of the infant industry argument. However, there is growing evidence that the biofuels infant has not only grown up, but is becoming oversized (in particular in the US, where corn ethanol is being produced, with domestic subsidies and import protection, over and above the limits of domestic use).
- **The developments and debates around sustainability criteria in the US and EU raise a number of important questions.**
  - The rather divergent criteria set for a minimum level of greenhouse gas savings to be provided by biofuels to count towards US and EU mandates, demonstrates that there appears to be little consensus on what should be a rather fundamental question.
  - Incorporating ILUC into net greenhouse gas savings calculations clearly makes sense, but it is presently far from certain whether this can be done in a scientifically sound fashion, or whether some international consensus for doing so could be reached. Until greater certainty and consensus is reached, it seems inevitable that the issue will be highly politicized.
  - Since biofuels are subject to government mandated sustainability criteria, questions pertaining to their scientific foundation, justification and trade impact need to be carefully considered. As Swinbank (2009) points out, it is difficult to argue that biofuels that save a certain percent of carbon emissions and those that save only one percent less are not "like goods."

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