



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

CAIRN Policy Brief

The logo for the Canadian Agricultural Innovation and Regulation Network (CAIRN) is displayed vertically in a large, white, serif font against a dark blue background.

Canadian
Agricultural
Innovation
Research Network
51 Campus
Drive
Saskatoon, SK
S7N 5A8

General Inquiries:
306.966.4026
Fax: 306.966.8413

The Regulation of Biofuels in the United States, European Union and Canada

Matthieu Mondou and Grace Skogstad
University of Toronto

Context

The implementation of mandatory targets in the European Union (EU) and the United States for blending renewable fuels, including biofuels, with the traditional fossil fuels of petroleum and diesel has spurred growth in the production of renewable fuels¹. EU and American consumption mandates are, however, to be met by renewable fuels that meet environmental sustainability standards that include both greenhouse gas (GHG) emission savings relative to fossil fuels, as well as restrictions on the use of particular kinds of lands, including those with high carbon stocks and biodiversity, to produce renewable fuels feedstocks.

Accompanying American and EU governments' imposition of environmental sustainability standards on renewable fuel mandates is heightened attention to the social sustainability of biofuels and renewable fuels. Social sustainability criteria consider, for example, the impact of the production of biofuels on the price and supply of food, as well as on labour force conditions, especially in developing countries. Although neither the US nor the EU has mandated social sustainability criteria of renewable fuels, there is considerable global attention to developing indicators and methodologies to measure biofuels' social and economic effects.

¹ This policy brief is a abridged version of a full report available online at this address:
<<http://www.ag-innovation.usask.ca/Mondou%20&%20Skogstad-CAIRN%20report-30%20March.pdf>>

Unlike EU and American renewable fuels policies, the policies of the Canadian government to promote renewable fuels with targets do not require these fuels to meet environmental sustainability criteria. Nonetheless, Canadian producers of biofuels feedstocks (like canola) and renewable fuels are affected by the developments in the US, EU, and elsewhere. Most directly, Canadian exporters of biofuels and biofuels feedstocks to the United States or any of the 27 member countries of the EU must meet these importers' environmental sustainability standards if their renewable fuel is to count toward the country's targets. The economic integration of Canadian biofuels' feedstock markets with markets elsewhere, plus the global dialogue around best practices when it comes to renewable fuels' policies, make it difficult to insulate Canadian renewable fuels policies from developments elsewhere.

Why were sustainability criteria for biofuels adopted in the US and the EU?

The adoption of sustainability criteria in both the US and the EU results from growing scientific controversy about biofuels' capacity to meet their stated environmental goals - GHG reduction – and from doubts about their deleterious effects on land use. This growing concern was carried by environmental associations and channeled through the Green Party in the European Parliament and the Democratic House Leadership in the United States. This resulted in the inclusion of specific provisions in the *Energy Independence and Security Act* (EISA) adopted by the US Congress and signed into law in December 2007 by the US President and in the *Directive on the Promotion of the Use of Energy from Renewable Sources* (also known as the Renewable Energy Directive, or RED) proposed by the European Commission and adopted by the European Parliament and Council in April 2009.

How do the sustainability criteria differ?

The sustainability criteria are similar in substance – both have a 'no land clearing' rule and a minimum GHG reduction threshold compared to petroleum fuels– though with notable differences in the level of the GHG threshold – 20% in the United States compared to 35% in the European Union – and in their account of indirect land-use changes.

Important differences also pertain to the implementation of these sustainability criteria. While the United States relies on a central system administered by the Environmental Protection Agency, the European Union relies primarily on voluntary private certifications schemes. Finally, no social sustainability criteria have been formally adopted in either of the policy frameworks, but the European Union legislation does contain an obligation to monitor this issue.

How robust are these standards?

The absence of a dominant international norm for biofuel sustainability has created a situation of multiple criteria and methodologies for assessing sustainability. Global conversations are currently underway to remedy the problems that this situation could provoke, notably for international trade. There are at least three initiatives: the Global Bioenergy Partnership (GBEP), the Global Sustainable Bioenergy (GSB) project, and the Technical Committee 248 of the International Standards Organization (ISO).

To obtain a consensus on biofuels sustainability criteria, three main issues of division will need to be bridged. First are the effects of indirect land-use change that result from biofuel policies. Although there is an emerging consensus on the existence of ILUC, there are disagreements on the level, magnitude or modalities of its effect. Second are the methodologies and models used for calculating GHG emissions of renewable fuels relative to petroleum-based fuels. More specifically, there is a need to ensure the biofuel industry of a transparent process to gauge these effects, and of the independence of the experts making these calculations. Third is the nature and the magnitude of the effects of biofuel policies on world food prices and supply and on developing countries' economy. Although these social sustainability issues are not formally inscribed in biofuel legislation, they affect the legitimacy of biofuel policies. Settling this controversy requires more research on the causes and consequences of increases in the volatility of food prices – and the extent to which biofuel policies contribute to this increased volatility. It also requires a better understanding of the different consequences – in the short term and the long term, and on urban and rural economies – of higher food prices for developing countries. Although judged to be imperfect, sustainability criteria are nonetheless here to stay. From the perspective of the renewable fuels industry, which generally accepts the need to comply with sustainability criteria, sustainability criteria would be more acceptable if they were also applied to their direct competitors: the petroleum industry.

The Implications for Canadian Renewable Energy Policies

There are several implications for the Canadian renewable fuel industry and Canadian biofuel policy of American, EU, and global biofuels policy developments to date. Environmental sustainability standards in the United States and the European Union have obliged export-oriented Canadian feedstock and biofuel producers - particularly canola and potentially cellulosic ethanol producers – to take into account sustainability criteria in their production methods. So far, the costs of doing so have been incurred by individual producers. Implementing a federal standard that complies with EU and US regulations would ensure a level playing field for all feedstock and biofuel producers, and avoid additional costs for export-oriented producers. Concurrently, Canadian government and industry officials are participating in the ongoing global conversation that may lead to harmonization of norms on sustainability. Social sustainability remains a concern globally, as world food prices have spiked again above their 2008 level. Canadian producers are not immune to this concern. Canadian biofuel policy-making would benefit from being attentive to the impacts of biofuels on food price volatility and food supply.

Conclusion

The implementation of mandatory blending targets and environmental sustainability standards for renewable fuels in the United States and the European Union (EU) directly affects Canadian producers of renewable fuels and renewable fuel feedstocks. The blending targets open up new market opportunities, but seizing these opportunities requires compliance with the environmental sustainability requirements of the respective US and EU legislation. Moreover, the American and EU renewable fuel mandates and environmental sustainability criteria are both subject to continuing controversy. A major source of contention is the appropriate model to estimate renewable fuels' greenhouse gas emissions over their lifecycle, including whether and how to estimate indirect land use changes of biofuels. Even while these domestic controversies remain unresolved, there are initiatives underway in the global arena to develop common methodologies and sustainable practices for biofuels. As a party to the latter, Canadian government and industry officials have an opportunity to create a level cross-jurisdictional playing field for producers of renewable fuels and feedstocks. Bringing Canadian public policies for renewable fuels into closer alignment with those in the US and EU would also serve to promote the Canadian renewable fuel industry.