



Current

Agriculture, Food
& Resource Issues

A Journal of the Canadian Agricultural Economics Society

Trading Biofuels – Will International Trade Law Be a Constraint?¹

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This paper was presented at the annual meeting of the Canadian Agricultural Economics Society (Halifax, June 2004) in a session entitled “Bio-Energy in North America: Problems, Policies and Potential”. Papers presented at CAES meetings are not subject to the journal’s standard refereeing process.

The Issue

Biofuels are increasingly being looked at to spur economic activity in the agricultural sector and to contribute to broader rural development goals while at the same time assisting in the reduction of harmful emissions created by burning petroleum-based fuels. Hence, biofuels appear to be a “win-win” technology that will contribute to achieving a number of important policy goals. As a result, governments around the world have become actively involved in the promotion of this new industry. The industry has expanded rapidly in the last few years but is still in a developmental stage. As the industry matures, biofuel producers will begin to see opportunities in international markets. Canada and the United States have considerable export potential due to their large supply of biomass and technological capacity to convert the biomass into biofuel. This article examines the potential trade issues that could arise when biofuels enter the international market. The issues examined include subsidization, the trade effects of using biotechnology in producing biofuels, market access and tariff classification, and potential technical barriers to trade related to product standards.



Implications and Conclusions

Although there is significant economic potential in the biofuel industry, international trade law may be ill equipped to facilitate the international movement of this new and novel product. There is considerable potential for trade disputes to arise and costly delays to occur. As a result, market potential may be less than expected, and suboptimal levels of investment can be expected. The private sector needs to factor trade constraints into product development decisions. Governments and industry must work together to establish a coherent strategy to proactively address potential trade constraints before they become actual trade complaints. More research is needed to fully inform policy makers and private sector investors.

The Biofuel Industry

Biofuels such as biodiesel and ethanol have recently been touted as offering a solution to many of the problems associated with the use of petroleum-based fuels. They are derived from renewable sources such as sunflower seeds, corn, soybean, canola and wheat. Biofuels can be used in place of petroleum-based fuels, meaning their widespread adoption could help reduce countries' dependency on imported oil supplies. Many governments also view them as a way to better utilize agricultural resources, thereby increasing prices and hence farmers' incomes. The primary motivation, however, for the increased interest in bio-based fuels is concern for the environment, especially related to urban air pollution and global warming. When burned, biofuels generally produce fewer harmful emissions, such as greenhouse gases and sulphur, than do traditional gasoline and diesel (Walsh, 2000).

There are two main types of biofuels: ethanol is used as a replacement for gasoline, and biodiesel is used as a replacement for diesel. These two industries are in very different stages of development. Biodiesel is still in the early development stage in North America and most of the firms are small, independent producers or distributors. In the European Union, spurred by heavy government subsidization, the industry is much more developed and several major players have emerged. The ethanol industry has been in existence for much longer and is much more developed. Large oil companies such as Shell and BP are cautiously beginning to make investments in the production and distribution of ethanol. In both of these biofuel industries, however, costs of production are much higher than when petroleum is used as the basic input. As a result, biofuels are dependent on heavy government subsidization – either as direct payments to producers or as tax subsidies in the form of elimination of high excise taxes on fuels.

Thus far, the biofuel industry has been dominated by national production that displaces petroleum-based fuels in the domestic market. International trade in biofuels has been extremely small with the exception of intra-EU trade. However, as the industry expands and producers look to increase plant size and production in order to benefit from

economies of scale, producers will look to trade their products internationally. Countries such as Canada and the United States, which have large agricultural sectors to provide the inputs for bio-based fuels, have considerable export potential. Further, current petroleum exporters may find themselves in direct competition with subsidised biofuels in their traditional foreign markets. As with any product, producers of biofuel must carefully consider the constraints their products may face in international trade law. These constraints could significantly increase risk levels for their investments, and the returns achieved may not be sufficient to justify the risks. The potential constraints arising in international trade law are examined below.

Subsidies and the WTO

As mentioned above, the biofuel industry is heavily subsidized by governments. This is true in the European Union, Canada, the United States, Brazil and other countries. The major justification for this subsidization is the desire to attempt to correct the market failure pertaining to the environmental damage caused by the externalities associated with using petroleum fuel. The WTO's General Agreement on Tariffs and Trade (GATT), which governs the international trade of goods, has disciplines regulating the use of subsidies in order to reduce or eliminate their trade-distorting effects. There are three categories of subsidies – prohibited, actionable and non-actionable.

Prohibited subsidies encompass two forms: 1) export subsidies – which at this point are not being used in the biofuel industry and 2) subsidies for which receipt is contingent upon using domestic inputs over imports. This second form of subsidization reduces expected market access benefits for foreign suppliers of competing inputs and, hence, is considered trade distorting. The U.S. Department of Agriculture has established a subsidy for refiners that use soy oil as a feedstock for biodiesel (Clean Air Initiative, 2004a). The United States produces 45 percent of the soybeans in the world (United Soybean, 2001). As this subsidy is only available if soy oil is used as the input, firms negatively affected by this subsidy, both petroleum producers or competing input producers, could argue that the subsidy nullifies or impairs benefits accruing to them under the WTO. If such a case were argued successfully, the United States would have to withdraw this subsidy.

Non-actionable subsidies are general subsidies to a firm or industry that are administered in a way that is considered non-trade distorting. Actionable subsidies are general subsidies that are large enough to have an effect on trade (WTO, 1994b). Member countries can address actionable subsidies in one of two ways: 1) they can use the dispute settlement body of the WTO to attempt to have the subsidy withdrawn or its adverse effects removed, or 2) they can launch a domestic investigation and ultimately charge a countervailing duty on imports to remove the damage to domestic producers (WTO, 2004b). Many, if not all, of the subsidies that exist in the biofuel industry today would fulfill the conditions necessary to be considered an actionable subsidy under Part III of the Agreement on Subsidies and Countervailing Measures (WTO, 1994b). In order to make

biodiesel competitive with conventional diesel, the United States has given out subsidies to producers that are over 100 percent of the selling price (SolarAccess.com News, 2004). Ethanol has also been heavily subsidized in the United States. In 1999, the average wholesale price for ethanol was about 100 cents/gallon. The U.S. government lowered the effective price to about 50 cents/gallon by providing a 53-cent/gallon alcohol fuel tax incentive (Clean Air Initiative, 2004b). These subsidies are clearly large enough (over 5 per cent of the value) and administered in such a way that they would be classified as actionable subsidies according to the Agreement on Subsidies and Countervailing Measures (WTO, 1994b).

The above conditions relate to industrial goods. However, it could be argued that because biomass-based fuels are actually agricultural products, the WTO Agreement on Agriculture should govern them. Agricultural subsidies are classified in a similar fashion to industrial subsidies, but either they are subject to different definitions or they are subject to a greater degree of tolerance with regard to the size of subsidies allowed. It has been agreed that subsidies placed in the green box (non-actionable subsidies) are allowed without limit and no actions can be taken against them. These subsidies are often non-product specific and must be decoupled from current output or prices. They also include environmental protection programs. Amber-box (actionable) subsidies are all domestic support programs that have not been placed in the green box. The sum of payments falling into the amber box is capped at a pre-agreed level for each country. Finally, blue-box subsidies are amber-box subsidies that satisfy certain conditions designed to reduce the trade distortion, for example, requiring farmers to limit production in order to receive the support. There are currently no limits on blue-box subsidies, but many countries are trying to change that in the current negotiations through setting limits on blue-box subsidies or creating reduction commitments (WTO, 2004a). At first glance, it would appear that biofuel subsidies would fall into the amber box and therefore face few constraints if the government decided they were high-priority subsidies and would be willing to make cuts to other subsidies in order to make room for them within their capped level.

The Uruguay Round Agreement on Agriculture (URAA), however, states that payments under environmental programmes fall into the green box and will not be limited or actionable. The conditions for these payments are that they must be part of a clearly defined government environmental or conservation programme and be dependent on conforming to certain pre-specified activity norms. Further, the amount of payment is limited to the extra cost or loss of income involved in complying with the government program (WTO, 1994a). If a government tried to classify biofuel subsidies as green box, two critical issues could arise in a dispute. First, scientific evidence would be required to prove that environmental benefits are provided and that they fit within a clearly defined environmental program. Second – and more importantly – how are “extra costs” measured? Subsidies in the biofuel industry are needed because the costs of production

are higher than the costs of production of products that are direct substitutes. There is no definite answer to this question and disputes are almost sure to arise at the WTO.

Trade Barriers Due to Biotechnology

Biotechnology is viewed as a critical tool in reducing the cost of producing biofuels so that they become more competitive with petroleum-based fuels. However, some countries, particularly in the EU, are opposed to the introduction into their markets of products that have used biotechnology anywhere in their production process, and as a result are putting in place strict regulations that act as trade barriers to such products. Predictably, proponents of biotechnology are opposed to these trade barriers and argue that they contravene WTO provisions that require scientific justification for the imposition of trade barriers. The major problem is that there is not a universally agreed set of rules for settling this dispute. Countries that support the use of biotechnology, such as the United States and Argentina, want trade in these products to be governed by the GATT. Countries opposed to biotechnology, such as the EU, Japan, Mexico, Brazil and South Africa, want trade in biotechnology products to be governed by the Cartagena Protocol on Biosafety (commonly called the Biosafety Protocol, or BSP) – a multilateral environmental agreement that deals specifically with trade in products arising from the use of biotechnology; its objective is the protection of biodiversity (Isaac and Kerr, 2003).

The GATT and the BSP have very different and conflicting rules regarding biotechnology products and how governments can assess and manage the risks they may pose. WTO rules state that trade barriers due to safety concerns must be based on the end product that is moving internationally. There are two main agreements related to these end-product regulations: 1) the Agreement on Sanitary and Phyto-Sanitary Measures (SPS Agreement) and 2) the Agreement on Technical Barriers to Trade (TBT Agreement). The SPS Agreement states that there must be acceptable evidence that a product poses risks to human, plant or animal health. What constitutes “acceptable evidence” is determined by three international scientific organizations: the Codex Alimentarius Commission (human safety and health); the International Office of Epizootics (animal safety and health); and the International Plant Protection Convention (flora and fauna safety and health). The TBT Agreement states that an end product must have some demonstrable effect that differentiates it from a similar product if it is to be treated differently under trade rules. Under these agreements – and the risk assessment framework they represent – it is unlikely that trade barriers based on prospective imports having been produced using biotechnology will be found WTO compliant (Isaac and Kerr, 2003). The WTO does not allow products to be discriminated against based on their production and processing methods (PPMs). This relates not only to the use of biotechnology but also to emission levels, cultivation practices, labour standards and any other production factors that do not change the end product. This rule is in place so that differing levels of technology will not be used as barriers to trade – particularly where developing countries use less

sophisticated, labour-intensive technologies (Isaac and Kerr, 2003). When the rule is applied to biotechnology it means that, even if a genetically altered plant was used as the input to the biofuel, or biotechnology was used to process the biomass, as long as the biofuel is not discernibly different from a biofuel produced without using biotechnology, it should not face a trade barrier.

The Biosafety Protocol, as a multilateral environmental agreement, is not as concerned as the WTO is about trade liberalization, fair treatment for developing nations or needing hard evidence showing risk before taking action. The BSP was signed in January 2001 and entered into force on September 11, 2003 after 50 signatory countries had ratified it. The United States is not a party to the protocol and Canada, while having signed the protocol, has not ratified it. The BSP uses the precautionary approach when dealing with unknown risk. This means that rather than the traditional approach of innocent until proven guilty, biotechnology products are guilty until proven innocent. As a result, the BSP does allow countries to keep products that have used biotechnology in their production process out of their markets, even if a product is not discernibly different from products that have not used biotechnology (Isaac and Kerr, 2003). This approach would allow the EU to keep biofuels produced in Canada or the United States out of their market if the fuels were produced using biotechnology. For potential biofuel exporters, the EU is an increasingly attractive market due to the EC Directive for the Promotion of Liquid Biofuels, which requires 5.75 percent of the fuel market to be supplied by biofuels by 2010 (Koerbitz, 2004). Given EU goals relating to farm income diversification, however, imports would be an unwelcome solution for satisfying the requirement.

Even if it can be shown that biofuels produced using biotechnology are as safe as biofuels produced without using biotechnology, the rules regarding PPMs as a justification for trade barriers present a major problem for North American producers. On May 13, 2003, the United States, Canada, Argentina and Egypt requested formal WTO consultations on the EU moratorium on the approval of genetically modified organisms. The WTO must tread carefully regarding this issue because a decision against the EU could be interpreted as an attack on national sovereignty and governments' ability to protect their citizens in the face of real or perceived risk (Isaac and Kerr, 2003). This issue will probably not be settled quickly, and the EU market will remain closed during this process. Even if the WTO rules in favour of the United States, Canada, Argentina and Egypt, there is no guarantee the EU will comply. When faced with a similar decision regarding the import of meat produced using growth hormones, and facing fierce resistance from some consumer groups, the EU decided to continue the ban and accept retaliatory actions from other WTO members. If the EU repeats their decision, or the WTO rules in the EU's favour, the largest existing market for biofuels will be inaccessible to North American producers. Other countries that have ratified the BSP could follow the EU's lead and insist that trade be governed by its rules rather than those of the WTO. International law is unclear as to which agreement, the WTO or the BSP, would take

precedence (Phillips and Kerr, 2000), further increasing the risks associated with investing in biofuels.

Market Access and Tariff Classifications

When products move internationally, they are classified into standardised categories in order for countries to be able to track imports and exports and charge the appropriate tariffs when products enter the customs territory of the importer. Almost all (98 percent) of world trade is classified according to the Harmonized Commodity Description and Coding System, generally referred to as the Harmonized System or simply the HS (WCO, 2004). The HS is comprised of about 5000 commodity groups, each identified by a six-digit number. The HS itself is not actually used for tariffs; however, almost all countries use the HS classifications to assign the appropriate tariffs. Each six-digit classification may cover a large and diverse group of goods and, as a result, most countries assign additional numbers at the end of the six-digit HS number to help distinguish goods more clearly. Canada adds an additional two digits for exports and an additional four digits for imports. The United States adds an additional four digits for both exports and imports (Canada Business Service Centres, 2002). The HS is designed to be versatile enough to deal with the wide range of goods that are traded internationally. One way this is achieved is by including the subheading “Other goods not previously defined” in every broad category. The tariffs that are attached to these undefined subheadings could give rise to a problem for biodiesel. Tariffs are most often negotiated at the six-digit, HS classification level. This tariff is then the upper limit of any of the further subheadings at the eight- or ten-digit level. In some cases, where all items in a product group are very similar, tariffs may be negotiated at the two- to four-digit level. If a product is placed in the undefined category, and this category’s tariff is bound at a very high level, the exporters would obviously suffer (McDonald, 2003). In both Canada and the United States, import tariffs are assigned at the ten-digit level and these can be lowered below the negotiated rate at the discretion of the government.

The direct connection between the classification code and the tariffs faced implies that where a product is classified may be not only incredibly important but also controversial. In many cases, exporters and importers alike are not particularly concerned with where a good is classified, as all potential classifications are relatively similar and likely to have the same or only minimally different tariffs (McDonald, 2003). Biofuels, however, are an example of products that could be affected by where they are classified. Petroleum products do not face high tariffs. For example, Canada charges no tariffs on gasoline (Canada Border Services Agency, 2004b) and the United States charges only 5.2 cents per barrel (U.S. International Trade Commission, 2004). As mentioned above, some governments may try to argue that biofuels are an agricultural product so they can grant subsidies with fewer constraints. In that case, it could be argued by importers that they should be placed alongside animal or vegetable oils and their cleavage products.² In this

case, the tariff faced by the biofuel would be dependent on the type of oil used as an input to the production process. In Canada, sunflower seed oil faces a tariff of 9.5 percent, palm oil faces a tariff of 11 percent and rapeseed oil faces a tariff up to 11 percent. Some oils, such as oil from sugar cane, face no tariff upon entering the Canadian market (Canada Border Services Agency, 2004a). In the United States, soybean oil faces a 19.1 percent tariff, cottonseed oil faces a 5.6-cent/ kilogram tariff and rapeseed oil faces a tariff of up to 6.4 percent (U.S. International Trade Commission, 2004). Not only will tariffs of up to 11 percent in Canada and 19 percent in the United States impede imports moving into these countries, the large variance across different oils could significantly affect which producers have an advantage, depending on what inputs they use to create the biofuels. Classifying biofuel as an agricultural product is obviously not optimal, as biofuel is really not a vegetable oil – it is only derived from vegetable oil – and after processing, biofuels produced from different oils are almost completely indistinguishable from one another, creating an incentive for producers to lie about their inputs so they will face lower tariffs.

If changes could be made quickly to amend the HS so it would properly accommodate new products, such as biofuels, the problems faced would be lessened significantly. However, it can often take in excess of seven years to update the HS; during such a lengthy time period, the problems discussed above are likely to arise. Not knowing where a product will be placed in the HS greatly increases the uncertainty and risk of trading biofuels internationally. The process to update the HS is extremely complex. It usually begins with private firms, industries or trade associations contacting their governments with an issue they would like to see addressed. Then the national government will review the request and ask for input from all parties that may have an interest in order to establish a national position. The government then presents a proposal to the World Customs Organization's Review Subcommittee. Most often, the issue is held over for a second or third review in order to give other governments time to determine their respective national positions. Once agreement in principle is reached, an amendment must be drafted. Countries then have six months to enter any objections. Implementation of amendments is a two and a half year process, to allow time to develop rules to coordinate the old system with the new system and to update the necessary documents and statistical systems (WCO, 2001; McDonald, 2003).

If there is a dispute between two or more countries regarding where a product should be classified within the existing nomenclature, the matter is handled by the HS Committee. The HS Committee's job is to try to have the HS applied uniformly all around the world. In an attempt to remain politically neutral, and due to the technical nature of the HS, disputes are settled purely from a classification point of view – i.e., the committee does not concern itself with the trade policy or tariff implications of its decisions (WCO, 2002). While decisions regarding where products are to be placed within the existing nomenclature take much less time than changing the nomenclature to accommodate new products, these decisions are not binding and countries may choose to disregard the HS

Committee's decision. As a result, even if a national industry is successful in having biofuels placed in the classification they desire, this may grant them almost no benefits if other countries choose not to implement the decision. The ruling made by the HS Committee may have a significant effect on the creation of the new nomenclature but this takes a great deal of time (McDonald, 2004). As biofuels are already more costly than petroleum fuels, having to wait seven years to get biofuels placed into a lower tariff product line could be detrimental to many businesses. Also, many biofuel producers are very small, with little political clout to ensure successful government lobbying to produce action from the necessary participants.

Product Standards

Biofuel standards are necessary before widespread acceptance will occur. Consumers have no way of determining the quality of these fuels by examining them or even using them. If the fuel is not of the quality required it could severely damage the vehicle using it. Also, poor quality biofuels may actually increase certain types of emissions (ASTM International, 2003). The United States has recently created new fuel standards that were developed by the American Society for Testing and Materials (ASTM) International. The standards apply to a variety of characteristics such as viscosity, flash point, cetane levels, sulfur levels and carbon residues (ASTM International, 2003). Germany and Austria have recently implemented a program for quality assurance that includes a seal placed on the pumps of independently certified quality biofuel retailers (Koerbitz, 2004). As of yet, there have been few attempts to harmonize standards internationally.

Differing standards can become extremely effective barriers to trade. At the very least, producers wishing to export to other markets will incur extra costs to have their biofuel tested according to the new market's standards. If they wish to enter multiple markets and each market has different rules regarding how the company must prove the quality of their product, these costs will be substantial. Trade is even further impeded if producers cannot sell their existing biofuel in certain markets and must develop a different fuel that will adhere to importer standards. Most biofuel producers, especially in North America, are far too small to be able to develop, produce and market more than one type of fuel. Producing more than one type would significantly reduce the benefits that accrue from economies of scale. Once a country's standards are established, they are reluctant to relinquish them and adopt someone else's. Development of an international industry would occur significantly faster if global standards were agreed upon from the very beginning.

As differing standards can restrict or even completely block international suppliers from competing with domestic producers, product standards often become a tool of groups that seek protection. A blatant example of this occurred in the United States in 2002 with regard to Vietnamese catfish. Due to lower production costs, catfish from Vietnam could be imported very profitably into the United States. Availability of this

product was hurting American catfish farmers, mostly in Mississippi. The Catfish Farmers of America, with the aid of Trent Lott, then the Senate majority leader, were able to persuade Congress to overturn science. Congress declared that out of over 2,000 catfish types, only the American-born family could be called catfish. Vietnamese fish exporters could only market their fish in the United States under their Vietnamese names – basa and tra (New York Times, 2003). The United States is certainly not the only country that employs this tactic – it is an old trade-war trick perfected by the Europeans (New York Times, 2003). As the biofuel industry develops and trade begins, the government will likely face strong calls for protection. As it is possible to produce biofuels in many different ways, the government could state that different inputs or different production methods create different end products – which governments would then argue are inferior to the products being produced using local inputs and local production methods and therefore do not comply with quality standards. Such speculation may represent an overly cynical view, but history suggests that the possibility for this type of protectionism could be very high. For example, the EU makes almost all of its biodiesel from rapeseed oil. They could argue that biodiesel made from soybean or corn oil (the major inputs in the U.S. industry) is not compliant with regulations tailored to biodiesel derived from rapeseed. This argument could effectively block U.S. producers from entering the EU market.

Recommendations

As the discussion above shows, international trade law could act as a constraint to the development of international trade in biofuels. They are new and novel products and there is very little precedent to indicate what may happen in trade disputes concerning them. Looking at the precedents outlined above, however, and relating them to what may happen when biofuels begin to move internationally on a significant scale, it becomes apparent that a number of problems could develop. Biofuels are heavily subsidized and could face challenges at the WTO dispute settlement body or in domestic countervail investigations. (This issue becomes more complicated due to the fact that biofuels could be classified as either industrial products or agricultural products – more on this below.) Biofuels produced using biotechnology may be blocked entry to the EU and other markets due to the provision in the BSP that allows products to face trade barriers based on their PPMs. Challenges are almost sure to arise in the WTO – which does not allow products to be discriminated against due to their PPMs. The current system of classifying products in order to move them internationally could also prove to be a problem as it could result in higher tariffs on imports, and it is a long and cumbersome process to change where a product is classified. Another factor, differing product standards, could either increase the cost of entering new markets or deter entry completely. Product standards could be captured by protectionists and used to their advantage. The discussion above also suggested that the definition of what a biofuel is could become critical to international

trade. If classified as an industrial product, it would face greater constraints with regard to the amount it could be subsidized but would likely face considerably lower tariffs. If classified as an agricultural product, it would face fewer constraints with regard to the amount it could be subsidized but would likely face much higher tariffs.

In general, a great deal of uncertainty exists surrounding international trade in biofuels, and those investing in the development and production of such fuels must be cautious. Further research is needed to fully determine the risks. Firms should not make business plans based on the assumption that the introduction of biofuels to the mix of internationally traded products will be uncomplicated and trouble free. Governments need to be proactive and address some of these trade issues before the related complications impede the business plans of their domestic producers. Governments must also understand the possible effects of programs such as subsidization, and try to administer them in ways that increase their compliance with international trade law. As well, governments need to realize the consequences of their actions in deciding whether to have biofuels treated as industrial products or agricultural products. There may be a significant first mover's advantage when creating harmonized product standards, determining where a product is classified within the HS and dealing with subsidies. Therefore, governments should move quickly to develop strategies to address the problems outlined, thereby reducing the risk and uncertainty associated with investing in biofuels.

Finally, those interested in the promotion of biofuels should take into account the competitive pressure that could eventually be put on petroleum producers, who depend on international markets. They can be expected to use all the weapons in their defence arsenal – including trade remedies. According to *The Economist* (October 23, 2003).

It will take a decade or two before either fuel cells or bioethanol make a significant dent in the oil economy. Still, they represent the first serious challenges to petrol in a century.

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Endnotes

¹ Funding support from the Social Sciences and Humanities Research Council and BIOCAP Canada is gratefully acknowledged.

² Cleavage products are products that have been processed or modified to split their molecules into simpler molecules.