

Brief for Agriculture and Agri-foods Committee of the House of Commons
Regarding the Committee's study of

Bill C-33, An Act to amend the Canadian Environmental Protection Act

Submitted
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Introduction:

Bill C-33, An Act to amend the Canadian Environmental Protection Act would allow the federal government to implement regulations requiring 5% average renewable content in gasoline by 2010. Subsequent regulations would also require 2% average renewable content in diesel and heating oil by 2012 on successful demonstration of renewable diesel fuel use under the range of Canadian environmental conditions.

The last budget announced \$345 million for programs to support biofuels development, plus \$2 billion over seven years to support renewable fuel production.

This expenditure is justified as a way to reduce the climate impacts of fossil fuels and to support Canadian agriculture. Yet these claims are unjustified, and the stated goals could be better met by other measures.

When soil acidification, fertilizer use, water use, biodiversity loss and toxicity of agricultural pesticides are taken into account, the overall environmental impacts of ethanol and biodiesel may well exceed those of gasoline and diesel. It is unlikely that crop based biofuel can deliver a major contribution to the energy demands of the transport sector without compromising food prices and the environment.

We are beginning to see the unintended consequences of the rapid expansion and subsidization of the global agrofuel sector. Corn and canola prices doubled over the last two years and wheat futures are trading at their highest level in a generation. Higher feed prices in Canada have triggered demands for emergency funds for the cattle and hog sectors.

The proposed biofuel mandate is a perverse subsidy, whereby one arm of government has to subsidize a program because of a subsidy implemented by another arm of government. The biofuel bandwagon promises to become a train-wreck, tragically demonstrating that monoculture cropping, specialization and consolidation in the agricultural sector are not sustainable, either economically or ecologically.

Bill C-33's biofuel blending mandate is simply another "intensity" measure that has the appearance of action, but does nothing to reduce overall climate change impacts. If instead, resources were invested in measures such as urban transit, city planning to make cities more pedestrian and bike friendly, rural high-speed internet, convenient inter-community rail passenger service, local food production, reduced highway speeds, fuel efficiency standards for vehicles and

transition strategies for transportation intensive industries, as a few examples, we would get practical community economic development with real climate change benefits.

In our opinion Bill C-33 will not result in the stated environmental and rural economic development objectives of the legislation. Rather it will cause significant and long-term damage to Canada's ecosystems, including agro-ecosystems, and will result in economic harm due to the opportunity costs of not deploying public money in more effective strategies for climate change prevention.

Myth # 1 Biofuel production will build the rural economy in Canada

Fact: Mandatory biofuel production will put independent livestock farmers out of business

The biofuel industry needs low-cost inputs in order to be profitable. However, mandating biofuels in the USA, Canada and the EU countries has resulted in increased demand, thereby pushing the price of grains up. As input prices rise, biofuel production becomes unprofitable, and thus will require continuous subsidies to remain afloat.

The linkage between expanding ethanol production and intensive livestock, outlined below, is troubling because the higher number of feedlot cattle would push more environmentally and socially responsible independent livestock producers out of business.

While grain farmers are pleased with high crop prices now, we are concerned that, as has happened before, fertilizer, seed and pesticide companies will soon begin to take advantage of their power in the marketplace and charge more for the needed inputs, resulting in no significant improvement in long-term profitability for the farmers themselves.

Myth # 2 Small-scale farmer owned operations will dominate the biofuel industry

Fact: Small-scale plants will be taken over by big corporations

The ecoAgriculture Biofuels Capital Initiative funding program requires a minimum five per cent equity investment by farmers, tying the level of subsidy per litre to the level of farmer investment - ostensibly to provide a way for farmers to participate in the whole biofuel value chain. But farmers have become unwilling to invest their savings, as recent farm papers report, preventing some biofuel projects from going ahead. Perhaps the wary farmers learned from the hog industry experience.

In the 1990s the shift from family farm-based hog production to large scale industrial hog production was largely financed by local farmer savings. Hog companies would approach farmers to invest. The pitch was: "Get involved in the value-added business, run your crop through the pigs and you will make way more money than just selling grain – plus we'll hire other people to look after the business for you!" Within a few years nearly all of these barns had gone bankrupt and were bought up at cents on the dollar by the biggest hog corporations. The farmer-investors lost everything, as they were unsecured creditors. The same scenario may well play out in the biofuel sector in coming years.

The profitability of biofuels operations depends on not only the low price of the feedstock and natural gas, but also on being able to sell the waste byproduct – wet or dried distillers grains (also known as DDGS or spent mash). The market for this byproduct is the intensive livestock industry – cattle feedlots and intensive hog operations. Therefore the expansion of ethanol production requires expansion of intensive livestock operations. Yet, the latest Statistics Canada report shows consistent and significant contraction in the hog and cattle sectors. These circumstances

will lead to a less profitable biofuel sector and an increasingly concentrated and industrialized livestock sector.

We see the ecoAgriculture Biofuels Capital Initiative as a means to access farmers' savings to leverage credit for the initial construction phase. As input costs inevitably rise, only the large corporations will be in a position to buy up the money-losing biofuel plants, to consolidate their position in the biofuel market by adding the plants to their production infrastructure or closing them and taking over their markets.

In the US, the ethanol manufacturing sector is already consolidating, with the larger corporations buying out the smaller, mostly farmer investor facilities. In Canada, Suncor Energy, GreenFields, Shell and Husky Oil are investing and they will become beneficiaries of the proposed biofuel mandate. Other beneficiaries include those companies who provide genetically modified feedstock. Syngenta, the Swiss agricultural giant, announced this past week, that its annual profits had risen 75 percent in the last year, in part because of rising demand for biofuels.

Myth #3 The Canadian biofuel industry can be competitive in the global market
Fact: Canada cannot produce biofuels as efficiently or cheaply as other countries

Bill C-33 permits the importation of blended fuel and fuel additives. The proposed biofuel mandate would require about a 12-fold increase in Canadian production capacity if the additional fuel were to be made in Canada. While the excise tax exemption for ethanol and biodiesel will be eliminated this year, it is doubtful that Canadian producers will be able to compete with biofuels made in the south.

Brazil, now the world's largest ethanol producer, intends to double ethanol production within the next six years to 32 billion litres/year, almost half of their new expansion will supply the export market. Brazil's costs, at 20 cents per litre, are the lowest in the world. Grain based ethanol in the US costs some 50% more to produce than cane based ethanol in Brazil and 100% more than in the European Union.

To bring this home, the average yield of wheat on the Prairies is about one tonne/acre. Corn produced in the U.S. Midwest yields about four tonnes/acre. Ontario corn would be about the same. In Brazil, the sugar cane yield is approximately 70 tonnes/acre.

Myth #4 Biofuels will reduce green house gas emissions
Fact: Biofuel production creates NO₂ emissions - worse than CO₂!

Canada uses the *GHGenius* model to justify claims of climate change benefits due to biofuels. However the model is flawed, as it underestimates the fossil fuel use for the machinery and equipment used to produce the feedstock crop; minimizes impacts of land use changes from converting permanent cover and perennial cover to more energy intensive cropping systems which emit greater GHGs; provides an overly generous co-product GHG credit on dried distillers grain (DDGS) for displacing other feed grains; and underestimates fertilizer use and subsequent nitrous oxide releases into the atmosphere.

Nitrous oxide (N₂O) is 296 times more powerful as a greenhouse gas than carbon dioxide. Humans are changing the global nitrogen cycle faster than any other major biogeochemical cycle. The largest human-generated source of reactive nitrogen is nitrogen fertilizer. Growing canola and corn requires high-energy inputs in the form of nitrogen fertilizers (90 lbs per acre on average for canola and 120 lbs per acre on average for corn).

Nobel Prize laureate Paul Crutzen's recent investigation of the potential global warming benefits from agro-biofuel production found that 3 to 5 % of the nitrogen in fertilizer was converted and emitted into the atmosphere, which is twice as much nitrous oxide as previously realized. He concludes that biofuels derived from corn and canola can contribute as much, or more, to global warming than fossil fuels, because of nitrous oxide emissions.

Myth #5 Biofuels are more environmentally friendly than diesel and gasoline
Fact: Biofuel production destroys biodiversity, depletes soil, wastes fossil fuels and is water intensive.

Impacts to Biodiversity

In order to meet the mandated biodiesel demand, the Canola Council of Canada predicts that canola tonnage will increase by over two-thirds in the next eight years, from 9 million tonnes to 15 million tonnes, all of which will be genetically engineered and mostly grown on the prairies.

The heavy reliance on the herbicide glyphosate has led to the increase of volunteer canola plants that are tolerant to the herbicide. This in turn has led to the increased use of other chemicals, such as 2,4,D to kill off these volunteers (now considered a weed problem). Expanding canola acreage and moving away from extended crop rotations in order to serve the fuel market will mean more monoculture in our agricultural system. Monocultures decrease genetic biodiversity within the crop and on the field, creating long-term vulnerability to serious disease and insect infestation crises.

Other ecological impacts

The Swiss Institute EMPA, for the Federal Offices of Energy, Environment and Agriculture, performed a full life cycle analysis on biofuels and concluded that while some agrofuels may reduce greenhouse gas emissions in comparison with gasoline or diesel, the cultivation and processing of some of the raw agrofuel feed stocks cause serious environmental impacts to occur, and thus clearly worsens the ecological balance for most agrofuels. Of the almost 30 agrofuel feed stocks analyzed, ethanol rye, ethanol potatoes, ethanol corn, biodiesel soy and biodiesel canola rank as the most ecologically damaging. Major impacts include soil acidification, fertilizer use, excessive water use, biodiversity loss and toxicity of agricultural pesticides.

The Husky Oil 130 million litre per year, wheat-based ethanol plant in Manitoba requires 9 litres of water for every litre of ethanol produced. For the drought prone prairies, ethanol plants do not make any sense in the face of climate change. Using crop residues for cellulosic ethanol production would remove valuable organic material from the land, further depleting the soil. According to a letter published in Science Magazine last year, removing crop residues can increase the rate of soil erosion a hundredfold.

Ethanol cannot be transported via pipelines because it absorbs water and contaminants, making the fuel of inconsistent quality. Transporting 5% of all Canada's motor vehicle fuel by rail or truck would increase overall fossil fuel consumption.

Myth #6 Dried distillers grain is valuable and desirable for livestock production
Fact: DDGS is potentially harmful to human and livestock health

Research into feeding DDGS to livestock is revealing some serious environmental and health concerns. Cattle fed on DDGS have a higher incidence of *e coli 0157*. Recent Kansas State veterinary research indicates "the prevalence of *0157:H7* was about twice as high in cattle fed distiller's grain compared with those cattle that were on a diet lacking the ethanol byproduct."

Iowa State University has compiled evidence that shows feeding 20 or 40 percent DDGS increased phosphorus levels in feedlot manure by 60 to 120 percent respectively, compared to using feed with no DDGS. Eutrophication of surface water bodies due to phosphorus pollution is one of the leading environmental challenges facing Canadians today. This problem is especially severe in Quebec and in the Prairies, where Lake Winnipeg is in need of remediation.

Contamination of the wheat or corn feedstock by the *Fusarium mycotoxin deoxynivalenol* (DON) limits the use of DDGS for feeding purposes, as the ethanol fermentation process concentrates the mycotoxins in the DDGS. Mycotoxins can cause severe health problems in livestock. Increased incidence of *fusarium* is linked to previous-season use of glyphosate herbicide on the same field. Under a mandated ethanol-biodiesel regime, a crop rotation of glyphosate resistant canola with low-protein wheat would be common – leading to increased incidence of *fusarium*-infected feedstock and DDGS.

There is a limit of how much DDGS can be fed to animals – it does not eliminate the need for feed grains and forage. Excess feeding results in poor meat quality and reduced weight gain.

Myth #7 There is no conflict between land for food and land for fuel in Canada. Fact: Biofuel production would displace significant food-growing acres in Canada and ultimately in the world.

The United Nations Food and Agriculture Organization estimates there are over 850 million people on the planet who do not get enough to eat on a daily basis. Every year, more than six million children still die from hunger-related illnesses before their fifth birthday.

This past summer, a Special Rapporteur to the UN General Assembly submitted an interim report on the “Right to Food”, whereby governments, including Canada, committed to reducing by half the number of malnourished persons around the world by 2015. The report called for all nation states to immediately establish a five-year moratorium on all initiatives that convert food into fuel, and recommended that agrofuels be produced from non-food plants in order to avert massive rises in the prices of food, water, and land and the diversion of these resources away from food production.

The UN’s World Food Programme’s food costs have increased by 70 per cent in the last five years, with a 20 percentage point increase in the past six months. Wheat, rice and soyabean prices recently hit all-time highs on the Chicago Exchange, while corn reached a 12-year high.

Canada would need to use 36% of its farmland to produce enough biofuels to replace 10% of the fuel currently used for transportation.

Already, the price of bread is rising in Canada due in part to the impact of world-wide expansion of biofuel production. It will be only a matter of time that food prices in Canada will follow the trends of other nations and increase substantially, causing suffering to those who can least afford it.

A comprehensive reference list is available on request.