

DEVELOPING A CANADIAN BIODIESEL INDUSTRY

POLICY SUBMISSION

By

Canadian Bioenergy Corporation

November 2005



VIA COURIER



November 8, 2005

Hon. Ujjal Dosanjh
Hon. David Emerson
Hon. John Godfrey
Hon. Ralph Goodale
Hon. John McCallum
Hon. Andy Mitchell
Hon. Stephen Owen

Hill Office
House of Commons
Ottawa, Ontario
K1A 0A6

Dear Honourable Ministers,

Re: Developing a Canadian Biodiesel Industry

The purpose of this submission is to augment the proposals recently put forward by the Canadian Renewable Fuels Association (CRFA) regarding the benefits of a sound renewable fuels policy and strategy. Our company, Canadian Bioenergy Corporation, has, over the past three years, been advancing the prospects for a domestic biodiesel production industry from the rich potential in the Western oilseed agricultural regions of Manitoba, Saskatchewan, Alberta and northern British Columbia. The contribution from oilseed feedstocks are important to note – forecast oilseed biodiesel production (in stream projects) represents over 70% of the Government of Canada's stated total biodiesel production target.

For analysis of the potential value of a domestic oilseed biodiesel industry, we need look no further than the experience of the European and American biodiesel industries. The results are impressive – there, their government's commitment to the oilseed biodiesel industry has brought about:

- ◆ **a surge in demand for rapeseed (Europe) and soy (U.S.), helping stabilize and improve farm-gate revenues for growers**
- ◆ **a dramatic improvement in urban air quality from the use of blended biodiesel in diesel burning cars, heavy-duty trucks and school buses**
- ◆ **real progress towards meeting global targets for reduction of greenhouse gases (CO₂ – e.g. Kyoto Protocol)**

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However, these benefits did not emerge from unfettered capital markets alone. The European and U.S. federal governments put direct measures in place to catalyze their agricultural communities, to engage risk taking private investors, to build a new industrial marketplace. With the growth of the biodiesel market, further government measures were introduced to assist in new crop developments, processing technologies, and distribution mechanisms to move the fuel through the petroleum infrastructure.

Canada, with its great wealth of agricultural lands, oleo-chemical processing expertise, and respected research scientists has been sidelined from the world biodiesel markets due to the large gap between our nation's policy mechanisms and those of our U.S. neighbours and the European community. Canada has the resources to become a world-leader in oilseed and fat-based biodiesel production, but we lack competitive policy.

To succeed, the European and U.S. policy models that established their successful biodiesel industries can be replicated. In order to establish a vibrant, competitive domestic Canadian biodiesel industry, the federal government must make a clear, firm and long-term commitment that:

- ◆ **the Government of Canada, together with its partners in the agricultural and renewable fuel energy sectors, supports the creation of a thriving domestic Canadian biodiesel production industry**
- ◆ **the Government of Canada intends to establish a level and fair system of policies and mechanisms to ensure an open and competitive international market for Canadian biodiesel fuels**
- ◆ **the Government of Canada will ensure all Canadians have open and secure access to clean, renewable fuels at a fair price**

Canadian Bioenergy, working with operations and partners in three of the Western Provinces, has prepared this submission because we are committed to the great potential for Canadian oilseed biodiesel. The material presented sets out the immediate market potential to establish a 350 million litre per year oilseed biodiesel industry in Western Canada within the Kyoto Protocol period. It describes the specific policy measures that will muster the market forces – creating jobs and new wealth for farmers and industry, and healthier, cleaner air for all Canadians. Our presentation includes a commentary on economic benefits, alignment with Federal and Provincial policy mandates and a description of the real, competitive forces from international policy measures affecting our marketplace.

We ask that the Government of Canada carefully consider and implement new measures to put Canada back in the lead as a global leader in sustainability, to demonstrate real engagement towards meeting Kyoto's CO2 reduction targets, and to show Western Canadians a strong commitment to rural economic development, industrial growth, and improved urban air quality.

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Respectfully yours,

CANADIAN BIOENERGY CORPORATION

Douglas G. Hooper
Executive Chair

Cc: The Governments of the Provinces of Western Canada
Honourable Richard Neufeld, BC Minister of Energy, Mines & Petroleum Resources
Honourable Minister Greg Melchin, AB Minister of Energy
Honourable Minister Eric Cline, SK Minister of Industry and Resources
Honourable Minister David Chomiak, MB Minister of Energy, Science & Technology

Nb: This submission is also available on our website at: www.canadianbioenergy.com

DEVELOPING A CANADIAN BIODIESEL INDUSTRY

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DEVELOPING A CANADIAN BIODIESEL INDUSTRY

Section One: Recommended Policy Measures

DEVELOPING A CANADIAN BIODIESEL INDUSTRY

RECOMMENDED POLICY MEASURES

OVERVIEW

Biodiesel is made from commodity feedstocks (oilseeds, fats, used greases) and, once processed, incorporated into the petroleum diesel stream. All inputs and production outputs are commodity products that are traded globally. To ensure market stability and efficiency, Canadian policy measures must be grounded in a framework that ensures:

- ◆ **an open and fair international trading regime**
(established international trading mechanisms for the commodities provide confidence in market access and relative pricing - no new tariffs or barriers to trade should be introduced that would impose new or artificial restructuring of input/output values)
- ◆ **a commitment to maintaining international competitiveness**
(international policy mechanisms affecting the biodiesel industry are dynamic – establishing market confidence for a new Canadian biodiesel industry requires an ongoing review and adjustment of Canadian policies to reflect international policy drivers)

POLICY MEASURES

The specific policy measures described on the following pages will provide the market catalysts to create the total Canadian biodiesel production target set by the Climate Change Action Plan (500 million litres/year by 2010). Of this, it is expected that Western oilseed biodiesel production will represent 350 million litres, or 70%, of this initial production capacity.

The recommended measures target three specific objectives:

- ◆ **Build Capacity**
 - establish a secure supply of biodiesel feedstocks
 - increase biodiesel feedstock processing capacity
 - establish & expand biodiesel refining capacity
 - establish integrated fuel distribution capacity
- ◆ **Establish Market Demand & Efficiency**
 - establish biodiesel market demand
 - provide quality assurance to the fuels market
 - maintain market education programs
 - establish an open Renewable Fuels Standard system
- ◆ **Research & Development**
 - maintain global competitiveness through R & D

DEVELOPING A CANADIAN BIODIESEL INDUSTRY

OBJECTIVE ONE: BUILD BIODIESEL PRODUCTION CAPACITY

RECOMMENDED POLICY MEASURES

◆ **Establish a ‘*Biodiesel Expansion Program*’, for participating Provinces, through which funds will be directed to four key elements of capacity building – feedstock, processing, production, distribution**

- establish a sustainable biodiesel industry with capacity sufficient to meet Renewable Fuel Standard 2010 targets, ensure strict quality controls and develop efficiency within the fuel distribution infrastructure
- concentrate resources on the most efficient production facilities, with lowest operating costs from economies of scale, and the highest quality standards

Source of Funds:	Partnership Fund
Dedicated Funding:	\$20 million/year
Term of Program:	5 years
Annual Threshold Criteria:	>= 25 million litres per year (applies to all four elements of capacity)
Federal Allocation:	\$0.20/litre (agri-biodiesel – virgin) \$0.10/litre (non-agri feedstocks)
Provincial Allocation:	Not specified (can opt out)
Qualifying Projects:	Feedstock procurement projects Feedstock processing facilities Biodiesel production plants Fuel Distribution Infrastructure <i>New or expansion projects</i>
Project Maximum:	\$10.0 million (per capacity element)
Annual Award:	Pro-rated if >\$20m in program year Carry-over if unallocated
Conditions:	Register & certify pre-commencement Paid on project conclusion Minimum equity matching >= 50% One-time allocation per project Program Cost: \$100 million (2006-2010)

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OBJECTIVE TWO: ESTABLISH MARKET DEMAND & EFFICIENCY

RECOMMENDED POLICY MEASURES

- ◆ **Work within existing program structures, including taxation policies, to assist the biodiesel industry in establishing domestic product demand, implementing strict quality standards, providing authoritative information to all Canadian consumers, and developing feedstock-to-fuel efficiencies within the collection and distribution structures**
 - public policy can be an important driver to establish early market demand; it seeds essential baseline support to build-out new infrastructure and systems
 - quality assurance is the number one priority for all industry stakeholders – producers, consumers, OEMs, and the petroleum industry – developing a domestic quality program is a must
 - using biodiesel is a transformative shift, moving consumers from a fossil to renewable fuel paradigm; comfort and confidence in the change will require dedicated resources for educational programs
 - real market efficiency will only be achieved by integration with the fuel distribution infrastructure; working with the petroleum industry to establish a fair and equitable system for the implementing the 2010 Renewable Fuel Standard is essential

Source of Funds: Existing Programs, De-taxation Policy & Procurement Policies

Term of Programs: 5 years

Market Demand Programs: Procurement Mandate - B5
(add biodiesel to *Alternative Fuels Act (1995)* to list of fuels, mandate B5 (5% biodiesel) in all diesel fuel sold to Government of Canada, Crown fleets, and fueled operations in any publicly tendered contract)

Program Cost: \$0 (at current market values)

Federal – Provincial De-taxation of Fuel Tax
(work to harmonize de-taxation of biodiesel between Provinces; establish long-term commitments to maintenance of fuel/road excise de-taxation programs)

Program Cost: \$71.4 million (2006-2010)

DEVELOPING A CANADIAN BIODIESEL INDUSTRY

RECOMMENDED POLICY MEASURES

OBJECTIVE TWO: Demand & Efficiency Measures - continued -

Quality Assurance Program: Biodiesel Producer/Importer Registration
(establish a Federal registration and certification program for all biodiesel producers, importers to guarantee all biodiesel into the Canadian petroleum fuel distribution system meets the accepted North American quality standard, ASTM D6751)

Program Cost: \$0 (cost recovery)

Market Education Program: Biodiesel Education Program
(establish and maintain a five-year program to develop and distribute information and factual data concerning the distribution, handling and use of biodiesel)

Program Cost: \$5 million (\$1million/year)

Implementation: Blender's Credit - \$0.30/L (agri-biodiesel)
\$0.15/L (non-agri)
(to harmonize to the U.S. biodiesel policy structure and with international biodiesel fuel trade, a transitional tax-based credit system to assist industry capacity build-out, including processing, production and distribution infrastructure (new capital costs, integration expenses, job creation). The amounts reflect the Canadian dollar equivalent of the U.S. Blender's Credit. Blender's Credit should be phased out in conjunction with U.S. system, contemporaneous with enactment of RFS in 2010. Program cost estimate is based on 5 year capacity expansion.)

Program Cost: \$535.5 million (2006-2010)

Renewable Fuel Standard (B5 – 5% Biodiesel)
(further to the CRFA proposal, establish the Canadian RFS in harmony with the U.S. system to ensure integration within the international fuels markets; establishing both a Provincial and/or petroleum company opt-out system (using renewable fuels credits or another market-based mechanism) will provide flexibility and acceptance across industry platforms)

Program Cost: \$20 million/year (2010 >)

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OBJECTIVE THREE: GLOBAL EXCELLENCE – R&D

RECOMMENDED POLICY MEASURES

- ◆ **Canadian researchers and scientists, in both academic or corporate workplaces, have a world-class depth in fields of agronomy, food processing, oleo-chemical processing, petroleum distillation, chemical manufacturing and climate change technologies; the biodiesel industry affords a unique opportunity to leverage this vast knowledge base across multiple economic sectors**
 - the biodiesel industry can be built on established technology and plant science; however, if we integrate disciplines, share resources and develop a collaborative focus, we can leap forward using Canadian solutions to the biodiesel industry of tomorrow
 - R&D focus can be brought to developing new feedstocks, crushing/processing technologies, biodiesel processing technologies, and petroleum blending and distribution challenges (i.e. pipeline integration)
 - the biodiesel industry is in a development stage worldwide; leveraging our Canadian research experience in multiple disciplines would allow the Canadian industry to become world leaders

Source of Funds:	Existing R & D Funding Programs
Dedicated Funding:	\$5.0 million/year - \$25 million total
Term of Programs:	5 years
R & D Programs:	BIOCAP Foundation – Research Coordination (at the outset of the industry launch, make a significant and stable commitment to biodiesel research to catalyze significant research momentum; utilize the existing synergies and breadth of disciplines in the BIOCAP Foundation operating structure to maximize the research dollars across Canada for biodiesel specific projects)
	Program Cost: \$25 million

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Section Two: Western Canadian Oilseed Biodiesel Industry

- 2.1 Benefits Summary**
- 2.2 Agriculture & Production Capacity**

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Section Two: Western Canadian Oilseed Biodiesel Industry

2.1 Benefits Summary

- Summary of Economic Benefits Table - 350 Million Litre per Year Western Oilseed Biodiesel Production
- GHG Reductions – 350 Million Liter per Year Western Oilseed Biodiesel Production

SUMMARY OF ECONOMIC BENEFITS TABLE – 350 MILLION LITRE
WESTERN OILSEED BIODIESEL PRODUCTION

	2005	2006	2007	2008	2009	2010	2006-2010
CUMULATIVE CAPACITY (million L)	1	25	115	350	350	350	350
INCREMENTAL COPERATING REVENUES ¹ (\$ million/yr)	1	25	115	350	350	350	1,050
INCREMENTAL CAPITAL EXPENDITURES ² (\$ million/yr)	4.3	19	54	39	0	0	116
CUMULATIVE KYOTO GHG EMISSION REDUCTIONS (Mt of CO ₂ e) ³	.0022	0.055	0.25	0.77	1.54	2.31	2.31
CUMULATIVE EMPLOYMENT(Jobs) ⁴⁵⁶⁷	2	28-35	128-160	400-500	400-500	400-500	400-500
INCREMENTAL HEALTH BENEFITS ⁸⁹ (\$ million of avoided health care costs/yr)	5.6	25	70	51	0	0	152

¹ Assume minimum 1\$ of revenue per liter of capacity

² Assume \$0.33 of capital expenditure per liter of production capacity; 50% of the annual expenditures are realized in the year before production capacity comes on-line.

³ Using an emission factor of 2.8kg of CO₂e per liter of diesel consumed. This is the un-weighted average of Light Duty Diesel Automobiles and Trucks as well as Heavy Duty Diesel Vehicles as shown in *Annex 7 of Canada's GHG Inventory, 1990-2002*. The GHG reductions are the product of the lifecycle GHG emission reductions of biodiesel (78.5% as calculated by NREL), emission factor of diesel and total amount of biodiesel produced.

⁴ Employment generated in oilseed processing, biodiesel manufacturing and distribution, the ranges displayed depend upon the individual production scale.

⁵ Government of Alberta, *Alberta Economic Multipliers 2000*, Alberta Finance, 2004;

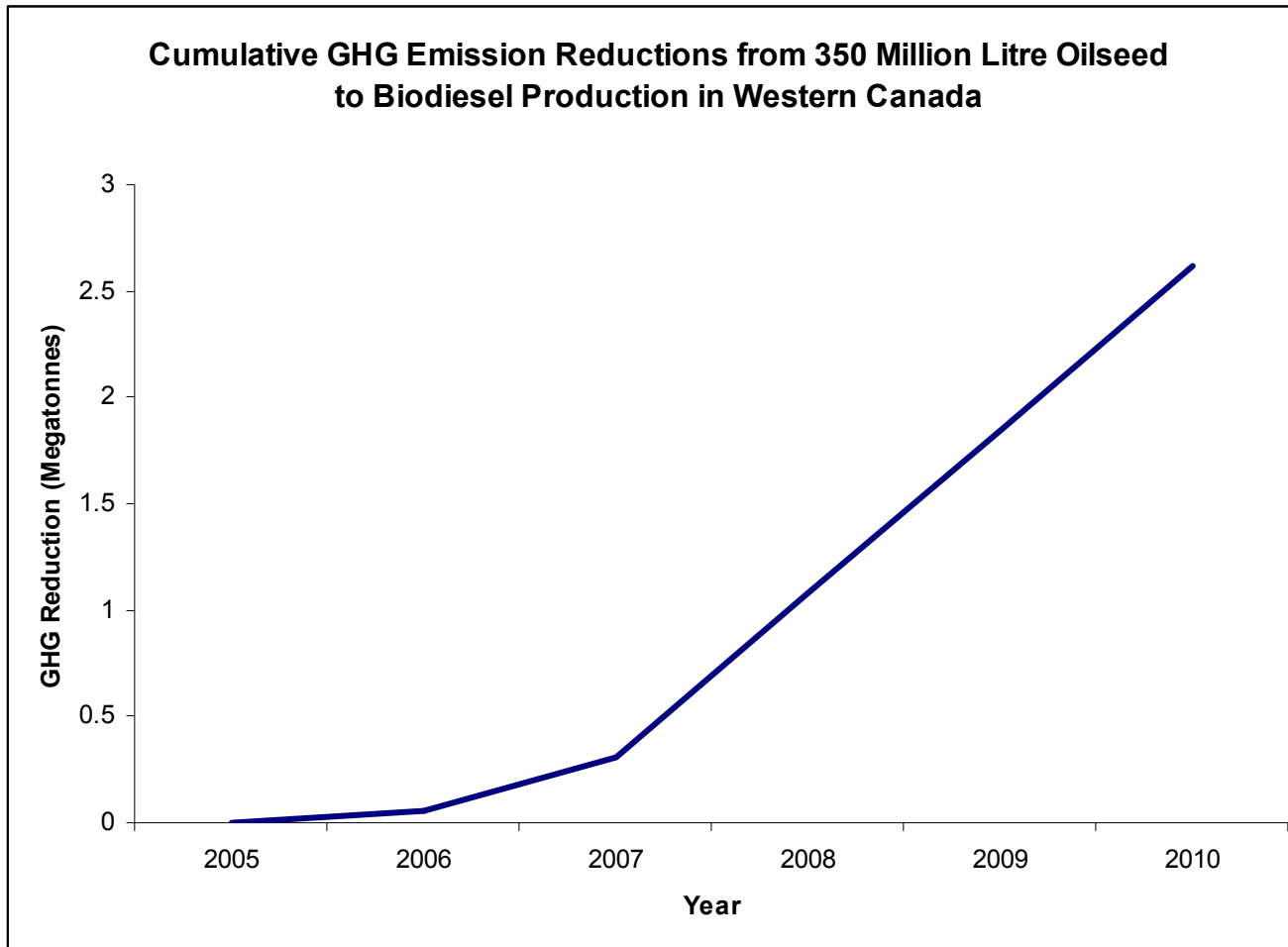
⁶ BC Stats, *British Columbia Provincial Economic Multipliers and How to Use Them*, Ministry of Labour and Citizens' Services, 2005

⁷ Bottom up analysis based on Canadian Bioenergy Corporation's Proforma statements and industry knowledge

⁸ Based on studies cited by Richard Holt of Environment Canada at the Diesel Emissions Reduction Workshop, Sep 15, 2005, in Vancouver, BC, every \$1 invested in diesel emission reductions provides \$13 in public health benefits. Using this information, Canadian Bioenergy Corporation is conservative, assuming that the \$13 benefit is not annualized and that only 10% of these benefits accrue over the lifetime of the project.

⁹ California Air Resources Board (CARB). 2000. *The Carl Moyer Program Advisory Board Report*.

GHG BENEFITS OF WESTERN CANADIAN OILSEED BIODIESEL PRODUCTION 350 MILLION LITRES/YEAR



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Section Two: Western Canadian Oilseed Biodiesel Industry

2.2 Agriculture & Production Capacity

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- Western Canadian & European Comparison
- Projected Western Oilseed Biodiesel Production Capacity

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Section Three: Canadian Biodiesel Industry

- 3.1 Benefits Summary**
- 3.2 Production Capacity**
- 3.3 Program Costs Summary**

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Section Three: Canadian Biodiesel Industry

3.1 Benefits Summary

- Biodiesel Environmental & Health Benefits
- Summary of Economic Benefits Table - 500 Million Litre per Year Domestic Biodiesel Production
- GHG Reductions – 500 Million Liter per Year Domestic Biodiesel Production

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Section Three: Overall Biodiesel Industry

3.2 Industry Metrics

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- Ethanol & Biodiesel Summary Tables

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Section Three: Overall Biodiesel Industry

3.3 Program Costs Summary

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Section Four: Policy Review

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Section Four: Policy Review

4.1 Government of Canada

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- **Canadian Precedence for Biofuel Capacity Building**
- **Climate Change Action Plan**

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Section Four: Policy Review

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 - **Alberta**
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 - **Manitoba**

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Section Four: Policy Review

4.3 United States: Federal / State (Selected References)

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Section Five: Stakeholders