

**Re-energizing the Future:
Faith and Justice in a Post-Petroleum World**

Background Paper

December 2007



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Section A: Energy – The Lifeblood Of Ecosystems

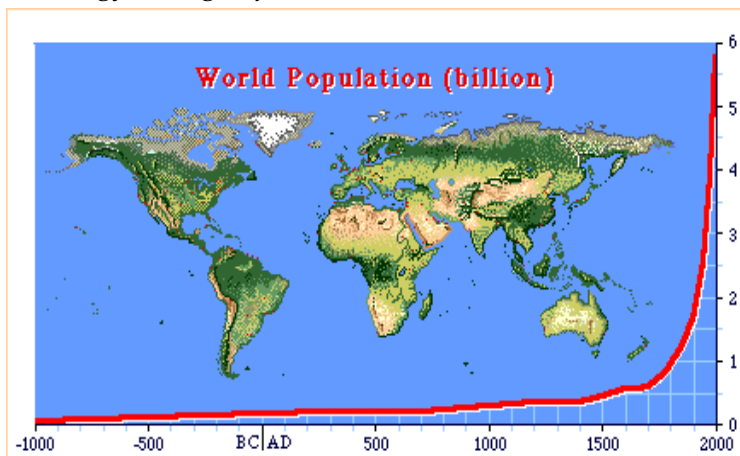
Energy is the lifeblood of ecosystems. The exchange and transformation of energy between species make complex ecosystems possible. Every living species on earth must capture energy to survive – from the single celled micro-organisms that convert sunlight into carbohydrates through photosynthesis to human beings who construct mammoth refineries to produce oil.

Food for all species is a form of stored and concentrated energy. For most wild species, life is a constant quest to capture this energy. An abundant source of energy means a species will thrive. Energy scarcity leads to diminished numbers and even death.

While our most enduring notion of the laws of nature may be Darwin’s “survival of the fittest” theories, modern ecologists have slowly gained a more subtle and less anthropocentric understanding of the interplay between energy and life. In fact, the cooperation and conservation of scarce energy sources between species is now cited as the hallmark of a healthy, diverse ecosystem.

Accordingly, the image of food (energy) “webs” is seen as more accurate than that of food “chains.” The more mature an ecosystem, the more diverse it will be, with more elaborate forms of cooperation among organisms to use available energy. As biologist Lewis Thomas stated, “The urge to form partnerships, to link up on collaborative arrangements, is perhaps the oldest, strongest, and most fundamental force in Nature.”¹

For thousands of years, human beings survived as hunter-gatherers, one species among thousands. Population growth was minimal, as was the impact of human beings on other species. As the graph² below dramatically illustrates, the industrial revolution of the 17th and 18th centuries produced a population explosion that has resulted in unprecedented changes to the world’s ecosystems. The most significant factor in this population growth was the discovery, not of a new source of energy, but of new forms of energy storage – *fuels*.



¹ Quoted in Richard Heinberg, *The Party's Over: Oil, War and the Fate of Industrial Societies*. Gabriola Island, BC: New Society Press, 2nd ed., 2005. p. 17.

² Source: <http://www.ldolphin.org/popul.html>

Mature ecosystems have ways to keep a particular species in check by limiting the amount of energy available to it. For example, locusts may expand prolifically as a result of favourable conditions but when they become too numerous for their food supply, their numbers die off and the plants they nearly obliterated have a chance to regenerate. Occasionally, a species expands so rapidly that it completely destroys its source of food to the point that the species dies off completely.

Digging Up The Dead

What has allowed human beings to escape the natural limitations of energy supply? Richard Heinberg, an educator and energy activist, notes five interrelated ways in which humans have increased their success as a species:³

- **Takeover.** Humans employed a number of strategies to appropriate energy from other species, the most important of which include turning land into agricultural areas and domesticating animals.
- **Tool use.** Increasingly complex tools, from the plow to the computer, have allowed humans to leverage more energy from their ecosystems than would be possible with human power alone.
- **Specialization.** The emergence of professional trades and human specialization allowed for the further capture of energy as societies developed more complex ways of organizing themselves. A farmer, for example, was able to produce more food, because an engineer was able to create tools that facilitated greater production from the land.
- **Scope enlargement.** An extension of specialization, scope enlargement occurred when societies further evolved by sharing and trading resources with one another. A region of the world that was poor in agricultural land, for example, might trade its minerals for food produce from a region rich in agricultural land but lacking in the raw material needed to make agricultural implements.
- **Drawdown.** The fifth and perhaps most important strategy that humans used to increase their available energy became possible with the discovery of fossil fuels: coal, oil and gas. This super-concentrated form of energy has transformed the lives, not only of human beings but of many other species, as no other discovery in the history of the world as we know it.

Nearly 100% of available energy on earth is ultimately derived from our solar system's star, the Sun. Life as we know it would be impossible without the vast quantities of sunlight energy that radiates to the Earth, allowing plants to grow, which become food for animals, which in turn become food for other animals. When plants and animals die, most of the stored carbon is eaten by bacteria and recycled back into living ecosystems. Under certain conditions, it can accumulate over millions of years beneath the surface of the earth where it is "pressure cooked" to become coal, oil and gas.

Coal is formed from plant remains that have been compacted and hardened over geologic time, often in areas where giant peat swamps existed. Oil is formed from

³ Richard Heinberg, *The Party's Over*, pp. 20-33.

animal remains, mainly sea plankton which make up 80% of organic matter in the oceans. Their goal in life is to stay floating on the surface of the water but eventually they die and sink, some eaten on the way down and some accumulating on the ocean bottom at the rate of about 0.1 mm per year. That may seem an insignificant amount but over 10 million years it is enough to form a layer measuring one kilometer in depth. Under just the right conditions, this layer of sediment gets cooked by the earth's internal core over millions of years to form the black gooey stuff known as crude oil.

Another way of looking at coal and oil, therefore, is as concentrated buried sunlight. One study estimated that it takes 24 metric tons of organic matter to produce one liter of gasoline. It takes about 10 acres of land to produce that much organic matter, about what is needed to propel the average automobile seven kilometers.⁴ The discovery of fossil fuels, and oil in particular, presented the human species with a spectacular energy subsidy that has allowed phenomenal social and technological developments. For example, it would take 2,000 people expending sustained maximum output to produce the same amount of energy as a 100 hp engine, or five people to power a 150 watt light bulb.

We have done this by burning concentrated energy from the sun at a rate 100,000 times faster than it can be produced. In less than 200 years, humans will have burned up a resource that took hundreds of millions of years to produce. We are only now beginning to ask the question: what happens when the oil runs out?

Black Gold

Of the three fossil fuels, oil has been the most precious. It is the easiest of the three to transport long distances and is the most versatile in terms of end product uses. When we think oil, we tend to think transportation, and indeed in Canada and the US, about two of every three barrels of oil are used to propel cars and trucks. The personal vehicle has transformed Western culture and lifestyles. For many people, their closest point of contact with the oil industry is squeezing the nozzle to pump gasoline into their fuel tanks.

But oil's impact goes far beyond the trains, planes and automobiles that replaced the horse and carriages of the 19th century. For example, oil is the essential ingredient in the myriad of plastic materials that have come to dominate consumer goods. Easily molded and flexible, plastic has become the material of choice from food packaging to car manufacturing. The list of products is endless.

Perhaps the least recognized use of oil is in agriculture. Growing and extracting the produce of plants rapidly decreases the nitrogen content of soil, rendering it less fertile for the next crop. Bacteria are able to replenish the nitrogen in the soil by taking it from the atmosphere but it is a slow process. The ancient Hebrew practice of Jubilee was in part a recognition that in order for agriculture to be sustainable, rest periods were needed for soil rejuvenation.

⁴ J.S. Dukes, "Burning Buried Sunshine: Human consumption of ancient solar energy," *Climatic Change*, 61 (1-2): 31-44.

Early agricultural societies addressed the problem by abandoning nitrogen depleted fields and moving on to other soil. As populations expanded, this strategy was not possible. An agricultural revolution occurred in the early 20th century when scientists discovered how to manufacture nitrogen fertilizers using fossil fuels, particularly natural gas, as well as oil based pesticides and herbicides.

The application of these chemicals, coupled with the development of new seeds that could maximize these inorganic inputs, produced the so-called “Green Revolution” that more than doubled agricultural yields. It is estimated that without these fertilizer inputs, the world today would have only two-thirds of its present population. Modern mechanized agriculture, using farm machinery fuel, fertilizers, and transport, requires about 1,000 liters of fuel to produce food on one hectare of land.⁵

Oil has essentially become the lifeblood of modern economies, moving people, fuelling our factories, transporting consumer goods, powering electricity plants and growing the food that feeds the world. We have become so dependent on oil that if it was cut off overnight, it is likely that large cities would be able to function for only days before chaos, hunger and violence would engulf their populations. For the moment at least, oil is life.

⁵ Dale Allen Pfeiffer, “Eating Fossil Fuels.” Wilderness Publications, www.fromthewilderness.com, 2003. For more analysis of modern agriculture and oil, see Richard Manning, “The Oil we Eat”, *Harpers Magazine*, February 2004.

Section B: Climate Change And Fossil Fuels

It is now abundantly clear that reliance on fossil fuels for everyday energy needs has produced the current climate crisis. The Intergovernmental Panel on Climate Change (IPCC) is very direct in its February 2007 report *Climate Change 2007: The Physical Science Basis*: “Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level.

“Global atmospheric concentrations of carbon dioxide, methane and nitrous oxide have increased markedly as a result of human activities since 1750 and now far exceed pre-industrial values determined from ice cores spanning many thousands of years. The global increases in carbon dioxide concentration are due primarily to fossil fuel use and land-use change, while those of methane and nitrous oxide are primarily due to agriculture.”

We have all done our part by burning fossil fuels⁶ at a rate 100,000 times faster than it can be produced. It takes about 100 tonnes of plant life to create four litres of gasoline. Humans have taken a resource that took hundreds of millions of years to produce and will have burned it up in less than 200 years.⁷

In Canada, we’re already experiencing warmer winters. We enjoy the extra days of sunshine, but we don’t yet know the longer-term consequences. Meanwhile, there is an outbreak of pine beetles in BC because of recent milder winters. These rice-sized beetles have ruined huge tracts of timber and have now migrated to an estimated 1.5 million trees in northern Alberta. Those who live in the Arctic are experiencing shorter winters which disrupt the life cycle of the plants and animals they depend on. There are dramatic fluctuations in water levels and warmer temperatures of lake waters in the Great Lakes region have affected fish populations and produced severe infestations of disease-spreading insects such as mosquitoes.⁸

The Moon of the Geese

Andy Blackwater of the Kainai Nation (Alberta) said that the tribe’s elders have observed changes in the climate and the way weather patterns are affected. In the Kainai culture, there is a month referred to as “the moon of the geese”, but ducks and geese now appear at other times of the year. March storms used to be very predictable and people would prepare accordingly; but increasingly the storms are not coming on schedule. Another concern is in the area of traditional medicine where there is the risk of

⁶ In other words, concentrated energy from the sun.

⁷ Dale Hildebrand, Study Leave Report 2006.

⁸ Indigenous Environmental Network, Climate Justice Campaign: www.ienearth.com

a real shortage in the supply of roots and other vegetation used for traditional remedies.⁹

The most serious consequences of global warming – flooding, desertification, storms, droughts, and loss of marine life – are likely to hit Southern countries the hardest, yet it is we in the North who are most responsible for greenhouse gas emissions.

According to new scientific assessments, reported in *The New York Times*, April 1, 2007, Africa accounts for less than 3% of the global emissions of carbon dioxide from fuel burning since 1900, yet its 840 million people face some of the biggest risks from drought and disrupted water supplies.

“As the oceans swell with water from melting ice sheets, it is the crowded river deltas in southern Asia and Egypt, along with small island nations, that are most at risk. ... The poorest countries in the world, with 738 million people, make no contribution to climate change but face the worst consequences,” laments Benedict Southwark, Director of the World Development Movement.¹⁰

“It is the richest people in the world who have produced and who are still producing most of the greenhouse gases causing climate change,” says Southwark. This anti-poverty campaign group has shown that the average person in Britain causes as much global warming in one day as the average person in Kenya does in over a year.

“We have a message here to tell these countries, that you are causing aggression to us by causing global warming. Alaska will probably become good for agriculture; Siberia will probably become good for agriculture, but where does that leave Africa?” asks Ugandan President Yoweri Museveni.¹¹

David Boyd, environmental lawyer at the University of Victoria, maintains that Canada has one of the worst records in the OECD for per capita and total emissions of toxic substances.¹² A report by the Natural Resources Defense Council and the Sierra Club of Canada in 2002 points out: “If the fossil fuel industry is allowed to proceed with its current plans, (GHG) emissions in Canada will grow to 827 million tonnes in 2010. This would be 44% beyond what Canada is permitted under the Kyoto Protocol and a far cry from the 60-80% reduction that scientists say is essential to stabilizing the climate.”

Fossil Fuels And Greenhouse Gases: The Connection

Essentially, fossil fuels are concentrated storage media for carbon. When these fuels are burned, the carbon is released quickly and combines with oxygen to form carbon dioxide or CO₂. This CO₂, released into the air, becomes part of our atmosphere where

⁹ *Climate Change: We are at Risk*, Report of the Senate Standing Committee on Agriculture and Forestry, November 2003, Chapter 7. www.parl.gc.ca

¹⁰ Quoted in the *New York Times* “Poor Nations to Bear Brunt as World Warms” Andrew Revkin, April 1, 2007.

¹¹ Speaking at the African Union Summit in Addis Ababa, Ethiopia, February 2007.

¹² www.environmentalindicators.com

it traps heat radiated from the earth's surface after it is warmed by sunlight (much as the glass in a greenhouse traps the sun's heat - hence the "greenhouse" effect). The greenhouse effect is a natural process that regulates temperature so the Earth is warm enough to be habitable. The current climate change crisis arises from an accelerated greenhouse effect due to the ever-increasing use of fossil fuels for energy.

While there are other greenhouse gases, CO₂ is responsible for about 80% of the global warming due to the burning of fossil fuels - coal, oil and gas. According to the November 2006 national inventory report, greenhouse gas (GHG) emissions in Canada increased by 26% between 1990 and 2003. The reasons for this increase are not hard to identify: more and more motor vehicles burn gasoline; consumer goods and food are transported world-wide by plane and truck; coal-fired power-plants generate great quantities of GHG emissions.

World carbon dioxide emissions from fossil fuel combustion reached 25 billion tonnes in 2003, an increase of 20% on the 1990 level of 20.7 billion tonnes. Of these emissions, around 38% comes from coal, 21% from gas, and 41% from oil.¹³

Coal is used primarily to generate electricity and while some countries are moving towards reduced coal use, others are moving in the opposite direction. Overall the world is burning more coal today than at any time in the past. Between 2000 and 2030, it is estimated that nearly 1,500 new coal plants will be built to meet electricity demand, many of them in countries such as China. Unlike oil and natural gas, there are still plenty of coal reserves. The US has the largest coal reserves in the world, enough to last it 250 years at current rates of usage.

Canada burned its way through 62 million tons of coal in 2002, mostly to produce electricity. While some provinces have promised to phase out coal electricity plants, rising demand and the inability to bring other sources of electricity online have delayed these plans. Some of the delay may be due to the huge appetite of the Alberta tar sands for Canada's natural gas, reducing the supply available for new electricity plants.¹⁴

The transportation sector, which is largely reliant on oil and diesel for fuels, is also a major contributor to CO₂ emissions, almost as much as coal. While most countries have increased the efficiency of fuel consumption of their vehicles, the US and Canada stand out as notable exceptions. The SUV and pickup truck have become the vehicles of choice for many in both countries. Due to intense lobbying from the automotive industry, SUVs and trucks are exempt from US fuel efficiency regulations. The result has actually been a decline in fuel efficiency in Canada and the US over the past 15 years.

Natural gas is often touted as the fuel of the future. It does burn much more cleanly than other fuels, emitting far less air pollution than oil. However, it emits CO₂, accounting for approximately 22% of GHGs in Canada for 2003 (the global figure is 21%). It is used primarily in electricity generation, industry (mainly the energy production and

¹³ www.world-nuclear.org

¹⁴ Notes on coal, oil and gas are taken from Dale Hildebrand, Study Leave Report 2006.

refinement industries), and home heating. As mentioned, large amounts of natural gas are also being used to extract oil in the tar sands of Alberta. While the replacement of oil and coal by natural gas would reduce CO2 emissions and air pollution, there is not enough available, given current demand.

The Tar Sands - Resource Guzzler And Major Polluter

Unlike conventional oil pumped out of the ground or from beneath the sea, oil extracted from the tar sands of Athabasca in northern Alberta is mined. The process requires abundant natural gas and huge amounts of water to separate the oil (called bitumen, which is much thicker than conventional crude) from silica sand, clay minerals and water.

It takes more than three barrels of water, on average, to process one barrel of synthetic oil. And for that one barrel of oil, the National Energy Board estimates that 125 kg of carbon dioxide are passed into the atmosphere. That means that each barrel of tar sands oil produces three times more GHGs than conventional oil (mostly because of the required use of natural gas).¹⁵

Further, the organic compounds released during the process are toxic, so that the sand, water and other residuals are pumped into tailing ponds. These toxic ponds now cover 50 square kilometers of northern Alberta. Syncrude's tailings alone are bigger and more plentiful than the natural lakes in the area.

The tar sands are the largest contributor to the growth of greenhouse gas emissions in Canada. They are projected to rise by 450-562% between 2003 and 2020, depending on technological improvements in the ability of industry to contain these discharges.¹⁶

The People And The Land Are Inseparable

I cannot even imagine what figures like this look like (referring to Alberta Energy Board estimates of needing 175 million litres of water a day in the tar sands). They are almost meaningless to the average person from Dehcho, but I do know this whole place looks like a moonscape. The government and the oil companies talk about 'balance,' a balance between the environment and the economy. But this is no balance, this whole scheme is unbalanced to the point it is out of control.

We Aboriginal people need to demand a stop to this until we can find out where the mess is going. We have to ask the hard questions: Do we need this? Is this kind of development just a waste? What is going to happen to our land and our water? And our people? As Dene, we do not differentiate between the land, water, air, earth, wildlife, birds, fish and people. The people and the land are inseparable. That is the real balance.

Grand Chief Herb Norwegian, January 31 2006¹⁷

¹⁵ *Fuelling Fortress America*, Canadian Centre for Policy Alternatives, Pembina Institute and Polaris Institute 2006.

¹⁶ *Fuelling Fortress America*, CCPA, Pembina Institute and Polaris Institute 2006.

¹⁷ Dehcho First Nations, Alberta, from press release January 31 2006.

Oil Fuels Modern Economies

Oil is the essential ingredient in an almost unbelievable range of consumer goods: air conditioners, ammonia, anti-histamines, toothpaste, upholstery, water pipes, wax paper, computers, hearing aids, golf balls, chewing gum, spectacles – to name a few!

The motorized mobility of people and goods consumes 60% of extracted oil world-wide. According to Jutta Steigerwald for the Mobility and Transport Coalition based in Rome, motorized traffic contributes 30% of worldwide carbon dioxide and greenhouse gas emissions, mainly from the OECD countries. Moreover, the manufacture of vehicles also uses 25% to 40% of produced raw materials which pollute the air, soil, and water while discarding tons of non-recyclable waste.

Aviation has experienced rapid expansion as the world economy has grown. A report from the IPCC notes that aviation passenger traffic has increased by nearly 9% every year since 1960. This form of transportation has a far greater climate impact than any other. Climate Action Network Europe¹⁸ says that since 2000 aviation was responsible for 4% to 9% of the climate change from global human activity and is growing rapidly.

Yet 70% of the human family depends on walking, non-motorized transport or public transportation. In fact 85% of the world's 600 million cars, trucks and buses are in OECD countries and consume 30% of the world's energy.

Beyond More Sunshine, What Will Climate Change Do?

Kenya is my home. The impacts of climate change are radically altering this land.... Mount Kenya means 'mountain of whiteness'. The snow and glaciers that covered the mountain for generations have almost disappeared. We depend on the snow and glaciers of Mount Kenya and Mount Kilimanjaro as critical sources of water for growing our food and quenching our thirst. The rains are becoming much less predictable. Drought and severe storms alternate making agriculture less sustainable.

Dr. Jesse Mugambi, World Council of Churches Climate Change Programme¹⁹

Climate change will increase the movement of people looking for water and food. Fresh water will become more scarce due to greater evaporation, a decline of glacier-fed rivers, and increased need for irrigation in agriculture. Damage to crops and livestock from heat, drought, extreme weather, rise in agricultural pests, and the growth of invasive weeds are expected results.

Zafir Adeel of the UN University International Institute on Water, Environment and Health, based in Hamilton, Ontario, maintains: "The number of people fleeing the spread of deserts or drought or flooding is estimated to reach 50 million within a

¹⁸ Climate Action Network Europe and European Federation for Transport and Environment, "Clearing the Air: The Myth and Reality of Aviation and Climate Change."

¹⁹ Dr. Jesse Mugambi, World Council of Churches Working Group on Climate Change. Statement from World Council of Churches to the UN Climate Change Conference in Nairobi, November 2006.

decade. ...Deserts will spread due to a warmer climate as well as land being cleared of wood for cooking fuel by impoverished people." He adds that water shortages are "guaranteed to spark violent conflicts, similar to drought-related violence in Darfur."²⁰

Climate change threatens the cultures and way of life of many peoples – the Inuit and peoples of the Arctic, Pacific island people, and all low-lying small island states and coastal communities. Those who live in the Arctic are already experiencing shorter winters with the inevitable disruption of the life-cycles of the plants and animals they depend on. The changes affect hunting, fishing and gathering rights and food security.

The ecosystem is a miracle of balance. Change in the climate threatens that delicate balance and will result in loss of species, the spread of pests and diseases, extreme weather events, a rise in sea level, and damage to coral reefs. Coral reefs and the Amazon rainforest are the two ecosystems with the highest levels of biodiversity in the world. It is believed that a 1° change would seriously affect them.²¹

Daphne Wysham of the Institute of Policy Studies, Washington DC, speaking in March 2007 in India, said that climate change "will increase the prevalence of diseases like malaria, plague and dengue," noting that the US has been seeing many previously unheard of viruses.²²

The Roots Of Darfur²³

In the mid-1980s, prior to the eruption of violence in Darfur, there was a period of damaging drought. According to Alex de Waal of the Social Science Research Council in New York City, who was then in the region, a blind Arab sheikh told him he had not previously seen sand blowing into the rich land and rain washing away alluvial soil. Local farmers who had welcomed his nomadic tribe and camels were now not as friendly since fertile land was becoming scarce.

The sheikh believed the balance of life, established from time immemorial, had been broken and he feared the future. The consequences, as we know, were horrific. The Janjaweed fighters leading a campaign of apparent ethnic cleansing focused on non-Arabs of Darfur, left a swath behind them of raped women, burned houses and tortured and killed men.

Until the drought, the nomadic Arabs had lived peaceably with the settled black African farmers. The subsequent conflict was rooted more in land envy than in ethnic hatred. Some see Darfur as a canary in the coal mine, a glimpse of climate-driven conflict.

²⁰ <http://www.msnbc.msn.com/id/19479607/>

²¹ <http://www.dhushara.com/book/diversit/eye1.htm>

²² Speaking at Water Initiatives Orissa, India, March 2007.

²³ As reported by Stephan Faris in *The Atlantic Monthly*, April 2007.

The Kyoto Protocol – And Its Limitations

It is generally agreed that the Kyoto Protocol is an essential small start in addressing greenhouse gas emissions and climate change, but it must be implemented immediately.

Unfortunately, Canada's efforts so far have been minimal and there is still no comprehensive plan. Even more worrying is the federal government's commitment to a five-fold increase in tar sands oil production which would dramatically drive up Canada's GHG emissions. In fact, the current level of Canadian GHG emissions has steadily increased since Kyoto was signed in 1998 and ratified in 2005.

Other countries have at least shown that Kyoto targets can be reached. The UK has met its target and Sweden is getting there by reducing its dependence on oil from 77% to 52% of its energy needs, even as it phases out nuclear power. It is clear though, that Kyoto signatories must do much more than reach the targets outlined in the agreement.

Kyoto is based largely on short-term political and economic aims of what "can be managed." There is no reference to a long-term objective for avoiding dangerous climate changes. The commitments in the agreement are modest and undoubtedly inadequate to address the scope of the challenge.

The main contribution of the Kyoto Protocol may be that it has helped to bring the issue of climate change into public discourse

Section C: Regulating Canadian Mining, Oil And Gas Companies Operating Internationally ²⁴

Canada has a unique opportunity to become a world leader in Corporate Social Responsibility (CSR) in the mining, oil and gas sector. In March 2007, the Harper government was handed a blueprint for a new approach to promoting Corporate Social Responsibility in the extractive industries which was developed as part of a year-long multi-stakeholder process of National Roundtables chaired by the Department of Foreign Affairs and International Trade.

The *Final Report* of the Roundtable Advisory Group – a panel of representatives of industry, labour, NGOs, academia and socially responsible investors – included 27 recommendations for the federal government that, if implemented, would increase transparency and corporate accountability.

KAIROS: Canadian Ecumenical Justice Initiatives and our civil society partners in Canada, call on the Government of Canada to:

- a) promptly adopt the consensus-based recommendations in the *Final Report of the National Roundtables*; and
- b) immediately implement the Canadian CSR Framework that is set out in the report.

Our Southern partners, who include communities directly affected by Canadian mining projects, are urging their own national governments to improve regulations in the mineral and petroleum sectors. However, they believe strongly that Canada, as the “home country” of these companies, also has a vital role to play.

Canada is uniquely positioned to take a leadership role in regulating mining activities internationally. Almost 60% of the world’s exploration and mining companies are listed in Canada. These companies account for over 40% of global exploration budgets and have interests in almost 3,200 mineral properties located in more than 100 countries.

The centerpiece of the *Final Report of the National Roundtables* is the Canadian CSR Framework. The Framework is important because it:

- establishes CSR standards and reporting obligations for Canadian companies;
- references international human rights standards and provides for the creation of human rights guidelines for the application of the CSR standards;
- creates an ombudsman office to receive complaints regarding the operations of Canadian companies in the developing world and to assess corporate compliance with the standards; and
- includes a provision for withholding government services from companies in cases of serious non-compliance.

²⁴ This background paper has been adapted from the KAIROS Policy Briefing (discussion) Paper No.11, May 2007 by the same title.

The recommendations from the National Roundtables build on a groundbreaking report on mining and CSR adopted by the Standing Committee on Foreign Affairs and International Trade (SCFAIT) in June 2005. The SCFAIT report highlighted the need for major policy and law reform to ensure that Canadian companies comply with international human rights and environmental standards.

Too often, Canadian mining, oil and gas companies have undermined community rights and environmental concerns. At present, these companies are not held legally accountable in Canada when they are complicit in human rights abuses or environmental destruction overseas. Voluntary measures have failed to curb the worst abuses and the resulting conflicts.

Once established, the CSR Framework must be incorporated into binding legislation so that compliance is mandatory, as recommended in the SCFAIT report. It must reflect internationally-guaranteed human rights standards and the corresponding obligations of states and non-state actors to respect the human rights of individuals and communities.

As currently proposed, the CSR Framework does not go far enough in ensuring the protection and promotion of the rights of Indigenous peoples. Canada has consistently demonstrated a clear lack of commitment to Indigenous peoples' rights, including the right to Free, Prior and Informed Consent (see box).

In November 2006, the Harper government voted against the adoption of the UN Declaration on the Rights of Indigenous Peoples, which affirms the right of Free, Prior and Informed Consent (FPIC) as well as rights to self-determination, land, resources and development. The Declaration on the Rights of Indigenous Peoples serves as an important standard for judging the current government's commitment to Indigenous peoples' rights, which at this point in time is very poor. The government of Canada must reverse its position at the UN General Assembly on the Declaration on the Rights of Indigenous Peoples at the earliest time possible.

KAIROS and our partners in the global South are seeking long-term, sustainable solutions that will end the injustices associated with Canadian extractive operations abroad. In adopting and implementing the aforementioned recommendations, the government of Canada would be taking an important first step in this direction.

Free, Prior, and Informed Consent

Free, Prior, and Informed Consent (FPIC) mandates that Indigenous communities possess a formal role in the consultations, and ultimate decision-making power in development projects like resource extraction initiated on their land. It has been recognized by United Nations human rights organizations like the Committee on Economic, Social and Cultural Rights, the International Labour Organization, and international instruments like the Convention on Biological Diversity and the Declaration on the Rights of Indigenous Peoples.

FPIC is an essential mechanism by which Indigenous peoples and local communities may protect their inherent right to control access to their land and natural resources, and to share in the benefits when these are utilized by and for the benefit of others, mainly governments and international companies.

As resource extraction continues to expand globally, Indigenous peoples are particularly vulnerable to human rights violations, desecration of their sacred lands, and the environmental devastation that often accompany the practices of multinational extractive companies, including those domiciled in Canada.

Free: Indigenous peoples must freely give their consent to development projects affecting their lands and resources without coercion, manipulation or interference by any government or corporation. Consent must not be obtained by force or deception.

Prior: The consent of the community affected must be requested and freely given prior to the initiation of any project on their lands.

Informed: Consent must be based on informed consultation and participation by Indigenous peoples with full disclosure of the development activity. All information must be provided in a form that is both understandable and accessible to the community. If misleading or false information is provided, any consent already given could be made invalid and therefore withdrawn.

Consent: The community affected by a proposed project must have the right to say “no” at any time prior to, or during the negotiation process. It is the responsibility of each affected community to decide who will express or withhold consent on their behalf.

Section D: Fossil Fuel, Conflict And Human Rights

Who controls the food supply controls the people; who controls the energy can control whole continents...

Henry Kissinger, US Secretary of State, 1973-1977

We use 30% of all the energy...That isn't bad; that is good. That means that we are the richest, strongest people in the world and that we have the highest standard of living in the world. That is why we need so much energy, and may it always be that way.

Richard Nixon, US President, 1973

Oil has literally made foreign and security policy for decades. Just since the turn of this century, it has provoked the division of the Middle East after World War I; aroused Germany and Japan to extend their tentacles beyond their borders; the Arab oil embargo; Iran versus Iraq; the Gulf War. This is all clear.

Bill Richardson, U.S. Secretary of Energy, 1999

It may be impossible to calculate the human death and suffering arising from conflicts over control of oil. Name a country in the global South rich in oil and gas and you are likely to find a country with a history of internal and external conflict: Iraq, Iran, Kuwait, Saudi Arabia, Nigeria, Angola, Libya, Indonesia, Sudan, Colombia, and Venezuela are examples of this sordid link between fossil fuels and violence.

The Middle East

It is no coincidence that the region of the world richest in fossil fuel reserves, the Middle East, has also been a cauldron of conflict and violence for nearly 100 years. At stake are the carbon fuels that power virtually every economy in the world. The energy companies that extract and sell these fossil fuel resources have managed to limit the major players to a handful of energy supergiants whose annual profits surpass the entire Gross Domestic ~~Product~~^{Profit} of many countries. For much of the 20th century, these oil companies were known as the "seven sisters" and through their support of despotic petro-dictators, or their covert cooperation with Western militaries, they were able to monopolize much of the world's oil production and distribution.²⁵

Although British and American governments have long intervened in the Middle East to protect access to the region's rich oil deposits, oil-related militarism escalated when it became apparent in the 1960s and 1970s that US oil production could no longer keep pace with the burgeoning US economy. Thus began a steady increase in US imports, mainly from the Middle East, to meet US energy demands. Coupled with the realization in the early 1970s that US oil production had reached its peak and begun to decline and the Middle East oil shocks of 1973 and 1979, US policy coalesced even further around the demand for steady, reliable, cheap supplies of oil.

²⁵ The seven sisters were Standard Oil of New Jersey, Standard Oil of New York, Standard Oil of California, Royal Dutch Shell, Gulf Oil, British Anglo-Persian Oil Company, and Texaco. Through a series of mergers in the last decade, only four private oil giants remain: Exxon Mobil, British Petroleum, Chevron, and Royal Dutch/Shell.

The Nixon Doctrine focused on propping up two client states in the Middle East, both rich in oil. Iran and Saudi Arabia were cultivated as oil supplying allies, favoured with US military hardware and other aid. In return, they opened their oil spigots to American oil companies. This strategy ran into trouble when the Shah of Iran was overthrown in a 1979 revolution and the oil industry nationalized. However, Saudi Arabia has for years acquiesced to American demands. Its role as a “swing” producer, opening its taps when world oil supplies are squeezed, helps to explain why successive US administrations have overlooked the atrocious human rights record of the Saudi government. The US maintained friendly relations even after the discovery that 15 of the 19 September 11, 2001 hijackers were of Saudi origin. This is due in no small part to the fact that Saudi Arabia holds approximately 25% of global conventional oil reserves and supplies the US with 15% of its daily imports.

The Lure Of Iraqi Oil

Nevertheless, the 21st century brought a growing uneasiness within Washington that Saudi Arabia was becoming increasingly unstable. Fears grew that if the Saudi pipelines stopped flowing westward, the US might return to the vulnerability it experienced in the 1970s. A confluence of events, some manufactured within the US, put the spotlight on Iraq, holder of the second-largest conventional oil reserves in the world. Many oil analysts believe that Iraq may even surpass Saudi Arabia with as much as 350 billion barrels of oil. Furthermore, much of this oil is still easily accessible and therefore extremely profitable. One study estimated possible annual oil profits at \$95 billion from Iraq alone, an amount exceeding the combined annual profits of the five biggest private oil companies in the world.²⁶

Despite vehement assertions by senior US officials such as former Secretary of Defense Donald Rumsfeld that the Iraq war had “nothing to do with oil, literally nothing to do with oil,” the facts speak for themselves. From securing the oil ministry buildings in Baghdad to the rewriting of economic policies, the US military has paved the way for companies like ExxonMobil and Chevron to exploit Iraq’s oil wealth.²⁷ The human cost of the oil war in Iraq has been staggering. During the 1990s when draconian sanctions precipitated a complete collapse of the Iraqi economy, and consequently its health and social infrastructure, up to 1.5 million Iraqis died. While ostensibly put in place to limit Saddam Hussein’s weapons capabilities, some analysts believe the sanctions served another purpose: to keep Iraq’s oil in the ground for later exploitation by western oil companies.

Since the March 20, 2003, invasion, a study in *The Lancet*, a respected medical journal, estimates that 650,000 war-related deaths have occurred in Iraq.²⁸ Thousands of Iraqis

²⁶ James A. Paul, “The Iraq Oil Bonanza: Estimating Future Profits,” *Global Policy Forum*, January 28, 2004 (www.globalpolicy.org/security/oil/2004/0128oilprofit.htm).

²⁷ See Greg Muttitt, *Crude Designs: The Rip-Off of Iraq’s Oil Wealth*, Published by PLATFORM with Global Policy Forum, Institute for Policy Studies (New Internationalism Project), New Economics Foundation, Oil Change International and War on Want. November 2005.

²⁸ Gilbert Burnham, Riyadh Lafta, Shannon Doocy, Les Roberts, “Mortality after the 2003 invasion of Iraq: a cross-sectoral cluster sample survey,” *The Lancet*, online edition, October 11, 2006.

are permanently disabled and over three million have become refugees within and outside the country. History may well show that in the age of oil-motivated conflict, the invasion and occupation of Iraq may be the costliest war in terms of human suffering and death.

Nigeria's Deadly Delta

Oil wealth has also been the catalyst for internal strife and conflict, not to mention corruption and huge gaps between rich and poor. "The curse of oil" is a familiar phrase in African discourse²⁹. Even the International Monetary Fund issued a report referring to oil as a potential curse for African countries given the history of oil producers such as Nigeria and Sudan.

Nigeria is the largest oil producer in Africa, potentially making it one of the most prosperous countries in the region. Instead it is one of the poorest with over 90% of the population living on less than \$2 per day and one of the worst records for inequality in Africa.³⁰ The Niger Delta, a focal point for the oil industry, is rife with violence and human rights violations. At least 1,000 people die annually in the Delta as a result of conflict between the Nigerian military and local militias demanding a greater share of the region's oil wealth.

Nigeria has become an important alternative to the Middle East for US oil imports and the US oil majors see it as a growing source of oil and gas. However, human rights and environmental groups have been highly critical of the collusion that exists between the oil industry and Nigerian military oppression. Royal Dutch Shell, in particular, was closely associated with the repression of the Delta's Ogoni people whose fight for survival became internationally known after the Nigerian government executed Ken Saro-Wiwa and eight other Ogoni leaders in 1995.

In the words of Nigerian human rights attorney Oronto Douglas: "There is a symbiotic relationship between the military dictatorship and the multinational companies who grease the palms of those who rule. ... They are assassins in foreign lands. They drill and they kill in Nigeria."³¹

Canada In Afghanistan

Although not every US military incursion in foreign lands can be explained in terms of oil colonialism, the attack on Afghanistan in October 2001 and ongoing military presence that now includes Canadians can certainly be viewed through an energy prism. While Afghanistan has no significant fossil fuel resources, it is nevertheless a critical country due to the massive oil and gas deposits that lie to its north in the Caspian Sea region. Prior to the 2001 ousting of the Taliban from power in Afghanistan, the US was involved

²⁹ Butler, P.; Chesla, D.; Kenny, G.; Ragoonanan, W.; Srivastava, M. *Africa's Blessing Africa's Curse*. KAIROS and Third World Network Africa. 2004.

³⁰ Human Development Report 2005, UNDP (New York, 2005), p. 229.

³¹ "Assassins in Foreign Lands." A CorpWatch Radio Interview with Human Rights Activist Oronto Douglas, undated.

in negotiations with them to build a strategic pipeline from the Caspian Sea through Afghanistan (and Pakistan) to the Indian Ocean.

Concerns about democracy and human rights were far down the list. As one US diplomat said: "The Taliban will probably develop like the Saudis did ... Afghanistan will become a US oil colony; there would be huge profits for the West, no democracy and the legal persecution of women. We can live with that."³² Taliban officials were warmly welcomed and entertained at Unocal headquarters in Houston in 1996 and, with US government approval, were offered generous profit sharing on oil and gas that would be pumped through Afghanistan.

It seems the Taliban could not reach an amicable agreement with the US and the Americans made true on their promise during the negotiations that "either you accept our offer of a carpet of gold, or we bury you under a carpet of bombs."³³ Fearing an overextension of its military with the Iraq war imminent, the US government appealed to its allies for reinforcements to fight the Taliban.

Prime Minister Jean Chrétien, eager to avoid Canadian involvement in an unpopular and illegal war in Iraq, responded with Canadian troops for Afghanistan. Packaged originally as a reconstruction mission, the Canadian military role slid inexorably into a combat mission when it became apparent the Taliban would not be easily dislodged. Troop deployment is now easily subsumed under the "war on terror" which itself is at least in part an ideological cover for further exploitation and domination of resource rich countries. While the original motivation for sending the Canadian military to Afghanistan may have been more humanitarian, the reality now is that the military is implicated under a largely US led effort to make the country safe for economic profit.

'Global Peak Oil'

As oil becomes scarcer and more expensive, it seems almost inevitable that conflicts over its control will become more frequent and intense. The term "global peak oil" refers to the point where global oil production peaks and begins to decline. While no one disputes the concept, when it will arrive has spawned considerable debate. Estimates range from 2010 to 2035 and beyond. Many countries, including the US in 1971, have already long passed their point of peak oil. Exactly what will happen when world production can no longer keep up with demand remains unknown but given that oil has become the lifeblood of nearly every national economy in the world, no country wants to be the first to experience it.

Accordingly, oil thirsty states such as the US, China, Japan, and European countries are jockeying for position to corner lucrative oil contracts around the world. This often puts them in competition with one another. For example, when the Chinese invested in Canadian oil sands projects and made plans for a pipeline to travel west to the coast of

³² As quoted in "The War in Afghanistan is a means to another end," *The Mail & Guardian*, December 4, 2001.

³³ "The War in Afghanistan is a means to another end," *The Mail & Guardian* December 4, 2001.

British Columbia—rather than south to American markets—one US energy analyst observed: “The problem with the Chinese is that they don’t know that the Canadian oil is ours. And neither do the Canadians.”³⁴ While it may seem improbable now, there is a very real possibility of conflict between China and the US over energy sources as global supplies dwindle.

For nearly a century, the struggle of large oil consumer countries to control and exploit oil and gas has entailed human rights violations and death for millions of people, from Sudan to Indonesia to Iraq. What is urgently needed is a shift from oil and gas as major energy sources. A move away from energy globalization and towards local energy democracy could also spell the end of violent colonial struggles over oil and gas.

³⁴ Eric Reguly, “Chinaphobia,” *Report on Business Magazine*, March, 2006, p. 19, referring to comments made by Irving Mintzer, an American energy consultant.

Section E: Canadian And International Subsidies To The Fossil Fuel Industry ³⁵

It makes absolutely no sense for the Government to use our taxes... to reduce CO₂ emissions and, at the same time, use even more of our taxes to provide massive subsidies which increases them. It's quite mad.

Jim MacNeill, former Secretary General

Brundtland Commission on Environment and Development

The purpose of this paper is to compile available information on the extent of subsidies to the fossil fuel industries in Canada and abroad. It outlines three kinds of subsidies: conventional subsidies, externalities, and political, military, and diplomatic support.

Conventional subsidies include direct grants, tax credits, tax exemptions, tax deferrals, loans, loan guarantees and accelerated depreciation allowances. Other government spending also indirectly subsidizes certain industries, such as highway construction that may benefit the automobile and oil sectors.

Externalities are subsidies in the form of environmental and social costs imposed on society, but not borne by industries. For example, communities downwind from coal-fired electricity generating plants subsidize them by dealing with the pollution and acid rain they produce at no financial cost for the utilities.

Climate change may well be the most far-reaching externality. Its effects are global, massive, and long-lasting. Carbon dioxide, once released, remains in the atmosphere for up to a hundred years. Some communities such as the Inuit in the Arctic, people living on coastal plains, and inhabitants of small islands will pay a higher price than others for the damages caused by climate change.

The UN's Intergovernmental Panel on Climate Change says that in Africa climate change will "add to stress on water resources, food security, human health and infrastructure." A Christian Aid report finds that, "a staggering 182 million people in sub-Saharan Africa alone could die of disease directly attributable to climate change by the end of the century."³⁶

Political, military and diplomatic support to fossil fuel industries are provided by governments in a variety of ways, including through Free Trade Agreements and Foreign Investment Protection and Promotion Agreements that require host governments to treat foreign investors as favourably as their own national firms. These agreements typically prevent host governments from imposing performance

³⁵ This background paper is an executive summary of the third draft of a study on Canadian government subsidies to fossil fuel industry by John Dillon, July 20, 2007.

³⁶ cited in Bank Information Center et al. 2006. How the World Bank's Energy Framework Sells the Climate and Poor People Short. Washington: Bank Information Center, Oil Change International, Bretton Woods Project, Campagna per la Riforma della Banca Mondiale, CEE Bankwatch Network, Friends of the Earth-International, Institute for Policy Studies, International Rivers Network and Urgewal. p. 15.

requirements on foreign firms and give foreign investors recourse to international tribunals in the case of disputes.

Political and diplomatic support for certain regimes may come with an implicit or explicit promise of military intervention. For example, the US government supports the Uribe regime in Colombia through US\$641 million a year for police and military operations. While this spending is ostensibly aimed at fighting the drug trade, it also constitutes important support for Occidental Petroleum's investments in Colombia. The money pays for three "anti-narcotics" bases, one of which sits alongside and guards, an oil pipeline owned by Occidental.

Various authors cite the cost to the US military for defending shipping lanes, primarily in the Persian Gulf, as a subsidy to the petroleum industry. The estimated cost of this subsidy varies from the Pentagon's own figure of US\$1 billion a year to the Cato Institute's estimate of US\$70 billion a year. The US Navy also protects offshore petroleum installations in the Gulf of Guinea, off the west coast of Africa.

Higher Subsidies For Fossil Fuels Than Green Alternatives

The New Economics Foundation in the UK says that in the late 1990s, the members of the Organization for Economic Cooperation and Development annually spent some US\$73 billion subsidizing fossil fuels, while their pledges of assistance to developing countries for adaptation to climate change amounted to just US\$400 million.

The Stern Review on the Economics of Climate Change puts existing worldwide subsidies for fossil fuels at between US\$150 billion and US\$250 billion a year. It says that only US\$10 billion was spent in 2004 on deployment of technologies for producing energy from renewable sources. US\$6.4 billion a year was spent subsidizing biofuels and US\$16 billion annually went to support nuclear power generation.

Between 1992 and late 2004, the World Bank approved US\$28 billion in financing for fossil fuel-related projects. This lending was 17 times as much as its financing for energy efficiency and renewable energy projects.

The Kyoto Protocol commits its signers to the "progressive reduction or phasing out" of damaging subsidies for all GHG-emitting sectors, such as fossil fuels.

Domestic Subsidies

According to a study by the Pembina Institute, the government of Canada provided \$1,446 million worth of subsidies to the domestic oil and gas sector in 2002. This was provided in three ways - direct expenditures, program expenditures, and tax expenditures.

The direct expenditures were relatively small (\$26.2 million) and included money for Nova Scotia and Newfoundland development funds. One of the largest amounts was \$11.5 million for tar sands research and development.

While it is difficult to get a precise figure, the Pembina Institute estimates the federal government spent \$37 million on programs related to the oil and gas industry in 2002.

Under the National Energy Board Act, permits for the export of oil and gas are to be issued only “after due allowance has been made for the reasonably foreseeable requirements for use in Canada.” However, the interpretation of this mandate has changed dramatically since the days when the NEB would allow exports only when a 25-year supply remained for the needs of Canadians. Canada sold 62% of the oil and gas produced from 2003-2005 to the US, despite the fact that at the end of 2004, we had only eight years worth of conventional oil reserves and nine years worth of natural gas available to meet domestic needs.

The North American Free Trade Agreement’s proportional sharing clause requires Canada to go on exporting non-renewable hydrocarbons to the United States, even if those exports result in domestic shortages. Oil and gas exports account for an increasing amount of Canadian greenhouse gas emissions and are a significant reason why Canada is falling behind on its Kyoto targets.

Further, the Security and Prosperity Partnership (SPP) initiated by Canada, Mexico and the US in 2005 is aimed at even deeper continental energy integration. The SPP is, in large part, a product of lobbying by the Canadian Council of Chief Executives (CCCE) representing the 150 largest corporations in Canada, many of them US-owned.

Subsidies Will Not Achieve Significant Greenhouse Gas Emission Reductions

During 2006 and 2007 the federal government announced approximately \$8.6 billion in new spending on 20 energy efficiency and greenhouse gas reduction initiatives. Major programs include subsidies to biofuel production, renewable power projects, public transit, building retrofits and encouraging the purchase of more efficient vehicles.

In August of 2007 Environment Canada released a report providing estimates of GHG emission reductions resulting from these expenditures worth about \$2 billion a year.³⁷ In 2012 these subsidized programs would reduce GHG emissions by just 34 megatonnes. Other measures involving the regulation of large industrial emitters, passenger vehicle emission standards and energy product standards would reduce emission by twice as much – 70 megatonnes. These results show how direct regulation is more effective than subsidy programs for achieving GHG emission reductions.

All the subsidy programs and regulatory programs together would only reduce total GHG emission by 105 megatonnes in 2012 leaving total Canadian emissions 31% above the targets Canada accepted when we signed on to the Kyoto Protocol.

Jaccard and Rivers estimate the effects of the government’s major subsidy and regulatory measures as likely to reduce carbon dioxide equivalent (CO₂e) emissions by only about 116.5 megatonnes in 2020, far less than the 300 Mt reduction required to meet

³⁷ Environment Canada. *A Climate Change Plan for the Purposes of the Kyoto Protocol Implementation Act 2007*

the government's own target of a 20% decrease from current levels.³⁸ Similarly, they conclude that if these policies were to continue unchanged over four decades, they would miss the 2050 target of a 65% reduction in emissions by a wide margin.

Tar Sands Emissions Outstrip Greenhouse Gas Reduction Programs

The largest amounts of government support for fossil fuel industries are delivered through tax expenditures. The tar sands of Alberta are a big recipient. Prime Minister Harper calls Canada "a new energy superpower" and he boasts of "an ocean of oil-soaked sand under the muskeg of northern Alberta". Extracting oil from the tar sands generates huge external costs which are being borne not by the industry, but by Canadians in general, and particularly Aboriginal peoples living downstream from the tar sands.

Extracting oil from the tar sands releases three times as much carbon dioxide as conventional oil production. Tar sands greenhouse gas discharges are the largest contributor to the growth of emissions in Canada. By 2015 GHG emissions from the tar sands alone could reach 126 megatonnes, a figure greater than all the annual reductions expected through all the government reduction initiatives announced to date. The industry also withdraws massive amounts of water to support the oil extraction process, most of which ends up later in huge toxic tailings ponds.

Devoting enormous amounts of Canada's dwindling supplies of natural gas to tar sands oil extraction constitutes yet another subsidy. It consumes as much natural gas every day as is used for heating half the homes across Canada with gas furnaces. This means Canadians are subsidizing US consumers since most of the oil will be exported to the US.

Why Subsidize Companies Earning Record Profits?

The oil and gas industry is the most profitable of all Canadian industries. Since 2000, Canadian oil and gas companies have earned annual returns on equity averaging 18.4%. This is well above the rate of return earned by other industries that do not benefit from so much government largesse.

According to the National Energy Board, investors in the tar sands can earn a 10% rate of return on their investments when oil prices are between US\$30 and \$35 a barrel. With world oil prices at twice that level, it is evident that neither tar sands producers nor conventional oil producers, who face much lower production costs, need any subsidies at all.

In a submission to the government in advance of the 2007 federal budget, KAIROS called for tax incentives and spending measures to increase investments in non-fossil fuel and non-nuclear energy production. Our vision is to substantially expand existing

³⁸ Jaccard, Mark and Rivers, Nic. "Estimating the Effect of the Canadian Government's 2006-2007 Greenhouse Gas Policies." Toronto: C.D. Howe Institute. June 12, 2007. p. 19.

measures that favour green technologies and to initiate new programs. Unfortunately, the 2007 budget only took small steps in this direction.

In 2000, the Canadian International Development Agency (CIDA) launched a \$100 million Canada Climate Change Development Fund, “to promote activities addressing the causes and effects of climate change in developing countries, while helping to reduce poverty and promote sustainable development.” By 2005, projects in over 50 countries had been funded.

At the same time, CIDA’s \$100-million Canada Investment Fund for Africa has participated with private investors in supporting oil exploration in Northern Africa and the privatization of the energy sector in Senegal. Another CIDA grant went to a heavy oil project in Venezuela, involving Phillips Petroleum and Chevron/Texaco.

The oil and gas sector receives significant financial support and services from Export Development Canada (EDC). In 2006, EDC supported transactions in this sector to the tune of \$8.6 billion. By contrast, EDC reported business transactions of a mere \$15 million for alternative fuels and \$9 million for renewable energy. This represents a ratio of 358 to 1 between EDC’s business in fossil fuels compared to alternatives and renewable energy.

Since 2002, the EDC has supported at least eight major fossil fuel production projects, all of which were deemed by their own classification system to have “significant adverse environmental effects.”

As part of a just and sustainable energy policy for Canada, EDC financing could be refocused to assist Canadian companies whose products and services will help developing countries to adopt greener development models than those in the North and ones that are less reliant on fossil fuels. While the EDC has taken small steps to support greener energy projects, fossil fuel production receives a much larger share of support than renewables.

International Financial Institutions

The World Bank is the most important international financial institution involved in financing energy projects in the global South. After the 1979 Iranian revolution precipitated a doubling of oil prices and a heightened sense of its dependence on petroleum from the Middle East, the US stepped up its efforts to undermine the power of the Organization of Petroleum Producing Countries (OPEC). In 1981, the US Treasury instructed the World Bank to play a leading role in the “expansion and diversification of global energy supplies to enhance security of supplies and reduce OPEC market power over oil prices.”

Between 1992 and late 2004, the World Bank approved US\$11 billion in financing for 128 fossil fuel extraction projects in 45 countries. These will ultimately lead to more than 43 billion tonnes of carbon dioxide emissions, many times more than all the CO₂ emissions reductions required by the Kyoto Protocol for the years 1990-2012. Another US \$17

billion went to other fossil fuel-related projects: \$11 billion for fossil fuel power plants and \$6 billion for sectoral support or policy reform initiatives.

More than 82% of World Bank financing for oil extraction was for projects to export oil back to the North.

World Bank financing for fossil fuels outpaced financing for renewable energy and energy efficiency by a ratio of 17 to 1. Some of the biggest beneficiaries were transnational corporations including Halliburton, Chevron/Texaco, Total and Exxon/Mobil.

Despite strong recommendations from its own Extractive Industries Review Panel to phase out investments in oil production and devote its resources to renewable energy, the World Bank increased its lending for fossil fuels by 93% in 2006 while lending for renewables and energy efficiency only grew by 46%.

Christian Aid points out: "The money the World Bank lends every year for fossil-fuel projects would be enough to provide small-scale solar installations supplying electricity to 10 million people in sub-Saharan Africa."

Section F: Are Biofuels Alternatives To Oil? ³⁹

Biofuels produced from corn, sugar cane or other crops can replace only a small fraction of current fossil fuel consumption. In fact, fuel conservation makes more economic sense. A study by the US Congressional Budget Office found that reducing gasoline consumption by 10% through efficiency improvements would cost consumers and industry about US\$3.6 billion a year. Substituting ethanol for the same amount of gasoline would cost over US \$10 billion in government subsidies.

The key factor in examining the issue of biofuels is the scale of production. Small-scale biofuel projects in local communities are worthwhile. For example, a group of farmers in Norfolk County, Ontario, have organized a cooperative to turn waste sweet potatoes, grown on sandy soil that formerly produced tobacco, into ethanol. They also plan to build an anaerobic digester to turn the residual biomass from the ethanol plant into biogas through fermentation. The biogas will then be burned to produce electricity to run the ethanol plant with the surplus sold to a local utility. This type of localized project, which puts unused sandy soil back into production with minimal irrigation, has merit.

On the other hand, large-scale biofuel production for export poses serious threats related to~~around~~ food sovereignty, land use, and exploitation of low-wage labour in the global South

The biofuel-induced squeeze on North American corn supplies is already causing hunger in Mexico, where corn imports have more than doubled since the signing of NAFTA. At the same time, huge agribusiness corporations dominate the Mexican corn flour market, undercutting the market for 15 million poor Mexican *campesinos* who live by growing corn.

Since 2006, the price of tortillas has tripled in some areas as white corn, used to make the staple food, is indexed to the international price of yellow corn used for animal feed and ethanol production. A Mexican family trying to subsist on a minimum wage must, therefore, devote a third of its income just to buy tortillas.

Feeding Cars, Not People

Lester Brown, an economist at the Earth Policy Institute in Washington, points out that the same amount of corn needed to fill a 25-gallon fuel tank with ethanol just once would feed a person in Mexico for a year.⁴⁰

Brazil's Landless Movement questions the whole pattern of consumption based on private cars and preserving the "American (or Canadian) way of life."⁴¹ Brazil produces

³⁹ This background paper has been adapted from the KAIROS Policy Briefing (discussion) Paper No.9, March 2007 entitled "Are Agrofuels Alternatives to Oil?".

⁴⁰ McKenna, Barrie. "America's appetite for ethanol poised to take corn from mouths of the poor." *The Globe and Mail*, 23 January, 2007.

ethanol from sugarcane and is second only to the US as a biofuel producer. Agribusiness corporations are planning to build 77 more ethanol plants in Brazil over the next few years. Justice advocates are protesting the displacement of peoples from their lands to make room for cane-alcohol production.

Monocrop cultivation of sugarcane is associated with deforestation, soil degradation, loss of biodiversity and contamination of water supplies. Fred Pearce, author of *When the Rivers Run Dry*, identifies sugarcane as “one of the thirstiest crops in the world” as it takes 600 to 800 tonnes of water to grow one tonne of sugarcane.⁴²

People’s movements in other parts of the Global South are opposed to the establishment of massive plantations to grow genetically-modified oilseed crops for conversion into biodiesel. Asian movements protest when corporations set large tracts of Indonesian forest on fire to clear land for palm oil plantations, causing dense smoke to drift as far as Singapore and Malaysia.

In Colombia, land dedicated to the mono-cultivation of African palm trees has more than doubled from 118,000 hectares in 2003 to 285,000 hectares in 2006. A leader of the National Organization of Indigenous Peoples of Colombia laments how foreign companies dupe indigenous people into signing contracts to hand over land without knowledge of the consequences. “The histories of these plantations are filled with grief, stained by the blood and tears of the black and *campesino* communities,” affirms Censat-Agua Viva, a non-governmental organization working in defence of poor peoples’ rights.⁴³

Rather than pursuing a mad race to grow more and more crops for biofuels, energy efficiency and conservation should be prioritized. Taking people’s land and destroying ecosystems in the South in order to produce biofuels for the private vehicles of people in the North only perpetuates colonial patterns.

The challenge is to overcome the idea that there must be one, single, universal substitute for gasoline and to prevent transnational corporations from turning large tracts of land in the global South into biofuel colonies.

⁴¹ Movimento dos Trabalhadores Sem Terra. Posicao Da Via Campesina Sobre Agro-Combustivel. www.mst.org.br 6 marco, 2007.

⁴² Reuters 2006. “Water shortages seen putting crimp in biofuel plans.” *The Globe and Mail*, October 20 Page B7.

⁴³ Martinez, Helda. 2006. Colombia: Biodiesel se mezcla con Guerra. www.ipsnoticias.net/nota.aspidnews=39534