MEMO

TO: **ConocoPhillips Company** shareholders

SUBJECT: Grounds for a Yes vote on ConocoPhillips shareholder resolution requesting a report on the environmental impacts of oil sands operations

DATE: March 1, 2010

CONTACT: Shelley Alpern, Trillium Asset Management Corporation

(617) 423-6655, x 248 or
salpern@trilliuminvest.com

Pat Hill, California State Teachers Retirement System
(916)414-1424 or phill@calstrs.gov

Andrew Logan, Ceres
(617) 247-0700 or logan@ceres.org

RESOLVED: Shareholders request that an independent committee of the Board prepare a report (at reasonable cost and omitting proprietary information) on the environmental damage that would result from the company's expanding oil sands operations in the Canadian boreal forest. The report should consider the implications of a policy of discontinuing these expansions and should be available to investors by November 2010.

This is the third year this resolution has been submitted. It received 27.5% in 2008 and 30% in 2009. The California State Teachers Retirement System is the lead filer, joined by 19 co-filers[1].

Rational for a Yes vote:

1) **ConocoPhillips (COP) shareholders bear significant financial and competitive risk** as long as the company continues its strategic focus on the development of the oil sands, given the significant potential for future carbon regulation, oil price volatility, water scarcity, as well as the legal and reputation risks arising from local environmental damage and impairment of traditional livelihoods to impact the long-term economics of these projects and the value of our company. We believe that these risks are material to the company, and that our company has not done an adequate job of disclosing to investors how it plans to manage them over the long-term.

2) **COP's shareholders may bear significant financial risk** if the current lawsuit filed by the Beaver Lake Cree against the Canadian government is successful and leads to shut-down or delay of oil sands projects.

3) **The oil sands are an expensive bet on the long-term viability of consistently high oil prices.** Financial analysts and industry players including Goldman Sachs and Total have said that oil sands projects require long-term prices in excess of $80/barrel to break even. Given the long capital horizons involved in the oil sands, oil prices need to remain consistently high for decades in order for projects to earn a return. Deutsche Bank and BP, among others, have raised doubts recently about the long-term oil demand and have

predicted that global demand will peak in the next 10-20 years. COP shareholders could see significant capital assets stranded if long-term prices and price volatility render its projects uneconomic.

4) **Although COP has begun limited reporting on the oil sands in its sustainability publication, it has not provided investors with sufficient information to enable them to determine whether the company recognizes and is properly managing the risks associated with its significant oil sands investments.** COP's disclosures fall short of meeting the resolved clause. While the report describes the scope of the company's oil sands operations, it fails to describe the impact that COP's oil sands operations will have on the environment, as the report requests. Hence, investors are not being given adequate disclosure as to how the significant risks embedded in its tar sands operations will be managed.

   Further, COP has been unresponsive to investors' requests for further clarity and specificity on key oil sands issues including how the company considers sustainability risks such as carbon and water when considering increased investment in the oil sand; which alternative fuel sources are being considered for its operations; its plans for the undeveloped properties; its progress in its participation in regional planning efforts, particularly with respect to water management; and reporting metrics. The company has also failed to respond to a letter from a number of signatories of the United Nations Principles for Responsible Engagement requesting a dialogue on the oil sands.

The purpose of the requested report is to provide investors with information on the environmental damage that would result from the company's expanding oil sands operations. It is the proponents' opinion that COP is exposed to substantial risks associated with its current and future oil sands operations (particularly in relation to the environmental impacts of these projects), but has failed to demonstrate it is adequately addressing its existing or future liabilities.

Shareholders must cast a "Yes" vote in favor of the 2009 resolution to signal clearly to COP that it must be more transparent to shareholders about its approach to mitigate risk from the Alberta oil sands.

This memo is organized as follows:

I. INTRODUCTION

Following a slowdown in 2008-09, the pace of oil sands development has begun to pick up. However, the public outcry against the oil sands' harsh environmental and climate impacts has continued to grow, keeping up pressure on companies and governmental entities to justify the high costs of developing these resources.

The financial attractiveness of oil sands projects depend on several increasingly tenuous assumptions: that high oil prices will be sustained over the very long life of the projects; that social and environmental costs will be minimal and not lead to costly delays; that breakthrough, transformational technologies will be achieved at an affordable price (e.g., carbon capture and sequestration); and that the projects will maintain their continued social license to operate.

We believe that while oil prices will at some point rebound, there is now significant doubt as to whether the high oil prices that are required to generate economic returns in the oil sands can be sustained over the long-term. There is now a consensus that oil demand in the developed world has peaked, and a growing number of experts, including analysts at Deutsche Bank and BP, believe that global oil demand will peak in the near- to mid-term as well due to a confluence of factors including advances in efficiency, increasing electrification of the transportation system, and growing concerns in China about energy security. To be viable (much less profitable), oil sands require high oil prices. According to FairPensions (UK), "analysts have suggested that profitability is dependent on an oil price in a range of $70 to $100, with *in situ* production … requiring the upper level of that range." A recent Deutsche Bank report suggests that high oil prices could well trigger a permanent shift to more energy efficient products, more efficient oil use and substitution.[2] Costs can also be expected to rise under any aggressive development scenarios, and oil sands oil are already the most expensive in the world.

While oil prices are relatively low, it is an opportune time for the company and investors to assess the full environmental and social impacts of COP's projects and discern the wisest path forward.

II. CONOCOPHILLIPS' INTEREST IN THE TAR SANDS

ConocoPhillips is:

- A 50% operating partner with Total in the Surmont oil sands joint venture project, with 110,000 barrels/day gross production potential. COP expects to drill about 500 production and steam injection well pairs over the 40-year life of the project.[3]
- A 50% partner with EnCana in the $11 billion FCCL Oil Sands Partnership to produce and refine oil sands crude, with potential for 400,000 barrels/day.[4]
- Holder of "undeveloped resources in Saleski, Thornbury and Clyden areas" of Alberta.[5]

COP's largest concentrations of proved undeveloped reserves at year-end 2009 are located in the Athabasca oil sands in Canada, consisting of the FCCL and Surmont steam-assisted gravity drainage (SAGD) projects.[6]

COP's 2010 10-K indicates that oil sands accounted for 100% of the additions to the company's net reserve from 2009 to 2010, and that without the oil reserves would have decreased from 2009. The oil sands represent 13.4% of total proved reserves.

In November 2008, Innovest estimated the carbon exposure of the largest integrated oil & gas companies with oil sands operations within its coverage universe. Materiality of carbon risk exposure was measured as the net present value of the carbon compliance liability (i.e. NPV of emission abatement costs), expressed as a percentage of market cap during current economic slowdown. COP's NPV of carbon compliance liability was the highest in its peer group (14 companies including COP), at ~2.3%. (Since then, COP has announced its intention to sell its 9% interest in Syncrude, which could change this ratio.) The average was approximately 1.5%.[7]

Going nuclear? In February 2008, ConocoPhillips Canada president Kevin Meyers said the company would be a "fast follower" if other companies were successful in using nuclear energy to power Canadian oil-sands operations.[8] Investing in nuclear facilities to power bitumen extraction would multiply environmental risk and controversy by numerous factors. ConocoPhillips' recent report does not clarify the company's long term thinking with respect to the nuclear possibility, and the company declined to answer shareholders' request for more specificity

III. ENVIRONMENTAL AND HEALTH THREATS FROM THE OIL SANDS & GROWING PRESSURES TO MITIGATE THEM

Overview. Northern Alberta harbors more than 175 billion barrels of oil, second in reserves to Saudi Arabia.[9] Most of the oil in the tar sands is exported to the United States. At present, and for the foreseeable future, there is no viable export route to Europe or Asia.

Oil sands extraction was deemed "the most destructive project on Earth" in a February 2008 report of the same name.[10] Mining, upgrading and refining bitumen from oil sands is "one of the most environmentally costly sources of transport fuel in the world"[11] -- highly resource intensive and environmentally damaging, requiring the draining of wetlands, diversion of rivers, and the removal of trees and vegetation.[12] Tailing ponds from mining operations cover almost 20 square miles of forest and bogs. Their pollutants are acutely toxic to aquatic life and are known to leak into the groundwater system[13], surrounding soil, and surface water. On top of the impacts on air quality, water quality, wildlife, and ecosystems, oil sands are also incredibly energy intensive[14], and their development and expansion will mean a huge increase in GHG emissions.[15]

Bitumen is recovered from the tar sands through open pit mining or through steam-assisted gravity drainage (SAGD) when the deposits are too deep to mine. When COP divests of its 9% interest in Syncrude, the remainder of its operations and planned operations will use SAGD. "Although *in situ* recovery is less destructive than open pit mining," a Pembina Institute report states, "it is significantly more damaging than conventional oil extraction methods." If all of the *in situ* reserves are developed, the impacted area will be 50 times the area in which open pit

mining is occurring, equal to 21% of Alberta or land the size of Florida. The impacts include massive deforestation, the building of access roads and short term disturbances such as seismic exploration and wildfire.[16]

The Canadian government received internal briefings two years ago warning of lawsuits due to failures in environmental assessments of the oil sands.[17]

First Nations challenge. In March 2008, the Beaver Lake Cree Nation filed suit against Alberta, calling for an injunction to block more than 16,000 permits related to oil sands development. The Cree say that the development is destroying their hunting and fishing lands, which they say has abrogated their treaty rights. In February 2009, the Co-operative Bank (UK) announced that it would provide US $71,000 to fund evidence-gathering for the case.[18] Separately, a judicial review is underway of an oil sands development application being granted without any First Nations consultation, which would run contrary to the precedent of case law. The case was dismissed but is being appealed on substantive grounds.[19]

According to the Canadian Boreal Initiative (CBI), the resolution of these cases will have tremendous impacts in shaping how the government discharges its obligations to consult and accommodate First Nations under the constitution.[20] The level of engagement required is linked to the level of the impacts. There is always a duty to consult at a minimum, but there is also a requirement to accommodate affected First Nations. This duty, which increase with increasing impacts, falls on a spectrum, ranging from 'consulting to inform' at the low end, to outright consent at the high end. Because of the significant impacts they create, major oil sands projects are likely to trend towards the high end of this spectrum.

Many legal opinions hold that the Government of Alberta has not been meeting the standards to consult and accommodate First Nations as required by legal precedent, according to the CBI. If these opinions are confirmed by the courts in present and future litigation, companies with permits granted by the Alberta province may find them nullified by this lack of consultation. If the courts place an absolute limit on infringement of First Nations rights (the remedy sought in the Beaver Lake case), then the province's decision-making processes take considerable more time.

In a related matter, Enbridge Gateway Pipelines Inc.'s proposed pipeline from Alberta's oil sands to a deep seaport on the coast of British Columbia has been delayed in part by challenges from indigenous groups related to their title to the land and environmental assessments.[21] In 2009, a proposal sympathetic to the perspective of First Nations that have opposed the pipeline drew the support of 32.5% of Enbridge shareholders.[22]

Carbon emissions. Canada's worldwide reputation has been greatly tarnished by oil sands production, as the sector has driven up the country's GHG emissions and makes it impossible for Canada to meet its Kyoto obligations.

According to the Pembina Institute, oil sands could contribute 41-47% (36.7-42.7 megatons) of the projected business-as-usual growth (90 Mt = 830-740 megatons) in Canada's total annual emissions between 2003 and 2010.[23] *In situ* oil sands production produces four times the greenhouse gas pollution per barrel while burning relatively cleaner natural gas.[24]

Existing and impending regulations at the provincial, national and international levels are placing a cost on GHG emissions and narrowing the market for bitumen.

Canadian regulations. In March 2008, the Canadian government released new climate change regulations that would force new oil sands projects and coal-fired electricity plants to capture and store the bulk of their greenhouse gases. The plan imposes industry-wide 18% intensity reductions, followed by 2% reductions every year thereafter until 2020, although the regime would be reviewed in 2012. Companies that fail to meet their targets would face prosecution under the Criminal Code. Oil sands plants that have yet to be built would have to capture and store their emissions; those in operation prior to 2004 would be subject to the 18-per-cent reduction regime, while more stringent targets would be applied on firms that have been established since 2004 and on plants that are in the construction process.[25]

In February 2009, the Ontario Securities Commission recommended that companies do more to quantify and disclose to shareholders the costs of meeting environmental regulations.[26]

The Government of Alberta announced its own regulatory framework for industrial GHG emissions in March 2007. In July of that year, an emissions trading system was enacted, which has received criticism because it is intensity-based. In addition to on-site emission reductions, firms can meet their targets by making payments at a rate of $15/ton into a technology fund or by purchasing offset credits from projects undertaken in Alberta.

Neighboring British Columbia is a member of the Western Climate Initiative, a regional cap-and-trade system that includes seven U.S. states and four Canadian provinces. BC also obtained royal assent to its *Greenhouse Gas Reduction (Cap-and-Trade) Act* in May 2008, which sets the legal framework for an eventual cap-and-trade system in the province. The details are left to future regulations. BC's February 2008 budget included a revenue-neutral carbon tax on fossil fuels that took effect in July 2008. The tax starts at a rate of $10/ton CO2e in 2008 and rises in annual $5 increments to reach $30/tonne in 2012.[27]

International carbon initiatives. ConocoPhillips operates in over 40 countries, most of which have ratified the Kyoto Protocol that obliges industrialized countries to reduce national GHG emissions below 1990 levels by 2012. International efforts to establish a post-Kyoto regime culminated in Copenhagen, Denmark in December 2009. One result of the Copenhagen Climate Conference has been the submission by 55 countries, including the United States, of carbon reduction pledges to limit and reduce their GHG emissions by 2010.

Globally, governments are increasingly adopting more stringent carbon standards as well as adopting low carbon fuel standards (LCFS). For example, the European Union has announced a standard for vehicles calling for no more than 130 grams of CO2 per km by 2012, and a long term target of 95 g/km CO2 by 2020. In April 2009, the EU announced a requirement for fuel suppliers to reduce the greenhouse gas intensity of energy supplied for road transport.

A proposal adopted by the European Union would require a 6% mandatory lifecycle greenhouse gas emission reduction target for fuel suppliers by 2020. The directive is aimed at all energy supplied to road transport and would have intermediate targets of 2% by 2014 and 4% by 2017. The baseline for reductions will be developed in 2010.[28]

US pressures. It is important to note that the United States is, and will remain for the foreseeable future, the only significant viable market for tar sands output, and so regulations that restrict the carbon content of fuels represent a significant risk for tar sands producers.

In February 2010, COP and BP withdrew from the US Climate Action Partnership, a coalition of 30 companies and major environmental organizations that less than a year prior had endorsed 80% reductions in GHG emissions from 2005 levels by 2020. COP had been a member since 2007. Its withdrawal announcement complained that climate change legislation in Congress "to date have disadvantaged the transportation sector and its consumers, left domestic refineries unfairly penalized versus international competition, and ignored the critical role that natural gas can play in reducing GHG emissions."[29]

The Obama Administration has signaled its continued support for a cap-and-trade program to reduce national GHG emissions. The US pledged in January to cut its greenhouse gas emissions by 17 percent by 2020 from 2005 levels, "in conformity with anticipated U.S. energy and climate legislation." Administration officials have expressed concern about the environmental footprint in the tar sands and indicated that this could be reflected in emerging U.S. climate policy.[30] The US has announced plans to require automakers to meet a 120 CO2 g/km standard by 2016.

US federal law contains a provision (Section 526 of the 2007 energy bill) that bars government contracts for fuels whose lifecycle GHG emissions exceed those of equivalent conventional fuels.[31] Under any reasonable interpretation, this would prohibit the US government from purchasing tar sands-derived fuel but efforts are underway to create an exemption for tar sands-derived fuel. A low carbon fuel standard (LCFS) is also on the table. In December 2009, a group of investors representing over $127 billion in assets wrote to Congress calling for the rejection of a weakening of Section 526 (a goal of Canadian Prime Minister Stephen Harper) and the enactment of an LCFS.[32]

On June 26, 2009 the House of Representatives passed a climate bill that, for the first time, would place mandatory limits on the emissions of the greenhouse gases that cause global warming. A similar bill was introduced in the Senate in the fall of 2009, which , if enacted, will limit and reduce greenhouse gas emissions through a "cap and trade" system of allowances and credits, among other provisions.

Environmental justice advocates are calling on the Administration to use the EPA's Clean Air Act permitting authority to place limit oil refineries' ability to process heavy crude by mandating that their technologies remain equipped using and processing only the same-quality oil as their current feedstock. This would have the effect of excluding tar sands oil from those refineries.[33]

At the state level, California has capped GHG emissions at 1990 levels by 2020 and is fleshing out the regulatory details of how it will achieve that goal California officials are crafting the world's first low carbon fuels standard that would apply to transportation fuels sold in the state.[34] It will apply to all transportation fuels sold in California, with the goal of reducing the carbon intensity of California's passenger vehicle fuels at least 10 percent by 2020.[35] ConocoPhillips operates refineries, and markets and sells gasoline, in California - business activities that will be impacted by the state's efforts. The Regional Greenhouse Gas Initiative, composed of 11 Northeastern states, have a nnounced they will also develop a plan to do same by the end of 2009.[36] Some members of Congress want to replicate California's plan to impose low-carbon fuel

standards that target not just tailpipe emissions but also those that occur during production, which could put a surcharge on oil sands crude unless producers cut emissions.[37] Twelve Northeast and Mid-Atlantic states are developing a framework for a regional low carbon fuel standard. In addition, the Western Climate Initiative, including seven states and four Canadian provinces, is also developing an LCFS, as is the Midwestern Governors Association, British Columbia, and Ontario.

At the local level, in June 2008 the US Conference of Mayors backed a resolution calling to ban the use of gasoline produced from oil sands-based synthetic crude.[38]

Carbon capture and sequestration. ConocoPhillips champions carbon capture and sequestration technology (CCS) as a partial solution to the oil sands' heavy GHG emissions. COP's 2007 Sustainable Development Report states that up to 70% of carbon future emissions from steam-assisted gravity drainage (SAGD) projects could be offset by CCS.[39] In February 2009, Alberta committed $2 billion to help fund carbon capture projects.[40] COP's proposal for funding from this source was rejected in 2009.[41]

While CCS has shown promise in pilot projects, it is open to question whether it will be affordable or scalable to the challenge provided by tar sands emissions. Even if CCS technology proves to be successful at reducing GHG emissions, the costs could range between $110-$290/ton.[42]

In November 2008, the Canadian Broadcasting Company published notes prepared by a federal carbon capture task force indicating little internal confidence in CCS for the tar sands. The notes illuminated concerns that only a small percentage of CO2 is capable of capture because the CO2 stream generated by tar sands production is diffuse (compared to, for example, an IGCC power plant); only limited near-term opportunities exist; the projects will be expensive; and the government will have legal liability for stored CO2.[43]

Non-carbon air emissions. While the significant GHG emission profiles of oil sands projects present serious risks, the oil sands are also more polluting than conventional oil in non-GHG emissions. Producing one barrel of bitumen creates more than twice as much nitrogen oxides and sulphur dioxide emissions as producing one barrel of conventional oil.[44]

Air pollution from the oil sands has become a recent focus of attention as a December 2009 paper highlighted the significantly underestimated contamination caused by oil sands development. A team of researchers from the University of Alberta discovered that oil sands projects have led to a dramatic increase in polycyclic aromatic compounds (PACs), a group of toxic organic contaminants containing several known carcinogens, mutagens, and teratogens.[45] Furthermore, documents obtained by the *Toronto Star* in January 2009 from Environment Canada state that chemicals from the oil sands linked to acid rain, respiratory problems and ozone depletion could significantly increase and potentially pose serious problems over the next several decades of oil sands expansion.[46] Other research has found that in 2000 nitrous oxide (NOx) emissions from oil sands operations represented 6% of Alberta's and 2% of Canada's NOx emissions.[47] Scientists project that if oil sands production increases to 5 million barrels/day without any further reductions in NOx emission intensity, the contribution from oil sands operations will increase to 31% of Alberta and 8% of Canada's emissions (assuming total emissions from all other sources of NOx remain constant). The contribution from oil sands

operations to sulphur oxide (SOx) emissions in 2000 was 18% of Alberta and 4% of Canada's total emissions. If production is increased to 5 million barrels per day this contribution would increase to 92% and 20% respectively.[48]

Canada has recently announced a new national strategic plan to reduce air pollution by up to 55% by 2012.[49] The plan sets national caps for industrial emissions of four air pollutants commonly associated with smog and acid rain, including NOx, SOx, volatile organic compounds, and particulate matter. Caps will also be set for other air pollutants such as mercury from electricity produced by combustion, and benzene emissions from the natural gas, iron and steel sectors. Nearly all of these pollutants are emitted by oil sands projects. Companies operating in the oil sands that exceed the caps on pollutants under the new regulations will need to expend capital to either improve the operations of their projects, purchase new technology to control emissions, or purchase credits for t he NOx or SOx targets that they have not yet met.

Water. *In situ* net water use averages around one barrel of water per barrel of bitumen and *nin situ* operators face new regulations on water use. In February 2009, Alberta's Energy Resource Conservation Board released draft regulations containing tougher restrictions on water usage for operators of *in situ* oil sands operators, which also require improved measurements and formal reporting. The agency's manager told the *Edmonton Journal* that companies will have to compete for water and disposal space in the future. In the same month, the Pembina Institute recommended charging for water used by the energy sector.[50]

Land reclamation. All oil sands operators are required by law to provide a closure plan that will ensure a restoration of project land area to "equivalent land capability."[51]

Reclamation, however, is very difficult for oil sands projects. Only 0.2% of land disturbed for oil sands development, or 1.04 kilometers, has been certified as reclaimed by the government.[52] One reason for this difficulty is that much of the original land upon which oil sands were developed consisted of wetlands, which are nearly impossible to recreate. At this time, no technologies or methods have been developed to accurately reclaim wetlands.[53] While exact reclamation costs are not known due to lack of disclosure by industry, it is widely understood to be a very expensive process.

COP has not disclosed reclamation costs. This is typical of most companies in the oil sands, according to a recent report from Canadian investment company Ethical Funds. [54]

Health impacts. In November 2007, a study released by Fort Chipewyan's Nunee Health Authority found high levels of arsenic, mercury and PAHs in areas downstream of Fort McMurray's oil sands. In February 2009, Alberta Health Services confirmed a higher rate of biliary cancer in Fort Chipewyan, calling for more analysis and monitoring. Environmental factors were not ruled out as a possible cause.[55] The Mikisew Cree First Nation is among those calling for a moratorium on oil sands development.

IV. REPUTATIONAL RISK

The combined result of the environmental, regulatory and legal risks identified above has been a public relations disaster for oil companies with tar sands operations. According to oil sands activist Michael Marx, at least 50 groups in the US and Canada are organized to fight the

expansion of the oil sands and advocate for greener operations.

Since we began tracking the issue in 2007, negative articles on tar sands have been numerous.[56] According to the Canada West Foundation, in the six-month period from June through December 2009, Canadian articles focusing on the negative environmental impacts of the oil sands outnumbered positive stories by at least 4:1 and web media stories with a similar focus dwarfed positive environmental stories by at least 8:1. The ratio was even more lopsided during with a wave of oil sands activism concurrent with the COP15 talks in Copenhagen in December.[57] Canada West reported:

> The various groups protesting the oil sands included Greenpeace, satirists the Yes Men, members of Canada's First Nations who were protesting what they saw as health risks caused by the oil sands, and the Climate Action Network, a coalition of environmental groups that handed out Fossil Awards to countries seen as blocking progress on climate change. Canada received several of these awards. Also, 11 members of the European Parliament, from countries including France, Finland and the Netherlands, called for European businesses to cease their investments in the oil sands.
>
> But not all criticism of the oil sands came from environmental groups and foreign officials. The most widely covered criticism of the oil sands in Copenhagen came from Ontario and Quebec. Quebec premier Jean Charest, Ontario Environment Minister John Gerretsen and Toronto Mayor David Miller travelled to Copenhagen to speak out against the oil sands, claiming to be "embarrassed" by them and speaking out against any Canadian carbon plan that would cause their provinces to shoulder extra carbon burden to allow the oil sands to be further developed.[58]

In February 2010, a campaign by Forest Ethics to organize a corporate consumer backlash began to bear fruit when Whole Foods Markets and Bed Bath & Beyond announced that they would seek alternatives to oil sands transportation fuels.

A year ago, environmental and First Nations organizations conducted a high visibility campaign in Canada and the U.S. to coincide with President Obama's meeting with Canadian Prime Minister Stephen Harper in February 2009, which included a direct action by Greenpeace activists and a full-page ad in *USA Today* and other papers by the Mikisew Cree and Athabasca Chipewyan and Forest Ethics

In January 2009, Bishop of St. Paul Luc Bouchard (Alberta) released the pastoral letter "The Integrity of Creation and the Athabasca Oil Sands," which examined the environmental and social footprint of the oil sands. The letter states: "The proposed future development of the oil sands constitutes a serious moral problem. … The present pace and scale of development in the Athabasca oil sands cannot be morally justified."[59]

In August 2008, three credible environmental organizations pulled out of the 44-member, multi-stakeholder Cumulative Environmental Management Association (CEMA), which was convened in 2000 to study the cumulative environmental effects of industrial development in the region and produce guidelines and management frameworks. In a press release, the Pembina Institute, the Toxics Watch Society of Alberta and the Fort McMurray Environmental Association cited as their reason, "eight years of effort and consistent failure to meet deadlines for recommending systems to protect the region's environment, [and as a result] CEMA has lost all legitimacy as an organization and process for environmental management in the oil sands." A Toxics Watch Society spokesperson said, "we can no longer legitimize a process that both the oil sands

industry and government have been using as a shield to deflect criticism about the cumulative environmental impacts of oil sands development." The organizations endorsed a suspension of new oil sands approvals and lease sales until interim environmental limits and management systems are in place.[60]

In April 2008, the toxicity of the tailing ponds drew worldwide attention when 500 migrating ducks became fatally mired in a Syncrude tailing pond. The company has pleaded not guilty to federal and provincial charges and is scheduled to go to trial in March. A report released by the Natural Resources Defense Council in December 2008 projects that between six and 166 million birds could be lost over the next 30 to 50 years from tar sands development.[61]

In January 2009 poll, half of the Canadians surveyed stated that they distrust information provided by oil sands executives.[62] Later that year, a poll conducted by Environmental Defence (Canada) found that more than half wanted to slow down oil sands production and invest in clean energy job creation.[63]

In a Spring 2007 survey[64] commissioned by the Pembina Institute, pollsters found widespread concern about the environmental impacts of tar sands development among citizens of Alberta:

•71% of Albertans agreed with the statement, "The Government of Alberta should suspend new oil sands approvals until infrastructure and environmental management issues are addressed in the oil sands region,"

•88% agreed with the statement, "New oil sands mines should only be approved if companies can demonstrate that they can return mined areas back to the way they were before mining began," and,

•70% favored total over intensity-based GHG reduction targets, "even if it costs industry more."

COP and other energy companies participated in Alberta's Oil Sands Multi-Stakeholder Committee, which released a report of its findings in August 2007. Twenty-four of 120 recommendations (20%) were presented as items where there was no consensus. Among those 24 items: slowing the pace (majority in favor, with some calling for a moratorium), setting hard caps on GHG emissions (majority in favor); increasing royalty rates (majority in favor); looking closely at health impacts on local populations and the long term investment of resource revenues.[65]

The CEO of ConocoPhillips admitted in 2007 that the industry has an image problem, noting that in surveys "the oil industry ranks last - last in credibility even behind tobacco." The *Wall Street Journal* noted recently that the industry's poor image is hurting its ability to attract young employees to replace its increasingly aging workforce - a crisis that Ernst S Young recently called the greatest risk to the oil industry.[66]

In November 2007, the *Financial Post* reported that Canadian oil companies' "poor public image … is costing them billions in adverse government decisions. In the past year alone, the Canadian oil sector, or large factions within the sector, arguably lost every public policy battle it engaged in."

The author attributed the poor public image, among other factors, to the industry's perceived environmental and social irresponsibility.[67]

V. SHIFTING ECONOMIC AND COMPETITIVE CONTEXT

By virtue of its carbon-intensive products and long capital horizons, the oil sector is uniquely exposed to economic, competitive, and regulatory risks resulting from climate change. According to the Pembina Institute and World Wildlife Canada, "A typical oil sands project in Alberta involves billions of dollars of capital investment, has an operations workforce of over a thousand people and a lifespan of over 50 years."[68]

Over US $57 billion in oil sands related projects have been proposed in the oil sands, and approximately $19 billion invested in 2008 alone.[69] Canadian oil production is expected to continue rising to 3.5 million BPD in 2010, with the contribution of the oil sands to total production growing from 40% in 2007 to 50% in 2008. Bitumen production could reach 4.2 million BPD by 2030.[70] At the same time, the oil and gas industry is beginning to acknowledge the risks associated with oil sands and shift capital toward shorter term, less carbon-intensive opportunities such conventional oil extraction enhanced by hydraulic fracturing, and shale gas extraction. Relative to oil sands, these new opportunities have low costs and f ast payback horizons. Shell Oil has significantly scaled back its oil sands plans, and Nexen has said that it is waiting for carbon-price certainty before expanding its oil sands exposure.

In December 2008, Reuters reported that HSBC was reconsidering its financing of tar sands projects in light of the possibility that tougher climate regulations could them commercially unviable. According to Francis Sullivan of HSBC, the bank believes that "a carbon price can radically change the viability of oil sands projects."[71] Goldman Sachs has said, "Oil sands projects face significant environmental challenges …[which] present material risks to project viability and returns potential."[72]

In December 2008, the Securities and Exchange Commission issued a new rule on oil reserves disclosure requires reporting of tar sands reserves in a special category, meaning that it will now be possible for investors to evaluate the risk of tar sands relative to conventional reserves.

In a related development, in February 2010, the Ontario Securities Commission recommended that companies do more to quantify and tell shareholders the costs of meeting environmental regulations.[73]

VI. PEER GROUP COMPARISON - REPORTING

Comprehensive reporting on tar sands operations by major operators is thin. We compared COP's reporting on tar sands to that of Suncor, Encana, Nexen, Imperial Oil and Syncrude.

ConocoPhillips Canada's 2007 Sustainability Report includes a section on the oil sands with expanded disclosure and metrics. The latest reporting is an improvement over COP's first sustainability report (which barely covered the tar sands): it identifies negative impacts (e.g., GHG emissions, water usage, traffic, employment) and potential solutions to them, where such solutions exist. Key performance indicators are offered (but not multiple years' worth), but many

are lacking (see Figure 1 below). Altogether, the quality, depth and candor of ConocoPhillips's reporting falls far short of the best of its peers reporting on the tar sands. And because it fails to provide any timetables or targets for rolling out its mitigation efforts, the general picture that emerges is that of a company with a hazy sense of timing, counting on future technological breakthroughs, and relying on lax regional and federal regulations for a continued license to operate with a big footprint and an absence of ambitious goals to shrink it.

FIGURE 1.

•Multiple years of data (Suncor, Nexen, Imperial, PetroCanada, Encana, Syncrude)
•Progress made toward meeting its goals (Suncor)
•GRI content index (Suncor, Encana, Nexen, Imperial)
•Carbon pricing strategy (Encana)
•Regulatory compliance (Suncor, Imperial)
•Third party audit and review (Suncor, Nexen)
•Report reviewed by stakeholders (Suncor, Nexen)
•Energy efficiency goals (Encana, Imperial, Nexen)
•Steam-to-oil ratio benchmarks against industry peers (Encana)
•Identification of GHG emissions as a percentage of all of Alberta's (Suncor)
•Benchmarking of tar sands GHG emissions against the those of other tar sands operators (Suncor)
•Identification of the proportional impact of certain key performance indicators (GHG, nitrogen oxide and sulfur dioxide emissions, boreal forest disturbed, overall area disturbed, fresh surface water used) on regional and/or national level (Suncor)
•Volume of CO2 sequestered (Encana)

[1] The co-filers are the Brainerd Foundation, Trillium Asset Management Corporation, Community Church of New York, Unitarian Universalist First Parish in Cambridge, Funding Exchange, Glenmary Home Missioners, Green Century Equity Fund, Haymarket People's Fund, Lemmon Foundation, Manhattan Country School, Max and Anna Levinson Foundation, Merck Family Fund, Needmor Fund, Pax World Management Corporation, Sisters of Notre Dame (Cleveland), Sisters of Notre Dame de Namur (Boston), Tides Foundation, Unitarian Universalist Service Committee, and Walden Asset Management.
[2] "Shareholder Resolutions at Royal Dutch Shell and BP PLC - Investor Briefing," FairPensions, February 2010.
[3] ConocoPhillips Fact Book, 2008
[4] ConocoPhillips Fact Book, 2008
[5] ConocoPhillips Fact Book, 2008
[6] ConocoPhillips 10-k, February 25, 2010.
[7] The analysis incorporated "our knowledge of the expected regulatory emission reduction targets in applicable legislations where companies have relevant assets, including North America." The other companies were Marathon, Suncor, PetroCanada, Imperial, Shell, BP, Husky, Chevron, Exxon, Total S.A., Hess, StatoilHydro and Occidental. (Innovest Weekly Report, 11/12/08.)
[8] http://www.heavyoilinfo.com/newsitems/conocophillips-seeks-oil-sands-cost-cutting
[9] "Oil Sands Facts," Alberta Energy at http:// www.energy.gov.ab.ca/OilSands/790.asp.
[10] Environmental Defence, *Canada's Toxic Tar Sands: The Most Destructive Project on Earth*, 02/08, available at http://www.environmentaldefence.ca/reports/tarsands.htm
[11] *The Oil Sands Report Card*, Pembina Institute and World Wildlife Canada, 2007, p. vii.
[12] James Hansen, director of Nasa's Goddard Institute for Space Studies, has written about the impact of oil sands development on the earth's natural carbon storage capacities:

> The tar sands of Canada constitute one of our planet's greatest threats. They are a double-barrelled threat. First, producing oil from tar sands emits two-to-three times the global warming pollution of conventional oil. But the process also diminishes one of the best carbon-reduction tools on the planet: Canada's boreal forest. This forest plays a key role in the global carbon equation by serving as a major storehouse for terrestrial carbon - indeed, it is believed to store more carbon per hectare than any other ecosystem on Earth. When this pristine forest is strip-mined for tar sands development, much of its stored carbon is lost.

The Guardian, February 19, 2009.

[13] According to a December 2008 report by Environmental Defence of Canada, tar sands tailings ponds oil are leaking an estimated 11 million litres of contaminated water every day, which threatens to contaminate groundwater and then flow into rivers. ("Polluted tar sands ponds leaking, report indicates," Globe and Mail,12/9/09)

[14] The tar sands use 0.6 billion cubic feet per day of natural gas. In November 2007, Canada's National Energy Board released a report warning that "increasing demand [for natural gas] and gradually declining production reduces the net exports to zero by 2028 [after which] Canada becomes a net gas importer, reliant on LNG (liquified natural gas) imports." The report goes on to predict that "Canadian natural gas production is expected to decline by almost 40 per cent by the end of 2030."

The energy return on investment (EROI) of developing oil from the tar sands is between 2 to 5:1. Middle Eastern oil has an EROI of roughly 20:1. ("Five steps to success: An analysis of Obama's energy plan," University Wire, 2/24/09).

[15] Presently, tar sands oil extraction pumps 29.5 million tons of greenhouse gasses into the atmosphere every year, or 12 per cent of Alberta's total greenhouse emissions and five percent of Canada's emissions. (http://www.canadaoilsands.ca)

[16] *Death by a Thousand Cuts: Impacts of In Situ Oil Sands Development on Alberta's Boreal Forest*, The Pembina Institute, August 2006, pp. vii - viii.

[17] Email communication from Simon Dyer, Pembina Institute, 03/07/08; "Environment Canada expecting oilsands lawsuits," Canwest News Service, 3/02/08.

[18] "Co-op to help fund oil sands legal fight," Financial Times, 2/26/09.

[19] Email received from Larry Innes, aboriginal rights attorney at Olthuis, Kleer & Townshend, 2/19/10.

[20] Presentation by Larry Innes, Executive Director, 9/11/08.

[21] "PetroChina walks away from Gateway," *Globe and Mail*, 7/12/07.

[22] The resolution text can be found at https://www.ethicalfunds.com/en/Investor/ChangingTheWorld/DifferencesWeMake/MakingGoodCompaniesBetter/ShareholderResolutions/Pages/default.aspx.

[23] *Carbon Neutral 2020: A Leadership Opportunity in Canada's Oil Sands*, Pembina Institute (October 2006), p. 9.

[24] Press release, February 13, 2009 at http://alberta.pembina.org/media-release/1783.

[25] "Tough new green plan targets oil sands," *Globe & Mail*, 3/10/08.

[26] OSC Staff Notice 51-716, Environmental Reporting, February 27, 2009. at http://www.osc.gov.on.ca/Regulation/Rulemaking/Current/Part5/sn_20080229_51-716_enviro-rpt.jsp.

[27] *Choosing Greenhouse Gas Emission Reduction Policies in Canada*, October 2008, prepared by the Pembina Institute for Don Drummond, TD Bank Financial Group, p. B 7-9.

[28] Directive 2009/30/EC of the European Parliament and of the Council of 23 April 2009.

[29] ConocoPhillips press release, 2/16/10.

[30] "Qualms remain in U.S. about oilsands energy," *Calgary Herald*, June 15, 2009.

[31] "Climate Change: Taking Stock of Industrial Emissions," Greenwire, 3/3/08.

[32] See http://www.greencentury.com/pdf/globaldocuments/Dirty_Fuels_Letter.

[33] "Activists Seek EPA Permit Provisions To Limit Heavy Crude Refining," *Energy Washington Week*, February 25, 2009.

[34] See Footnote 23.

[35] Pew Center on Global Climate Change (http://www.pewclimate.org/node/5980).

[36] "RGGI States to Develop Low Carbon Fuel Standard," ClimateBiz.com, January 6, 2009.

[37] "The Kindler Gentler Superpower," *Globe & Mail*, 2/28/08.

[38] http://www.usmayors.org/usmayornewspaper/documents/06_16_08/pg9_res_energy.asp.

[39] ConocoPhillips Canada 2007 Sustainable Development Report, p. 73.

[40] "Alberta laying down rules for carbon," *Calgary Herald*, 2/25/09.
[41] Conversation with ConocoPhillips sustainable development executives, October 20, 2009.
[42] *Carbon Capture and Storage in the Albertan Oil Sands: A Dangerous Myth*, World Wildlife Fund UK and the Co-operative Financial Services, October 2009.
[43] "Little Gain from Oil Sands Carbon Capture Report," 11/25/08, Reuters.
[44] J. Bergerson and D. Keith, "Lifecycle Assessments of Oil Sands Technologies," Proceedings of the Alberta Energy Futures Project Workshop, 2006, http://www.iseee.ca/files/iseee/ABEnergyFutures-11.pdf.
[45] "Untold levels of oil sands pollution on Athabasca River confirmed," Science Daily, 12/8/09. http://www.sciencedaily.com/releases/2009/12/091207151335.htm.
[46] "Oil sands smog seen worsening," *The Toronto Soil*, 1/21/09. http://www.thesoil.com/News/Canada/article/574514.
[47] J. Bergerson and D. Keith, Lifecycle Assessments of Oil Sands Technologies," Proceedings of the Alberta Energy Futures Project Workshop, 2006, http://www.iseee.ca/files/iseee/ABEnergyFutures-11.pdf.
[48] Environment Canada. CAC Emissions Summaries. Criteria Air Contaminants Emission Summaries. http://www.ec.gc.ca/pdb/ape/ape_tables/nox2000_e.cfm
[49] "Action on climate change and air pollution," Environment Canada. http://www.ec.gc.ca/doc/media/m_124/brochure/BR_c1_eng.htm
[50] "Oilpatch to see new rules on water use -- Proposal calls for lower consumption," *The Edmonton Journal*, February 18, 2009.
[51] http://www.ethicalfunds.com/SiteCollectionDocuments/docs/lines_in_the_sands_full.pdf
[52] Government of Alberta, "Alberta's Oil Sands: Facts and Stats," www.oilsands.alberta.ca/519.cfm.
[53] Alberta Environment, "Guideline for Wetland Establishment on Reclaimed Oil Sands Leases" (2nd edition), prepared by M. L. Harris of Lorax Environmental for the Wetlands and Aquatics Subgroup of the Reclamation Working Group of the Cumulative Environmental Management Association (Fort McMurray, AB: December 2007), http://www.assembly.ab.ca/lao/library/egovdocs/2008/alen/171465.pdf
[54] *Lines in the Sands: Oils Sands Sector Benchmarking*, Ethical Funds, 2009. Canadian Oil Sands Trust, another company operating in the oil sands, has been most forthright on how it is planning for future reclamation costs, explaining that it sets aside 13.2 cents for every barrel of its share of Syncrude production. In 2008 the reclamation trust held $44 million. However, it should be noted that this information was not disclosed in the company's official filings or annual report but rather in an industry chat room.
[55] "Study Confirms High Levels of Toxins Downstream Alberta Oil Sands," *Edmonton Sun*, 11/8/07.
[56] A particular low point for oil sands proponents was the March 2009 issue of National Geographic, which featured a 24-page feature story.
[57] Sands Media Monitoring Project Report, Canada West Foundation, January 20, 2010.
[58] Sands Media Monitoring Project Report, Canada West Foundation, January 20, 2010.
[59] The Bishop explained: "The moral problem does not lie in government and industry's lack of a sincere desire to find a solution; the moral problem lies in their racing ahead and aggressively expanding the oil sands industry despite the fact that serious environmental problems remain unsolved after more than forty years of on-going research. The moral question has been left to market forces and self-regulation to resolve when what is urgently required is moral vision and leadership." (The Integrity of Creation and the Athabasca Oil Sands: A Pastoral Letter on The Integrity of Creation and the Athabasca Oil Sands to The Faithful of the diocese of St. Paul by Luc Bouchard, Bishop of St. Paul in Alberta, Canada, January 25, 2009.)
[60] http://alberta.pembina.org/media-release/1678.
[61] *Danger in the Nursery: Impact on Birds of Tar Sands Development in Canada's Boreal Forest*, p. iv, Natural Resources Defense Council, December 2008.
[62] Canadian Association of Petroleum Producers press release, January 8, 2009.
[63] "Canadians Want Cut in Oil Sands Production," *Globe and Mail*, August 3, 2009.
[64] "Backgrounder: Albertans' Perceptions of Oil Sands Development: Poll," 05/08/07 (http://pubs.pembina.org/reports/Poll_Env_mediaBG_Final.pdf).
[65] "Oil Sands Truth: Shut Down the Tar Sands," 8/7/07.
[66] Ernst & Young, Strategic Business Risk: Oil and Gas 2008, http://www.ey.nl/download/publicatie/11106_SBR_O_G_Sec_Client_Version.pdf.
[67] The article continues: "It failed to sway the federal Tories to reverse their decision to tax oil and gas trusts; it lost the climate change debate; it lost the accelerated capital cost allowance federally and provincially; a consortium led by Imperial Oil Ltd. failed to convince the federal Tories they should gain fiscal breaks to build the McKenzie pipeline;

it lost the energy policy debate with Newfoundland and it lost the royalty debate in Alberta." ("Poor Public Image Has Cost Oilpatch Billions," *Financial Post* (Canada), 11/07/07)

[68] *The Oil Sands Report Card*, Pembina Institute and World Wildlife Canada, 2007, p. 3.

[69] National Energy Board of Canada at www.neb-one.gc.ca, accessed February 2010.

[70] Energy Information Administration (2009) *Short-Term Energy Outlook*, July 2009 and Energy Resource Conservation Board (2008) *Year in Review 2008*, cited in *Lines in the Sand: Oil Sands Benchmarking*, Northwest & Ethical Investments, LP, p. 7.

[71] "HSBC to curb palm oil lending, review oil sands," Reuters, 12/2/08.

[72] "Canadian oil sands fieldtrip 2009: Key takeaways," Goldman Sachs, November 2009.

[73] OSC Staff Notice 51-716, Environmental Reporting, February 27, 2009. at http://www.osc.gov.on.ca/Regulation/Rulemaking/Current/Part5/sn_20080229_51-716_enviro-rpt.jsp.