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Ashok Dhillon has 40 years of front-line business experience in Canada and International markets. He incorporated his first construction company in 1974, and since then has founded and led companies in construction and international power development.

Over the last 20 years Mr. Dhillon, has led and worked with top Canadian talent in the legal, engineering and accounting firms, such as Fasken Martineau, Russell & DuMullen, Stikeman Elliott; Hatch, Monoco Agra, New Brunswick Power, SNC Lavalin; and Ernst & Young, Arthur Anderson, and Grant Thornton. And in London, worked with Perkins Couie and Morgan Grenfell. Mr. Dhillon's companies have partnered and worked with Pan Canadian Oil & Gas, WestCoast Energy, TransCanada Pipelines, and international companies such as AES, Enron Power, Hyundai Heavy Industries.

Mr. Dhillon has worked and negotiated with highest levels of Governments in Canada and India. He has pursued and won mandates to develop power plants in Canada, and foreign jurisdictions such as Hungary, Iran, Pakistan and India with uncompromising ethical standards. His extensive experience in securing and negotiating multi-hundred million and billion dollar mandates in power project development, gives him in-depth knowledge and intuitive insights into macro and micro, national and international, geo-political and economic realities and trends.

Mr. Dhillon has been invited to speak on international business at various forums, including as an expert witness for the Standing Senate Committee, Government of Canada, on "The Rise of Russia, China and India".

## CO<sub>2</sub> Highest in 3 Million Years – And Canada's "Dirty Oil" Image

According to scientists the levels of carbon dioxide in our atmosphere is at a 3 million year high. Now, whether one believes in the climate change theory or not, that statement catches our attention. The fact is - when anything swings far from the norm, there are consequences. This is a well known phenomenon in our natural world.

The other well known fact is that dramatic change in one area always bring dramatic changes in other areas (...*equal and opposite reaction...etc.*); and dramatic change, even if over time, always costs everyone. With that high a level of CO<sub>2</sub> in the planet's atmosphere (*climate change believers or unbelievers notwithstanding*) changes in global natural phenomena will occur, and those changes will cost us all.

Some scientists (*majority now*) have been warning us about rising CO<sub>2</sub> levels for a long time. Other scientists (*less now*) have been vigorously denying the conclusions of the first scientists. Governments and people have been lining up behind one or the other group depending on their self interest, politics, personal understanding or ideological bent. The debate is so fraught with self interest and whipped up emotion that it is useless to try and trot out facts and figures to prove the one side over the other. So, let's lean on the probability of natural phenomena that dictates that any aberration in nature will not be tolerated for long, before nature moves (*in nature's time*), to restore conditions to their 'normal' balance. In that restoration towards the norm, nature will inflict damage to all things that come in the way. That is us. We humans and all other life forms on this planet are in the way.

The rankings of the top ten emitters of CO<sub>2</sub> in thousands of tonnes per annum (estimates

2010):

 <u>China</u>	8,240,958
 <u>United States</u>	5,492,170
 <u>India</u>	2,069,738
 <u>Russia</u>	1,688,688
 <u>Japan</u>	1,138,432
 <u>Germany</u>	762,543
 <u>Iran</u>	574,667
 <u>South Korea</u>	563,126
 <u>Canada</u>	518,475
 <u>Saudi Arabia</u>	493,726

*\*Estimated and ranked by the International Energy Agency.*

As ranked above, the five largest emitters of CO<sub>2</sub> by far, are China, the United States, India, Russia and Japan. After these first five, the level of CO<sub>2</sub> emissions by the next five drops off significantly. For instance, Canada, while being in the top 10, is a significantly lower emitter of CO<sub>2</sub> than the top four: being approximately 6% of China's total; 9% of the United States; 25% of India's and 29% of Russia's levels. Yet lately Canada is being singled out for its "Dirty Oil".

At one time having been the acknowledged 'leader' in the global environmental movement, and the past few years having backed off from that lead position, Canada now faces extraordinary pressure from everyone, even from those that are far greater polluters, such as the United States.

Canada has been castigated by environmental groups for its obvious retreat from the pole position it traditionally held as an environmentally sensitive G8 Economy. Of late the United States government and Europe have targeted Canada's environmental policy short

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comings, and its efforts to develop and export its significant oil and natural gas energy resources, to the United States and East Asia.

Poor Canada - to be endowed with an over abundance of tar sands oil (*oil reserves 2<sup>nd</sup> to Saudi Arabia's*) and natural gas, in an ever energy hungry World, and not be able to exploit them, without enduring severe lecturing and criticism. On top of that, at a time of increasing climate change sensitivity, Canada's tar sands are labeled 'Dirty Oil', because of the energy it takes to extract and refine them. That label inflicts a heavy discount price on tar sands oil (*up to 40%*), at a time when global oil companies have been making windfall profits from high oil prices, and it brings serious external and internal pressure from environmental groups, and foreign governments most of whom are far bigger polluters. What a predicament for Canada to be in.

The Canadian Government, very rightly, is trying to develop its natural resources for the benefit of Canadians. But the Government forgot that it is not only important to do the right thing but it is even more important to seem to be doing the right thing. The Government's unapologetic withdrawal of Canada from leading the global environment initiatives is now exacting the price.

Canada can no more help the type of natural resource it has in the ground, than any other country can. The country has no option but to develop its resources to the best of its ability, be it 'clean' resource or 'dirty', in the most responsible manner possible. The Canadian Government's belief that it is doing the right thing for Canada, without making the necessary effort in selling the '**most responsible manner**' part, that would overcome its existing image of not caring, is now giving foreign governments and environmentalists justification for criticizing its initiatives for the extraction, development and exportation of its oil and gas resources. So for

now, Canada is being identified with its "Dirty Oil" image in an increasingly climate change sensitive World, and the latest reports of 'CO<sub>2</sub> highest in 3 million years' is not going to help Canada's cause.

It is rather ironic that the World should be criticizing Canada for developing its natural resources for its economic benefit, when all of them are busy doing whatever it takes to boost their own economic well-being, at grievous cost to people and the environment. China, the United States, India and Russia are by far the worst offenders, and yet they are not in the cross hairs of global criticism, with threatened repercussions. And, even when they are, they are decidedly uncooperative, unapologetic and at times defiant. Lately, at times the Canadian Government has been perceived to have acted in a similar defiant manner on the international stage.

On a **per capita** basis India is by far the lowest emitter, and therefore has justification in resisting constraints being put on it, to reduce fossil fuel usage, by the highest per capita emitters. While one can really understand and empathize with India's position, or other countries that are in a similar situation, unfortunately, as we stated in previous reports, the earth's atmosphere does not differentiate between per capita emissions or total country emissions, it only knows total tonnage. So a country's total tonnes output per annum, of CO<sub>2</sub> or GHG per year, are what really counts for the atmosphere. As per that impartial gauge, the biggest emitters are the guiltiest. If the biggest five are not willing to scale back actively, then Canada is being picked on unfairly. After all, it's not that it takes more GHG to extract and refine Canada's 'tar sands' oil that matters to the atmosphere, but how many tonnes per annum of CO<sub>2</sub> and GHG does Canada produce in total, versus the other major economies, and is it willing to scale back 'in total'.

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Canada’s performance in energy production is and has been exemplary by most global standards.

For a major economy it produces an extraordinary amount of clean and sustainable energy in comparison to most economies. A number of its Provinces including: British Columbia; Manitoba; Quebec; Newfoundland & Labrador; and the Yukon Territory, produce 90% + of their electricity from hydro dams, large and small, making it approximately 61% of the total electricity produced in Canada. Over 15% of its electricity is produced by nuclear energy, **making a total of over 71% of its electricity production from non CO<sub>2</sub> producing sources.** Approximately 6.7% of electricity is produced by oil and natural gas, and 16.5% is from coal: **Totaling 23.2% from fossil fuels.**

**China produces over 82.4% of its electricity from fossil fuels!** (79% of that is from coal).

In contrast to Canada, the United States produces approximately 10% of its electricity from hydro and 19.4% from nuclear, **totaling 29.4% from CO<sub>2</sub> free power plants.** Power production from oil and natural gas is 21.6%, and from coal electricity production is 49%, for a **total of 70.6% electricity production from fossil fuels, equal to the number that Canada produces from non fossil fuels.** [Sources NEB Canada and IEA]

**India produces approximately 82.1% of its electricity from fossil fuels** (over 68% from coal).

**Russia produces approximately 67% of its electricity from fossil fuels,** 15% from nuclear power, and 18% from hydro dams.

Canadians are the second largest energy users in the World, after the United States, on a per capita basis. Electricity production is the largest user of primary energy (*electricity produced from **other** energy source such as coal, oil, gas etc.*), and that is why the above comparisons are significant and valid. Canada being one of the largest clean energy producer and user, Canadians can hardly be called irresponsible,

when it comes to development and use of energy.

Now, having said that, it does not mean Canada should have a free hand in the development of its energy resources, especially the tar sands. Total pollution management, coupled with serious mitigation of environmental damage and degradation, and cutting edge technology applications, would allow for the responsible development of such a significant resource over time. Because, in the face of the lack of an alternate fuel or energy technology, that can replace the dominance of oil as the primary energy source, Canada and the World will continue to need vast amounts of oil, and it’s myriad refined by-products on which the public is entirely dependent, all fuels, lubricants, chemicals, polymers etc, without which there would be total economic dysfunction.

So what do we do about the climbing CO<sub>2</sub> levels in the atmosphere? Well, everything we can! Starting with the biggest 5 polluters, being required to do the most at the very earliest, rather than pointing to Canada which is decades ahead in producing and using clean energy (*percentage-wise*), and decades behind in producing and contributing atmospheric CO<sub>2</sub> and GHG tonnage!

Last but not least, if we really want to protect the planet’s atmosphere, and with it our future, it’s the global public that must change its consumption habits and consume a lot less, particularly in the developed countries like Canada, the United States and Europe. Without that, governments and corporations, to keep the public on side, will do what it takes to feed the consumer’s appetite for CO<sub>2</sub> intensive products and services, regardless of the damage and cost to the environment. At the end of the day, it is up to us the public to take environmental responsibility.