

## ALBERTA HIDES DIRTY TRUTH AS US DEMANDS TAR SANDS FACTS<sup>1</sup>

Andrew Nikiforuk<sup>©</sup>

In recent weeks a number of well-informed U.S. Congressmen along with the Environmental Protection Agency have been asking some uncomfortable questions about a large metallic snake connected to the tar sands, Canada's largest single growing source of extreme climate-warming gases. The 2,700 kilometre-long python in question is TransCanada's proposed Keystone pipeline. The snake's unhappy controllers are now seeking a crucial State Department construction permit in order to build a line that would daily pump 900,000 barrels of bitumen from the tar sands to refineries in the U.S. Gulf Coast. But many Americans don't think the \$7 billion pipeline should be allowed to sneak across the Midwest without a thorough assessment of its impact on climate and energy security. In a no-nonsense *letter* to U.S. Secretary of State Hillary Clinton, Henry Waxman, chairman of the Committee on Energy and Commerce, noted that the carbon intensity of U.S. transportation fuel could increase by as much as 37 per cent if the country shifts to dirty tar sands crude. The great snake and its diluted stream of bitumen would also act as a damper on clean energy investments.

### Americans See a Dirty Picture

Waxman also calculated that the pipeline, by doubling tar sands imports to more than three million barrels a day, would add the carbon equivalent of "18 million passenger vehicles to the roads." Waxman concluded that importing more of "the dirtiest source of transportation fuel currently available" would simply erase the benefits of new motor vehicle standards to reduce pollution, and wondered if that was good public policy. (He might also have asked why a friendly neighbour would coddle such a venomous snake)

In a similar no-nonsense letter to Secretary of State Hilary Clinton, the EPA's Cynthia Giles also focused on bitumen's nasty emissions and demanded more studies on the pipeline's impacts. Giles calculated that a barrel of refined bitumen makes 181 kilograms of greenhouse gases, while conventional U.S. crude makes only 99 kilograms. As a consequence, Giles figured that 900,000 barrels of tar sand a day translated into 36 million tonnes of greenhouse gases a year, or 27 million tonnes more than conventional crude. That's roughly equivalent to "annual CO<sub>2</sub> emissions of seven coal-fired plants." (For the record, the project now fouls the atmosphere with about 37 million tonnes a year. That's more than the emissions generated by the state of Montana or the province of Manitoba.) Giles, a top notch regulator, wasn't impressed with her findings: "We estimate that GHG emissions from the Canadian oil sands crude would be approximately 82 per cent greater than the average crude refined in the U.S. on a well-to-tank basis."

### Alberta's Rosy Reply

But those aren't the kind of facts and figures we hear from industry or the Alberta government. The cheery line doled out by these bedmates goes like this: bitumen only creates a little more ocean acidifying pollution than conventional oil, and what's the big deal? Our sultry bedmates argue that all petroleum sources are getting heavier and dirtier and that Alberta taxpayers will

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<sup>1</sup> TheTyee.ca, July 29, 2010

soon spend between \$20 billion and \$60 billion over two decades on unproven technologies to bury the carbon in special cemeteries. And shouldn't energy security trump climate security and silly green energy plans? But when U.S. customers ask their Canadian crack dealers direct questions about the quality of their exports, it's best to come clean about what's going into the pipe. Yet transparency and good public data on bitumen's growing carbon liabilities don't really exist. It appears that industry and government have a Saudi fear of transparency. Why? Because some operators in the tar sands are much dirtier than others and the industry increasingly behaves like a fanatical drug cartel that only tolerates conformity and silence.

Now the well-reported Canadian claim that bitumen is only 10 per cent dirtier comes from an arm of the carboniferous Alberta government: the Alberta Energy Research Institute. PR guys renamed the institute Alberta Innovates this year and gave it a lovely new mandate to produce clean energy with a low carbon footprint or what it calls "market-ready, ecologically responsible energy." No matter. Albertans can only pray that the group will provide clean data and achieve its mandate. In July 2009 the institute's CEO Eddy Isaacs trotted out two studies on the life cycle of refined crude, comparing the tar sands with other oil sources. It was pretty much a "shock and awe" presentation with 450 pages of mind-numbing data that no sensible reporter could vet. (Tellingly, neither the TIAX or Jacobs studies were as well-referenced as the Waxman and EPA letters) The whole intent was to bully U.S. customers and an energy-illiterate media into thinking that low carbon fuel standards are unnecessary because, surprise, bitumen looks a lot like a low carbon fuel if only some generous taxpayers pay to *bury* all the carbon. (Lecturing customers is never a good idea, but Albertans bumble around like deluded Texans these days.)

### **Where Are Public Data on Tar Sands Emissions?**

Life cycle studies, a field that illustrates the growing complexity of energy issues, try to identify all the carbon emissions associated with different types of heavy and light oil. Such studies add up all the carbon clouds from the drilling, refining, delivery and consumption (the major source, by the way) as well as indirect emissions created by the destruction of forests and peat lands. For viscous gunk like bitumen, that means tracking the emissions from digging or steaming the coal-like resource out of the ground as well as adding up all the gases from energy-intensive upgrading and refining. A life cycle analysis can track emissions from mine to car tank, or well to refinery, or any number of combinations. The critical pathway here for this discussion is well-to-tank (WTT) or emissions from production.

Isaac's dog and carbon show unintentionally highlighted the absence of public data on tar sands emissions. TIAX, a U.S. firm that purportedly "transforms innovations into technology platforms," produced a 229-page study that concluded that tar sand emissions were only "10 per cent higher than conventional crude." But TIAX's authors admitted they had trouble getting information on big smoke from tar sands projects. As a consequence, they used data from only CNRL's mine and three steam plant operations. The mining outfit hadn't started full production, while two of three steam plants remain among the most efficient energy users (and low carbon makers) in the business. In other words, these operators didn't represent the dismal majority of high carbon fouling steam plants. (Some steam plants *create* 500 kilograms of CO<sub>2</sub> a barrel.) In fact the whole report, as one industry insider put it, "was contaminated by wishful thinking." TIAX, however, did confirm one damning truth: a total lack of transparency on industry emissions. "Unfortunately, certain large and established projects that likely best represent oil sands operations were not able to provide public data... Contact was made with other operators but no public data was made available."

The second study, completed by Jacobs Consultancy, a well-known oil patch firm, didn't bother using non-existent or rare public data on emissions. It based its emission calculations on a computer model. Not surprisingly the Jacobs study came up with a 10 per cent average figure, too, but admitted there were some wild ranges in emissions between the mines and the steam plants.

### **Studies Blasted**

Both studies curiously omitted emissions created by the destruction of forests, wetlands and peat lands, or the intensive drilling of grasslands for bitumen's biggest fuel cost: natural gas. Global Forest Watch now estimates that land use changes alone could add eight to 21 million tonnes to well-to-tank emissions every year. For some reason, Isaacs didn't advertise three damning critiques of the institute's life cycle studies while unveiling his 10 per cent claim to the media. Yet a senior climate policy analyst from the California Energy Commission, for example, called the Jacobs report "biased," "incomplete" and "inaccurate." The Pembina Institute, an energy watchdog, noted that "primarily theoretical data" is no substitute for real production data and demanded a technical review. But most of the damning analysis came from three experts in life cycle analyses at the University of Toronto and University of Calgary. These well-informed analysts and number-crunchers (Joule Bergerson, David Keith and Heather MacLean) wrote a scathing memorandum on the Jacobs and TIAX studies. They concluded "there is no sufficient documentation of assumptions, methods, treatment of uncertainty, comparison to existing estimates or a technical review to allow us to support the results/conclusions of the studies."

In other words, Alberta's 10 per cent claim was purely a propaganda exercise. Two of these critics also wrote an important and damning *study* that looked at 13 life cycle models for the tar sands in 2009. It was released two months before the Jacobs and TIAX life cycle reports and should have been referenced but wasn't. The researchers found so many inconsistencies and gaps in the tar sand life cycle models "that one cannot be sure that the ranges presented reflect current oil sands" performance.

### **Hiding Who is Dirtiest**

Most of the models cherry-picked data. While some studies excluded CO<sub>2</sub> emissions from tailing ponds, flaring, venting and fugitive emissions (leaks), others didn't acknowledge the striking variance in the quality of bitumen being mined or steamed. (The cleanest has already been exported.) Many excluded vital steam to oil ratios (a signature of energy and carbon intensity). Some ignored the fact that it takes 1.2 barrels of bitumen to make one barrel of crude. None included CO<sub>2</sub> emissions from the construction or decommissioning of facilities. Hardly any included the destruction of peat lands, an incredibly important carbon sink. Nevertheless the review concluded that tar sands were indeed dirtier than conventional oil, that the steam plants were sometimes dramatically dirtier than the mines and that there was an alarming range of emissions from project to project. The peer-reviewed study concluded that getting reliable information on GHG emissions in the tar sands was almost impossible because of "limited data availability (and the proprietary nature of the industry data) the rapid expansion of the industry, the unique and complex nature of each oil sands project and the evolving technologies being applied in the industry." In sum the researchers implied that public policy on controlling atmospheric pollution would remain in the dark until government forced tar sand companies to transparently report CO<sub>2</sub> emissions by project. If you don't know who is dirty and who is not so

dirty, how can you ever hope to transform an industry or answer tough questions from worthy and worried customers?

### **Government's Lack of Carbon Accounting**

In 2008 the Vancouver-based Canadian Industrial End-Use Energy Data and Analysis Centre recommended to Environment Canada that it get serious about carbon accounting in the fossil fuel industry. Given that "crude bitumen extraction and upgrading is the most energy and GHG emission intensive type of crude production," it was imperative to make "more transparent data available to the public." It also called for a historic emissions review of the industry beginning in 1990. To date, Canada has yet to produce a comprehensive emissions report with real, up-to-date bitumen production data from various mining and steam projects. The federal government, for example, typically bundles all reports on tar sands emissions into mining statistics. (According to one source, the industry hasn't offered reliable energy consumption and emission production data to a federal body since 2002.) Environment Canada's 2010 National Inventory Report On Greenhouse Gas Sources and Sinks promises a comprehensive study on bitumen "with the goal of improving emission estimates from oil sands mining, extraction and upgrading in Canada," sometime in the future.

### **Dumping the Risks Onto the US**

The report also notes that the rising exports of raw unprocessed bitumen to the United States means "that emissions associated with the upgrading and refining of bitumen were increasingly avoided in Canada." In other words, the tar sands industry is dumping the climate and security risks of bitumen exports on the backs of U.S. refiners and consumers by simply processing less crude here. Given the tone of Waxman's letter and the EPA's damning assessment of bitumen's impact on emissions, the Americans aren't going to wait for their number one oil supplier to cook up any more misleading data. The U.S. National Energy Technology Lab, which has no investment in bitumen exports, has already calculated that diesel fuel refined from bitumen creates 244 per cent more greenhouse gas emissions than conventional sources.

Meanwhile the Alberta government continues to publish erroneous information on emissions from the tar sands. In June 2010 the government issued a new fact sheet on the steam plants (45 percent of bitumen production and rising), boasting that they produced but 60 kilograms of CO<sub>2</sub> per unrefined barrel. Yet even the province's Energy Resources Conservation Board estimates the real figure is probably around 90 kilograms.

### **Americans Call Our Bluff**

But here's the kicker. In raising concerns about the improvised carbon device known as the tar sands, the EPA estimates that well-to-tank tar sands emissions are 181 kilograms per barrel or 82 kilograms more than conventional oil. Yet the grossly inaccurate Jacobs study claims that steam plant bitumen is even dirtier than that. It puts well-to-tank emissions at 218 kilograms per barrel or 120 kilograms more than average. As one industry insider remarked: "it suggests that the EPA has a really good point and it is says that industry has zero wiggle room. Alberta's own numbers say steam plant emissions are 50 per cent higher than what the EPA is assuming." Alberta Premier Ed Stelmach thinks that the Americans will approve the Keystone pipeline without a hitch. But the Americans are calling our bluff on carbon. Transparency is the first step on the road to accountability. Isn't it time to start being more transparent and address the GHG issues instead of bullying our customers and belittling their important questions?