



CANADA 2020

**Summary Report:
“Greening” the Oil Sands:
Canadian Science and
Clean Tech Leads the Way**

*April 29, 2010
Rideau Club, 99 Bank St
15th Floor, Ottawa, Ontario*

In co-operation with



About Canada 2020 – Canada's Progressive Centre

Canada 2020 is a non-partisan, progressive centre working to create an environment of social and economic prosperity for Canada and all Canadians.

Overview

On April 29, 2010 *Canada 2020*, in partnership with Sustainable Development Technologies Canada (SDTC), Natural Sciences and Engineering Research Council (NSERC) and Suncor Energy, convened a symposium entitled *Greening the Oil Sands*. The symposium brought together some of the leading oil sands researchers and technologists, business leaders from the energy sector, energy policy thinkers, politicians, and political analysts to discuss, among other things, the exciting innovation happening in the oil sands today. This rich mix of expertise produced a very informative half day discussion.

The Politics and Business of the Oil Sands



James Rajotte, MP, Edmonton-Leduc

Canada 2020 began the discussion with remarks from two thoughtful and articulate political leaders – Mr. James Rajotte, MP for Edmonton-Leduc and Hon. Sandra Pupatello, Minister of Economic Development and Trade, Government of Ontario – and Mr. Richard George, the CEO of Suncor Energy, the largest company operating in the oil sands today.

Mr. Rajotte, Chair of the House of Commons Standing Committee on Finance, conceded that while the oil sands have made impressive

strides in reducing their carbon and environmental footprint, significant challenges remain, notably land use and tailings. He pointed out that carbon capture and storage is a priority area for federal research investment because the technology is seen as having the potential to substantially mitigating green house gas emissions. Mr. Rajotte stated that having a conference titled “Greening the Oil Sands” – that brings together the worlds of business, science and policy – is in itself a major step forward.

Hon. Sandra Pupatello, Minister of Economic Development and Trade, highlighted the positive economic effects of the resource on the Ontario economy. She made a pitch to strengthen and deepen Ontario-Alberta relations at a variety of levels, among governments, business and the research community.

Minister Pupatello pointed out that when she travels internationally the questions she gets on the environment tend to be focused on the oil sands – this issue seems to be the international barometer on the Canadian environment. Her message was clear – on the international stage, the oil sands are viewed as a Canadian problem,



Minister Sandra Pupatello

not an Alberta Advantage. In her view, when the world thinks about the oil sands, the image is very negative – one of massive Green House Gas (GhG) emissions and tailings ponds – rather than one of investments in technological innovation and an ever-improving GhG emissions record.

Minister Papatello also noted that business does not sufficiently appreciate the politics of the oil sands, and needs to become more sophisticated in telling its story to counter the negative image that persists. For example, she suggested that clean tech companies should be key spokespeople for the resource, rather than the oil companies.

Richard George, CEO of Suncor Energy, began his remarks by arguing for an adult conversation on the oil sands. He is of the view that there is a need to engage Canadians in an energy dialogue that leads to some form of a National Energy Strategy.

In his view, the oil sands have always been about science, technology and innovation. This has resulted in a 30 percent reduction since 1990 in GhG emissions per barrel of oil extracted from the oil sands. Mr. George stated that new tailings technology coming on stream will be a “game changer” in reducing tailings ponds. However, he is also of the view that companies need to build more technology investment into their business models.



Mr. Rick George, President & CEO, SUNCOR Energy

Like Minister Papatello, Mr. George sees the oil sands as a Canada-wide issue, not one that is limited to Alberta. He pointed out that the oil sands is the largest private attractor of capital in Canada, and that Suncor alone has spent over \$1 billion in the last decade on Aboriginal businesses. His complete remarks are available at www.canada2020.ca.

Panel 1: The Big Picture: Public Opinion, Politics and Policy

Canada 2020's first panel, moderated by CBC journalist Don Newman, consisted of four authorities on the politics, public policy and public opinion on the oil sands.

Robert Johnston, Director of the Eurasia Group's Global Energy and Natural Resources practice, provided an instructive international perspective on the oil sands. Mr. Johnston, a specialist in political risk assessment of energy investments, stated that the absence of Canadian policy on the oil sands generates political risk for the resource. While he is of the view that the Obama administration has been somewhat supportive of the oil sands (or at least not hostile), Canada, in his view, should not take this tacit support for granted. There are strong anti-oil sands forces in the US that have great influence over the Obama administration according to Mr. Johnson. As a result, Washington wants to see a credible, detailed and coherent plan on the oil sands from Canadian governments.

Mr. Johnston was blunt – the biggest political risk to the oil sands is the absence of Canadian policy and if we do not make decisions in Canada soon they will be made for Canada in Washington.



Don Newman, Satya Das, Robert Johnston, Bruce Anderson, and Marc LePage

Satya Das, Founder and Principal of Cambridge Strategies and author of *Green Oil*, predicted that within five years Canada will be the world's number one "petro state". Mr. Das sees Canada as the first transparent and reliable democracy leading the world in oil exports and he believes this will change the decades old international oil market dynamics, which has been dominated by OPEC states. Das also believes that green technologies are destined to be the next major industry for Canada, in the effort to reduce as much as possible the environmental footprint of the oil sands, as the developed world moves inexorably toward a lower carbon future. Mr. Das believes Canada needs a policy mix, as well as citizen engagement and political leadership on this issue.

Marc LePage, Special Advisor on Climate Change and Energy at the Canadian Embassy in Washington, gave a Washington political perspective on the oil sands. LePage reminded the audience that climate change and energy are one of President Obama's three principal campaign commitments (along with health care and the withdrawal of US forces from Iraq). In his view, the oil sands are under duress in Washington, with the resource suffering a very poor image as a result of effective anti-oil sands NGO campaigning and lobbying. This negative image needs to be changed in Washington and throughout America – what is needed is a greening of the oil sands campaign in the US, emphasizing technological innovation and continuous environmental improvements.

Mr. LePage pointed out that the US is investing \$10 billion in carbon capture and sequestration technology, which further underlines the importance the administration attaches to reducing GhG emissions. LePage ended by stating that in Washington today the green agenda trumps energy security.

Finally we heard from **Bruce Anderson of Harris Decima** on the public opinion context in Canada today regarding the oil sands specifically and the environment more generally. Anderson, who has been conducting survey research in this area for two decades, pointed out that 20 years ago Canadians were concerned mostly about local

environmental issues. These options have now changed toward a greater concern with issues affecting the planet overall. The public view of “who is responsible” has also shifted. Two decades ago companies were blamed for environmental problems, whereas today citizens accept some personal responsibility.

That said, Mr. Anderson noted that the Canadian public remains pragmatic about the environmental challenges we face, and want to see directional change towards improvement over time, rather than radical ideas. Environmental groups have also changed their approach and are now less perfection seekers and more willing to work with business toward practical improvements. Mr. Anderson believes oil sands companies and proponents need to change their messaging with the public to reflect this new public opinion context.

Panel 2: How science can contribute to reducing the environmental impact of oil sands development

The second panel, chaired by **Dr. Suzanne Fortier, President of Natural Sciences and Engineering Research Council**, focused on the scientific challenges of the oil sands and the impressive research breakthroughs over the last few decades that have significantly changed oil sands procession and extraction and its environmental footprint.

Dr. David Lynch, Dean of Engineering at the University of Alberta, noted that it was only about fifteen years ago that the oil sands industry really started to develop because the policy and regulatory environment, research investments and technological advances came together collaboratively to make the development of the resource economical. It was at that point that real collaboration between government, industry and the academic community began, and in Lynch’s view, that type of partnership and collaboration has been and will remain critical to the development of the oil sands in an environmentally responsible way.



Dr. David Lynch, Dr. Jacob Masliyah, Dr. Murray Gray, and Dr. Michael Lipsett

Dr. Jacob Masliyah, Distinguished Professor Emeritus at the University of Alberta, talked about continuous improvements in efficient processing of oil sands, which now results in 95 percent of the bitumen getting recovered. This efficiency was achieved through industry-science-academic collaboration. Dr. Masliyah made an impassioned plea for more industry-academic partnerships, underpinned by NSERC support for fundamental research.

Dr. Murray Gray, Director of the Centre for Oil Sands Innovation at the University of Alberta, discussed research and technology efforts aimed at eliminating tailings altogether from oil sands processing. He also suggested governments need to do more to encourage the manufacture and value-added work around processing in Canada. Dr. Gray also argued for new science to better understand bitumen, which remains a largely undefined and complex material, even after some 40 years of oil sands processing experience and research.

Finally, **Dr. Michael Lipsett, Director, Engineering Management Programs, University of Alberta**, in discussing the broad ranging nature of oil sands research, pointed out that all NSERC disciplines are in some way working on oil sands research today. He echoed the comments of his colleagues to the effect that collaboration between industry, government and academic research is powerful and fundamental to developing the oil sands in a responsible manner.

What Canadian clean technologies are being deployed? Which are having the greatest impact?

Canada 2020's final panel, moderated by SDTC's Sailesh Thaker, looked at innovations in clean technologies developed in Canada and at use today in oil sands processing.

Scott Nelson, President and CEO of Titanium Corporation, briefed the audience on his company's impressive tailings technology. This technology was developed on the basis of industry/academic collaboration, funded in part through a \$5 million SDTC grant. In Mr. Nelson's words, his company's technology "creates value from waste." Titanium's technology removes solvents and minerals from tailings ponds, to be sold into the marketplace. Titanium is deploying its technology with some of the largest oil sands companies, including Suncor, Total and Syncrude. Mr. Nelson sees his firm as offering an industry-wide solution to tailings.



Scott Nelson, Dr. Hassan Hamza, and Bob Mitchell

Dr. Hassam Hamza, Director General of the Devon Research Centre near Edmonton – an institution focused on the development of environmental technologies related to the oil sands – spoke about some of the ground-breaking work, both past and present,

which has come out of the Devon labs. Dr. Hamza singled out solving the tailings problem as critical and one that has always, in his view, been underestimated in its environmental impact and technological complexity.

Finally, **Bob Mitchell, co-chair of the Oil Sands Leadership Initiative (OSLI)**, spoke about OSLI's activities since its recent creation. The group is comprised of ConocoPhillips, Nexen, Statoil, Suncor and Total. Alberta Environment, Alberta Energy and Alberta Sustainable Resource Development participate as observers. The vision of OSLI is to achieve world class environmental, social and economic performance in developing the oil sands, and to demonstrate and communicate existing technological advancements toward toward this end.

OSLI, which has a budget of \$10 million for 2010, has established four active working groups: land stewardship, water management, technology breakthrough, and sustainable communities. Notable achievements in these areas include 170,990 trees planted, the rehabilitation of wildlife habitat, the development of concepts for a regional water solution, water/wastewater treatment operator training, a \$480,000 investment in the hamlet of Janvier/Chard, and a focus on improving high-school graduation rates.

Conclusion

Four broad conclusions emerged evident from Canada 2020's "Greening" the Oil Sands symposium.

- **First**, scientific and technological innovation is fundamental to both the economics and environmental dimension of the oil sands.
- **Second**, partnerships between business, government, and academia are fundamental to this innovation that lies at the heart of oil sands extraction and processing.
- **Third**, a broader national and Canada-US conversation is required about both the advances and ongoing challenges of the oil sands industry. Ideally this should culminate in some form of national policy strategy to ensure this important natural resource benefits the Canadian economy to the maximum extent possible in an environmentally responsible manner.
- **Fourth**, Canada needs to tell the clean tech story to American audiences in Washington and other key US cities, so that policy makers and opinion leaders have a better understanding of the positive impact science, technology and cleantech are having on the extraction and refining processes for secure Canadian oil.

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