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POLICY ANALYSIS OF THE CANADIAN OIL SANDS EXPERIENCE

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Abstract

For those who support U.S. oil sands development, the Canadian oil sands industry is often identified as a model the U.S. might emulate, yielding financial and energy security benefits. For opponents of domestic oil sands development, the Canadian oil sands experience illustrates the risks that opponents of development believe should deter domestic policymakers from incenting U.S. oil sands development. This report does not seek to evaluate the particular underpinnings of either side of this policy argument, but rather attempts to delve into the question of whether the Canadian experience has relevance as a foundational model for U.S. oil sands development. More specifically, this report seeks to assess whether and how the Canadian oil sands experience might be predictive or instructive in the context of fashioning a framework for a U.S. oil sands industry. In evaluating the implications of these underpinnings for a prospective U.S. oil sands industry, this report concentrates on prospective development of the oil sands deposits found in Utah.

Executive Summary

In the wake of the Energy Policy Act of 2005 and the attendant political efforts to spur development of a domestic oil sands industry, supporters of U.S. oil sands development have pointed to Canada as a potential model for such development. While there are obvious disparities in the size of the Canadian and U.S. oil sands resources, as well as distinct resource characteristic differences, the hope was that domestic development could benefit from examining the lessons learned over the course of the past several decades of Canadian oil sands extraction. This report seeks to examine the joint premises that Canada is a promising model for U.S. oil sands development and that there are policy lessons from the Canadian experience that can be applied to a domestic oil sands industry.

The succinct conclusion is that Canada is not an apt model for domestic oil sands development. In part, this is due to comparative resource, processing differences, competing energy resources and prices, and relative market share and access for the Canadian and potential U.S. oil sands industries. These differences are discussed in greater detail in the body of the report. In further part, the disconnect between the Canadian experience and potential U.S. oil sands development is due to federalist distinctions in how the respective oil sands resources are owned and regulated in Canada as compared to the U.S. On the whole, however, the predominant reasons why Canada's development experience is not a promising domestic model are contextual and cultural.

Canada's oil sands experience began prior to the advent of Earth Day, the imperatives of climate change, and the growth of social media as a venue for expressing grassroots objections and leveraging social pressure. Further, the shaping of the Canadian oil sands experience, for better or worse depending upon one's perspective, has been

dominated by an attitude of collaboration and compromise over conflicts stemming from resource development. While there are some exceptions to that characterization, the pattern in Canada tends away from litigation while the contrasting U.S. approach to resource conflict resolution tends towards litigation.

Related to these opposing cultural trends, and derived from the specifics of resource ownership in Canada versus the U.S., is a correlated difference in attitudes towards funding resource development. Extensive government funding facilitated the Canadian experience. In the U.S., the expectation is that funding for oil sands research and development should be sourced in the private sector. Moreover, the Canadian funding model for oil sands development was both stable and non-partisan, providing essential certainty for companies and investors alike.

While the Canadian experience may not be an apt model on which to premise domestic oil sands development, it does offer some lessons. Long-term funding for research and development is almost certainly essential and can be adjusted post-initial development to insure fair rates of return to stakeholders. Similarly, a long-term energy policy that articulates the potential role of oil sands in a U.S. energy portfolio should be a predicate to any domestic oil sands development. Effective planning is also essential, especially in addressing the potential for cumulative impacts (and mitigation) resulting from oil sands development. Early and meaningful engagement of impacted stakeholders will be critical to the success of any planning efforts.

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List of Acronyms

ACEC	Area of Critical Environmental Concern
ADE	Alberta Department of Energy
AENV	Alberta Environment
API	American Petroleum Institute
BLM	Bureau of Land Management
CAPP	Canadian Association of Petroleum Producers
CEAA	Canadian Environmental Assessment Act
CEMA	Cumulative Effects Management Association
CHLA	Combined Hydrocarbon Leasing Act
CMDRC	Crown Mineral Disposition Review Committee
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EPAct	Energy Policy Act of 2005
EPEA	Environmental Protection and Enhancement Act
ERCB	Energy Resources Conservation Board
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
FWS	U.S. Fish and Wildlife Service
GOSRR	Generic Oil Sands Royalty Regime
IEA	International Energy Agency
MLA	Mineral Leasing Act
MLE	Minimum Level of Evaluation
MLP	Minimum Level of Production
NEPA	National Environmental Policy Act
NFMA	National Forest Management Act
NHPA	National Historic Preservation Act
OBA	Other Business Arrangement
OPEC	Organization of the Petroleum Exporting Countries
PADD	Petroleum Administration Defense District
PEIS	Programmatic Environmental Impact Statement
PON	Public Offering Notice
RSDS	Regional Sustainable Development Strategy
SITLA	School and Institutional Trust Lands Administration
STSA	Special Tar Sands Area
SUWA	Southern Utah Wilderness Alliance
WTI	West Texas Intermediate

1. Introduction

This report begins with a brief overview of the significant resource similarities and dissimilarities between the Canadian and U.S. oil sands resources. The report then examines the contrasting market realities that historically faced the nascent Canadian oil sands industry and those that presently face a potential oil sands industry in the U.S. This report also considers political differences between Canada and the U.S., and broadly discusses the environmental consequences of Canadian oil sands production (and emerging post-production environmental management issues) to the extent that they illustrate the contrasting legal and environmental regulatory frameworks (and attendant approaches to implementing policy frameworks) governing these issues in Canada and the U.S. This report then compares the public opinions and political considerations specific to climate change and oil sands as an energy resource that prevailed during the Canadian development experience, as compared to present-day domestic views of these issues. Lastly, the report seeks to identify specific lessons that can be gleaned from the Canadian oil sands experience, and to address the implications of these lessons for proposed oil sands development in Utah.

2. Quantitative Comparisons: Resource Size and Market Access

A. Resource Characteristics and Distinctions

There are significant quantifiable dissimilarities between Canadian and U.S. oil sands resources, ranging from the respective sizes of the resources to their fundamental physical characteristics to the extraction techniques of likely relevance in the context of U.S. oil sands production versus those utilized in Canada. The two most important resource characteristic distinctions as far as weighing the value of the Canadian

experience for prospective commercialization of U.S. oil sands resources are (1) the disparate resource production potentials of the two countries respective resources, and (2) the consequent market potential disparities between the Canadian and U.S. resources.

Canadian oil sands reserves are located in three major areas, Athabasca, Cold Lake and Peace River, in the Province of Alberta. According to Alberta's government, Canadian oil sands are the second largest source of oil in the world following Saudi Arabia, with proven reserves of over 168 billion barrels¹ as compared to Saudi Arabia's 264 billion barrels.² The Government of Alberta expects to increase production from 1.31 million barrels per day in 2008 to 3 million barrels per day in 2018.³ The Alberta government owns 81% of the province's mineral rights; the remaining 19% are freehold mineral rights owned by the federal government on behalf of First Nations or in National Parks (11%), and by private individuals and companies (8%).⁴

By contrast, the U.S. oil sands resource is fairly small. U.S. oil sands resources are spread over several states, with the Utah oil sands resource comprising 93% of the total domestic resource; Utah's oil sands resource is 11.5 billion barrels (of oil equivalent) of proven resources and an additional 20.7 billion barrels of unproven resources.⁵ Domestic resources are spread across federal, state, private and tribal lands.⁶

¹ About 80% of the 170 billion barrels of remaining established reserves are suited for in-

² Government of Alberta, Energy, Facts and Statistics, <http://www.energy.alberta.ca/OilSands/791.asp> (accessed July 24, 2013). Measured in terms of resource "rent," the difference between the price of oil and the cost of producing it from the given resource, inclusive of opportunity costs, the "size" of the oil sands resource would be somewhat less, but still formidable.

³ Government of Alberta, Energy, Facts and Statistics, *supra* note 2.

⁴ *Id.*

⁵ INSTITUTE FOR CLEAN AND SECURE ENERGY, A TECHNICAL, ECONOMIC, AND LEGAL ASSESSMENT OF NORTH AMERICAN HEAVY OIL, OIL SANDS, AND OIL SHALE RESOURCES, (2007), at 3.15.

However, all of the Special Tar Sands Areas (STSAs), resource zones designated by the U.S. Geological Survey as part of federal efforts in the late 1970s and early 1980s to encourage oil sands development, are located on federal lands in Utah.⁷

B. Market Disparities

That the Canadian oil sands resource physically dwarfs the U.S. resource is a portent of the fundamental market share differences and costs of scale that make the Canadian experience a poor predictor of financial and investment challenges to developing a U.S. oil sands market. Where Canada faced the absence of a well-developed market for its oil sands crude, or syncrude, prospective U.S. oil sands development would need to develop and bring a smaller syncrude production base to a market already dominated by the Canadian oil sands industry.

Various “downstream” market issues could confront a potential U.S. oil sands industry. While some of these issues also apply to conventional resource production, others are related to the quality of the typical crude produced from oil sands deposits. Although Canada’s long experience with oil sands has led to decreased costs of production, it still remains that the commercial viability of oil sands operations requires oil prices that are historically high.⁸ The relevant oil price benchmark is the standard price of crude as measured by the price of West Texas Intermediate (WTI) or Brent. But the stream of revenue from projects that produce oil will be based on the price a refiner is

⁶ INSTITUTE FOR CLEAN AND SECURE ENERGY, LAND AND RESOURCE MANAGEMENT ISSUES RELEVANT TO DEPLOYING IN-SITU THERMAL TECHNOLOGIES (2011), at 2.4.

⁷ Geological Survey: Designations of Tar Sand Areas, 45 Fed. Reg. 76800 (Nov. 20, 1980); Geological Survey: Designations of Tar Sand Areas, 46 Fed. Reg. 6077 (Jan. 21, 1981).

⁸ See IEA, WORLD ENERGY OUTLOOK (2008).

willing to pay. The price a refiner is willing to pay, in turn, is based primarily on the refiner's configuration and the going prices for the refined products it is able to produce.

Thus, the price a typical upstream producer will receive for her crude will depend on (but not only on) those of its physical features that bear on the refining process (e.g. a crude's API density, sulfur and nitrogen content). Regional circumstances, like insufficient refining capacity, can lead to substantial departures of this price from its average. Thus, it is not surprising that Canadian oil sands producers are making efforts to access markets where refining capacity supports higher crude prices and facilitates deeper access to U.S. markets.

The most significant such effort is the Keystone XL project, which proposes to construct a new pipeline from Alberta to the Gulf Coast refiners in Houston and Port Arthur. The Keystone XL pipeline would theoretically⁹ keep the majority of Canadian syncrude flowing into the U.S. (rather than being exported to China), allowing the export of an additional 1.1 million barrels of oil per day, on top of the 1.9 million combined barrels of syncrude and conventional crude already exported daily to the U.S.¹⁰ Gulf

⁹ There is some controversy over whether the Keystone XL pipeline is intended to supply U.S. markets, thereby providing a local alternative to U.S. OPEC imports, or whether TransCanada's aim is to reach markets beyond the U.S. through Gulf Coast exporting. See, e.g., Jared Anderson, *Would Keystone XL Increase US Gasoline Prices? Let's Fight About It*, BREAKING ENERGY, July 19, 2013, <http://breakingenergy.com/2013/07/19/would-keystone-xl-increase-us-gasoline-prices-lets-fight-about-it/> (accessed July 24, 2013); *Foe says Keystone XL not for U.S. markets*, UPI, July 12, 2013, http://www.upi.com/Business_News/Energy-Resources/2013/07/12/Foe-says-Keystone-XL-not-for-US-markets/UPI-31391373625916/ (accessed July 24, 2013); NRDC, KEYSTONE XL PIPELINE: UNDERMINING U.S. ENERGY SECURITY AND SENDING TAR SANDS OVERSEAS (Jan. 2012), available at <http://www.nrdc.org/energy/files/kxlsecurity.pdf> (accessed July 24, 2013).

¹⁰ Elisabeth Rosenthal, *Lawmakers Oppose Canadian Pipeline*, N.Y. TIMES, July 6, 2010, http://www.nytimes.com/2010/07/07/science/earth/07sands.html?_r=2 (accessed July 24, 2013); see generally TransCanada, Keystone Pipeline Project,

coast refiners are well-outfitted to process heavy crudes from oil sands because Gulf Coast refiners have secondary conversion capacity that allows relatively high margins on heavy crudes. Hence Gulf Coast refiners can offer a higher maximum price than less-complex refiners, making Gulf Coast refiners an attractive target for oil sands producers. As discussed later in this report, the Keystone pipeline has engendered significant domestic controversy and its ultimate fate remains undecided.

Though the rate of Canadian syncrude production compared to the oil sands resources base is small, it is increasing. There has been a ten-fold increase in production since 1980, and a near doubling since 2002. To date, the U.S. has been the dominant export market for oil sands syncrude and Canada has become the number one U.S. oil supplier.¹¹ These trends are expected to continue. The Canadian Association of Petroleum Producers (CAPP) sees oil sands production increasing from the 1.3 million barrels/day in 2009, to about 2.2 million barrels/day in 2015 and 3.5 million barrels/day in 2025.¹² CAPP expects oil exports to the U.S. from Western Canada to increase from the 1.8 million barrels per day to 2.7 million barrels per day, with most of the increase coming from the oil sands. Assuming, as CAPP does, that U.S. demand for crude will not grow significantly, the forecast for increasing exports to the U.S. means that the share of U.S. imported crude coming from Canada could increase in the near future, with a greater proportion derived from oil sands.

<http://www.transcanada.com/keystone.html> (accessed July 24, 2013); Wikipedia, Keystone Pipeline, https://en.wikipedia.org/wiki/Keystone_Pipeline (accessed July 24, 2103); U.S. Department of State, Keystone XL Pipeline Project, <http://www.keystonepipeline-xl.state.gov/> (accessed July 24, 2013).

¹¹ CERES, CANADA'S OIL SANDS: SHRINKING WINDOW OF OPPORTUNITY (May 2010), at 1.3.

¹² Canadian Association of Petroleum Producers, *Crude Oil Forecast, Markets, & Pipelines*, June 2010; CERES, *supra* note 11, at 1.4.

The primary current markets for western Canadian crude (including but not limited to syncrude)¹³ include western Canada refineries, Ontario, the U.S. midwest, the Rocky Mountain region (PADD IV), and the West Coast.¹⁴ Although to date the U.S. has served as the sole export market for oil sands crude, plans are underway to extend the export market into Asia. The proposed Enbridge Northern Gateway project includes a 525,000 barrel per day pipeline reaching from Edmonton to the Canadian western coast at Kitimat. Utilizing Kitimat's deep-water port, the oil could then be transported by tanker to refiners in Asia and California.¹⁵

The size of the Canadian resource, breadth of market access, and consequent economies of scale currently enjoyed by Canadian oil sands producers greatly exceed the market potential and efficiencies that could be achieved by a potential U.S. oil sands industry. Where Canada has the production capability to become an international market force, the U.S. oil sands resource does not afford future domestic oil sands developers the same opportunities. Instead, domestic sands production would more likely be limited to a local or regional market, and would be in position of competing for refinery capacity in a constrained geographical location. This is not to say that such resource development

¹³ Several varieties of oil sands-derived crude enter the U.S. In some cases, the raw oil sands are first upgraded to synthetic crude oil or syncrude—a close substitute for light, sweet crude. Because of its viscosity, raw oil sands sent to market through a pipeline must first be mixed with a diluent, usually a light crude oil or other light hydrocarbon. The addition of such light hydrocarbons is why oil sands supply is reported as greater than oil sands production. “Bitumen blend” includes upgraded (but still) heavy sour crude, bitumen mixed with light crude oil (“Synbit”) and bitumen mixed with condensate (“Dilbit”).

¹⁴ See Canadian Association of Petroleum Producers, *Crude Oil Forecast, Markets, & Pipelines*, June 2010, p. 19.

¹⁵ Wikipedia, Enbridge Northern Gateway Pipelines, http://en.wikipedia.org/wiki/Enbridge_Northern_Gateway_Pipelines (accessed July 24, 2013).

might not be feasible or possibly profitable, as may yet be shown by development efforts presently underway in Utah.¹⁶ It is to say, however, that the inherent market disparities between the Canadian experience and potential U.S. sands development renders the Canadian experience largely inapplicable to proactive planning efforts for that domestic development scenario.

3. Canada v. U.S.: Models for Developing the Oil Sands Resource

Beyond the comparative size and potential market reach of the respective Canadian and U.S. oil sands resources, the two countries also have contrasting approaches to managing resource ownership and access. In both scenarios, policymakers have a number of tools available that can and have been used with the intent to stimulate or curb certain types of economic activity. Because much of the oil and natural gas in Canada and the U.S. resides on public lands, tax and royalty arrangements that favor investment in exploration, development, and production of oil and gas are often deployed when it is believed that such activity is worthy of special incentives. However, the foundational sources of power and policy-making vary greatly between Canada and the U.S., which in turn yields efficiencies to Canadian developers that would be unlikely to

¹⁶ U.S. Oil Sands, Inc., Operations, <http://www.usoilsandsinc.com/index.php?page=operations> (accessed July 24, 2013); Comments of Cameron Todd, U.S. Oil Sands, Inc., *Developing the USA's Largest Oil Sands Resource*, Governor's Energy Summit, Feb. 15, 2012, Salt Lake City, Utah, available at <http://www.energy.utah.gov/media/energysummit/docs/2012/Mar/Sands2CameronTodd.pdf> (accessed July 24, 2013); see also Brian Maffly, *Company: Utah tar sands poised to yield oil*, SALT LAKE TRIBUNE, March 21, 2013, <http://www.sltrib.com/sltrib/money/55987097-79/sands-tar-oil-utah.html.csp> (accessed July 24, 2013). But see also Briab Maffly, *Utah's oil shale, tar sands in for a bumpy ride*, SALT LAKE TRIBUNE, May 7, 2013, <http://www.sltrib.com/sltrib/news/56275796-78/utah-energy-oil-sands.html.csp> (accessed July 24, 2013); David Hasemyer, *Nation's First Tar Sands Mine Stirs Water, Environmental Fears Out West*, INSIDECLIMATE NEWS, Sept. 17, 2012.

obtain for U.S. developers. This section first provides a comparative overview of resource ownership and access issues between the two nations, followed by an overview of the fiscal incentive regimes utilized in the Canadian experience and discussion of their relevance to potential U.S. oil sands development.

A. Canadian Oil Sands Resource Ownership and Access

Canada, like the U.S., is organized into a federal structure, with governmental powers constitutionally divided between the central government and constituent states (in Canada's case, provinces).¹⁷ Canadian federal powers in many cases appear on their face to be quite similar to the powers allocated to the U.S. federal government, including the powers to regulate trade and commerce,¹⁸ navigation and shipping,¹⁹ federal works,²⁰ and Indians and Indian lands.²¹ However, these seemingly similar powers often have a very different breadth and meaning in Canada. For example, the Supreme Court of Canada has generally treated the federal trade and commerce power as too narrow to reach intraprovincial trade,²² while the U.S. Supreme Court has consistently interpreted the Commerce Clause of the U.S. Constitution to grant the U.S. federal government very broad powers to regulate trade, even reaching purely intrastate commercial activities.²³

¹⁷ See generally Constitution Act, 1982. See also JAMIE BENIDICKSON, ESSENTIALS OF CANADIAN LAW: ENVIRONMENTAL LAW 25 (2002).

¹⁸ Constitution Act, 1982, 91(2).

¹⁹ *Id.* at 91(10).

²⁰ *Id.* at 91(29), 92(10).

²¹ *Id.* at 91(24).

²² See *Labatt Breweries v. A.-G. Canada* [1980] 1 S.C.R. 914; see also BENIDICKSON, *supra* note 17, at 29.

²³ See, e.g., *Heart of Atlanta Motel v. United States*, 379 U.S. 241 (1964); *Wickard v. Filburn*, 317 U.S. 111 (1942).

Other powers assigned to Canada's central government are more distinct from U.S. government powers, such as the power to regulate fisheries²⁴ and the seemingly ubiquitous residual general welfare power to regulate for the peace, order, and good government of Canada.²⁵

The provinces, on the other hand, retain substantial power, including exclusive authority to govern property,²⁶ civil rights,²⁷ and matters of a merely local or private nature.²⁸ Most significant for purposes of regulating natural resource development is the constitutional conferral on the provinces of ownership of all public lands within their borders.²⁹ Provincial ownership of public lands, characterized by one author as “extensive proprietary authority,”³⁰ confers on the provinces an extremely broad jurisdictional power. While the federal government owns extensive tracts of land in the northern territories, the same is not true in the provinces, thus leaving the provinces with comparatively greater jurisdictional authority over public lands within their borders.³¹

²⁴ Constitution Act, 1982, 91(29).

²⁵ BENIDICKSON, *supra* note 17, at 29. The residual power of the Canadian federal government has led to a broadly discretionary and highly contentious “national concern doctrine” in Canadian jurisprudence. *See id.*

²⁶ Constitution Act, 1982, 92(13).

²⁷ *Id.*

²⁸ *Id.* at 92(16).

²⁹ *Id.* at 92A.

³⁰ Kathryn Harrison, *Federalism, Environmental Protection, and Blame Avoidance*, in ENVIRONMENTAL LAW IN SOCIAL CONTEXT: A CANADIAN PERSPECTIVE 66, 68 (Allan Greenbaum et al. eds., 2002). The broad jurisdictional authority that Canadian provinces possess as an incident of land ownership is not unlike the authority granted the U.S. government in the Property Clause. *See* U.S. Const. art. IV, sec. 3; *see also Kleppe v. New Mexico*, 426 U.S. 529, 539 (1976) (holding that “[t]he power over the public land thus entrusted to Congress is without limitations”).

³¹ Harrison, *supra* note 30.

The courts have also consistently expressed sensitivity to the protection of provincial prerogatives, often curtailing federal attempts to encroach on provincial matters.³²

The Canadian Constitution grants to the provinces proprietary rights over the lands and minerals it owns. “Implicit within the ownership rights protected by [the constitution] is the general authority to manage and dispose of provincial lands and minerals, subject to legislative or constitutional constraints.”³³ The Alberta government (or Alberta Crown) owns 81% of the oil sands mineral rights in the province, with the remainder being held by freehold owners.

Oil sands leasing in Alberta is governed primarily by three regulatory frameworks: the Mines and Minerals Act; the Oil Sands Tenure Regulation; and the Mines and Minerals Administration Regulation. Under the Alberta system, the term “tenure” is used to “describe[] the system through which Crown owned mineral rights—including oil sands rights—are leased and administered.”³⁴ According to the Alberta Department of Energy (ADE), “[b]y facilitating the leasing of these rights, the tenure system makes it possible for individuals and companies to explore for and develop Alberta’s mineral resources for the benefit of the citizens of the province.”³⁵ In exchange for allowing the private sector to develop the minerals, the government “receives revenues in the form of royalties, bonus bids, offset compensation and annual rental

³² See, e.g., *R. v. Fowler* [1980] 2 S.C.R. 213 (striking down a federal fisheries law for encroaching on provincial authority, even though the Constitution expressly confers a fisheries power on the federal government).

³³ *Id.* at 4.

³⁴ Alberta Dept. of Energy, *Alberta Oil Sands Tenure Guidelines*, available at http://www.energy.alberta.ca/OilSands/pdfs/GDE_OST_2009.pdf (hereinafter “GUIDELINES”), at 1-4 (accessed July 24, 2013).

³⁵ *Id.*

fees.”³⁶ The actual assignment of mineral rights is referred to as a “disposition,” which is defined as “a grant, a transfer, or an agreement.”³⁷

The ADE manages the Crown-owned mineral rights in the province. It is responsible for calculating, assessing, and collecting the revenues as well as monitoring and reviewing the effectiveness of the framework and recommending resource development policies that support government goals. In addition, the Energy Resources Conservation Board (ERCB) “regulates oil, gas, oil sands, and other mineral activities and acts in the best interest of all Albertans in overseeing the efficient and effective development of Alberta’s energy resources, while ensuring public safety and balancing the need for protection of the environment, conservation, orderly development, technical innovation, and service.”³⁸ Both the ADE and the ERCB work with other governmental entities such as the Ministry of Environment and Sustainable Resource Development to “manage air, land and water monitoring and planning.”³⁹

An oil sand agreement grants a party the right to “drill for, win, work, recover and remove” oil sands that are owned by the Alberta Crown. Any recovery of Crown-owned minerals without an agreement is considered trespass.⁴⁰ Crown-owned oil sands rights are disposed through two types of agreements: permits or leases.

Oil Sands Permits. Under the regulations in the 1990s, permits were issued when relatively little evaluation had been done in the area. Under the modern system, parties

³⁶ *Id.*

³⁷ Mines and Minerals Act, R.S.A. 2000, c.M-17 at 1(1)(f), *available at* <http://www.canlii.org/en/ab/laws/stat/rsa-2000-c-m-17/latest/rsa-2000-c-m-17.html> (accessed July 24, 2013).

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ *Id.* at 2-17.

have a choice of a permit or lease agreement from the outset. Permits are issued for five years and may be converted to leases at any time before the expiration. Once a permit holder meets the minimum level of evaluation (MLE) under the regulations they may apply in writing for a lease selection. Basically the permit holder must submit information identifying the land to which lease selection is requested (either all or part of the permit land), provide technical data to support the required MLE, and include maps as well as the annual rental fee and issuance fee for the lease. The ADE will review the application and notify the party of which lands were deemed to have satisfied the MLE, meaning the lands for which oil sands rights may be retained. The party is then assigned a primary lease for the approved lands. Applicants are allowed to appeal determinations, however only one appeal is allowed. If no lease application is received, then upon expiration of the permit the lands are returned to the Crown.

Oil Sands Leases. Under the current regulations there are two types of leases: a primary lease and a continued lease.⁴¹ A primary lease is issued to convert an Oil Sands Permit or to extend a first-term oil sands lease.⁴² It is issued for 15 years and may also be obtained through public offerings or direct purchases. A continued lease is a primary lease or deemed primary lease⁴³ that has been continued past its expiration date for an

⁴¹ There are two other types of recognized leases that were issued before 1991 or under the now rescinded 1991 regulations:

1. First-term Oil Sands Lease: This is a still active, 21 year lease that was issued before 1991 or under a previous regulation. At the end of its term the lesee may apply for a primary lease.
2. Deemed Primary Lease: This is a second-term lease that is not subject to a development plan, a lease issued out of a permit under the now rescinded 1991 regulation. Deemed primary leases are granted continuation under the same criteria as primary leases.

⁴² Mines and Minerals Act, *supra* note 37.

⁴³ *Id.*

indefinite term, under either a producing or non-producing status. In order to be continued, a lease must meet the MLE. When applying for continuation, the lessee must submit a written application that, among other things, identifies the lease and the lands, states whether the required minimum level of production (MLP) has been met, provides technical data to support the required MLE and the required MLP, includes maps identifying relevant sites, and includes the annual rental rate. If the MLE is met, a letter is issued by the ADE with the conditions of approval as well as whether the ADE has identified the lease as producing or non-producing. If non-producing, the lessee is subject to an escalating rent. At this point the lease remains in effect indefinitely so long as the conditions of the approval and the regulations requirements continue to be met and the rental fees and other payments are regularly paid. Lessees may request an advance ruling on the continuation of a lease at anytime during the term or primary lease, thereby allowing the lessee to ensure that it is on track to meet the MLE or MLP requirements.

Oil sands rights are obtained through the permits and leases discussed above. These agreements are issued by the ADE through one of four methods: (1) public tender; (2) private sale; (3) transfers; or (4) another means approved by the Minister. The first three agreements are commonly used, however, the fourth path to oil sands rights appears to rarely, if ever, be invoked. Although often referred to as “sales,” the Crown always retains title to the minerals.

Public Tender. This is the most common form in which oil sands rights are acquired. The rights are leased at a public offering to the highest bidder. The party to whom the agreement is issued is given the right to minerals associated with a particular piece of land subject to bonus payments, annual rental, fees, and royalties. Of importance

is that a successful bidder is not always guaranteed to receive surface rights to allow access to the minerals. A surface lease must be obtained, if necessary, through the Department of Sustainable Resource Development.

Public tender sales for oil sands follow the same process as that for petroleum and natural gas rights. For oil sands, sales are only initiated if requested by companies or individuals. Those who request a sale will be expected to bid and therefore will be charged a penalty for each requested parcel that is not sold at the tender. After a posting has been requested, the ADE determines whether the rights are actually available and then forwards the information to the Crown Mineral Disposition Review Committee (CMDRC). This committee is made of members from the Alberta Ministry of Environment, The Ministry of Sustainable Resource Development, and the Ministry of Community Development. The committee reviews the land, identifies potential surface access restrictions, and advises the ADE about the nature of the restriction. After reviewing the committee comments, the ADE will notify the requesting private entity of any new restrictions and contacts.

Particular parcels that will be available for public tender are published eight weeks before the sale date. The Public Offering Notice (PON) sets out the terms and conditions under which parcels are offered, specifies the date, location, and time of sale, provides instructions for submitting bids, and lists and describes parcels being offered as well as other information relevant to the parcel. Bids must be submitted electronically and may be submitted as soon as the PON is available. The sale is closed at noon on the date of the sale. Oil sands agreements are awarded to the highest bidder. Payment must

be made through electronic funds transfer and the bidder must have sufficient funds on the sale day to cover all bids.

Direct Purchases. Direct purchases are only allowed on application, if the Minister considers the issuance of the agreement warranted. This type is allowed to “facilitate a company or individual in acquiring the lands in a drilling spacing unit.”⁴⁴ Essentially, direct purchase is only allowed if most of the area in the smallest applicable spacing unit is already privately held and the Crown has less than 50% of the rights in the area. Additionally, the regulations require a minimum acceptable bonus for these purchases.

Registered Transfers. Ownership of existing oil sands agreements may be transferred between parties. Parties wishing to transfer agreements, or part of an agreement, must apply to the ADE.

B. U.S. Oil Sands Resource Ownership and Access

Oil sands in the U.S. reside in multiple jurisdictions, namely on federal, state, Indian, and private lands. Although the primary focus of this report is U.S. oil sands development on federal lands, both the federal leasing regime and Utah’s leasing regimes are presented. At present, the only active domestic oil sands project is situated on Utah state lands.⁴⁵ The history and current state of federal oil sands leasing is discussed first, followed by historical and current leasing requirements for state lands in Utah.

⁴⁴ GUIDELINES, *supra* note 34, at 2-11.

⁴⁵ U.S. Oil Sands Inc., *supra* note 16; Comments of Cameron Todd, *supra* note 16; *see also* Brian Maffly, *Company: Utah tar sands poised to yield oil*, Salt Lake Tribune, March 21, 2013, <http://www.sltrib.com/sltrib/money/55987097-79/sands-tar-oil-utah.html.csp> (accessed July 24, 2013).

Federal Oil Sands Leasing. Prior to 1926, the General Mining Act of 1872 controlled the leasing of oil sands on federal lands. Oil sand claims generally covered 160 acres per claim and could be patented or held as unpatented mining claims.⁴⁶ However, legislators did not enact the General Mining Act of 1872 with oil sands in mind. Consequently, application of the act to oil sands was awkward.⁴⁷ In 1926, Executive Order No. 4371 withdrew lands known to contain deposits of oil sands from consideration for placer mining claims under the General Mining Law.⁴⁸

After modest, but inadequate, attempts in 1909, 1914,⁴⁹ and 1920 to address oil sands leases head-on, Congress once again addressed oil sand development when it enacted the Mineral Leasing Act of 1960 (MLA). The Amendment provided for conversion of mining claims to oil sands leases within a one-year period. However, delays in publishing the regulations effectively negated the conversion period.⁵⁰ Additionally, the Amendment referenced materials “from which oil is recoverable only by special treatment after the deposit is mined or quarried.”⁵¹ This and other language from the Amendment spurred a conflict over in situ recovery of hydrocarbons from the

⁴⁶ ROBERT E. BLACKMAN, TAR-SANDS RESOURCES OF THE UINTA BASIN, Utah 31 (Utah Geological Survey 1996).

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ *Id.* (“The federal government first distinguished between oil and gas fields and [oil]-sand deposits beginning on July 17, 1914 with an Act of Congress. Congress authorized the reservation to the United States of all deposits of ‘phosphate, nitrate, potash, oil, gas, or asphaltic minerals’ in agricultural land patents. The Mineral Leasing Act of 1920 did not specifically identify [oil] sands, but provided that deposits of oil, oil shale, and gas on federal lands be disposed of exclusively by separate mineral leases. The Mineral Leasing Act was directed toward certain well-known commodities, where it was felt that greater government control for their orderly development was needed. DOI interpreted the Mineral Leasing Act to exclude [oil] sands which remained subject to the General Mining Law of 1872.”)

⁵⁰ *Id.*

⁵¹ Mineral Leasing Act, 30 U.S.C. §131 (1920) (amended 1960).

oil-sand deposits. Consequently, the Department of the Interior (DOI) ceased oil-sand leases in 1965.⁵²

Following the failure of MLA, Congress enacted the Combined Hydrocarbon Leasing Act (CHLA) of 1981 to “facilitate and encourage the production of oil from [oil] sand and other hydrocarbon deposits.”⁵³ CHLA redefined “oil” to include oil sands and authorized special leases with specified diligent development requirements in areas designated by Congress as STSAs.⁵⁴ CHLA authorized the Bureau of Land Management (BLM) to issue new combined hydrocarbon leases and to modify existing leases to include oil sands.⁵⁵ In 1995, the BLM held a sale of combined hydrocarbon leases, issuing leases on eight parcels covering 13,852 acres (56.1 square kilometers) of STSAs in the Sunnyside and P.R. Spring deposits. However, no significant oil sands development took place under any of the leases.⁵⁶

Unlike CHLA, which merely allowed for conversion of existing oil and gas leases to hydrocarbon leases under the oil and gas leasing structures, the Energy Policy Act of 2005 (EPAct) creates a leasing system specifically for oil sands.⁵⁷ The Act states: “[f]or any area that contains any combination of [oil] sand or oil or gas (or both), the Secretary

⁵² BLACKMAN, *supra* note 46.

⁵³ Combined Hydrocarbon Leasing Act, Public Law 97-78 (codified as 43 C.F.R. §3140 (1981)).

⁵⁴ Geological Survey: Designations of Tar Sand Areas, 45 Fed. Reg. 76800 (Nov. 20, 1980); Geological Survey: Designations of Tar Sand Areas, 46 Fed. Reg. 6077 (Jan. 21, 1981).

⁵⁵ INSTITUTE FOR CLEAN AND SECURE ENERGY, A TECHNICAL, ECONOMIC, AND LEGAL ASSESSMENT OF NORTH AMERICAN HEAVY OIL, OIL SANDS, AND OIL SHALE RESOURCES, *supra* note 5.

⁵⁶ Comments of James Kohler, Bureau of Land Management, *Heavy Oil Resources of Utah: The Historic Perspective*, Western U.S. Oil Sands Conference, Sept. 21, 2006, Salt Lake City, Utah.

⁵⁷ Steven R. Baxter, *Tar Sands: Worth the Energy? An Analysis of the Future of Utah's Tar Sands*, 27 JLRENVL 323 (2007).

may issue under this Act, separately (i) a lease for exploration for and extraction of [oil] sand; and (ii) a lease for exploration for and development of oil and gas.”⁵⁸ The statute authorizes the BLM to offer oil sand leases through competitive, non-competitive, or Other Business Arrangements (OBAs). Recently the BLM has taken steps towards awarding oil sands leases,⁵⁹ which have been promptly challenged by environmental groups.⁶⁰ No oil sands development is currently ongoing on BLM lands.

The chart below details the leasing characteristics of EPAct. Notably, the Act includes royalty and rental rate incentives to encourage oil sand development.

<u>Lease Term</u>	“[oil] Sand leases shall have a primary term of 10 years and shall remain in effect so long thereafter as oil or gas is produced in paying quantities.” ⁶¹
<u>Royalty Rate</u>	“(a) The royalty rate on all combined hydrocarbon leases or tar sand leases is 12.5 percent of the value of production removed or sold from a lease. The Minerals Management Service shall be responsible for collecting and administering royalties.” ⁶² “The lessee may request the Secretary to reduce the royalty rate applicable to [oil] sand prior to commencement of commercial operations in order to promote development and maximum production of the [oil] sand resource in accordance with procedures established by the [BLM]

⁵⁸ Energy Policy Act (EPAct), §350(a)(2)(B) (2005); 42 U.S.C. §15801 (2005).

⁵⁹ Bureau of Land Management News Release, Utah State Office, BLM Seeks Public Comment on Potential Tar Sands Lease in Eastern Utah, May 14, 2013, http://www.blm.gov/ut/st/en/info/newsroom/2013/may/blm_seeks_public_comment0.html (accessed July 24, 2013); *see also* Amy Joi O’Donoghue, *BLM proposes to open lands near Vernal for tar sands development*, Deseret News, May 15, 2013, <http://www.deseretnews.com/article/865580071/Company-seeks-to-tap-Utahs-rich-tar-sands-deposits.html?pg=all> (accessed July 24, 2013).

⁶⁰ Amy Joi O’Donoghue, *Groups suing BLM for decision to open lands for oil shale, tar sands leasing*, *KSL.com*, May 25, 2013, <http://www.ksl.com/?nid=148&sid=25312336> (accessed July 24, 2013).

⁶¹ 43 C.F.R. 3141.5-2(b) (2009).

⁶² 43 C.F.R. §3141.5-3(a) (2009).

	and may request a reduction in the royalty after commencement of commercial operations in accordance with 3103.4-1 of this title.” ⁶³
<u>Rental Rate</u>	“The rental rate for a [oil] sand lease shall be \$1.50 per acre for the first 5 years and \$2.00 per acre for each year thereafter.” ⁶⁴
<u>Lease Size</u>	“Combined hydrocarbon leases or [oil] sand leases in Special Tar Sand Areas shall not exceed 5,760 acres.” ⁶⁵

State of Utah Oil Sands Leasing. The School and Institutional Trust Lands Administration (SITLA) manages oil sand leases within the state of Utah. SITLA has employed three oil sand leasing regimes over the years.⁶⁶ However, the first two regimes, enacted in 1988 and 1999, were nearly identical for purposes of oil sand leasing. The chart below details the leasing requirements under the 1988 and 1999 leasing regimes.

<u>Rental Rate</u>	\$1 per acre, ⁶⁷ minimum annual rental of \$20. ⁶⁸
<u>Royalty Rate</u>	7% during the first five years of production and increasing annually thereafter at the rate of 1% to a maximum of 12.5% at lessor’s discretion. ⁶⁹
<u>Lease Size</u>	“Mineral leases are limited to no more than 2,560.00 acres or four sections.” ⁷⁰

⁶³ 43 C.F.R. §3141.5-3(b) (2009).

⁶⁴ 43 C.F.R. §3141.5-3(d) (2009).

⁶⁵ 43 C.F.R. §3141.5-4 (2009).

⁶⁶ UTAH ADMIN. CODE R850-20-200 (1999) and UTAH ADMIN. CODE R632-20-2 (1988). “Applications are made for and the agency shall issue separate mineral leases on the following classifications of mineral substances:...2. Oil, Gas, and Hydrocarbon – shall include oil, natural gas, elaterite, ozocerite, and other hydrocarbons (whether the same be found in solid, semi-solid, liquid, vaporous, or any other form) including tar, bitumen, asphaltum, and maltha, and other gases. The oil, gas, and hydrocarbon category shall not include coal, oil shale, or gilsonite.”

⁶⁷ UTAH ADMIN. CODE R850-20-1000(a) (1999); UTAH ADMIN. CODE R632-20-10(a) (1988).

⁶⁸ UTAH ADMIN. CODE R850-20-1000(c) (1999); R632-20-10(c) (1988).

⁶⁹ UTAH ADMIN. CODE R850-20-1000(b) (1999); UTAH ADMIN. CODE R632-20-10(b) (1988).

⁷⁰ UTAH ADMIN. CODE R850-20-900 (1999); UTAH ADMIN. CODE R632-20-9 (1988).

Development Incentive	“First lessee to commercially produce is exempted from the payment of any royalty on the first 200,000 barrels of oil commercially produced.” ⁷¹
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In 2006, SITLA enacted R850-22 to provide commodity specific rules. In its explanation of the then proposed rule, SITLA stated: “[r]ule R850-20 covering all mineral-type commodities is being repealed in its entirety in order that each commodity can be better regulated by its own commodity-specific rule.”⁷² SITLA also explained that while the new regulation “simply re-promulgate[d] material in a manner specific to [oil] sands and oil shale leasing,” it also made two significant changes. First, it raised the annual minimum rent from \$20 to \$500 hoping to “motivate lessees to either put the leases into production, or to drop the leases so that others with the capabilities to produce [could] have a chance to lease the lands.”⁷³ Second, it deleted the historic incentive to waive royalties on the first 200,000 barrels of production for oil shale or oil sands because during the 30 years of its existence the provision had had no demonstrable effect.⁷⁴

R850-22 refers to oil sands as bituminous-asphaltic sands, although the terms are synonymous.⁷⁵ The term bituminous-asphaltic sands explicitly “does not include coal, oil shale, or gilsonite.”⁷⁶ SITLA may award leases competitively, non-competitively or through OBAs.⁷⁷ The chart below lists R850-22’s oil sand leasing characteristics.

⁷¹ UTAH ADMIN. CODE R850-20-3500 (1999); UTAH ADMIN. CODE R632-20-35 (1988).

⁷² 27613 Utah Bulletin (January 15, 2005).

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ UTAH ADMIN. CODE R850-22-200 (2006). (“The term ‘bituminous-asphaltic sands’ means rock or sand impregnated with asphalt or heavy oil and is synonymous with the term ‘tar sands.’”)

⁷⁶ *Id.* at R850-22-200.

⁷⁷ *Id.* at R850-22-300.

<u>Lease Term</u>	“Primary Lease Term: no lease shall establish a primary term in excess of ten (10) years.” ⁷⁸
<u>Royalty Rate</u>	Primary term: “during the primary term of the lease, the lessee shall pay lessor a production royalty on the basis of eight percent (8%) of the gross value, including all bonuses and allowances received by the lessee, of each marketable product produced from the lease substance and sold under a bonafide contract of sale.” ⁷⁹ Beyond primary term: “[t]he royalty may, at the discretion of the lessor, be increased after the ten (10) year primary term at a rate not in excess of one percent (1%) per annum to a maximum of twelve and one-half percent (12.5%).” ⁸⁰
<u>Rental Rate</u>	“The rental rate shall not be for less than \$1 per acre, or fractional acre thereof, per year at the time the lease is offered.” ⁸¹ “The minimum annual rental on any lease, regardless of the amount of acreage, shall in no case be less than \$500.” ⁸²
<u>Lease Size</u>	“Leases shall be limited to no more than 2,560 acres or four sections and must all be located within the same township and range unless a waiver is approved by the director.” ⁸³

C. Canadian Fiscal Regime for Oil Sands Production

Fiscal regimes bearing on Canadian oil sands projects can be divided into three periods. Although these periods correspond to specific and official rules governing royalties, they also relate well to three phases in the development of the oil sands industry. Alberta’s policy with respect to oil sands projects has always been concerned with nurturing their development, in light of high costs and special risks. However, as development has advanced (*e.g.* production costs have decreased and special risks

⁷⁸ *Id.* at R850-22-500(3).

⁷⁹ *Id.* at R850-22-500(2).

⁸⁰ *Id.*

⁸¹ *Id.* at R850-22-500(a).

⁸² *Id.* at R850-22-500(b).

⁸³ *Id.* at R850-22-400(2).

somewhat abated), concern has increasingly turned toward extracting more of the value of oil sands production for the public.⁸⁴

The commercial advent of the Canadian oil sands industry is marked by initial production, in 1967, by what is now known as Suncor Energy, following decades of basic research and the support of the Alberta government.⁸⁵ Syncrude followed Suncor in commercial operations, coming online in July 1978. As of the early 1990s, only a few commercial oil sands projects were in operation: Suncor; Syncrude; and a small number of in situ projects. During this early stage of development, royalties were set on a case-by-case agreements with the Crown, rather than by legislation. Royalty rates ranged from 1 to 5% on gross revenue and 25 to 50% on net revenue.⁸⁶ Both Suncor and Syncrude enjoyed royalty agreements that called for revenue calculations based on the price of synthetic crude oil, rather than the much cheaper raw bitumen.⁸⁷ In the mid-1980s, a number of large Canadian oil sands projects were either cancelled or postponed over project concerns, including the lack of a certain royalty regime.⁸⁸ Essentially, would-be investors could not determine what royalty regime they would ultimately face

⁸⁴ See André Plourde, *Oil Sands Royalties and Taxes in Alberta: An Assessment of Key Developments since the mid-1990s*, *The Energy Journal* 30 (2009).

⁸⁵ See Marc Humphries, CRS Report for Congress: North American Oil Sands: History of Development, Prospects for the Future (Jan. 2008), available at <http://www.fas.org/sgp/crs/misc/RL34258.pdf>.

⁸⁶ See Government of Alberta, *Alberta Oil Sands Royalty Guidelines*, Chapter 1: Alberta's Oil Sands Royalty System, 2006 November p. 1.

⁸⁷ "Alberta's bitumen has been worth 26 per cent to 80 per cent of WTI during [the four years ending 2009] recognizing the upgrading, refining and transportation costs in creating higher value products from oil sands crude." Government of Alberta, *Energy Economics: Understanding Royalties*, Sept. 2009, p. 9. These agreements expired in 2009 and have been replaced with interim agreements, which will remain in effect until 2016, at which point both Suncor and Syncrude will fall under the current royalty regime.

⁸⁸ See Plourde, *supra* note 84.

at the time of initial investment as the royalty regime was designated to be determined at a later, more advanced stage of planning.

In 1993, members of the Canadian government and industry formed the National Task Force on Oil Sands Strategies. The purpose of the Task Force was to determine what policies could be undertaken to spur commercial development of the Canadian oil sands. In 1995 the Task Force delivered, and the Alberta government accepted, its recommendation that royalty provisions be uniformly applied rather than applied through individual agreements with the Crown. This new regime, known as the Generic Oil Sands Royalty Regime (GOSRR), began in late 1997. The objective of the new system was twofold: “(1) To establish a single, clear and stable royalty regime that is applicable to all new investments in oil sands and facilitates development without the Province of Alberta having to provide grants, loans, loan guarantees, or become directly involved in any capacity other than resource owner; and (2) To ensure that oil sands development in Alberta is generally competitive with other petroleum development investment opportunities around the world.”⁸⁹ GOSRR included requirements for project approval, royalties based on net revenue (as before) and definitions of costs that could be deducted from gross revenue for the purposes of estimating whether a project had reached payout.

Between the initiation of GOSRR and 2007, Canadian oil sands producers could choose whether to base royalties on bitumen production or syncrude production (which has incurred upgrading costs to render the oil sands physically similar to conventional refinery feedstock). Where producers elected to base royalties on bitumen production, the allowable costs did not include capital (including return on investment) or operating

⁸⁹ See Alberta Energy, Information Letter 98-3, Jan. 1998, p. 2.

costs for upgrading, and allowable revenue would be based on bitumen prices, rather than syncrude prices. Under GOSRR, oil sands project royalties were 1% of gross revenue until the project reached “payout”— the date on which cumulative revenue from the project equaled cumulative costs. Among the allowable costs was a return on investment, set at the Government of Canada’s long-term bond rate. Consequently, reaching payout equated to recovering costs and making a conventional profit. After reaching payout, royalty rates converted to the greater of 1% of gross revenue or 25% of net revenue. This risk-sharing arrangement, *i.e.* lending the government’s fiscal support to new projects until they had returned their investors’ costs plus a return, reflected the overriding policy objective of developing an economically attractive and self-sustaining Alberta sands industry.⁹⁰

By the mid-2000s, oil prices had risen well above the level that prevailed near the time of GOSRR’s adoption. Oil sands production nearly doubled between 1997 (30,604 thousand cubic meters) and 2005 (57,550 thousand cubic meters). This led to a growing belief that the 1997 regime had become outdated, prompting the Alberta government to commission the Albert Royalty Review Panel to consider alternative fiscal regimes. The Panel’s findings, released in 2007, were stark, claiming: “Albertans do not receive their fair share from energy development.”⁹¹ The Panel argued that the total government take from oil sands projects, in light of the then-present royalty structure and oil prices were favorable compared to projects in other parts of the world, and could withstand an increase without significantly curtailing development:

⁹⁰ As of February 2009, 48 oil sands project were in pre-payout and 43 were in post-payout. Government of Alberta, *supra* note 90, at 14.

⁹¹ See Alberta Royalty Review Panel, 2007, p. 7.

The total government take (Alberta and Canada, taxes and royalties) can be increased with Alberta still remaining an attractive investment destination . . . Cumulatively, the Panel’s recommended package of changes for oil sands tar gets a total government take from the oil sands sector of 64%, increased over the present total take which is a little under 50%. Roughly 60% was the total take level identified by the 1995 National Oil Sands Task Force (NOSTF) as consistent with the needs of a fledgling industry. The Panel regards a comparable level of take as more than reasonable for the production powerhouse the sector has become.⁹²

Following the Panel, a new royalty regime was implemented entitled, “The New Royalty Framework.”⁹³ The new royalty framework retains the previous regime’s differential treatment between pre- and post-payout projects. For pre-payout projects, the royalty is still 1 percent of gross revenue while the price of WTI is less than C\$56/barrel. However, when WTI is at or above C\$56/barrel, the royalty is 1% of gross revenue and an additional 0.12308% of gross revenue for every dollar the price of WTI is above \$55/barrel, but not more than \$120/barrel. At \$120/barrel (and beyond), the applicable royalty rate is 9% of gross revenue. In the post-payout period, royalty rates are 25% of net revenue while the price of WTI is less than \$56 and increases by 0.23077% for every dollar it is at or above \$56/barrel but below \$120/barrel. Thus, post-payout royalty rates on net revenue range from 25 to 40%.

⁹² *Id.* at pp. 7, 11.

⁹³ Government of Alberta, The New Royalty Framework, Oct. 2007, *available at* http://www.energy.gov.ab.ca/Org/pdfs/royalty_Oct25.pdf (accessed July 24, 2013).

D. U.S. Fiscal Regime for Oil Sands Production

At present, there is no commercial production of oil sands in the U.S. However, detailed economic assessments of potential ex situ and in situ oil sands production scenarios, as well as a comparison of Canada's fiscal regime for oil sands and a hybrid of the U.S.' fiscal regimes for oil and gas, oil shale, and oil sands, are available in the recent ICSE report, *A Market Assessment of Oil Shale and Oil Sands Development Scenarios in Utah's Uinta Basin*.⁹⁴ In Utah, where a majority of the domestic oil sands resource is located, the royalty regime for production on state lands is the same as for conventional oil and gas.⁹⁵ Oil sands production is exempt from Utah's state severance tax at least until 2016. For typical oil projects in Utah (not low-production wells), the severance tax is 3% of the sales price while the price is less than \$13/barrel and increases to 5% of sales for the portion of sales price above \$13/barrel.

E. Comparing Economic Approaches to Resource Development

These policy differences between the Canadian and U.S. fundamentals of resource access and approaches to economic incentivizing of oil sands development can be characterized in large part as voluntary differences, meaning that the two countries' models for development reflect contrasting policy commitments and choices. The Canadian development model reflects the policy choice to make a long-term commitment, financially born in large part by the government, to commercialize the Canadian oil sands resource. The U.S. model has instead left the burden of development largely to the private sector.

⁹⁴ INSTITUTE FOR CLEAN AND SECURE ENERGY, *A MARKET ASSESSMENT OF OIL SHALE AND OIL SANDS DEVELOPMENT IN UTAH'S UINTA BASIN* (2013), AT 3.

⁹⁵ *Id.* at 3.4.1.1.

Even as the Canadian model has evolved in order to shift the balance between private and public economic risk and return, and to contemplate more incisive environmental impact analysis, the Canadian model reflects a consistency lacking in the U.S. approach to domestic oil sands development. This is not to say that the Canadian model is necessarily preferable, or even that such a consistently implemented policy focus would have yielded the same results in the U.S. as have been achieved in Canada. For example, an identical singularity of purpose in the U.S. could not have created the market force that has been created from the Athabaskan oil sands given the disparity in resource size. Nonetheless this distinction between the economic and development policies in Canada and the U.S. is relevant to evaluating whether the Canadian experience is an apt model for oil sands development occurring presently in the U.S.

These jurisdictional and fiscal distinctions in the oil sands policies of Canada and the U.S. are instructive for U.S. policymakers even as they reduce the scope of applicability of the Canadian experience to prospective domestic oil sands development. Stated succinctly, Canada formulated and implemented a comprehensive, overarching energy policy with respect to development of its oil sands resource. Development of an equivalent overarching energy policy framework continues to elude the U.S., both with respect to oil sands specifically and unconventional fuel resources more broadly. Arguably Canada had fewer hurdles to overcome than would the U.S. in formulating an overarching oil sands policy framework, given the provincial role in shaping resource development and the traditional Canadian reliance on collaboration as compared to the

partisanship that has and continues to dominate contemporary U.S. politics and policymaking.

One discernible consequence of the absence of an acknowledged and consistent U.S. energy policy with respect to domestic oil sands resources is that no sustained, commercial oil sands development has occurred in the U.S. Another discernible consequence is that prospective domestic oil sands development is being contemplated on state lands in Utah rather than federal, raising issues of whether and how state-level development of oil sands resources will comport with national energy and environmental policy objectives.⁹⁶

Another distinction between Canada and the U.S. illuminated by their contrasting voluntary policy decisions is the delineated role of the private sector in energy and resource development. The Canadian experience achieved success under a model that deemed it appropriate for the government to assume a level of risk that has been treated by the U.S. as the burden of the private sector industry players interested in commercializing oil sands. The Canadian approach facilitated far more extensive research and development efforts and technological progress than have been realized in the U.S. The only recent –and only somewhat analogous – domestic unconventional fuel research and development efforts were made some decades ago in the context of oil

⁹⁶ For further discussion of the policy implications of unconventional resource development proceeding in the U.S. on state, but not federal lands, *see* INSTITUTE FOR CLEAN AND SECURE ENERGY, LAND AND RESOURCE MANAGEMENT ISSUES RELEVANT TO DEPLOYING IN-SITU THERMAL TECHNOLOGIES INSTITUTE FOR CLEAN AND SECURE ENERGY, *supra* note 6; ANALYSIS OF ENVIRONMENTAL, LEGAL, SOCIOECONOMIC AND POLICY ISSUES CRITICAL TO THE DEVELOPMENT OF COMMERCIAL OIL SHALE LEASING ON THE PUBLIC LANDS (2009).

shale.⁹⁷ The current oil shale Research, Development and Demonstration lease program (initially authorized by EPAct) is not analogous as it did not incorporate integrated public-private sector risk sharing or transparent public-private sector funding mechanisms, nor has it been particularly successful thus far in yielding commercially viable technological innovation.

Perhaps the most fundamental lesson of the Canadian oil sands experience for U.S. policymakers is that the U.S. is unlikely to optimize any future commercial oil sands development in the absence of a comprehensive and consistently implemented national energy policy.

4. Canada v. U.S. : Environmental Approaches to Resource Development

Beyond the elective fiscal policy choices made by Canada and the U.S. with respect to oil sands, the legal and environmental frameworks of Canada and the U.S. present involuntary or structural differences that further minimize the utility of the Canadian experience as an analogous model for prospective U.S. oil sands development. The environmental framework applied to oil sands development in Canada is substantially different from the overarching environmental regulatory framework applied in the U.S. under the National Environmental Policy Act (NEPA). The primary differences appear to be that under the Canadian system there are no equivalent substantive federal or regional policies or land management plans in regards to environmental regulation, there is less clearly defined open public participation throughout the process, and there are multiple overlapping statutes and regulatory bodies.

⁹⁷ See Comments of Bill Johnson, Task Force on Strategic Unconventional Fuels, *Local Issues for Utah Oil Sands*, Western US Oil Sands Technology Transfer Meeting, Feb. 22, 2008, Salt Lake City, Utah.

In order to provide context for contrasting the Canadian oil sands experience with prospective domestic sands development, the Canadian environmental regulatory regime is first explained with particular attention to division of powers, environmental assessment processes, and regulatory approaches to endangered species. The understanding of Canadian oil sands development impacts to proximate natural resources is then elaborated on in order to further shed light on potential analogs and disconnects between Canadian and prospective oil sands projects in Utah. Proposed resource development in Utah is examined in terms of both the governing environmental regulatory framework, as well as the natural resources likely to be impacted. The discussion then considers varying attitudes towards environmental litigation as between Canada and the U.S. so far as it pertains to oil sands development.

A. Canadian Environmental Framework for Oil Sands Development

As is the case with the U.S. Constitution, the Canadian Constitution does not explicitly mention the environment.⁹⁸ As a result, constitutional concerns of an environmental nature revolve primarily around allocation of power to regulate between the provinces and the central government. The lack of an express constitutional allocation of power renders the authority to regulate environmental matters uncertain, giving rise to the criticism that “responsibility for important environmental questions has not been allocated with the level of constitutional certainty often thought to be desirable from the perspective of legislators, policy makers, and anyone seeking to ensure government accountability in this field.”⁹⁹ This concern emanates even from Canada’s high court, as one justice referred to the environment as “a constitutionally abstruse

⁹⁸ See generally Constitution Act, 1982. See also BENIDICKSON, *supra* note 17.

⁹⁹ BENIDICKSON, *supra* note 20, at 26.

matter which does not comfortably fit within the existing division of powers without considerable overlap and uncertainty.”¹⁰⁰

One result of this uncertainty over allocation of power to regulate environmental issues has been a “historically weak federal role in the environmental field.”¹⁰¹ The uncertainty concerning regulatory authority leads to federal timidity, “an unwillingness to confront the provinces, which tend to be highly protective of their jurisdiction over natural resources.”¹⁰² Thus, in Canada, “most resource and environmental laws and regulations are implemented under provincial authority.”¹⁰³ Even where federal legislation exists, administration of the regulatory regime remains primarily within the constitutional domain of the provinces,¹⁰⁴ giving rise to a form of cooperative federalism¹⁰⁵ that is, by U.S. standards, more province-dominated than cooperative.¹⁰⁶ For example, where an environmental assessment is required under the applicable federal law, which may give rise to duplicative and potentially conflicting analyses at the federal and state levels, the federal government and Alberta have agreed that one single cooperative assessment can fulfill both requirements.¹⁰⁷

The consequences of ceding exclusive federal regulatory authority and a policy of deference to provincial control are multiple. At best, Canadian environmental laws can

¹⁰⁰ *Friends of the Oldman River Soc’y v. Canada* (Minister of Transport), [1992] 1 S.C.R. 3.

¹⁰¹ Harrison, *supra* note 30, at 66.

¹⁰² *Id.* at 67 (internal citations omitted).

¹⁰³ MELODY HESSING ET AL., *CANADIAN NATURAL RESOURCE AND ENVIRONMENTAL POLICY* 84 (2d ed. 2005).

¹⁰⁴ *Id.* at 85.

¹⁰⁵ Harrison, *supra* note 30, at 66.

¹⁰⁶ *But see* Robert Fischman, *Cooperative Federalism and Natural Resources Law*, 14 N.Y.U. ENV’T L. J. 179 (2005) (noting state favoritism in federal process and federal deference to state process in U.S. natural resources law).

¹⁰⁷ *Id.* at 70-71.

be characterized as “difficult,”¹⁰⁸ while less favorable commentators have described the situation as creating “a range of dissonance between policy aims and outcomes” in Canadian environmental law.¹⁰⁹ One problem with the allocation of environmental regulatory power in Canada, for example, is that the government with an interest in protecting the environment is not always, if perhaps even rarely, the government with the most effective tools for doing so.¹¹⁰ In short, the limited role of Canada’s federal government has been a major obstacle to enforcement of environmental standards.¹¹¹

Federal Canadian environmental law includes an environmental assessment mandate. Similar to NEPA, the Canadian Environmental Assessment Act (CEAA) requires completion of environmental assessments before proposed oil sands mining projects can receive federal approval. More specifically, the CEAA establishes a two-step process: (1) an environmental assessment where potentially adverse environmental effects are analyzed; and (2) after considering and verifying the assessment, the federal authority decides if the project should be authorized.¹¹²

In accordance with the Canadian federal structure, environmental assessments are most often carried out by the provinces, which obtain authority to manage assessment responsibilities by establishing provincial environmental assessment legislation.¹¹³ This

¹⁰⁸ BENIDICKSON, *supra* note 17, at 25.

¹⁰⁹ EUGENE LEE & ANTHONY PERL, *THE INTEGRITY GAP: CANADA’S ENVIRONMENTAL POLICY AND INSTITUTIONS* 3 (2003).

¹¹⁰ BENIDICKSON, *supra* note 17, at 27.

¹¹¹ O.P. DWIVEDI ET AL., *SUSTAINABLE DEVELOPMENT AND CANADA* 51 (2001).

¹¹² S.C. 1992, c. 37, ss. 5, 37 and 38; *see Pembina Instit. for Appropriate Development*, at para. 15 (*quoting Friends of the Oldman River Society v. Canada*, [1992] 1 S.C.R. 3, [1992] S.C.J. No. 1 (S.C.C.)) (“Environmental impact assessment is, in its simplest form, a planning tool that is now generally regarded as an integral component of sound decision-making.”).

¹¹³ Harrison, *supra* note 30, at 67.

provincial delegation of federal environmental assessment has greatly weakened the assessment process because provinces are “subject to the same political pressures [as the federal government] and are even more apt to be captured by potentially regulated interests.”¹¹⁴ As a result, virtually all development proposals subject to environmental review are approved.¹¹⁵ One provincial environmental assessment review study found that out of 636 development proposals subject to review, a full environmental review was requested on only 80 occasions, with less than half of the requested reviews being completed.¹¹⁶ Nevertheless, only two projects of the more than 600 proposed were denied approval.¹¹⁷ Thus, it is not surprising that critics describe the Canadian environmental review process as “totalitarian, a boondoggle, a hoax, a paper tiger, a Trojan horse, and a nasty game.”¹¹⁸

Canadian law includes a number of other environmental laws beyond environmental assessment at both the federal and provincial level. Federal laws include the Fisheries Act,¹¹⁹ Water Act,¹²⁰ Environmental Protection Act,¹²¹ Navigable Waters Protection Act,¹²² National Parks Act,¹²³ and Migratory Birds Convention Act.¹²⁴ Other

¹¹⁴ *See generally id.*

¹¹⁵ DAVID RICHARD BOYD, *UNNATURAL LAW: RETHINKING CANADIAN ENVIRONMENTAL LAW AND POLICY* 113 (2003).

¹¹⁶ BENIDICKSON, *supra* note 17, at 213 (*citing* REPORT OF THE SASKATCHEWAN ENVIRONMENTAL REVIEW COMMISSION: ENVIRONMENTAL CHALLENGES (1991)).

¹¹⁷ *Id.* *See also* BOYD, *supra* note 115 (stating that 99.9% of reviewed projects are approved).

¹¹⁸ BOYD, *supra* note 115.

¹¹⁹ R.S., ch. F-14 (1985).

¹²⁰ R.S., ch. C-11 (1985).

¹²¹ 1999 S.C., c. 33 (Can.).

¹²² R.S., ch. N-22 (1985).

¹²³ 2000 S.C., c. 32 (Can.). It is noteworthy that the Canadian law of national parks is significantly different from U.S. national parks law. BENIDICKSON, *supra* note 17, at 258.

¹²⁴ 1994 S.C., c. 22 (Can.).

federal environmental laws are focused primarily on pollution and hazardous substance control. Under the National Board Energy Act, federal approvals are also required if an oil sands project includes an interprovincial or international pipeline.¹²⁵ Notably absent from Canadian law for comparative purposes is any sort of federal land management law like the U.S. Federal Land Policy and Management Act (FLPMA)¹²⁶ or National Forest Management Act (NFMA).¹²⁷

Although Canada provides for endangered species protection, the Species at Risk Act¹²⁸ has been widely seen as a failure because it accomplishes nothing more than formal listing of species; recovery plans are not implemented, nor is habitat protected.¹²⁹ In the U.S., on the other hand, critical habitat has been designated for 667 species.¹³⁰ Also exemplary of the differences between attention to endangered species protections in the two nations, Canada currently lists nine terrestrial mammals as “endangered,”¹³¹

¹²⁵ Nickie Vlavianos, *The Legislative and Regulatory Framework of Oil Sands Development in Alberta: A Detailed Review and Analysis, Appendix A: Federal Involvement in Alberta Oil Sands Development*, Canadian Institute of Resources Law, Occasional Paper #21, 73-75, 69 (Aug. 2007).

¹²⁶ 43 U.S.C. §§ 1701-87 (1976).

¹²⁷ 16 U.S.C. §§ 1600-14 (1990).

¹²⁸ 2002 S.C., ch. 29 (Can.).

¹²⁹ Nature Canada, *Canada’s Species at Risk Act: Implementation at a Snail’s Pace*, at *3 (Apr. 2009), available at http://www.naturecanada.ca/endangered_atrisk_saraRC2009.asp (accessed July 24, 2013).

¹³⁰ U.S. Fish & Wildlife Svc., *Listed Species with Critical Habitat*, http://ecos.fws.gov/tess_public/CriticalHabitat.do?nmfs=1 (accessed July 24, 2013).

¹³¹ Canada Species at Risk Public Registry, *Species List*, http://www.sararegistry.gc.ca/species/schedules_e.cfm?id=1 (accessed July 24, 2013).

whereas the U.S. has designated nearly ten times as many terrestrial mammals as endangered.¹³²

The number and kind of legally cognizable resource impacts of oil sands development in Canada pale in comparison to the corollary impacts that will be germane to U.S. oil sands development. This is due substantially to the fact that Canadian law simply does not contain the breadth of resource management and classification schemes that are codified in U.S. law. Accordingly, Canadian oil sands development discussions have not involved consideration of areas of critical environmental concern, wilderness areas, or wild and scenic rivers, all of which are topics that already have been prominent in discussions of U.S. oil sands development. The discussion of Canadian oil sands development that has focused on impacts to proximate natural resources has focused primarily on general harm to the boreal forest and muskeg,¹³³ harm to waterfowl from landing on toxic tailings ponds,¹³⁴ and risks to woodland caribou.¹³⁵

The extent to which oil sands development impacts endangered species is perhaps the most conspicuous distinguishing factor in the comparison of Canadian and prospective U.S. oil sands development. Under the laws of both Canada and Alberta, the

¹³² U.S. Fish & Wildlife Svc., Endangered Species Program, <http://www.fws.gov/endangered/species/us-species.html> (select “Vertebrate Animals,” then “Mammals”) (accessed July 24, 2013)

¹³³ See generally RICHARD SCHNEIDER & SIMON DYER, DEATH BY A THOUSAND CUTS: IMPACTS OF IN SITU OIL SANDS DEVELOPMENT ON ALBERTA’S BOREAL FOREST (Pembina Inst. 2006), available at <http://www.pembina.org/pub/1262> (accessed July 24, 2013).

¹³⁴ JENNIFER GRANT ET AL., NORTHERN LIFEBLOOD: EMPOWERING NORTHERN LEADERS TO PROTECT THE MACKENZIE RIVER BASIN FROM THE RISKS OF OIL SANDS DEVELOPMENT 17 (Pembina Inst. 2010), available at <http://www.pembina.org/oil-sands> (accessed July 24, 2013).

¹³⁵ SIMON DYER ET AL., DRILLING DEEPER: THE IN SITU OIL SANDS REPORT CARD 34 (Pembina Inst. 2010), available at <http://www.pembina.org/pub/1981> (accessed July 24, 2013).

boreal woodland caribou is listed as a threatened species.¹³⁶ In situ industrial development, usually oil sands extraction, is largely responsible for the decline in woodland caribou populations.¹³⁷ Yet, even in light of the continuing decline of a listed species population and a clear understanding of the cause of the decline, development has moved forward unimpeded because regulators have failed to protect critical caribou habitat.¹³⁸ In the U.S., on the other hand, it is not uncommon for protection of endangered species to thwart industrial development, even in the most seemingly extreme of cases.¹³⁹

Provincial environmental law is even more limited, a fact that becomes salient in light of the dominance of provincial authority in environmental regulation. For example, in Alberta, the only provincial environmental laws other than environmental assessment are the Alberta Clean Air Act and Clean Water Act. In lieu of strong national or provincial environmental legislation, Canada has relied primarily on international environmental law,¹⁴⁰ such as the Convention on International Trade in Endangered Species and the Convention on Biological Diversity, often focusing on vague notions of tenuous concepts like “sustainable development.”¹⁴¹

¹³⁶ *Id.*

¹³⁷ Environment Canada, Scientific Review for the Identification of Critical Habitat for Woodland Caribou (*Rangifer tarandus caribou*), Boreal Population, in Canada, at vi (2008), available at http://www.sararegistry.gc.ca/document/default_e.cfm?documentID=1761 (accessed July 24, 2013).

¹³⁸ Nature Canada, *supra* note 129, at *3.

¹³⁹ See, e.g., *Tennessee Valley Authority v. Hill*, 437 U.S. 153 (1978) (enjoining construction of a \$5 million dam because it threatened protected species habitat).

¹⁴⁰ BENEDICKSON, *supra* note 17, at 266-67.

¹⁴¹ DWIVEDI ET AL., *supra* note 111, at 44.

On the provincial side, Alberta oil sands are regulated by the ERCB and Alberta Environment (AENV). The ERCB “is an independent, quasi-judicial agency of the Government of Alberta . . . [with a] mandate . . . to ensure that the discovery, development, and delivery of Alberta’s energy resources take place in a manner that is fair, responsible, and in the public interest.”¹⁴² AENV’s central mandate is the protection and management of the environment and water resources.¹⁴³ In addition, this agency is responsible for addressing climate change and waste management.¹⁴⁴ AENV also has ongoing obligations to monitor existing oil sands production processes.¹⁴⁵

According to AENV materials, the development process for oil sands in Alberta is as follows: (1) a private company purchases mineral rights for a specific area; (2) the company consults with First Nations groups in the area; (3) the company makes an application for development to the ERCB; (4) the prospective developer submits an environmental impact assessment, water use request, and socio-economic impact study to the Alberta Government; (5) public hearings may be held; and (6) the ERCB makes a decision in the public’s interest on the application. If approved, development proceeds based on the terms set out in the project approval, subject to annual reporting and 10-year renewal requirements.¹⁴⁶ Steps 3 through 6 of this process are discussed in more detail below.

¹⁴² BLAKE, CASSELLS, & GRAYDON LLP, OVERVIEW OF ENVIRONMENTAL REGULATORY REGIME RELATED TO ALBERTA OIL SANDS ACTIVITIES 3 (Jan., 2010) (*hereinafter* BLAKE).

¹⁴³ *Id.*

¹⁴⁴ *Id.*

¹⁴⁵ Vlavianos, *supra* note 125, at 44.

¹⁴⁶ Alberta Environment, Alberta Oil Sands 2, Sept. 2008, <http://environment.gov.ab.ca/info/library/7925.pdf> (accessed July 24, 2013).

Step 3, an application for development, arises under the Oil Sands Conservation Act, which states that no person shall construct facilities or commence an operation for the recovery of oil sands without the approval of the ERCB.¹⁴⁷ Directive 23 outlines what an applicant must include in an application submitted to the ERCB for approval to construct facilities or to commence an operation to recover oil sands. It applies to all commercial oil sands projects in the province.¹⁴⁸ Basically, the application must include a summary of all aspects of the project, a statement of the objectives and the types of permits and approvals being requested, technical and economic details of the project, as well as assessments of biophysical impact, social impact, and benefit-cost. In addition, it must include an environmental assessment describing the project and alternatives, an environmental protection plan, a conceptual development and reclamation plan, as well as a solid waste management plan.¹⁴⁹

Up until recently applicants were not required to allow for public consultation. Applicants were only “encouraged to plan and carry out a suitable program to make the public aware of the proposed development, to obtain and incorporate, where feasible, the reaction of interested or affected persons, and to provide documentation to the ERCB and AENV as to the nature and extent of the communication.”¹⁵⁰ At present under Directive 056, public consultation is required, but the type of consultation varies depending on the

¹⁴⁷ Oil Sands Conservation Act, at 10(1).

¹⁴⁸ BLAKE, *supra* note 142, at 4.

¹⁴⁹ *See id.*, at Appendix 1 for greater detail.

¹⁵⁰ *Id.* at 4.

type of party and the project.¹⁵¹ However, it has been noted that the ERCB rarely rejects applications for deficient consultation.¹⁵²

Step 4 arises under the Environmental Protection and Enhancement Act (EPEA), which requires that an applicant-developer party must complete an Environmental Impact Assessment (EIA). This is also required in order for the ERCB to approve the project.¹⁵³ The EIA must provide an explanation of the environmental effects of the project and other planned activities in the area that are related to the project.¹⁵⁴ In order to comply with EPEA, the project proponent is also required to obtain numerous other authorizations and approvals from AENV related to construction, operation, and reclamation.¹⁵⁵ As with the ERCB review, only those parties who are “directly affected” are allowed to participate under the public consultation.¹⁵⁶ In addition, under the Water Act, parties must receive approval from the AENV for any actions that are likely to affect ground or surface water or aquatic ecosystems.¹⁵⁷ If water is going to be removed, a license must also be obtained.¹⁵⁸

Step 5, the holding of public hearings on an application, appears to be the only clearly defined opportunity for public comment in the provincial environmental review process. However, even then only parties who have “rights that may be directly and adversely affected by the proposed development” have standing to request a hearing

¹⁵¹ Vlavianos, *supra* note 125, at 34.

¹⁵² *Id.* at 40.

¹⁵³ BLAKE, *supra* note 142, at 5.

¹⁵⁴ *See id.* at Appendix 2, at 3 for greater detail on what is generally required in an EIA.

¹⁵⁵ Vlavianos, *supra* note 125, at 49.

¹⁵⁶ *Id.* at 50.

¹⁵⁷ *Id.* at 52.

¹⁵⁸ *Id.* at 53.

before the ERCB.¹⁵⁹ This has generally been interpreted to only allow landowners in the development area or adjacent landowners to request hearings.¹⁶⁰ Parties that do not have standing may participate in the hearing, but only in a limited capacity.¹⁶¹

The criteria for Step 6, namely the ERCB decision on a project application, have been criticized for being tilted in favor of the developer. Under the Environmental Resources Conservation Act (ERCA), the ERCB must consider “whether the project is in the public interest, having regard to the social and economic effects of the project and the effects of the project on the environment.”¹⁶² Some commentators have noted that since the rights disposition process that occurs before the environmental review creates legally enforceable property rights, “a company’s ability to exercise oil and gas rights it has purchased from the government is a ‘compelling component’” that can tilt the public interest calculation in favor of approving the project.¹⁶³

Canadian environmental regulation up to this point appears to have been primarily left to the individual provinces with little federal oversight, despite the potential applicability of some federal environmental statutes.¹⁶⁴ This has been attributed to the overlapping of provincial and federal statutes as well as the discretionary nature of Federal involvement under the Federal statutes.¹⁶⁵ Attempts have been made more recently to develop a regional framework to better assess cumulative environmental

¹⁵⁹ *Id.* at 36.

¹⁶⁰ Cindy Chiasson, *Governing the Oil Sands*, ENVIRONMENTAL LAW CENTER <http://www.elc.ab.ca/pages/Publications/PreviousIssue.aspx?id=574> (accessed July 24, 2103).

¹⁶¹ Vlavianos, *supra* note 125, at 36.

¹⁶² Environmental Resources Conservation Act s. 3; Vlavianos, *supra* note 125, at 33.

¹⁶³ Vlavianos, *supra* note 125, at 14

¹⁶⁴ See ENVIRONMENTAL DEFENCE, EQUITERRE, AND THE PEMBINA INSTITUTE, DUTY CALLS: FEDERAL RESPONSIBILITY IN CANADA’S OIL SANDS 73-75 (Oct. 2010).

¹⁶⁵ Vlavianos, *supra* note 125.

effects. In 1999, the Alberta Government created the Regional Sustainable Development Strategy (RSDS). A multi-stakeholder group, the Cumulative Effects Management Association (CEMA) was formed in partnership with AENV and Alberta Sustainable Resource Development to address cumulative effect issues.¹⁶⁶ According to CEMA, their mission is to serve as “a key advisor to the provincial and federal governments committed to respectful, inclusive dialogue to make recommendations to manage the cumulative environmental effects of regional development on air, land, water, and biodiversity.”¹⁶⁷ Furthermore, their goals are to recommend management frameworks, best practices, and implementation strategies that address cumulative effects on air, land, water, and biodiversity to protect, sustain, and restore the environment and to be protective of human health.”¹⁶⁸

CEMA has been important in providing scientific data to policymakers.¹⁶⁹ However, it has been criticized recently for its slow progress and lack of clear policy goals as well as for being primarily comprised of oil and gas industry members.¹⁷⁰ Some have felt that this has diminished the credibility and thus legitimacy of the efforts.¹⁷¹

¹⁶⁶ CEMA, *History*, <http://cemaonline.ca/index.php/about-us/cema-history> (accessed July 24, 2013).

¹⁶⁷ CEMA, *Mission and Goals*, <http://cemaonline.ca/index.php/about-us/cema-mission-and-goals> (accessed July 24, 2013).

¹⁶⁸ *Id.*

¹⁶⁹ Jordan Brown, *Balancing Environmental Policy with Oil Sands Development in Industry Oriented Economy*, THE PEMBINA INSTITUTE (Apr. 2009). http://comcul.ucalgary.ca/ThePembinaInstitute#_Toc228858432 (accessed July 24, 2013); see also Oil Sands Environmental Management Bibliography, available at <http://www.see.ualberta.ca/en/OilSandsResearchandInformation.aspx> (accessed July 24, 2013).

¹⁷⁰ Brown, *supra* note 169.

¹⁷¹ <http://www.pembina.org/media-release/1678> (accessed July 24, 2013).

Taken as a whole, these regional efforts seem to have been largely unsuccessful, failing to generate either substantive requirements or a clear framework for managing oil sands development. CEMA also has faced recent funding challenges, although those were resolved for 2013.¹⁷²

B. U.S. Environmental Framework for Oil Sands Development

The domestic environmental framework for oil sands development on federal lands begins with NEPA. NEPA is a procedural statute triggered by any “major federal action significantly affecting the human environment.”¹⁷³ The purpose of the act is to prevent uninformed decisions and require an agency to take a “hard look” at the environmental impacts of its actions. Specifically, the purpose of the NEPA is “[t]o declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation.”¹⁷⁴

The NEPA process must be completed at the earliest date possible. In general, a NEPA analysis requires the preparation of an environmental impact statement (EIS) designed to assess the environmental effects of the federal action. The EIS must include an assessment of any adverse environmental effects which cannot be avoided, a list of alternatives to the proposed actions, the relationship between local short-term uses of the

¹⁷² Vincent McDermott, *Industry agrees to reinstate CEMA funding*, FORTMCMURRAYTODAY, December 19, 2012, <http://www.fortmcmurraytoday.com/2012/12/19/industry-agrees-to-reinstate-cema-funding> (accessed July 24, 2013).

¹⁷³ 42 U.S.C. § 4332(C).

¹⁷⁴ *Id.* at § 4321.

resource and enhancement of long-term productivity, and any irreversible and irretrievable commitments of resources which would be involved in the proposed action.¹⁷⁵ Additionally, applicable regulations require that connected actions and cumulative impacts of past, present, and foreseeable actions be assessed in the EIS.¹⁷⁶

Each federal agency is required to comply with NEPA for each decision it has the discretion to make when there are multiple alternatives to accomplishing a goal.¹⁷⁷ For example, when private individuals or companies apply for a permit from an agency, the agency that is being asked to issue the permit is required to initiate the NEPA process before granting the requested permit.¹⁷⁸ The requesting party generally pays for the EIS, but the agency is responsible for the scope and accuracy of the analysis.¹⁷⁹ Throughout the NEPA process there are multiple opportunities for public comment from any citizen regardless of whether she is directly involved or affected by the proposed action. The responsible agency is required to consider the comments when issuing its final decision, and the final decision may be contested in court if a party meets the appropriate standing requirements. In addition to NEPA, the U.S. has numerous additional federal environmental and land use planning laws¹⁸⁰ with which prospective U.S. oil sands

¹⁷⁵ *Id.* at § 4332(C).

¹⁷⁶ 40 C.F.R. §§ 1507, 1508.

¹⁷⁷ 40 C.F.R. § 1508.23.

¹⁷⁸ COUNCIL ON ENVIRONMENTAL QUALITY, A CITIZEN'S GUIDE TO THE NEPA 4 (Dec. 2007).

¹⁷⁹ *Id.*

¹⁸⁰ Examples of these laws would be the Bald Eagle Protection Act, the Clean Air Act, the Clean Water Act, the Colorado River Basin Salinity Control Act, the ESA, FLPMA, the Migratory Bird Treaty Act, NFMA, the National Historic Preservation Act, and the Safe Drinking Water Act. The State of Utah has its own environmental regulations, which would apply to oil sands development on state lands. Several protected state resources could be impacted by oil sands development, including Escalante, Anasazi,

developers will need to comply. Lengthier discussions of the U.S. environmental framework applicable to unconventional resource development can be found in previous ICSE reports.¹⁸¹

As envisioned under the revised (2012) Programmatic Environmental Impact Statement¹⁸² that will guide the BLM's oil shale and oil sands leasing program, proposed oil sands development in Utah would likely impact a number of different federally owned resource areas. Such resource areas include national parks, monuments, forests, wildlife refuges, historic districts, scenic byways, conservation areas, recreation areas, and wilderness areas. Noteworthy resources potentially impacted by oil sands development are Canyonlands National Park, Capitol Reef National Park, Grand Staircase-Escalante National Monument, Fishlake and Dixie National Forests, Mt. Nebo Wilderness Area, and Ouray National Wildlife Refuge, among others.¹⁸³ Prohibited from development under the 2012 PEIS (a change from its 2008 predecessor document) are several protected areas of environmental concern¹⁸⁴ (specifically, Copper Globe, Dark Canyon, I-

Edge of the Cedars, Green River, and Kodachrome Basin state parks, as well as Red Fleet, Scofield, Starvation, Steinaker, and Upper Stillwater reservoirs.

¹⁸¹ INSTITUTE FOR CLEAN AND SECURE ENERGY, LAND AND RESOURCE MANAGEMENT ISSUES RELEVANT TO DEPLOYING IN-SITU THERMAL TECHNOLOGIES INSTITUTE FOR CLEAN AND SECURE ENERGY, *supra* note 6; ANALYSIS OF ENVIRONMENTAL, LEGAL, SOCIOECONOMIC AND POLICY ISSUES CRITICAL TO THE DEVELOPMENT OF COMMERCIAL OIL SHALE LEASING ON THE PUBLIC LANDS, *supra* note 96; INSTITUTE FOR CLEAN AND SECURE ENERGY, A TECHNICAL, ECONOMIC, AND LEGAL ASSESSMENT OF NORTH AMERICAN HEAVY OIL, OIL SANDS, AND OIL SHALE RESOURCES, *supra* note 5.

¹⁸² U.S. Dep't of the Interior Bureau of Land Management, Proposed Land Use Plan Amendments for Allocation of Oil Shale and Tar Sands Resources on Lands Administered by the Bureau of Land Management in Colorado, Utah, and Wyoming and Final Programmatic Environmental Impact Statement (Nov. 2012) (*hereinafter* 2012 PEIS), available at <http://ostseis.anl.gov/>.

¹⁸³ *Id.* at Table 3.1.2-1.

¹⁸⁴ Pursuant to the ecological conservation mandate of FLPMA, BLM designates certain locations as areas of critical environmental concern(s). Designation as an ACEC depends

70 Scenic Highway, Lears Canyon, Nine Mile Canyon, Pariette Wetlands, San Rafael Canyon, San Rafael Reef, Sid's Mountain, and Temple Mountain¹⁸⁵), potential wild and scenic rivers,¹⁸⁶ and lands with wilderness characteristics.¹⁸⁷

From the perspective of potential oil sands developers, perhaps the most impactful of the various federal environmental and planning laws is the Endangered Species Act (ESA). Two lawsuits challenging Utah oil sands development on the basis of its impacts to natural resources have been brought. In the first of the two suits, the Center for Native Ecosystems sued the U.S. Fish and Wildlife Service (FWS) regarding its failure to list under the ESA a number of plant species to be affected by the development.¹⁸⁸ In the second case, thirteen environmental groups, including the Wilderness Society, Natural Resources Defense Council, Sierra Club, and Earthjustice, sued, challenging BLM's management plans for the development as well as the agency's final regulations for the project.¹⁸⁹ The overarching concern of both allegations in the second case is that the FWS made the BLM aware that the proposed development would have potentially devastating

on an area's significance and relevance to ecological conservation. BLM Manual 1613—Areas of Critical Environmental Concern § 1613.1.11, 43 C.F.R. § 1610.7-2 (1983).

¹⁸⁵ 2012 PEIS, *supra* note 182, at Ch. 1.

¹⁸⁶ *Id.*

¹⁸⁷ *Id.*

¹⁸⁸ See *Center for Native Ecosystems v. U.S. Fish & Wildlife Svc.*, Slip Op., No. 08-cv-2744, 2010 WL 2035580 (D. Colo. May 20, 2010). See also Center of the American West, *Oil Shale in the West: New Developments in Oil Shale*, May 20, 2010, <http://www.centerwest.org/publications/oilshale/7new/?p=215> (accessed July 24, 2013).

¹⁸⁹ See Press Release, Groups Take on Last Minute Bush Oil Shale Rules, Earthjustice, Jan. 6, 2009, <http://www.Earthjustice.org/news/press/2009/groups-take-on-last-minute-bush-oil-shale-rules> (accessed July 24, 2013); see also *Can Oil Shale Be Used as a Power Source?: Why the U.S. Hasn't Tapped this Resource for Energy*, SCI. AM., July 14, 2009, <http://www.scientificamerican.com/article.cfm?id=can-oil-shale-provide-power> (accessed July 24, 2013).

effects on numerous at-risk species, but the BLM nevertheless “chose to turn a blind eye”¹⁹⁰ and proceed with development.

Some of the most far-reaching impacts of Utah oil sands development would involve wildlife. As already noted, the interplay of the ESA and oil sands development could be quite problematic for developers. According to the BLM, unconventional resource development in Utah will affect 448 species of birds, seventeen species of amphibians, fifty-seven species of reptiles, and 134 species of mammals.¹⁹¹ In the STSAs, among the swath of impacted biological diversity are a number of protected species, including sixty-two BLM-designated and state-listed species, as well as twenty-one federally listed threatened or endangered species.¹⁹² Protected species include the white-tailed prairie dog,¹⁹³ Canada lynx,¹⁹⁴ and the black-footed ferret.¹⁹⁵ Core habitat for the sage grouse (which the FWS has concluded is deserving of protection as an endangered species¹⁹⁶) is off-limits for development in Colorado and Utah.¹⁹⁷ Habitat for

¹⁹⁰ Earthjustice, *supra* note 189.

¹⁹¹ 2012 PEIS, *supra* note 182, at 3.7.3-1. These figures reflect combined potential oil shale and oil sands leasing in Utah, so the precise number of species impacts by any single oil sands development project will clearly be smaller.

¹⁹² *Id.* at 3.7.4, Tables 3.7.4-2, 3.7.4-3, Appendix E.

¹⁹³ *Id.* at 3.7.4.1.29, Table 5.8.1-6, Appendix E.

¹⁹⁴ *Id.* at 3.7.4.1.7, Table 5.8.1-6, Appendix E.

¹⁹⁵ *Id.* at 3.7.4.1.4, Table 5.8.1-6, Appendix E.

¹⁹⁶ U.S. Fish & Wildlife Service, Endangered Species: Greater Sage-Grouse, <http://www.fws.gov/mountain-prairie/species/birds/sagegrouse/> (March 5, 2010).

Although FWS concluded that the grouse is deserving of listing, the agency did not list the species due to the backlog of other deserving candidates. *Id.*

¹⁹⁷ 2012 PEIS, *supra* note 185, at Ch. 1. Core sage grouse habitat is also off-limits for development in Wyoming in accordance with pre-existing state law sage grouse protections. *Id.* The impact of the sage grouse is evidenced by BLM’s dramatic shift in approach between 2008 and 2012, The scope of development contemplated under the 2008 predecessor PEIS would have impacted roughly 400,000 acres of sage grouse habitat, including more than 2,500 acres of breeding sites. U.S. Dep’t of the Interior Bureau of Land Management, Proposed Oil Shale and Tar Sands Resource Management

wild horses and burros,¹⁹⁸ which are protected by federal law, would be impacted by development.¹⁹⁹ Also noteworthy is the elk and mule deer habitat to be impacted;²⁰⁰ considerable pronghorn and bighorn sheep habitat will also be affected.²⁰¹

Oil sands development could also impact numerous federally listed and threatened and candidate plant species, such as the Utah columbine, Uinta Basin hookless cactus, and the shrubby reed-mustard.²⁰² Many such species are endemic to the proposed development area, thus rendering impacts all the more significant.²⁰³ Large- to moderate-impacts to vegetation include injury and mortality, habitat fragmentation, dispersal blockage, alteration of topography, changes in drainage patterns, erosion, sedimentation, contamination from spills, excess dust, fire, and the spread of invasive species, among others.²⁰⁴

The development could additionally affect aquatic resources, some of which provide habitat for sensitive, threatened, or endangered species.²⁰⁵ Waters located within the Green River watershed will be the most significantly affected waters, with the Green River, White River, Bitter Creek, Evacuation Creek, and the Pariette Draw all potentially impacted.²⁰⁶

Plan Amendments to Address Land Use Allocations in Colorado, Utah, and Wyoming and Final Programmatic Environmental Impact Statement, at 2-70, 2-89, Tables 2.6-1, 2.6-2 (Sept. 2008) (*hereinafter* 2008 PEIS).

¹⁹⁸ 2012 PEIS at 3.1.1, 3.1.

¹⁹⁹ 16 U.S.C. §§ 1331-1340 (1971).

²⁰⁰ 2012 PEIS, *supra* note 182 at 3.7.3.

²⁰¹ *Id.* at 3.7.3.

²⁰² *Id.* at Table 5.8.1-5, 5.8.1-6

²⁰³ *Id.* at Ch. 5.

²⁰⁴ *Id.*

²⁰⁵ *Id.* at 3.7.1, Table 3.7.1-1.

²⁰⁶ *Id.* at 3.4.

Oil sands development also could significantly affect paleontological resources.²⁰⁷ Project-related impacts would include damage and destruction of such resources.²⁰⁸ At present, the BLM's primary mitigation strategies are personnel training and monitoring of development activities,²⁰⁹ even though the breadth and frequency of new dinosaur species discoveries in Utah underscores the potential importance of the paleontological resources that will be vulnerable to development impacts.²¹⁰

C. Comparing Environmental Regulatory Frameworks

It has been asserted that the Canadian oil sands experience can serve as a model for development of similar resources in the U.S.²¹¹ For several important reasons, the U.S. is relatively limited in its ability to rely on Canada as a model for sands development. First, the regulatory environments of the two jurisdictions are too distinct to allow for meaningful comparison. In the U.S, the federal government owns wide swaths of potential sands development public lands and, as owner, the U.S. government possesses tremendous authority to regulate those lands. In Canada, however, the federal

²⁰⁷ *Id.* at Ch.5.

²⁰⁸ *Id.* at 5.4.1

²⁰⁹ *Id.* at 5.4.2.

²¹⁰ Christine Dell'Amore, *New Big-Nosed Horned Dinosaur Found in Utah*, NATIONAL GEOGRAPHIC, July 16, 2013, <http://news.nationalgeographic.com/news/2013/07/130717-new-dinosaur-utah-nasutoceratops-paleontology-animals-science/> (accessed July 24, 2013); *see also* Rachel Kaufman, *Two New Horned Dinosaurs Found in Utah*, NATIONAL GEOGRAPHIC, Sept. 22, 2010, <http://news.nationalgeographic.com/news/2010/09/100922-new-species-dinosaurs-horned-utah-fossils-science/> (accessed July 24, 2013).

²¹¹ *See, e.g.*, Utah Mining Association, *Development of Utah Oil Shale and Tar Sands Resources*, Oct, 2008, at *4 (stating that “the Canadian tar sands development experience provides insight regarding economic opportunities and planning, as well as impact mitigation”), *available at* <http://www.circleofblue.org/waternews/wp-content/uploads/2010/08/UMA-White-Paper-on-Development-of-Utah-OS-TS.pdf> (accessed July 24, 2013).

government owns virtually no oil sands development public lands and, accordingly, has virtually no authority to regulate oil sands projects.

This distinction would not be fatal to the analogy were the Canadian provinces to act in a regulatory capacity similar to that of the U.S. government. But, this is not the case. The Canadian environmental regulatory regime is drastically distinct from environmental regulation in the U.S. due to the comparatively miniscule jurisdictional authority over natural resource development the Canadian federal government possesses. As a result of this diminished jurisdictional role, federal land management and endangered species legislation, both of which play tremendous roles in U.S. resource development, are essentially absent from the Canadian oil sands development regime. Consequently, the kinds of issues present in the discussion of U.S. development are not considered in Canadian projects. Regulated interests have mostly captured the provinces, and what little provincial environmental law exists has not provided any kind of meaningful environmental review process, nor has it in any way impeded oil sands development.

Although the U.S. government, like many governments, is subject to criticism for regulatory capture, it nevertheless has meaningful environmental review processes and a comparatively broad regulatory regime. While U.S. public land management is guided by comprehensive federal legislation, Canadian provincial management operates without any such direction. It is thus difficult to draw any regulatory lessons out of the Canadian experience, for the provincial governments occupy a regulatory setting that is entirely different from the one facing U.S. land managers. Thus, due to the considerable differences between the Canadian and U.S. environmental regulatory regimes, the value

of the Canadian experience as a demonstrative model for oil sands development in the U.S. is minimal.

D. Collaboration v. Litigation

In both Canada and the U.S., a citizen suit may be brought against the agency that issues a lease for oil sands development for failure to comply with appropriate environmental assessments required by law. Although Canada and the U.S. share this avenue for challenging development, two very different approaches characterize Canada and the U.S. when it comes to utilizing lawsuits. Where Canada has embraced collaboration, the U.S. has embraced litigation as the predominant means of dispute resolution. In the absence of a preference for collaboration—which, to be fair, has been faulted as an enabler of the more damaging and cumulative effects of oil sands development now grappled with by Canada — replication of the Canadian oil sands experience, even on a small scale, cannot be expected to occur in the U.S.

There are multiple avenues for NEPA litigation arising from domestic oil sands development. As discussed earlier, NEPA requires that federal agencies take a “hard look” at the environmental consequences of a proposed action before undertaking any “major Federal actions significantly affecting the quality of the human environment.”²¹² As an example of the type of legal challenge available under NEPA’s “hard look” requirement, consider the following illustrative case. In February 2005, the BLM’s Utah Office sold and issued 16 oil and gas leases on public land in southern Utah. Environmental groups challenged the sale/lease, alleging that the BLM violated NEPA

²¹² 42 U.S.C. § 4332(c).

and the National Historic Preservation Act (NHPA).²¹³ Ultimately, the court found that the BLM violated NEPA by issuing four leases without taking a hard look at the no-leasing alternative and failing to consider significant new information about wilderness values and characteristics of all sixteen parcels.²¹⁴ More specifically, the court found that the BLM failed to prepare an adequate pre-leasing document and arbitrarily determined that it did not need to supplement existing NEPA analyses in light of new information.²¹⁵

Another example of NEPA litigation of the sort likely to accompany prospective oil sands development is found in a 2008 challenge, brought by the Southern Utah Wilderness Alliance (SUWA) to the BLM's sale and issuance of sixteen oil and gas leases on Utah public land.²¹⁶ First, SUWA argued that the Utah BLM office failed to comply with NEPA by failing to take a hard look at the no-leasing alternative. Second, SUWA argued the Utah BLM office violated NEPA by failing to consider significant new information concerning the land's wilderness values and characteristics. The court agreed that the BLM failed to consider the no-lease alternative because its decision to grant the leases was not accompanied by an adequate pre-leasing NEPA analysis (Environmental Assessment (EA) or EIS).²¹⁷ Additionally, the court agreed that BLM failed to consider new information about wilderness values and characteristics. The court explained that subsequent to the NEPA analysis on which the BLM relied to approve

²¹³ *Southern Utah Wilderness Alliance v. Norton*, 457 F.Supp.2d 1253 (D. Utah 2006). Plaintiffs included the Southern Utah Wilderness Alliance, the Natural Resources Defense Council, and the Wilderness Society.

²¹⁴ *Id.* The court did not reach the NHPA claim.

²¹⁵ *Id.* at 1262.

²¹⁶ *SUWA v. Norton*, 457 F.Supp.2d 1253 (D.Utah 2006).

²¹⁷ *Id.* at 1264.

issuance of the leases, the BLM had designated the land as wilderness. Additionally, SUWA had supplied ample evidence supporting the wilderness designation.²¹⁸ Because BLM had not conducted a new EIS encompassing its own wilderness designation and the information supplied by SUWA, it had not met the NEPA requirements and therefore the issuance of the leases was void. In addition to bringing an environmental assessment challenge under NEPA, litigants may also bring a suit under a specific statute. By way of example, in 2008, the Utah district court heard an oil sands leasing case arising under the CHLA.²¹⁹

The role of litigation in U.S. oil sands development -- and the attendant delays and expense -- is evidenced by the permitting experience of the only active commercial oil sands developer in Utah. In the case of the permitted U.S. Oil Sands, Inc. Utah project, lengthy attention was given to environmental impacts during the review process. Even so, U.S. environmental law is so thorough that even a lengthy analysis is subject to attack and, in fact, U.S. Oil Sands did and likely will continue to face multiple agency and judicial challenges. But, in Canada, environmental impacts are rarely assessed in depth and even more infrequently considered an adequate reason to limit development.

5. Canada v. U.S.: The Changing Face of Energy Policy Challenges

Although climate change and public perception of energy development endeavors may not be entirely novel energy policy challenges, they have evolved significantly between the onset of Canadian oil sands development and the present. And the shifts in and among the nuances of these policy challenges distinguish the context of the Canadian oil sands experience from that facing would-be U.S. developers.

²¹⁸ *Id.* at 1265.

²¹⁹ *Southern Utah Wilderness Alliance v. Sierra*, 2008 WL 3925216 (D. Utah 2008).

Current U.S. energy policy under the Obama Administration has two critical components: supply security and sustainability.²²⁰ The supply security strand of the administration's energy policy is focused on developing reliable energy sources that do not threaten national security.²²¹ The sustainability thread arises out of the threat of climate change, and is therefore intended to achieve reductions in greenhouse gases.²²² Obviously the surplus of natural gas currently being produced in the U.S., combined with the consequent downward pressures on natural gas pricing, have altered the historical energy supply landscape. Nonetheless, the U.S. still consumes a substantial amount of crude oil and syncrude, and, in the case of syncrude, the oil sands resource illustrates the independence of the energy policy goals of supply security and sustainability.

On the supply side, "buying from Canada neither props up an authoritarian regime nor exposes the U.S. to political manipulation of its energy supply."²²³ The Canadian oil sands represent the largest oil supply outside the control of OPEC and, as one Canadian official remarked, oil sands development "can go a long way to breathing life into the president's desire to reduce reliance on oil that comes from less-friendly parts of the world."²²⁴ Given that "[t]he United States is obsessed with security of supply,"²²⁵ it

²²⁰ The White House, Energy & Environment, <http://www.whitehouse.gov/issues/energy-and-environment> (accessed July 24, 2013).

²²¹ *Id.* The 9/11 attacks brought to the fore the connection between our energy supplies and the role that Middle Eastern nations play in U.S. national security.

²²² *Id.*

²²³ *Tarred with the Same Brush*, THE ECONOMIST, Aug. 5, 2010, http://www.economist.com/node/16743977?story_id=16743977 (accessed July 24, 2013) *see also* EZRA LEVANT, ETHICAL OIL (2010).

²²⁴ Jim Efstathiou, Jr., 'Dirty' Tar Sands in Canada to Test Obama Green Goals, BLOOMBERG, Feb. 17, 2009, (citing Gary Mar, Albertan diplomat in Washington, D.C.) <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a0uCsGmBhqXg&refer=us> (accessed July 24, 2013).

comes as little surprise that the Obama administration “considers Canada a very valuable partner as it relates to energy and energy security.”²²⁶

This emphasis on supply security was evident in the first term of the Obama Administration when House Speaker Nancy Pelosi and Representative Ed Markey met with Canadian parties interested in oil sands development.²²⁷ The invitation-only meetings arranged by the U.S. embassy in Ottawa included representatives from environmental groups, oil sands industry, and members of the Canadian government.²²⁸ Pelosi, who has long been a voice for environmental concerns, took a surprisingly cautious approach to the environmental issues associated with Canada’s oil sands. She described her visit as an opportunity to “learn and listen,” emphasized the importance of energy security for North America, and refused to take a stance on the issues.²²⁹ The Obama Administration has struck a similarly cautious tone as it awaits a final State Department decision on the Keystone XL Pipeline, prompting many environmental advocates to conclude that President Obama favors approval of the Keystone XL

²²⁵ Mike McCourt, *Obama Presidency No Threat to Alberta Economy: Experts*, METRO NEWS (Calgary), Nov. 6, 2008.

²²⁶ The White House, Press Briefing (Feb. 17, 2009) (*hereinafter* Press Briefing), available at <http://www.whitehouse.gov/the-press-office/press-briefing-21709> (accessed July 24, 2013). During his visit to Canada, President Obama stated that “we are very grateful for the relationship that we have with Canada, Canada being ... our largest energy supplier.” The White House, Press Availability by President Obama and Prime Minister Harper (Feb. 19, 2009) (*hereinafter* Press Availability), available at <http://www.whitehouse.gov/the-press-office/press-availability-president-obama-and-prime-minister-harper-canada-21909> (accessed July 24, 2103).

²²⁷ Josh Wingrove & Nathan Vanderklippe, *Oil Sands to Dominate Agenda on Nancy Pelosi’s Visit to Canada*, GLOBE & MAIL, Sept. 8, 2010, <http://www.theglobeandmail.com/news/politics/oil-sands-to-dominate-agenda-on-nancy-pelosis-visit-to-canada/article1699241/> (accessed July 24, 2013)

²²⁸ *Id.*

²²⁹ *Id.*

Pipeline.²³⁰ It is worth noting, however, that the President's most recent comments on the pipeline focused on the pipeline's potential environmental and climate impacts.²³¹ Although supply security plays a key role in U.S. energy policy, the President has also acknowledged the environmental concerns that arise from oil sands development,²³² namely greenhouse gas emissions from extracting and burning oil sands bitumen, and environmental degradation, such as pollution, resulting from mining activities. In this way oil sands present a "stark dilemma"²³³ for a president who campaigned on environmental responsibility.

Arguably, U.S. energy policy on oil sands has been influenced by more than the need to meet U.S. demand for fossil fuels. On April 20, 2010, an explosion on a British Petroleum Deepwater Horizon oilrig in the Gulf of Mexico triggered a massive oil spill that devastated the U.S. Gulf Coast. The spill raised serious questions about the risks associated with non-traditional oil extraction, such as deepwater-drilling, driven by U.S. fossil fuel consumption. At least one news outlet was quick to point out the connection

²³⁰ See, e.g., Andrew Restuccia, *President Obama's Keystone XL decision to test green groups*, POLITICO, April 30, 2013, <http://www.politico.com/story/2013/04/obama-keystone-vote-to-test-green-groups-90804.html> (accessed July 24, 2013).

²³¹ Nick Snow, *Obama sends mixed signals to oil, gas industry in his climate address*, OIL & GAS JOURNAL, June 26, 2013, <http://www.ogj.com/articles/2013/06/obama-sends-mixed-signals-to-oil-gas-industry-in-his-climate-address.html> (accessed July 24, 2013) (Specifically, President Obama commented, "But I do want to be clear: Allowing the Keystone pipeline to be built requires a finding that doing so will be in our nation's interest..it should not significantly exacerbate the problem of carbon pollution. The net effects of the pipeline's impact on our climate will be absolutely critical in determining whether this project is allowed to go forward."); see also Nick Snow, *TransCanada: Keystone XL's greenhouse gas impacts would be minimal*, OIL & GAS JOURNAL, July 18, 2013, <http://www.ogj.com/articles/2013/07/transcanada-keystone-xl-s-greenhouse-gas-impacts-would-be-minimal.html> (accessed July 24, 2013).

²³² Nick Snow, *Obama sends mixed signals to oil, gas industry in his climate address*, *supra* note 231.

²³³ Hassan Arif, *America's New Best Friend*, TELEGRAPH-J., Feb. 23, 2009.

between deepwater-drilling and Canadian oil sands mining, describing oil sands mining as “kind of like the gulf spill but playing out in slow motion.”²³⁴ The comparison again became apparent in August of 2010, when a pipeline carrying Canadian syncrude ruptured in Michigan, polluting water and sickening residents.²³⁵ As one observer remarked, “Canada's tar sands, like the Deepwater Horizon oil spill, are a warning sign of things to come. Future sources of fossil fuels will only get dirtier and riskier.”²³⁶

The environmental degradation that flows from oil sands mining is an issue on which the White House has been mostly silent. The Environmental Protection Agency (EPA) has taken a relatively strong stance against oil sands,²³⁷ while the DOI has been

²³⁴ Matthew O. Berger, *Oil Sands Riskier than Gulf Spill, Say Investor Groups*, IPS NEWS, May 7, 2010, <http://www.ipsnews.net/news.asp?idnews=51463> (accessed July 24, 2013) (quoting Doug Cogan, co-author of a Ceres report on oil sands development and Director of Climate Risk Management at RiskMetrics). Cogan also described the oil sands as a “land-based” version of the gulf spill. *Id.*

²³⁵ Eartha Jane Melzer, *Hundreds Sickened by Enbridge Oil Spill: State Does Not Plan to Track the Long Term Health of Those Exposed*, MICH. MESS’R, Dec. 10, 2010; see also CORNELL UNIVERSITY GLOBAL LABOR INSTITUTE, THE IMPACT OF TAR SANDS PIPELINE SPILLS ON EMPLOYMENT AND THE ECONOMY (MARCH 2012), at 12, available at http://www.ilr.cornell.edu/globalaborinstitute/research/upload/GLI_Impact-of-Tar-Sands-Pipeline-Spills.pdf (accessed July 24, 2013).

²³⁶ *Citizen Scientists Should Speak Out on the Environmental Effects of Ventures Such as Tar Sands Mining*, 468 NATURE 476 (2010), available at <http://www.nature.com/nature/journal/v468/n7323/full/468476a.html> (accessed July 24, 2013). Accord Berger, *supra* note 234 (noting that “[a]ll oil is getting dirtier and more difficult to find”).

²³⁷ *Tarred with the Same Brush*, *supra* note 223. The EPA has noted that greenhouse gas emissions from oil sands are more than 80% greater than emissions from traditional light crude. The EPA also criticized the U.S. State Department’s environmental impact statement for the Keystone XL pipeline approval, citing a failure to consider alternative energy sources other than syncrude derived from oil sands. *Id.* Both cases suggest a relatively strong EPA opposition to oil sands development.

lukewarm, if not reticent, to embrace the prospect of U.S. oil sands development.²³⁸

These agencies' treatment of oil sands development stands in stark contrast to the fact that the U.S. imports and consumes tremendous quantities of Canadian syncrude. At best, this disconnect reflects the political and practical realities of the American public's consumptive demand for crude and syncrude. At worst, this disconnect indicates a certain degree of nimbyism, evincing a national willingness to accept the environmental consequences of our energy consumption as long as those consequences remain outside of our borders. Should the disconnect ultimately prove to be more the latter, the Keystone XL pipeline stands to alter the status quo as far as nimbyist comfort and possibly prompt a change in the national dialogue on these issues.

It has been asserted that the significance of maintaining supply security and averting environmental catastrophes in the U.S. prevented any real change in U.S. policy toward Canadian oil sands following the Gulf oil spill.²³⁹ There is no sign that U.S. energy demand will diminish at any point in the near future, and renewable sources are

²³⁸ Although DOI has finalized a framework for allowing oil sands development to move forward (*see* U.S. Dep't of the Interior, Press Release, Secretary Salazar Finalizes Plan Promoting Responsible Oil Shale and Tar Sands Research, Demonstration and Development, Mar. 22, 2013, <http://www.doi.gov/news/pressreleases/secretary-salazar-finalizes-plan-promoting-responsible-oil-shale-and-tar-sands-research-demonstration-and-development.cfm> (accessed July 24, 2013)), other actions taken by DOI suggest that the agency might not view U.S. oil sands development as an integral component of U.S. energy policy. Brock Vergakis, *Utah Wary over National Monument Candidate List*, SEATTLE TIMES, Feb. 23, 2010 (describing an internal department memo that proposed setting aside lands overlying oil sands deposits as national monuments), http://seattletimes.nwsourc.com/html/localnews/2011165256_apusmonumentopposition3rdldwritethru.html (accessed July 24, 2103).

²³⁹ Peter Kilpatrick, *A Realistic and Pragmatic Strategy for Energy Generation*, ATLANTA J. CONST., Dec. 14, 2010, <http://www.ajc.com/opinion/a-realistic-and-pragmatic-777181.html> (accessed July 24, 2013).

far short of meeting demand.²⁴⁰ As a result, U.S. reliance on fossil fuels will persist. Unconventional oil (e.g. Bakken) and natural gas resources newly accessed through horizontal wells and hydraulic fracturing will clearly continue to substantially impact the energy supply landscape, despite a variety of unresolved environmental and regulatory concerns raised in connection with these activities.²⁴¹ Presumably, new industry techniques will continue to generate significant energy supplies, although the regulatory and financial framework will likely evolve considerably. Meanwhile, Canada's oil sands plainly fulfill the President's energy security objectives,²⁴² while also helping to limit the likelihood that an environmental catastrophe – absent a major pipeline spill from an approved Keystone XL pipeline -- like the Deepwater Horizon spill will occur on U.S. soil. Even so, it should be noted that opposition to oil sands development is growing, as evidenced by various advertising and grassroots campaigns aimed at persuading the

²⁴⁰ *Id.*

²⁴¹ See, e.g., Bob Downing, *EPA study on fracking threat to water will take years*, AKRON BEACON JOURNAL, June 18, 2013, <http://www.ohio.com/news/epa-study-on-fracking-threat-to-water-will-take-years-1.407046> (accessed July 24, 2013); Mead Gruver, *Federal Fracking Rules Spark Controversy in Wyoming*, THE HUFFINGTON POST, May 17, 2013, http://www.huffingtonpost.com/2013/05/17/federal-fracking-rules-regulations_n_3292958.html (accessed July 24, 2013); Ben Wolfgang, *EPA offers details of its controversial fracking study*, THE WASHINGTON TIMES, Dec. 21, 2012, <http://www.washingtontimes.com/news/2012/dec/21/epa-offers-details-its-controversial-fracking-stud/> (accessed July 24, 2013); Environmental Protection Agency, Natural Gas Extraction – Hydraulic Fracturing, <http://www2.epa.gov/hydraulicfracturing> (accessed July 24, 2013).

²⁴² A discussion of the conceptual issues inherent in this “energy security externality” can be found in MICHAEL A. TOMAN & DOUGLAS R. BOHI, *THE ECONOMICS OF ENERGY SECURITY* (1996).

President to take a strong stance against oil sands in general, and the Keystone XL pipeline in particular.²⁴³

The elephant in the room for U.S. energy policy with respect to Canadian oil sands and the Keystone XL pipeline is the existence of alternative markets for Canadian syncrude. As one observer noted, “even if America does try to reduce its imports, China will be more than happy to take them.”²⁴⁴ In fact, Chinese firms are already investing heavily in Canadian oil sands.²⁴⁵ TransCanada has not ignored this fact. Should the U.S. ultimately reject the Keystone XL pipeline, “TransCanada’s message is simple: If America does not take advantage of the oil sands, other nations will.”²⁴⁶ However, delivering Canadian heavy crude from the Athabasca oil sands will require construction of a new pipeline to British Columbia, as well as a new port.²⁴⁷ Such a project is already being planned—the Enbridge Northern Gateway Project, also referred to as the Enbridge Plan—though it too is receiving considerable opposition from environmental groups.²⁴⁸ It is against this energy policy backdrop that comparative analyses of climate change and

²⁴³ Barbara Yaffe, *Anti-Oilsands Campaign Could Fuel Support for Enbridge Plan*, VANCOUVER SUN, Dec. 8, 2010; Elena Schor, *Enviros Launch Ad Assault Against Oil Sands Pipeline Project*, N.Y. TIMES, Nov. 30, 2010, <http://www.nytimes.com/gwire/2010/11/30/30greenwire-enviros-launch-ad-assault-against-oil-sands-pi-82051.html> (accessed July 24, 2013); *but see also* David Kashi, *TransCanada Corporation (TRP) Defends Its New Ad Campaign For Keystone XL Against Environmental Groups*, International Business Times, July 25, 2013, <http://www.ibtimes.com/transcanada-corporation-trp-defends-its-new-ad-campaign-keystone-xl-against-environmental-groups> (accessed July 25, 2013).

²⁴⁴ *Tarred with the Same Brush*, *supra* note 223.

²⁴⁵ *Id.*

²⁴⁶ Schor, *supra* note 243; *see also* Andrew Nikiforuk, *Oh Canada: How America’s friendly northern neighbor became a rogue, reckless petrostate*, FOREIGN POLICY, July/August 2013.

²⁴⁷ Yaffe, *supra* note 243.

²⁴⁸ *Id.*; *see also generally* Wikipedia, *Enbridge Northern Gateway Pipelines*, *supra* note 15.

public sentiment, at the time of the Canadian oil sands experience and now in the U.S., must be considered.

A. Climate Change

The public opinion and political considerations that informed Canadian policymakers in engineering the Canadian experience were far different than those that presently face U.S. policymakers. In 1967 when Canadian oil sands production began, international public worries over global warming were essentially non-existent, as was any widespread negative public sentiment directed at potential domestic oil sands development. Today, climate change is not only an issue for many domestic and international policy discussions, but is a source of tremendous grassroots opposition (often fueled by social media not in existence at the time Canadian oil sands production began) to both domestic oil sands development and expanded imports of Canadian syncrude.

Several issues are relevant to understanding the differing role that climate change plays for prospective U.S. oil sands development than it did at the formative stages of the Canadian oil sands industry. This report first compares public perception of climate change at the time of early oil sands development with public climate change awareness today. Next this section discusses current climate change impacts on potential domestic oil sands development, such as legal challenges and public opposition grounded in climate change concerns. And finally, this report examines the ways in which climate change is shaping the conceptualization and evaluation of industrial economic risk.

When comparing present day public perceptions of climate change to perceptions at the time Canadian oil sands development began, two different worlds emerge. In

1967, Canadian oil sands production began, following decades of research.²⁴⁹ At that time, climate change research was in its infancy, and the first Earth Day was still three years in the making.²⁵⁰ With climate change science too disparate to yield persuasive findings and the environmental movement just beginning, it is fair to conclude that public concern for climate change was nonexistent during early Canadian oil sands development.

While climate change research progressed slowly through the 1970s, the economic pressures of the oil embargo intensified the focus on oil sands development.²⁵¹ It was not until the 1990s that climate change began to frequently and prominently appear in public discourse; for example, in the Intergovernmental Panel on Climate Change's first assessment report²⁵² and later in the U.N. Framework Convention on Climate Change.²⁵³ Today, climate change concerns and debate permeate policy and society. Governments are focused on climate change,²⁵⁴ as are non-governmental organizations.²⁵⁵ Climate change is a familiar headline in media publications both

²⁴⁹ Humphries, *supra* note 85, at 7.

²⁵⁰ Spencer R. Weart, The Discovery of Global Warming, Introduction, <http://www.aip.org/history/climate/summary.htm> (accessed July 24, 2013).

²⁵¹ *Id.*

²⁵² INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE: THE IPCC SCIENTIFIC ASSESSMENT (J.T. Houghton et al. eds., 1990), *available at* http://www.ipcc.ch/ipccreports/far/wg_I/ipcc_far_wg_I_full_report.pdf.

²⁵³ March 21, 1994, 1771 U.N.T.S. 107.

²⁵⁴ *See, e.g.*, U.S. Global Change Research Program, Homepage, <http://www.globalchange.gov> (accessed July 24, 2013).

²⁵⁵ Matt Horne & Josha MacNab, The Business of Climate Change (Pembina Inst. 2010), <http://www.pembina.org/pub/2097> (accessed July 24, 2013).

national and local.²⁵⁶ In less than fifty years, climate change has gone from an unknown concept to a ubiquitous societal and political concern.

Concerns over climate change have had an increasingly significant impact on oil sands development in Canada. While climate change was essentially absent from discussions of early oil sands development, today it is a central focus for public assessment of oil sands projects. Proposed oil sands developments frequently run into legal challenges,²⁵⁷ and objections to these projects are increasingly grounded in climate change concerns.²⁵⁸ In *Pembina Institute for Appropriate Development v. Canada*, an

²⁵⁶ See, e.g., Erin Cox, *O'Malley says state has 'moral imperative' to avert climate change*, THE BALTIMORE SUN, July 25, 2013, http://www.baltimoresun.com/news/maryland/bs-md-omalley-climate-change-20130725_0_5569506.story (accessed July 25, 2013); Max Greenberg, *Reuter's Climate Change Coverage Declined Significantly After "Skeptic" Editor Joined: New Analysis Backs Whistleblower's Claims*, MEDIA MATTERS FOR AMERICA, July 23, 2013, <http://mediamatters.org/blog/2013/07/23/reuters-climate-change-coverage-declined-signif/195015> (accessed July 25, 2013); Thomas Kaplan, *Most New Yorkers Think Climate Change Caused Hurricane, Poll Finds*, N.Y. TIMES, Dec. 3, 2012, <http://www.nytimes.com/2012/12/04/nyregion/most-new-yorkers-tie-hurricane-sandy-to-climate-change-poll-finds.html> (accessed July 25, 2013); Jon Herskovitz, *Climate Change: 2011 temperatures the hottest ever during La Nina*, CHRIST. SCI. MONITOR, Nov. 29, 2011, <http://www.csmonitor.com/Science/2011/1129/Climate-change-2011-temperatures-the-hottest-ever-during-La-Nina> (accessed July 25, 2013); Jason Lee, *China's Climate Change Talks: What's Changed Since Copenhagen?*, CHRIST. SCI. MONITOR, Oct. 5, 2010, available at <http://www.csmonitor.com/World/Asia-South-Central/2010/1005/China-s-climate-change-talks-What-s-changed-since-Copenhagen> (accessed July 24, 2013); Rachel Lee Harris, *Science Foundation Backs Climate-Change Play*, N.Y. TIMES, Oct. 3, 2010, http://www.nytimes.com/2010/10/04/theater/04arts-SCIENCEFOUND_BRF.html (accessed July 24, 2013); *Our View: No on Prop. 23; Keep Green Future*, PASADENA STAR-NEWS, Oct. 4, 2010, http://www.pasadenastarnews.com/ci_16254098 (accessed July 24, 2013).

²⁵⁷ Press Release, Oil Sands Environmental Coalition Files Motion Requesting Panel Adjourn Total Oilsands Hearing (Pembina Inst. Sept. 21, 2010), <http://www.pembina.org/media-release/2085> (accessed July 24, 2013).

²⁵⁸ NRDC, WHITE PAPER: CLIMATE IMPACTS FROM THE PROPOSED KEYSTONE XL TAR SANDS PIPELINE (July 2013), available at http://docs.nrdc.org/energy/files/ene_13072301b.pdf (accessed July 24, 2013); JENNIFER GRANT ET AL., FORECASTING THE IMPACTS OF OIL SANDS EXPANSION (Pembina Inst.

oil sands project was referred to a joint review panel due to its potential to cause significant adverse environmental effects.²⁵⁹ The panel recommended project approval, believing that the proposed mitigation measures would prevent significant adverse environmental effects. Non-profit organizations applied for judicial review of the panel's decision, claiming that the panel did not comply with mandatory steps in the CEAA. The Canadian Federal Court found that appropriate mitigation measures²⁶⁰ were considered, but the panel failed to provide a cogent rationale for its conclusion that adverse environmental effects of greenhouse gas emissions would be insignificant.²⁶¹ In short, the panel's dismissal of the greenhouse gas emissions as insignificant without explanation precludes the responsible federal agency from making an "informed decision."²⁶² The Court remanded the matter back to the panel with directions "to provide a rationale for its conclusion that the proposed mitigation measures will reduce the potentially adverse effects of the Project's greenhouse gas missions to a level of insignificant."²⁶³

Notwithstanding the *Pembina* case cited above, a weak Canadian regulatory system often presents few actual barriers to development.²⁶⁴ Even so, the public outcry

2013), available at <http://www.pembina.org/pub/2455> (accessed July 24, 2013); CERES, *supra* note 13, at 4, 5.4; see also 2012 PEIS, *supra* note 182, at 3.5.1.2.

²⁵⁹ 2008 FC 302.

²⁶⁰ *Id.* Mitigation measures must be both technically and economically feasible; see also generally Comments of Karin Buss, Ackroyd, LLP, *Mitigation used for Oil Sands Projects in Alberta; Does it comply with the Canadian Environmental Assessment Act?*, Annual National Environment, Energy and Resources Law Summit, Montreal, Canada, April 2007.

²⁶¹ 2008 FC 302.

²⁶² *Id.* at ¶¶ 78-79.

²⁶³ *Id.* at ¶ 80.

²⁶⁴ *Id.* (citing one observer's focus on a "lack of federal regulations in Canada to address greenhouse gas pollution").

has garnered the attention of the oil sands industry, with one industry executive recently inviting a leading Canadian environmentalist to engage in settlement talks.²⁶⁵ Not only has climate change provided a basis for direct opposition to oil sands development, it has also shaped the industrial economy in numerous ways. Shareholders are now more widely concerned with how corporate leaders will address climate change in terms of both social and shareholder responsibility. Lending institutions are beginning to acknowledge the reality and relevance of climate change risk in business decisions. But, widespread regulatory uncertainty over climate change has made it difficult for industry to craft responses.

Sometimes the role of climate change in shaping industry may seem incremental; for example, in the declaration of a major global lending institution that climate change is real.²⁶⁶ Other times the impact of climate change is more immediate to industrial interests, for climate change is now a concern common to corporate shareholders. For many, how those responsible for their investments—usually corporate management—are preparing for climate change is of ever-increasing significance. Sometimes the concern is so great as to lead to shareholder revolt.²⁶⁷ More often, shareholders are simply utilizing their voices and voting rights to ensure that greenhouse gas emissions are

²⁶⁵ Sheila Pratt, *Is an Oilsands Truce Possible?*, EDMONTON J., Oct. 4, 2010 (noting industry hopes that recent settlements between foresters and environmentalists might provide a model for a similar truce in oil sands development). Industry's invitation to settlement talks was, however, firmly rebuked. Todd Babiak, *Suzuki Coffs at Syncrude Offer*, VANCOUVER SUN, Sept. 23, 2010.

²⁶⁶ Marlene Y. Satter, *Climate Change Is Real, Says Bank: Implications Are 'Huge' for Investors, White Paper Claims*, ADVISORONE, Sept. 14, 2010, <http://www.advisorone.com/article/climate-change-real-says-deutsche-bank> (accessed July 24, 2013).

²⁶⁷ Marianne Stigset, *Statoil Defeats Shareholder Revolt Against Oil Sands*, BLOOMBERG BUSINESSWEEK, Oct. 5, 2010.

limited and that firms are preparing for business in a changing climate.²⁶⁸ It is thus of little surprise that climate change has become a central issue for most businesses,²⁶⁹ and a number of firms have received praise for their climate change conscientiousness.²⁷⁰

Perhaps the most noteworthy way that climate change has impacted industry is in the widespread uncertainty over how and which regulatory bodies will react to climate change. While the EPA is working on regulating greenhouse gases under the Clean Air Act, the U.S. Securities and Exchange Commission is issuing interpretive releases on corporate climate change reporting.²⁷¹ At the same time, significant and often rancorous debate continues over the proposed Keystone XL pipeline intended to transport increased quantities of Canadian syncrude to U.S. Gulf Coast refineries.²⁷² To the dismay of many

²⁶⁸ Nicola Berkovic, *Shareholders to Grill Firms on Climate Risk Plans*, THE AUSTRALIAN, Sept. 22, 2010, <http://www.theaustralian.com.au/national-affairs/shareholders-to-grill-firms-on-climate-risk-plans/story-fn59niix-1225927540330> (accessed July 24, 2013).

²⁶⁹ See, e.g., *The Next Environmental Issue for Business*, FORBES.COM, Aug. 9, 2010, <http://www.forbes.com/2010/08/09/sustainability-biodiversity-environment-leadership-citizenship-mckinsey.html> (accessed July 24, 2013).

²⁷⁰ *TransAlta Recognized for Leading Climate Change Disclosure Practices*, MARKETWATCH, Oct. 5, 2010; Alex Morales, *GE, Ford Top Climate List; Buffett's Berkshire Last*, BLOOMBERG, Oct. 4, 2010, <https://www.cdproject.net/en-US/Pages/HomePage.aspx> (accessed July 24, 2013). But this positive engagement with climate change may be the exception and not the rule. See *Canada's Largest Firms Show Leadership in Climate Change Management, But Widespread Corporate Action Lags*, CNW, Oct. 5, 2010, <http://www.newswire.ca/en/releases/archive/October2010/05/c8151.html> (accessed July 24, 2013).

²⁷¹ Bill Singer, *Climate Change: The SEC Weighs In (Or Not)*, FORBES.COM, Feb. 4, 2010, <http://www.forbes.com/2010/02/04/singer-climate-change-intelligent-investing-sec.html> (accessed July 24, 2013).

²⁷² Joe Nocera, *Canada's Oil Minister, Unmuzzled*, NEW YORK TIMES, April 24, 2013, http://www.nytimes.com/2013/04/25/opinion/nocera-canadas-oil-minister-unmuzzled.html?hp&_r=0 (accessed July 24, 2013); Gordon Pape, *Canadian Pipeline Wars*, FORBES.COM, June 21, 2010, <http://blogs.forbes.com/investor/2010/07/21/canadian-pipeline-wars/> (accessed July 24, 2013). See also *supra* note 9.

environmental activists, President Obama appeared only nominally engaged with the issue of climate change during his first term. However, recent remarks and actions seem to indicate that the Obama Administration's posture on climate change may be about to gain regulatory teeth.²⁷³ Uncertain of which regulators will act and to what extent, industry is left to address intermittent shareholder demands to respond to climate change.

Economic and financial concerns for industry can also be traced to other sources of climate change related uncertainty, such as the inability to acquire investment insurance for long term capital investments in climate change related projects²⁷⁴ and the instability of prices in regional cap-and-trade programs.²⁷⁵ While a select few industry leaders have remained resistant to change in the face of climate concerns,²⁷⁶ most businesses have reacted to the uncertainty by investing in policy that will, among other things, bring more certainty to the regulatory environment.²⁷⁷

Public understanding and awareness of climate change—what might be described

²⁷³ Nick Snow, *Obama sends mixed signals to oil, gas industry in his climate address*, *supra* note 231. In the context of oil sands, President Obama has previously pointed to carbon capture and sequestration as a solution, repeatedly emphasizing the need for the U.S. and Canada to work together on developing this technology. Press Availability, *supra* note 226; The White House, Press Conference (Feb. 17, 2009), <http://www.whitehouse.gov/the-press-office/interview-president-cbc-21709> (accessed July 24, 2103); Jim Efstathiou, Jr., *Canada's Tar-Sands Oil Can Be 'Clean,' Obama Says*, BLOOMBERG, Feb. 18, 2009, <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aCh8kEdlrPXE> (accessed July 24, 2013).

²⁷⁴ *Insurance Can Spur Climate Change Investment*, REUTERS, Oct. 5, 2010, <http://www.reuters.com/article/idUSTRE6942ZT20101005> (accessed July 24, 2013).

²⁷⁵ Simon Lomax & Lisa Lerer, *U.S. Northeast Carbon Price Falls on Senate Climate Bill Doubts*, BLOOMBERG BUSINESSWEEK, May 13, 2010.

²⁷⁶ *Coal? Yes, Coal*, BLOOMBERG BUSINESSWEEK, May 7, 2007 (noting one coal executive unwilling to acknowledge anthropogenic climate change).

²⁷⁷ Michael Keller, *CA's Clean-Tech Potential Draws Venture Capitalists into Fight Against Prop. 23*, REUTERS, Oct. 4, 2010, <http://www.reuters.com/article/idUS278205187820101004> (accessed July 24, 2013).

as the public mood—has undergone a sea change in the last four decades. From nonexistence in the public eye, climate change has evolved to become a pervasive concern for all segments of society. It is thus that climate change has come to impact oil sands development in myriad ways. Climate change is the basis for legal challenges and public opposition to oil sands mining, while it has also revolutionized the economic environment of the industry. Both shareholders and the public at large have articulated the expectation that corporate leaders should address the problem of climate change, and business executives have taken note. While this is by no means a universal domestic expectation, it is a growing one. It is also an expectation altered and intensified by events unconnected to oil sands, as was seen in the aftermath of Hurricane Sandy, when the severity of the physical and financial consequences of the event were linked to climate change. The public perception and media coverage of Hurricane Sandy provides an illustration of how at hand climate change is as a social issue, even when there appears to be little constructive engagement or ongoing political action to actually address or mitigate climate change. Over time, the issues of climate change, energy supply, and the financial and social costs of climate change can be expected to evolve, expanding the scope of related legal and regulatory challenges and prompting consequent shifts in the economic landscape for oil sands development.

B. Public Sentiment

Evaluating the potential of the Canadian oil sands experience to serve as a demonstrative model for U.S. development necessitates assessing the public perception of the pros and cons of Canadian development, and whether or how those perceptions carry over to future domestic oil sands production. Although production technologies and

mitigation strategies have advanced since the early days of Canadian oil sands production, the public perception of oil sands remains shaped by the post-production environmental management challenges being grappled with in Canada. As is evident from grassroots campaigns opposing expanded imports of Canadian syncrude via the Keystone XL pipeline, as well as opposition activities to the relatively minimal amount of pending U.S. oil sands development, any prospective domestic oil sands development in the U.S. will need to contend with the specter of the environmental impacts that have resulted from the Canadian oil sands experience.

The best and most current lens through which to view public perception of oil sands is the Keystone XL pipeline. The Keystone pipeline is such an exemplary case study because it illuminates how conflated the issues of U.S. energy policy, climate policy, and social change have become in the public perception of the oil sands resource. As proposed, the Keystone XL pipeline would carry Canadian syncrude south through the U.S. plains to refineries on the Gulf of Mexico. The Keystone XL project would place more than 1,600 miles of 36-inch diameter pipe across the central U.S.,²⁷⁸ and is expected to deliver an additional 900,000 barrels of oil to the U.S. market per day.²⁷⁹ The pipeline is thus quite compatible with the U.S. policy objective of obtaining secure energy sources, and the project's supporters have described it as a "key step" toward reducing dependence on Middle East oil.²⁸⁰ This is likely why Secretary of State Hillary

²⁷⁸ *Supra* note 10.

²⁷⁹ Susan Casey-Lefkowitz, *What Better Time to Say No to New Tar Sands Pipeline than During the International Climate Negotiations*, N.R.D.C. BLOG, Dec. 6, 2010, http://switchboard.nrdc.org/blogs/sclefkowitz/what_better_time_to_say_no_to.html (accessed July 24, 2013).

²⁸⁰ *See supra* note 223.

Clinton signaled an initial willingness to approve the transnational project²⁸¹ and her successor, John Kerry, has yet to reject the pipeline despite his forcefully expressed concerns over climate change.²⁸²

However, the Keystone XL pipeline faced challenges on numerous fronts in its first go-around. Some took issue with particular aspects of the pipeline itself. For example, Nebraska Senator Ben Nelson expressed concerns (subsequently resolved) with the risk a spill would present to the Ogallala aquifer, a critical plains water resource over which the pipeline will run.²⁸³ Related concerns alleged that the type of pipe proposed for the Keystone project was too weak to handle the pressure of syncrude.²⁸⁴ Further complaints about the pipeline focused more broadly on whether oil sands should be part of long-term U.S. energy policy, asserting that “tar sands and clean energy do not fit together.”²⁸⁵ Pipeline opponents also argued that allowing the pipeline would serve only

²⁸¹ Elana Schor, *Senators Question Secretary of State Clinton’s Comments on Oil Sands Pipeline*, N.Y. TIMES, Oct. 29, 2010, <http://www.nytimes.com/gwire/2010/10/29/29greenwire-senators-question-secretary-of-state-clintons-76116.html> (accessed July 24, 2013).

²⁸² Daniel Halper, *Kerry Gives First Foreign Policy Speech ... on Climate Change*, THE WEEKLY STANDARD Feb. 20, 2013, http://www.weeklystandard.com/blogs/kerry-gives-first-foreign-policy-speech-climate-change_703024.html (accessed July 24, 2103).

²⁸³ John Broder, *Governor of Nebraska Backs Route for Pipeline*, N.Y. TIMES, January 22, 2013, <http://www.nytimes.com/2013/01/23/science/earth/keystone-pipeline-route-approved-by-nebraska-governor.html?ref=opinion> (accessed July 24, 2013).

²⁸⁴ See PLAINS JUSTICE, *THE NORTHERN GREAT PLAINS AT RISK* (2010); *but see* NATIONAL RESEARCH COUNCIL, *TRB SPECIAL REPORT 311: EFFECTS OF DILUTED BITUMEN ON CRUDE OIL TRANSMISSION* (2013).

²⁸⁵ Casey-Lefkowitz, *supra* note 279. This position challenges the President’s position, *see supra* note 237, that carbon capture and sequestration techniques make oil sands a clean fuel source.

to hinder implementation of a sustainable energy policy, while simultaneously reinforcing U.S. dependence on high-carbon fuels.²⁸⁶

Citizen concern with the environmental risks associated with the pipeline ramped up following the Gulf oil spill, which “armed pipeline foes with a set of resonant new safety arguments.”²⁸⁷ These safety concerns were in turn amplified by recent syncrude pipeline spills.²⁸⁸ Following the Gulf spill and subsequent syncrude pipeline ruptures, many have expressed doubt about the level of U.S. preparedness to respond to a major spill on the Keystone XL pipeline,²⁸⁹ which some have predicted will give rise to the “next oil disaster.”²⁹⁰ At the grassroots level, these enumerated concerns have coalesced into a strident Keystone XL pipeline opposition movement that has leveraged social media to effectively broadcast the position that stopping the Keystone XL pipeline is an

²⁸⁶ See, e.g., Theresa Riley, *Bill McKibben on Climate Change and the Keystone Pipeline*, MOYERS & COMPANY, Feb. 13, 2012, <http://billmoyers.com/2012/02/13/bill-mckibben-on-climate-change-and-the-keystone-pipeline/> (accessed July 24, 2013); Leo Hickman, *Bill McKibben on tar sands, Obama, geoengineering and population growth*, THE GUARDIAN, Oct. 6, 2011, <http://www.guardian.co.uk/environment/blog/2011/oct/06/bill-mckibben-keystone-pipeline-oil> (accessed July 24, 2013); Elizabeth McGowan, *NASA’s Hansen Explains Keystone Pipeline Protest*, REUTERS, Aug. 29, 2011, <http://www.reuters.com/article/2011/08/29/idUS257590805720110829> (accessed July 24, 2013).

²⁸⁷ Elana Schor, *Push for Tar Sands Pipeline Sparks Fierce Hill Debate*, N.Y. TIMES, Oct. 1, 2010, <http://www.nytimes.com/gwire/2010/10/01/01greenwire-push-for-tar-sands-pipeline-sparks-fierce-hill-58408.html> (accessed July 24, 2013); Op-ed., *Baucus Overlooks Pipeline Safety Precautions*, BILLINGS GAZZ., Nov. 22, 2010, http://billingsgazette.com/news/opinion/guest/article_3bb9bd85-e4f7-586c-b48a-6a85e1cb7a85.html (accessed July 24, 2013).

²⁸⁸ Riley, *supra* note 286.

²⁸⁹ Letter to Ed., *Conditions for New Pipeline*, HELENA AIR, Dec. 3, 2010, http://helenaair.com/news/opinion/readers_alley/article_c74dc300-feb0-11df-99bb-001cc4c002e0.html (accessed July 24, 2013); *Baucus Overlooks Pipeline Safety*, *supra* note 291.

²⁹⁰ Schor, *supra* note 281.

essential component of addressing climate change.²⁹¹ Such public sentiment challenges did not confront the early architects of the Canadian oil sands industry, but they will shape the political, social and economic realities facing prospective U.S. oil sands developers.

6. Conclusion

The Canadian oil sands experience does hold some policy insights for proponents of domestic oil sands development; however, it does not offer a model or policy framework that can be appropriated to effect or expedite the commercialization of U.S. oil sands. For practical and logistical reasons, the U.S. will never be able to duplicate, or even approach, the market potential and economic power generated by the Canadian oil sands resource. The U.S. resource is simply too small and too fragmented. Similarly, the U.S. oil sands resource will face numerous regulatory and environmental limitations -- along with litigation and consequent economic and investment uncertainties -- that were and continue to be absent from the Canadian experience.

But what the Canadian experience does highlight, for unconventional resource development as a whole, is the effectiveness of long-term planning, of shared risk-taking between government and the private sector, of the value of research and development expenditures, and of flexibility in allocating the financial benefits between private and public interests. Without those elements in place, the Canadian experience would have been far different and arguably far less successful on every front. The Canadian experience also underscores the need for genuine and effective multi-stakeholder dialogue as an integrated element of resource development planning. If the U.S. resolves

²⁹¹ *See supra* note 286.

the energy policy debate in favor of adding oil sands resources to the U.S. energy portfolio, the course of domestic oil sands development would similarly benefit from incorporating sustained long-term planning, prioritizing consensus-building among impacted stakeholders, committing to well-funded research and development, and embracing regulatory adaptability as to assumptions and allocations of financial risk and reward.

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