



IMPERIAL STANDARD: Imperial Oil, Exxon, and the Canadian Oil Industry from 1880

Graham D. Taylor

ISBN 978-1-77385-036-8

THIS BOOK IS AN OPEN ACCESS E-BOOK. It is an electronic version of a book that can be purchased in physical form through any bookseller or on-line retailer, or from our distributors. Please support this open access publication by requesting that your university purchase a print copy of this book, or by purchasing a copy yourself. If you have any questions, please contact us at ucpress@ucalgary.ca

Cover Art: The artwork on the cover of this book is not open access and falls under traditional copyright provisions; it cannot be reproduced in any way without written permission of the artists and their agents. The cover can be displayed as a complete cover image for the purposes of publicizing this work, but the artwork cannot be extracted from the context of the cover of this specific work without breaching the artist's copyright.

COPYRIGHT NOTICE: This open-access work is published under a Creative Commons licence. This means that you are free to copy, distribute, display or perform the work as long as you clearly attribute the work to its authors and publisher, that you do not use this work for any commercial gain in any form, and that you in no way alter, transform, or build on the work outside of its use in normal academic scholarship without our express permission. If you want to reuse or distribute the work, you must inform its new audience of the licence terms of this work. For more information, see details of the Creative Commons licence at: <http://creativecommons.org/licenses/by-nc-nd/4.0/>

UNDER THE CREATIVE COMMONS LICENCE YOU MAY:

- read and store this document free of charge;
- distribute it for personal use free of charge;
- print sections of the work for personal use;
- read or perform parts of the work in a context where no financial transactions take place.

UNDER THE CREATIVE COMMONS LICENCE YOU MAY NOT:

- gain financially from the work in any way;
- sell the work or seek monies in relation to the distribution of the work;
- use the work in any commercial activity of any kind;
- profit a third party indirectly via use or distribution of the work;
- distribute in or through a commercial body (with the exception of academic usage within educational institutions such as schools and universities);
- reproduce, distribute, or store the cover image outside of its function as a cover of this work;
- alter or build on the work outside of normal academic scholarship.



Acknowledgement: We acknowledge the wording around open access used by Australian publisher, **re.press**, and thank them for giving us permission to adapt their wording to our policy <http://www.re-press.org>

A CHANGE IN THE CLIMATE

Oil has always been a dirty business. A reporter travelling through western Pennsylvania in 1865 portrayed one of the early oil fields: “The soil is black, being saturated with waste petroleum. The engine houses, pumps and tanks are black with the smoke and soot of coal fires, which raise the steam to drive the wells . . . Even the trees . . . wore the universal sooty covering. Their very leaves were black.”¹ Piles of mud and pools of oil surrounded the wellheads. Oil leaked from jerry-built pipelines in the field, from wooden barrels that carried the oil by barge or wagon to refineries.

The refineries in turn contributed to the polluted scene. When kerosene was the main commercial by-product of oil refining, most of the residue, including gasoline, was dumped into nearby culverts or streams while sulphur-laden smoke poured from the chimneys. When the city of London (Ontario) was contemplating expansion in the 1870s, the refineries clustered there hastily moved to carve out a separate municipality to avoid air and water regulations that might be imposed, a tactic Imperial Oil followed when setting up refineries in locations distant from residential communities in Halifax, Montreal, and Vancouver.²

Oil was also a dangerous business. Drillers often encountered explosions, fires, and runaway wells, which can keep leaking or burning for weeks or months. An observer of a well explosion at Oil Creek in 1861 described the scene: “In a moment the whole air was in roaring flames . . . each drop of oil came down a blazing globe of boiling oil. Instantly the ground was in flame, increased and augmented by the falling oil.”³ Wellhead fires were a regular occurrence in the Petrolia fields, burning or smoldering for weeks on end. Refinery explosions were common as

well. Jacob Englehart's first refinery in London blew up twice within seven weeks in 1873. Ten years later Imperial Oil's large Victoria refinery in London burned to the ground, leaving the company with only Englehart's Silver Star refinery in Petrolia.⁴

Between 1880 and the 1920s conditions in the industry improved to some degree, in part because of technological changes that indirectly affected pollution and safety problems. The development of "ram type blowout preventers" by James Abercrombie and Harry Cameron in the 1920s reduced the frequency of wellhead gushers that could result in runaway fires as well as extensive pollution of oil fields. Pipeline materials and design improved substantially, although these did not figure prominently in Canada until after the Second World War. The introduction of thermal cracking technology and the shift to production of gasoline and motor-vehicle related products reduced the amount of waste materials discarded by refineries. Better maintenance and measures to reduce sulphuric emissions lessened, although it did not eliminate the dangers of refinery fires.⁵

In the first half of the twentieth century, the term "conservation" was often invoked, but it could best be defined as the efficient exploitation of natural resources with an emphasis on the reduction of waste rather than protection of the environment. During debates in the US Congress in the 1920s on an Oil Pollution Act, advocates for the American Petroleum Industry argued, effectively, that improvements in thermal cracking had been so successful that refineries could be exempted from the application of the act to pollution of harbours and waterways; the law focused instead on oil tankers, requiring them to empty residual waste beyond the three-mile limit. The efficiency argument could of course work both ways. In the 1930s the Alberta Conservation Board set out to reduce gas flaring in the Turner Valley, arguing that it wasted an economic resource; it also reduced pressure on oil deposits, making them harder to locate for drilling. It took years of political manoeuvring, but the board was ultimately successful in 1938. In the 1950s the board allowed a limited amount of flaring to continue, but required that measures be taken to protect nearby land and forests.⁶

Two events during this period provide insights into Imperial Oil's approach to what would now be regarded as environmental challenges



FIGURE 13.1. Atlantic #3 Fire, 1948. Glenbow Archive PA-3478-3, Imperial Oil Collection.

during a period of transition from an emphasis on efficiency and reducing waste to one that focused more on the recovery of the environment. The first episode reviews the quashing of a runaway fire in the Leduc oilfield in 1948–49; the second focuses on the clean up of the Saint Clair River after the Second World War.

In the aftermath of Imperial success at Leduc Number 1, many other enterprises, large and small, descended on the oil field. Among these was the Atlantic Oil Company, a relatively small undertaking founded by Frank MacMahon, who later gained fame and fortune in pipeline development. On March 8, 1948, about a year after Imperial's Leduc well came in, the Atlantic Company's third well attempt erupted into a gusher, spewing oil, gas, and mud 150 feet into the air. The leaking continued for months, raising concerns that a fire could consume the Leduc field and beyond. The Alberta Conservation Board brought in Myron Kinley, an American specialist in quelling "wild wells," who tried using dynamite inside the well and then packing it with a mixture of mud, wood fibres, and lime, all to no avail. Local farmers and even residents of Edmonton demanded action.

Alberta's premier Ernest Manning, facing an upcoming election, authorized the board to close down the Leduc field, and Imperial Oil turned to Tip Moroney, the head of its western operations, and an engineer with extensive experience in Oklahoma, Peru, and Venezuela, to deal with the crisis. Moroney recruited two experienced drillers, Charlie Visser and Jim Tod from Royalite (which was in the process of separating from Imperial). They set out to relieve pressure on Atlantic Number 3 by drilling wells north and west of the runaway, which was still hurling debris into the air and leaking oil. On Labour Day the long-feared explosion and fire broke out, but fortunately water from one of the relief wells suppressed the fire after a few days. The conservation board was able to settle most liability claims from a trust fund it had set up against such a contingency. Ironically, the newspaper accounts (and dramatic photos) of the explosion brought immense publicity to Leduc and encouraged even more oil seekers to flock to Alberta. At the same time the episode enabled the conservation board to strengthen its field inspection system and preparedness for future problems. The public pressure and government action that led to the termination of the Atlantic Number 3 blowout in 1948 contrasts with the conditions that prevailed during the Royalite Number 4 well fire twenty-four years earlier.⁷

As discussed in chapter 8, during the Second World War the federal government set up Polymer Canada in Sarnia near to Imperial Oil's largest refinery, as well as Dow Chemical. After the war a number of oil refineries and petrochemical operations, including Sun Oil, DuPont, Fiberglass Canada, and Shell Canada also relocated there. Even as "Chemical Valley" was celebrated on Canada's currency, it was recognized that this was a potent source of air and water pollution on the Saint Clair River, feeding into Lake Huron and Lake Erie. In 1950 the Canada-US International Joint Commission submitted a critical report on the state of water pollution of the "boundary waters" in the Lake Erie region.⁸

In 1952 the Saint Clair River Research Committee was set up by representatives of Imperial Oil, Polymer Canada, and Dow Chemical, joined later by eight other companies in the area. By 1960 the committee had spent \$14 million (CAD) conducting surveys of pollution levels and designing equipment to mitigate the effects of industrial operations. Imperial contributed \$2.8 million (CAD) to this total. The committee's

work led to the development of the Great Lakes Water Quality Agreement by the International Joint Commission, which was ratified in 1972.⁹

By that time there had been a sea change in public attitudes toward environmental issues in the US and Canada. Concern over the impact of pesticides, stimulated in part by the 1962 publication of Rachel Carson's *Silent Spring*, widened to cover many aspects of industrialization. The capacity of the oil industry to use technology to protect aquifers and groundwater from pollution seemed to have reached its limits. High profile disasters—such as the sinking of the tanker *Torrey Canyon* in 1968 that affected coastlines from the Bay of Biscay to the North Sea, and the fouling of beaches and marine wildlife in Santa Barbara following an oil spill by a Union Oil drilling blowout in 1969—fuelled growing demands for more intense regulation of industrial pollution. As luck would have it, Imperial Oil was to figure prominently in an episode that dramatized the dangers of oil spills in Canada in this same time period.

On the morning of February 4, 1970 the oil tanker SS *Arrow* ran aground at Chedabucto Bay in Nova Scotia during a storm. The crew was rescued but the ship remained stranded as high winds and waves impeded salvage efforts. On February 8 the ship split in half and sank, releasing over 10,000 tons (3.6 million US gallons) of bunker sea oil that the *Arrow* was carrying from Aruba to the Stora paper mill in Point Tupper. Salvaging took two months, by which time the oil slick had spread across 190 miles of the Nova Scotia shore. The clean up took more than a year, and forty years later there were still reports of oil residues in the area. The ship was registered in Liberia, owned by Sunstone Marine Co. of Panama, and managed by Olympic Maritime S.A. of Monte Carlo. Apparently Greek tycoon Aristotle Onassis controlled the vessel. It had been chartered by Imperial Oil for the voyage.¹⁰

Imperial had its own fleet of ships, operating since 1902. In 1945 it had fourteen coastal tankers, primarily for use on the Great Lakes, plus five deep-sea tankers. After the sale of International Petroleum, however, Imperial began to reduce its overseas fleet, although a tanker capable of ocean voyages, the *Imperial Quebec*, was launched in 1957. The company had eight ships in operation in 1970, and most of the oil imported from Venezuela and elsewhere was carried in chartered vessels like the *Arrow*.¹¹



FIGURE 13.2. SS *Arrow*, Chedabucto Bay (1970). Glenbow Archive IP-14c-70-6, Imperial Oil Collection.

When Imperial's executive committee was informed about the sinking, it authorized one of its regular tankers, *Imperial Acadia*, to sail from Newfoundland to assist in the salvage, and also agreed to contribute to the clean up. At the same time, members were concerned that Imperial should not be held responsible for the accident. Two weeks later the committee heard a report from its legal counsel, J.F. Barrett, who advised them that the federal Department of Transport had agreed that the company had undertaken clean-up efforts "under extreme emergency conditions . . . to

minimize pollution hazards” and this did not imply “legal liability under Canadian or international law.” Imperial’s clean-up responsibilities would be restricted to “pools of oil in various coves.” Subsequently, the company reported it had spent \$500,000 (CAD) on clean-up operations, which cost over \$3 million (CAD). An inquiry under a Nova Scotia judge into the accident assigned fault to the Greek captain of the *Arrow*.¹²

In terms of public relations the company escaped relatively unscathed, in contrast to the results of the Exxon Valdez disaster in 1989. Don Jamieson, the Canadian Minister of Transport, criticized Imperial Oil because it “should have asked . . . what are we going to do if a disaster occurs?” Jamieson set up an “Oil Spill Task Force” to review the preparedness of oil shipping companies for accidents. Imperial followed up with a procedural manual that was regularly updated. The company retired its last regular tanker in 1998. The marine service had been an important part of Imperial’s operations for almost a century, and had followed high standards of maintenance and morale throughout those years. But the expansion of pipeline systems and the move by the industry generally to contracting out transport services had been going on for a long time.¹³

At virtually the same time that Imperial’s Executive Committee was informed about the *Arrow* disaster, they were notified of the likely imposition of emission controls on automobiles, and the prospective elimination of leaded gasoline. This was by no means a surprise, as pressure had been mounting over the previous decade, particularly in the US, for emissions regulation. Heralded in the 1920s as a breakthrough in auto fuel technology, by the 1960s leaded gasoline was seen to be a health hazard as well as a major contributor to “smog” air pollution in metropolitan areas such as Los Angeles and New York City. The Clean Air Act of 1970 in the US imposed deadlines on the auto industry (and by the extension on the oil industry) to meet reduced emission targets by the middle of the decade.¹⁴

Because of the Auto Pact, the Canadians might have been expected to follow in the wake of US regulations; but, interestingly, the Department of Energy, Mines and Resources under Jack Austin promoted a “Canadian” approach that would soft-pedal the imposition of the Clean Air Act standards, arguing that smog was much less of a problem in Canada. Other departments, including Environment and Industry Trade and Commerce, pushed for closer integration with the US on the issue, but bureaucratic

feuding hampered any action until the energy crisis shifted attention away from the environment to security of supplies. In 1980, Canadian emission requirements were lower than those in the US, and “harmonization” did not occur until after the Free Trade Agreement of 1988.¹⁵

Imperial Oil in 1970 was prepared, albeit reluctantly, to follow the deadlines of the US Clean Air Act, and modify their refinery facilities to meet the lead-free requirements by 1976. This was in keeping with the position of both Exxon and General Motors in Canada (as well as the United States). Not surprisingly, these costly renovations were put on hold once the position of the Canadian government was clarified (or perhaps mud-died), and the company postponed action until the 1980s, at which point the Nanticoke refinery of Texaco Canada, which had moved on to developing the capabilities of producing lead-free gas, was an attractive feature in the Imperial takeover.¹⁶

In 1970 Imperial Oil began producing an “Environmental Protection Activities Review,” which eventually was incorporated into its annual reports. A good deal of the report was devoted to refinery pollution clean ups and monitoring the impact of federal environmental policies. The degree of detail in the reviews waxed and waned with the demands from the government and the media for information, but environmental awareness did become part of the way in which the company presented itself to the public. The industry showed progress in addressing pollution generated by refineries. In an otherwise glum assessment of the effectiveness of Canadian environmental regulations, the environmental lawyer David Boyd noted that refineries had made significant reductions in emissions of phenol, ammonia nitrogen, and sulphur dioxides between 1980 and 1995—prompted, to be sure, by government regulations at the municipal as well as federal level.¹⁷

More frustrating for the oil industry were continuing controversies over pipeline leaks, despite major improvements in pipeline design and construction. As environmental historian Sean Kheraj has pointed out, specifically with regard to the Interprovincial Pipeline Company (now Enbridge) between 1950 and 1980: “While oil spills have been a regular occurrence . . . the volume of liquid hydrocarbons released has been proportionally small relative to the total throughput . . . That fraction of [one]

per cent of a failure rate, however, led to more than 41 million litres of liquid hydrocarbon spills.”¹⁸

The oil sands presented the greatest environmental challenges for Imperial Oil and the other companies that entered that field. The sheer scale of the operations dwarfed most conventional oil field exploration and development, but the particular features of this resource strained the technological capabilities of the industry. As Jack Armstrong said, it was a “big, tough, expensive job,” and the payoff always seemed to vanish into the future.

The first major oil sands projects, those of GCOS and Syncrude, resembled strip-mining operations in the coal industry—the scraping of surface areas to reach the bitumen—and as with all mining, the tailings were left behind as too toxic to return to the existing water system. GCOS notoriously failed to meet even the minimal standards for residual recovery required by the Alberta government.

In 1973 Alberta began demanding land reclamation of the oil sands sites after use, and in 1993 banned discharges of wastewater so that tailings ponds would have to be treated before release. All of the oil sands companies made efforts to deal with land and water reclamation, but even a sympathetic observer of the industry acknowledged that these measures only covered a fraction of the problem, due in part to the renewed growth of operations in the early twenty-first century.¹⁹

Imperial’s Cold Lake development, an *in situ* undertaking, avoided the problems of strip mining but produced its own issues. A large amount of water was required for these operations (although less than with the mining approach) and required recycling: the wastewater was injected into aquifers on the site. Although Imperial took measures to control the potential for leakages, critics claimed that bitumen was seeping into the waterways and in 2013 Canadian Natural Resources Inc. drained a lake they thought was affected.²⁰

The greatest threat, not just to the oil sands but also to the petroleum industry as a whole, came from another quarter. In 1990 the Intergovernmental Panel on Climate Change, a body of scientists sponsored by the United Nations, presented a report maintaining that the earth’s climate was warming at an accelerated rate, particularly since the Second World War, and that carbon emissions from human use of fossil

fuels—including coal, oil, and gas—had contributed significantly to this result. In response the UN called for a Conference on Environment and Development, to be held in Rio de Janeiro in 1992.

There was precedent for this proposal. In 1987, after scientists had discovered that the ozone layer in the atmosphere that protected earth from ultraviolet radiation was being depleted, twenty-four countries signed an international agreement to restrict the use of chlorofluorocarbons, which were considered a major contributor to the problem. But when a much larger group assembled in Rio, sharp differences emerged. Industrializing nations such as China and India objected to measures that might impose restraints on carbon emissions in their countries, since the threat originated from the output of long-established industrial countries, particularly the United States and Western Europe. One hundred and fifty-three nations signed the Convention on Climate Change, which called for “the stabilization of greenhouse gas concentrations,” by ensuring that by the year 2000 carbon emissions would be limited to 1990 levels. But aside from setting targets, the agreement did not commit any signer to actually doing anything. Another conference scheduled in Kyoto in 1997 was expected to identify specific carbon reduction goals.

At Kyoto the same divisions between “developed” and “developing” nations persisted. In the end a compromise was worked out that only encouraged countries such as China to undertake “clean energy” projects. The industrialized countries were to meet certain targets by 2012—Canada, for example, was assigned to cut its carbon emissions by 6 per cent by that time, while the US, Japan, and European countries would meet targets between 6 and 8 per cent. One hundred and forty-seven countries, including the US and Canada, signed on. The agreement also stipulated that it must be ratified by countries responsible for 55 per cent of global carbon emissions before going into effect.²¹

By this time, however, internal divisions were also arising, particularly in the United States, where the treaty stalled. Both the Democratic president Bill Clinton and his Republican successor, George W. Bush, declined to even present the agreement to the US Senate for ratification, and partisan divisions blocked further action, although some states such as California undertook their own emission restriction initiatives. After 2010, president Barack Obama used executive orders to enable the US

Environmental Protection Agency to impose carbon restrictions on the fossil fuel industries. Russia, where the oil and gas industry had rebounded after the collapse of the Soviet Union, was also a holdout until 2005, when its ratification brought Kyoto to the 55 per cent goal. In 2016 China and other “developing” nations agreed to participate in the Paris Protocol on carbon emission limits; but in the US a new administration under Republican president Donald Trump refused to accept the Paris accord, and rolled back emission control measures introduced by his predecessor.

Not surprisingly, the major oil and gas corporations were reluctant if not hostile observers of events preceding and following the Kyoto accord, although after 2000 BP and Shell exhibited some willingness to accept the need for controls over carbon emissions. Exxon, on the other hand, fiercely opposed the basic ideas underlying the demand for restrictions. In 1989 Exxon set up a “Global Climate Coalition” under the auspices of the US National Association of Manufacturers and sponsored speakers and organizations who criticized climate change advocates. The company’s public relations strategy presented arguments that Exxon and the industry were already taking steps to limit carbon emissions, and that the cost of implementing the Kyoto targets would wreak economic hardship on the US. But much emphasis was also placed on discrediting the science on climate change—questioning the reliability of the research, and promoting the view that scientific inquiry is by its nature based on “uncertainty.”²²

Ironically, Exxon’s own scientists had been conducting research on global warming trends in the 1970s. In 1979, based on concerns expressed by the research and engineering division, the company sent a supertanker carrying special measuring instruments to sail from the Gulf of Mexico to the Persian Gulf, to determine the speed and extent to which oceans acted as a “carbon sink” absorbing carbon dioxide from the atmosphere. A few years later Exxon scientists, collaborating with outside researchers, developed computer simulations of the impact of carbon emissions in increasing global temperatures: in 1983–84 the results of these studies appeared in peer-reviewed journals in atmospheric sciences.²³

Although this research did not lead to major policy shifts by Exxon, the results did reflect a perspective that influenced senior management in the late 1970s and early 1980s. In the context of oil market instabilities, the company began looking toward a strategy of diversification in a range of

fields, including nuclear power and solar power as well as synthetic fuels and non-energy related businesses. If climate change portended long-term restrictions on oil resources, this reinforced a move toward alternative energy (and other) markets. Clifford Garvin, the chief executive of Exxon in 1977, maintained: “Exxon is in the energy business, as it is most broadly defined, rather than just the oil business.”²⁴

The collapse of global oil prices in 1985–86 ushered in a new regime at Exxon under Lawrence Rawl and Lee Raymond, who set out to dismantle the diversification strategy and return the company to its “core business”—i.e., oil and gas. The research on global warming was terminated as part of across the board cost-cutting measures. In the 1990s, Raymond, as the dominant figure at Exxon, saw the international efforts to limit fossil fuel emissions as a direct threat to the company’s “core business” and its strategy to recover leadership in the industry.²⁵

Exxon’s position on global warming attenuated after Raymond’s retirement in 2006. By this time the company’s take-no-prisoners stance had left it somewhat isolated as the other oil majors shifted: the “Global Climate Coalition” closed down in 2002, and Exxon was regularly assailed by protestors and activist shareholders at its annual meetings. Raymond’s successor Rex Tillerson was a more low-key figure, with extensive experience as an oil diplomat in Russia, the Middle East, and Thailand. When he became US Secretary of State in 2017, he notably challenged President Trump’s views on climate change—but also adhered quietly to the boss’s decision to the contrary.²⁶

Imperial Oil’s challenge in the debate over climate change and carbon emission limits was in some respects greater than its parent, Exxon, had to face. With large fixed commitments both through Syncrude and at Cold Lake, it could not easily extricate itself from this strategy and although the oil sands contributed only 8 per cent of Canada’s output of greenhouse gases, during the debates over Kyoto environmentalists had focused attention on this sector of the industry as the virtual embodiment of misguided economic and technological development. The *in situ* projects like Cold Lake came in for criticism, along with the strip mining operations of Suncor and Syncrude—particularly for the high energy requirements to heat water for the SAGD process. Calculations of the greenhouse gas output of the full fuel cycle (called “well to wheels”) of *in situ* operations was

somewhat higher than the surface mining levels and both exceeded the output of conventional oil production by 12 to 24 per cent, despite efforts to improve refining efficiencies after 2010.²⁷

Imperial's shifting perspectives paralleled those of Exxon. A section on "Climatic Change, Carbon Cycle" appeared in its 1980 *Review of Environmental Protection Activities*, which included the observation that "increases in fossil fuel usage and decreased forest cover are aggravating the potential problem of increased [carbon dioxide] in the atmosphere." By the 1990s in the context of the debate over the Kyoto accord, Imperial's president Robert Peterson reiterated the arguments made by Exxon's Lee Raymond that "there is absolutely no agreement among climatologists on whether or not the planet is getting warmer, or . . . whether warming is the result of man-made factors or natural variations in the climate."²⁸ Also in 1998 a leaked Imperial memo, "The High Costs of Kyoto," echoed criticisms of the accord emanating from the Global Climate Coalition. But, as with Exxon, Imperial moved thereafter to accommodate environmental critics of the industry, particularly on the issue of oil sands development.²⁹

In 1997 Exxon-Mobil and Imperial began laying plans for a new oil sands venture at Kearl, 40 kilometres north of Fort McMurray. It would be an open-pit mine, similar to Suncor and Syncrude, projected to cost \$8 billion (CAD) to extract between 110,000 and 300,000 bbl./day, to be transported by an Enbridge pipeline to Edmonton for refining. Imperial would own 70 per cent of the project and Exxon Mobil 30 per cent.

This was Imperial's first major oil sands venture since Cold Lake in the 1970s and a kind of good-faith opportunity for Exxon and Mobil to work together pending their incipient merger. It also was devised at virtually the same time as the Kyoto Accord, and reflected Lee Raymond's defiant posture toward that initiative. It took ten years for the Kearl project to get approval from the Alberta Energy and Utilities Board, and it faced almost immediate legal challenges from the Sierra Club and the Pembina Institute in Alberta, leading to a Canadian court ruling that delayed further action until issues relating to greenhouse gas emissions were resolved. In response, Imperial mounted a public relations campaign, maintaining that the Kearl project would use "high paraffin froth" processes to reduce carbon dioxide emissions in the mining stage and would dilute the heavy bitumen with natural gas so it could be transported more readily by

pipeline. The chief executive of Imperial, Bruce Marsh, maintained: “technology has been instrumental in reducing our energy consumption and greenhouse gas emissions across our company.”³⁰

By this time the cost of the project had escalated to \$13 billion (CAD) with projected increases up to \$28 billion (CAD). In 2010 an Enbridge pipeline in Michigan carrying diluted bitumen suffered a rupture, leading to an extended clean up—the incident was cited by opponents of the Keystone XL pipeline in the US and Canada. Nevertheless, Imperial began operations at the Kearl site at the end of 2011. As the costs of the technology needed to address emissions requirements mounted, the industry began pushing for subsidies from the government of Canada to support carbon-capture and storage measures and related actions so that it could “be competitive with wind power and biofuels in terms of cost per tonne for reducing greenhouse gas emissions.”³¹

In 2013 Imperial and Exxon proposed a new *in situ* oil sands project christened “Aspen” that would use the SAGD technology and produce 150,000 bbl./day. Five years later, however, it was still on hold: Imperial’s president Richard Kruger argued that “regulatory uncertainty”—both in the approval processes for the project and in the development of the Trans Mountain Pipeline—was responsible for the delays. By this time many of the multinational oil companies had abandoned the oil sands, and even Syncrude had cut back production.³²

Until the 1970s, despite criticism that they took advantage of energy crises to obtain windfall profits, the large multinational oil companies were regarded as essential for the economic stability of the industrial world. By the early twenty-first century, these companies—and their local satraps like Imperial Oil—were increasingly characterized as enemies of the global environment, purveyors of pollution, and defenders of practices that could endanger the planet. They still would play an essential role in meeting the world’s energy needs, but not as champions of “better things for better living.”

The dilemma for Imperial Oil and the Canadian oil industry was more acute. In the 1960s–70s the oil sands were perceived (by Canadians and others) as the New Golconda, an energy source equal to—or perhaps larger than—the oil of the Middle East, and companies like Suncor and Imperial/Syncrude were hailed as hard-driving, risk-taking pioneers on

the frontiers of resource development. By the second decade of the twenty-first century many Canadians (including then-prime minister Stephen Harper) might still embrace the “New Golconda,” particularly as world oil prices soared in 2010–14. But the age-old problem of getting the oil sands product to market faced rising challenges.

In the US, environmentalist opponents of the Keystone XL pipeline from Alberta to the Gulf of Mexico were joined by farmers in the American Midwest worried about the impact of pipelines on their land, as well as communities reacting to reports of pipeline spills. The Keystone pipeline was ultimately approved—but only after extended and possibly unfinished controversies, by which time oil prices were once more in the doldrums. Meanwhile in Canada, a coalition of environmentalist and First Nations groups set out to block an expansion of the Trans Mountain pipeline from Alberta to the west coast of British Columbia that would carry “diluted bitumen” from oil sands production to eventually reach the markets of East Asia. In 2018 the government of Canada took over the project from Kinder Morgan while facing a court challenge from the government of British Columbia. Even Trans Canada’s “all Canadian” Energy East pipeline encountered resistance in Quebec and was cancelled in 2017. As in the past, oil company executives could feel certain that ultimately energy needs would trump the opposition, but the oil sands still provided critics with prime suspects in the lineup of perpetrators of climate change; and prospective solutions through “carbon capture” measures would add costs to what was already the most expensive energy source derived from fossil fuels that the industry had developed.

In 2004 Imperial Oil announced that it was relocating its corporate headquarters from Toronto to Calgary. The company’s chief executive, Thomas Hearn, explained that this move would “strengthen our focus” on Imperial’s “major initiatives” in the oil sands and development of the oil and gas resources of northern Canada. In many respects it was following the lead of Exxon, which had moved its headquarters from New York to Irving, Texas (between Dallas and Fort Worth) in 1990 in order to focus on what Lee Raymond, Exxon’s chief executive, designated “core business:” oil and gas.³³

These moves were logical, even obvious, steps for the two companies. At the same time they reflected a resolute rejection of the idea that

climate change would ultimately transform fossil fuel production into a “sunset” industry. As Imperial and Exxon entered their second century together, they remained committed to the course that had brought them both to leading positions in the Canadian and global petroleum industry respectively, after 1900.