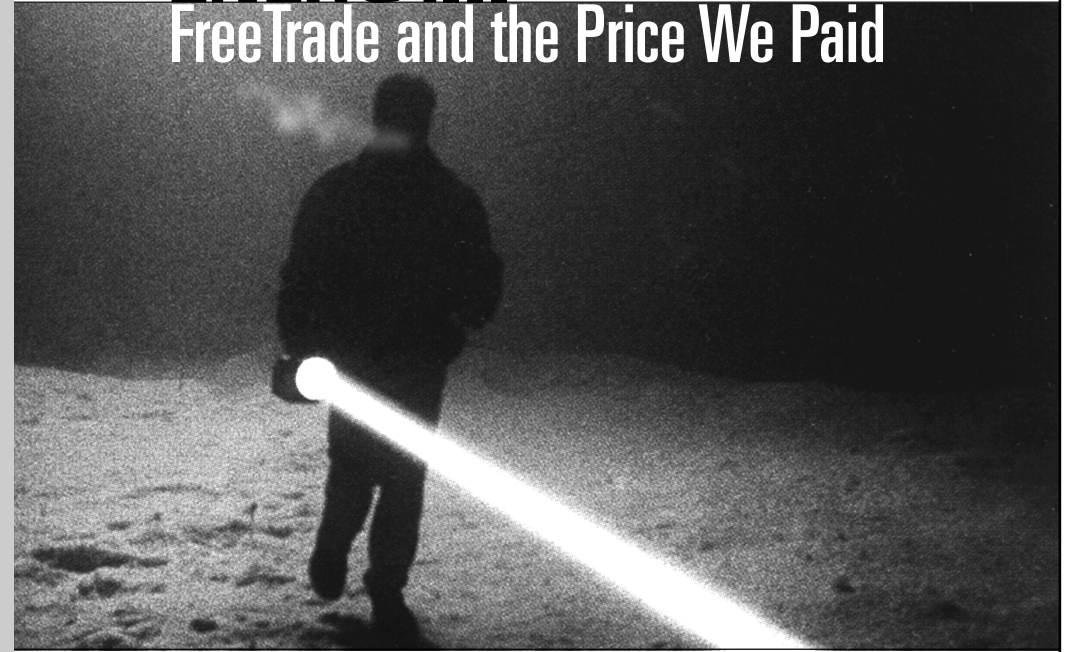




Parkland Institute, University of Alberta.

ENERGY...

Free Trade and the Price We Paid



A study for The Parkland Institute, University of Alberta,
and The Council of Canadians by

Larry Pratt

Author's Biography

Larry Pratt

Larry Pratt has written on energy and politics in Alberta for 25 years. He is the author of The Tar Sands (1976), co-author of Prairie Capitalism (1979), and several other studies. He taught Political Science at the University of Alberta from 1971 to 1997. He is now an independent writer working in Edmonton. He is married to Trishia Smith and they have three grown children and two grandchildren.

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- publish research and provide informed comment on current policy issues to the media and the public.
- sponsor conferences and public forums on issues facing Albertans.
- bring together academic and non-academic communities.

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Notes on Sources

This paper is based on documents, news clippings, and a variety of online resources. Especially useful on American gas demand and imports are: the Energy Information Administration's reports at the U.S. Dept of Energy (www.eia.doe.gov.html); Oil and Gas Journal Online (ogj.pennnet.com); Natural Gas Intelligence Weekly (intelligence.press.com), Energy Gate (denver.petroleum.place.com) and other industry newsletters online. Natural Resources Canada publishes reports and discussion papers at www.nrcan.gc.ca: including, for instance, commentaries on Chap. 6 of NAFTA and explanations—prepared for American audiences—of Canada's regulatory process.

The National Energy Board's 1999 Annual Report, Canadian Energy Supply and Demand to 2025 and Short-term Natural Gas Deliverability from the Western Canada Sedimentary Basin (1998-2001) are useful; the latter is an example of an Energy Market Assessment used in export hearings. A copy of the NEB's Fair Market Access Procedure, which is used in licensing long-term exports of energy, can be found at www.neb.gc.ca/pubs/mogoil.htm. Re the new export pipeline, see www.alliance-pipeline.com. The Reports and Study Papers of the Canadian Energy Research Institute are often too expensive to be generally accessible, but a few can be found at the Alberta Legislature Library: of particular interest are their excellent surveys on Canadian natural gas deliverability, production, reserves and investment.

The Annual Reports of the gas-exporting independents —Alberta Energy Co., PanCanadian, Talisman, Alberta Natural Gas, Canadian Hunter, etc.—usually need to be read in paper rather than online.

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Executive Summary

We are paying a high price for free trade. The 49th Parallel is vanishing, creating a new integrated continental oil and gas market in which Canadian energy industries are used to feed an ever-growing American demand.

Free trade was supposed to lower prices. But consumers of electricity, natural gas and petroleum products will recall the winter of 2000-2001 as a time when gasoline prices rose even while crude oil was in surplus; when natural gas heating charges soared in Canada, largely because California ran short of both electricity and natural gas; and when the deregulation of power markets caused havoc everywhere. Energy exports to the U.S. and oil company profits have never been higher, but domestic consumers have seldom paid so much to heat their homes, drive their cars, and keep their lights burning.

And because the poor rely on primary energy goods to survive, and do so with far less income than the wealthy and the middle classes, the effect of these sudden price increases is regressive and unfair. Rebates do not address the root causes of this fundamentally new problem. They are merely a politically expedient way to lessen voter discontent.

There is no shortage of oil or gas in Canada that can justify these price escalations. We have, in effect, imported them through trade agreements. This report ties the crisis in gas and oil prices to the North American Free Trade Agreement. NAFTA stripped Canadian governments of the power to intervene in the energy sector, deregulated exports, and freed Canadian producers to meet the energy demands of an insatiable U.S. market. NAFTA ties the hands of Canadians who want to cut back exports and conserve our precious non-renewable resources. It confines the National Energy Board's authority to the preparation of market assessments and the regulation of long-term exports. We have become bystanders watching our energy heritage flowing south.

Besides critiquing NAFTA, this report will show that gas deregulation in the U.S. and Canada has caused tremendous instability and left many gas users in both countries vulnerable to market power and monopoly. The promise to unbundle all the functions of the gas industry and to create a more competitive, lower-cost sector was based on ideology, not on common sense. Natural gas, like electric power, needs state regulation because of natural monopoly and the exploitation of consumers.

8. Recommendations

1. It is time for a "re-regulation" of the oil and gas industries in Canada. We require a very different mix of energy fuels, with far less concentration and less dependence on fossil fuels, and strong government support for developing clean energy alternatives.
2. The nexus between the Canadian user's energy supply and the export of our energy goods needs to be broken. The priority must be domestic requirements and prices; exports should be strictly conditioned by this priority and by ecological standards.
3. Canadian oil prices should be determined by world prices, but domestic natural gas prices can be set to meet domestic conditions (through negotiation) rather than based on U.S. prices.
4. A monitoring group needs to be struck to watch the activities and procedures of the National Energy Board in Calgary, and in particular to focus on its gas export decision hearings.
5. For the longer term, the NEB should be wound down and replaced by a different energy regulatory board with a very different mandate. The present Board has become the executive arm of the large and small producers. Its interest lies in production and exports, not in making a transition to a better energy economy.
6. The national government needs to warn the United States that we propose to deintegrate from the continental energy market and to follow Mexico's lead in preserving energy sovereignty. At the very least, Chapter Six of NAFTA would have to be drastically changed or abandoned as unworkable, as would the investor-state provisions of Chapter Eleven.
7. Close regulation of foreign ownership and control in the energy sector should be reinstituted by the federal government, and 75% of production, reserves, pipelines, etc., should be a minimum target for Canadian control.

7. Conclusion: Fuel for the American Dream

As of January 2001, the entire western Canadian fleet of drilling rigs—about 600 rigs in all—was actively employed in the search for new oil and gas reserves. Labour was so tight that the drilling industry was recruiting for help through the National Parole Board. The NEB and Alberta's EUB were busy trying to remove potential “barriers” to new production: e.g., addressing the opposition to “sour gas” wells in the western parts of the province. And the Alberta government—facing a spring election—was spending its surplus on energy rebates for consumers angered by huge increases in their power and gas bills. Suddenly, the advantage of owning and living beside most of Canada's raw energy resources had disappeared.

In the early 1970s, James Laxer published a controversial and prophetic little book called *The Energy Poker Game*. Laxer predicted that Canada and the United States were about to conclude a “continental energy deal” in which, in return for open access to the huge U.S. market, the Americans would be given complete freedom to develop Alaska and Canadian northern oil and gas resources, and to bring them in large pipelines to the lower 48 states. It didn't happen right away, but through NAFTA and subsequent decisions to build more export pipelines, we now have the continental energy deal. The North will soon have its resources developed, as new U.S. President Bush decrees, in order to keep the American economy growing. In fact, until they are fully depleted, all of Canada's energy resources could be said to have a single great mission: providing fuel for the American dream.

Cui bono? Who gains from the post-NAFTA regime, and which groups have played the key role on the Canadian side in shifting energy from a West-East to a sharp North-South direction? The initiative was shared, but from 1996 a significant push to build new export pipeline capacity and to eliminate a large surplus of western Canadian gas came from a group of indigenous Calgary independent producers—“the generation of '86”—who were moving into a vacuum caused by the departure of the majors from Alberta. The American and Canadian oil, gas and power companies are pocketing billions of dollars in profits from the recent crisis.

The independents faced intense resistance from the existing pipeline carriers. Now, however, many of them have been taken over by foreign companies who want the Canadian reserves of oil and gas, and others are vulnerable. A large indigenous energy industry will not develop without restrictions on foreign takeovers and investment.

If the accelerating trade and investment flows continue to strengthen North-South energy links, then the rationale for East-West physical ties—e.g., the TransCanada gas pipeline system—could be eroded. Consumers between Alberta and Ontario might well lose their access to the system, which was built as a political as well as a commercial wager on this country's survival.

1. Introduction: Production, Growth, and NAFTA

NAFTA has Canada's energy policy in shackles. Or, perhaps more accurately, NAFTA has eliminated and superseded our energy policy, together with our sovereignty. We now have a continental energy market, with little room to maneuver.

Seven years after the completion of the “free trade” treaty between Canada, the United States and Mexico, Canadians have had their eyes opened by the recent crisis in high energy prices. What they have seen is this: because of NAFTA, their governments lack the power to intervene to protect Canadian consumers from energy price hijacking; they lack the power to cut back oil and gas exports; they lack the power to attach economic benefits to the sale of Crown resources; they lack the power to regulate foreign investment; in fact, they have given up virtually all their powers and sovereignty in return for access to—and faster integration into—the North American energy market.

The old national East-West energy market of the 1950s and 1960s is being redirected by deregulation, by NAFTA rules, and by a network of new pipelines that link Canadian resources to U.S. markets. The accompanying maps illustrate the southern thrust of Canadian oil and gas pipelines in the years since deregulation and NAFTA.

pace of development. We have heard a great deal about the coming gas boom and the environmental advantages of natural gas over other fossil fuels—and there is truth in it—but natural gas is not a homogeneous resource, and not all gas wells are safe or worth the hazards to human health. Nor should every place be accessible to the drill-bit: in 1994, the industry was shocked when the Energy Resources Conservation Board (now the Energy and Utilities Board) rejected the application of Amoco to drill for gas in the wilderness area known as the Whaleback Montane. Amoco's plans galvanized a number of ecological groups to preserve these rare wildlands, and the Board drew a limit—for a time—at the Whaleback. The struggle to protect ecologically-sensitive areas continues.

Finally, let us be realistic about natural gas. It is not a panacea. Though some may extol the benefits of natural gas, it is difficult to ignore the health risks. Natural gas has been praised by some as the answer to many ecological problems. True, it has a lower carbon content and produces less carbon dioxide than does an equivalent unit of oil or coal, and it has a less adverse impact on the atmosphere. But methane, as a gaseous fuel, is a greenhouse gas in its own right, and it has been building up rapidly in the atmosphere in recent decades.

Natural gas accounts for 25-42% of the methane emissions that stem from fossil fuels, and made up to 12% of total emissions related to human activities in the past. Natural gas resources around the globe have been understated and underpriced, but it is false to assume that there are no limits or that the gas produced is undifferentiated or homogeneous. As we use up our best reserves of this non-renewable resource, we find prices rising and we are forced into the development of “deep” gas, “tight” gas, gas from shale, gas from coalbed methane—none of which can do much but postpone depletion while adding significantly more to greenhouse gas emissions.

These are expensive, polluting sources, and developing them is an indicator of economic scarcity: to hasten the day we will need them by rapidly producing and exporting the best unprocessed fuels in amounts limited only by pipeline capacity is folly. We should cut our appetites and conserve, as much as we can as individuals, but curbs on the production and use of fossil fuels will be impossible as long as NAFTA continues to encourage, and even dictate, greater production, consumption, and pollution.

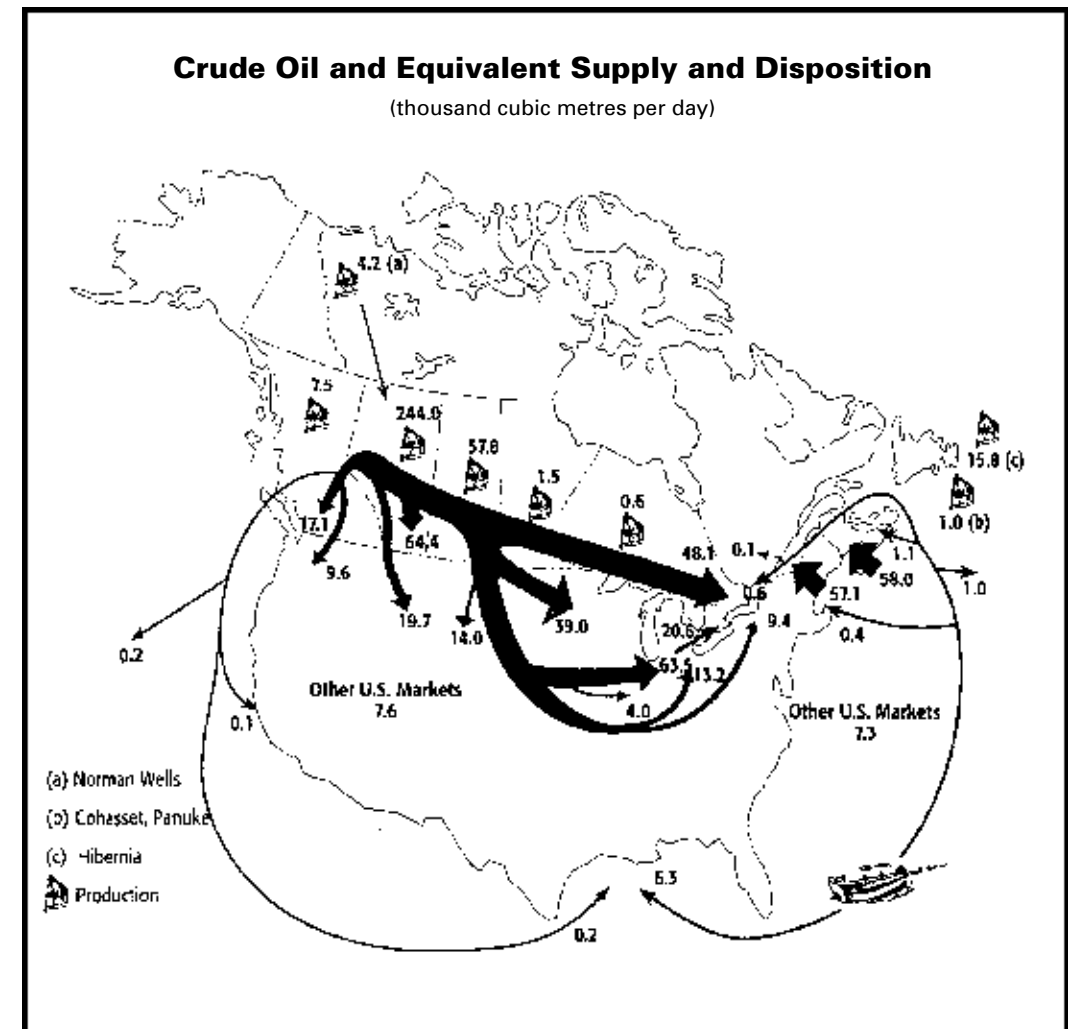
restricted areas. But environmental constraints and political opposition to development in these natural areas mean that this is no solution. Why not address the problem of depletion by increasing the volume of imported gas? Let us assume for the moment that there is enough takeaway pipeline capacity to let Canada's gas actually bail out the Americans. In effect, this transfers part of the common-property resource problem upstream to foreign producers, who react to higher prices by increasing production and pollution. Increasing gas exports will increase the emissions of greenhouse gases and bring on stream many new wells containing high concentrations of hydrogen sulphide, with an increasingly negative impact on the environment.

Amazingly, in Alberta there are still 5,000 gas flares emitting sulphur and other toxic substances into the environment. Now it is B.C. or Alberta residents who have to cope with the air pollution emanating from old sour gas plants that won exemption—i.e., were “grandfathered”—from new regulatory standards. With deregulation or self-regulation, the EUB lacks enough field staff to monitor emissions from oil and gas facilities—and enforcement is light to non-existent.

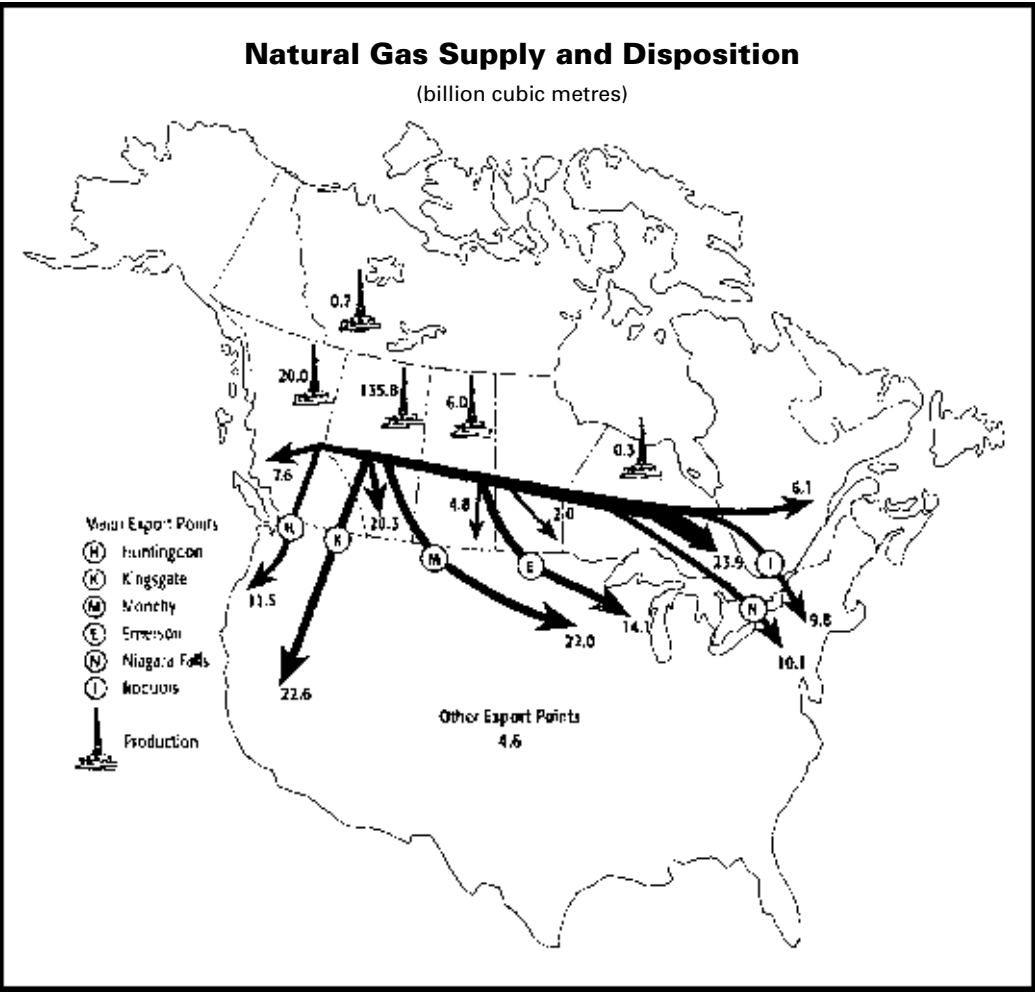
Alberta also has yet to make any significant reductions in climate change emissions. Not to do so may appease parts of the oil and gas industry, but it invites external opprobrium and political pressures from the rest of Canada and the world. Calgary is as constrained by the environment as any place on Earth. It will find itself increasingly on the defensive on the issue of climate change unless some enlightened group of producers comes forward to puncture the illusion and face up to the facts.

Urban dwellers in Alberta have begun to experience directly some of the risks of gas drilling. Calgary residents have had to worry about Canadian '88's plan to drill large sour gas wells a few miles from the city. Near Edmonton, the people of Strathcona County had to organize to stop a multi-well drilling program in their backyards. The Ludwig trial threw light on the impacts of flared gas on livestock and on humans in the northwest, and it is not unreasonable to anticipate the growth of a rural opposition to the continued pattern of rapid development.

The gas exports boom has been a mixed blessing at best; arguably, there would be many more benefits—and a more equitable distribution of the wealth—from a slower



National Energy Board, 1999 Annual Report



National Energy Board, 1999 Annual Report

6. The Environment, Depletion and Scarcity

In the medium to longer term, petroleum industry activity will shift from the west to the eastern offshore and the north. This process is well underway and is for the most part being led by the integrated majors, who need large supplies of crude oil and natural gas to supply their downstream operations. Imperial Oil, BP-Amoco, Petro-Canada, Shell, Mobil-Exxon, Husky, Statoil, etc.—these companies dominate oil and gas in the offshore and in the Mackenzie Delta, and have kept levels of foreign ownership of the industry at about 50%. Such companies can afford to take the longer view. However, today’s economy is a short-term arrangement, and for the near future it is the Western Canadian Sedimentary Basin—involving B.C., Alberta and Saskatchewan—that still produces the majority of our fossil fuels.

Alberta, in particular, has ultimate reserves of natural gas, heavy oils, and mineable oil sands that will keep it in production for decades; and meanwhile its companies are exporting capital, expertise and sophisticated technology around the globe. If the province is no longer promoting rent-collection from oil and gas, it is still accumulating large financial assets from the production of its resources. What are the limits? Where are the constraints? Why not just find and develop more gas resources?

The central limits are those imposed by rising costs, including the impact on the environment as we shift from low-cost to higher-cost resources. A fundamental problem is that all fossil fuel development has an impact on those resources that we call common-property resources: the atmosphere, water, soil, air quality. Market transactions do not reflect the use of common-property resources as part of the full cost of extraction. As we move from the best land, or best exhaustible resources, toward the marginal ones—for example, from the U.S. Gulf Coast into the Rocky Mountain states, with their vast unconventional gas resources—higher prices and new technologies can only partially offset the effects of depletion.

We can forestall the decline in domestic production of gas by shifting to higher cost resources. This is what the American Gas Association and the American Petroleum Institute say is the best solution to energy scarcity: give capital access to environmentally

many producing jurisdictions, Alberta is a high-cost region facing a future of costly depletion. It retains significant gas reserves and bitumen and heavy oil. Relative to other places, it is not particularly attractive as an oil-producer—though it does have relatively stable government and a good work force. Thus, companies could either pull out, or they could cut costs, remove the barriers to production, reduce the state’s take or royalty, and go for a larger share of the North American market.

Alberta has massive amounts of bitumen and heavy oil that are not available through surface mining, and the province has invested heavily in new production technologies that can develop these resources. In commercial development, these projects would be far smaller than a Syncrude-sized plant—with output of, say, 25,000 b/b and increasing in increments. The Steam Assisted Gravity Drainage (SAGD) is a particularly promising oil recovery process that can be used for heavy oil and in situ bitumen: twin horizontal wells, drilled in parallel with one above the other, are injected with steam generated by natural gas, and this heats the reservoir, reducing the oil’s viscosity. The heated oil flows into the lower well, while steam continues to be circulated from the upper well, and eventually the oil is brought to the surface.

The technology evolved from Alberta government agencies now shut down. Left to the market, it probably would not exist today, because the gradual development of such technology is far closer to a public good than something a private firm would find profitable. This type of development is available to the independents as well as the majors, and it will play a part in slowing the rate of oil depletion. These thermal recovery processes consume lots of natural gas for their heating requirements, so new oil extraction may be constrained by high gas prices and scarcity.

A key point of this study is that, under NAFTA and deregulation, we are exporting far too much gas and light conventional oil. The benefits of excess exports are short-lived and concentrated in a few hands. But the costs of exporting the best light conventional oil and gas we have left are going to outweigh the benefits. Exports can be useful, but they should not be an end in themselves. This country ought to have enough light, cheaper oil and gas to protect its own security and, in the case of international emergencies, to prevent rapid jumps in prices.

It was the high demand for gas for electrical generation and the very cold weather of late 2000 that triggered the revolution in gas prices. California’s situation, with dual power and gas crises, was—and remains—dire. But why should a power and gas crisis in California trigger extremely high consumer price increases in Canada?

The answer is simple: because Canadian gas producers and pipelines seized the opportunity to make very big profits out of California’s troubles, thus drawing us ever more deeply into the continental morass—integrated not by policy, but by profit-seeking. In a continental market, we Canadians have to share prices as well as resources. And the trouble is that the resources we divert into foreign sales have to be replaced. As we use up more and more of our best resources, we are forced to seek new reserves in the higher-cost, environmentally difficult areas. And thus far, we are doing a poor job of adding new reserves. NAFTA is a production-stimulating accord. It prompts a faster pace of development and export of our resources, while doing nothing at all to encourage their wise and prudent management.

Can the pace of development be decoupled from U.S. demand and free trade? Or are the so-called forces of “globalization” much too strong to permit a return to a national strategy? The Bush administration is embarking on a new national energy strategy that is bound to affect Canadian interests. Why should Canada not have a new energy strategy?

The concept of a national energy policy, like an old movie, is barely flickering; yet if the Canadian state does not re-regulate the energy sector, consumers will be exposed to more price volatility and more predatory behavior by the biggest producers, pipelines and distributors in an industry characterized by “natural monopoly.” The continental

energy market—allegedly the most efficient use of our resources—has revealed itself to be prohibitively expensive. We need out.

Natural gas, the fuel of choice in the development of new power generating capacity in North America, has been in short supply south of the border, where demand has risen to a record 22 trillion cubic feet (tcf). Canadian gas producers have around 15% of this market. Gas is less polluting (fewer emissions) and it is flexible and abundant. Our exports of energy are today constrained only by the limits to pipeline capacity and what Canada can produce.

Exports are scrutinized through the “market access procedure” of the National Energy Board, but the regulation is not much more than tokenism because, in the new continental market, a commodity like gas goes where the price is highest. What decides how much is produced and at what price is determined by market transactions, and such transactions are now short-term. The NEB is virtually irrelevant, except as an instrument to remove the barriers to higher exports.

This is not the 1970s energy crisis. Security of supply and rent distribution are not the issues. Production and economic growth, not conservation or rent-collection, are the main driving forces behind Canadian energy decisions, private as well as public, and the growth of demand in the U.S. is what determines what is produced, and how much gets exported.

“Canada,” wrote the NEB in an Energy Market Assessment released on 1 November 2000, “has become part of an integrated North American natural gas market. Natural gas can be bought from many supply sources and delivered to any market centre through an extensive North American pipeline grid.” Domestic users paid less than export customers until “1998, at which point the two prices have converged.” That is to say, we had lower prices until the new post-NAFTA export lines came on stream: it was the growth in our exports that elevated us to the U.S. price level.

tivity changes. The old formula of upgrading through the economies of scale found in massive strip mines linked to huge refining plants now looked brutally obsolescent.

In a world of lower prices and radical changes in the oil industry’s structure, this type of supply system was too rigid, too slow moving, and too costly to survive. (Prior to renovation, the plants needed better than \$20/bbl a day to keep running). In the post-1986 era, massive, stand-alone energy projects were too vulnerable to price shocks to be sustainable in the long run. To governments, they looked like liabilities without limits: Ottawa recovered 6 cents on the dollar for its investments and loans in the Lloydminster heavy oil upgrader. (They sold foolishly as the investors who stayed made good returns.)

It was the older and smaller plant—Suncor—that in the early 1990s initiated the shift to cost-efficiency, much lower operating costs, and rapid expansion of production. The experiments in cost-reduction began shortly after the signing of the Free Trade Agreement. By introducing new technologies, especially on the mining side, and decentralizing the processes of upgrading and marketing light synthetic oil, Suncor squeezed their costs of operations, then were able to double their output and sales. Access to the new North American energy market must have loomed large in this expansion. Syncrude drove its unit costs from \$24(Can)/bbl in 1981 to \$13.70 in 1996.

Operating costs in the oil sands are said to be below \$9/bbl today. On the advice of an (oil industry-directed) National Task Force on Oil Sands Strategies, Alberta and Ottawa offered generic royalty and tax regimes that left most of the rent and aimed at the acceleration of oil sands development for the continental market. The Task Force stressed rapid growth in production and private-sector development, offering a face-saving 1% royalty on all production. Alberta and Ottawa, happy to be out of the oil-sands business and eager to facilitate expansion for the North American market, agreed to the royalty and taxation terms in 1995. The formula was: much higher volumes of production with lower costs, lower royalties, and access to an expanded market. Doubling production was achieved after the new fiscal terms were agreed. This neoliberal solution, if we can call it that, was very much in keeping with the thinking of the independents, the generation of ’86: Suncor was very much a product of the new strategy.

It was a solution that literally imposed itself on the oil and gas industries: relative to

5. Rising Cost-Curves

Canada has been producing over 2 million barrels a day of crude oil and equivalent, but less and less of it comes from the few conventional light oil fields discovered in the late 1940s, the '50s and '60s. Partly because of low world oil prices in 1998 and early 1999, conventional light crude declined over 11% in 1999, while conventional heavy and in situ bitumen fell off by 6% and 7%, respectively. Technological change (horizontal drilling, 3D and 4D seismic, etc.) and prices can slow down the rate of depletion, but nothing can prevent it in the longer term. Alberta has already produced some 80% of its conventional light oil, and the supply projections indicate that the Western Canadian Sedimentary Basin will be depleted of all but some heavy oil reserves by 2025.

Conventional oil reserves have declined to about 4 billion barrels, and reserve additions have tended to lag production. As we have seen, the overwhelming target of recent drilling in Western Canada has been for gas, not oil; and better than 80% of the drilling in 1999 was developmental rather than exploratory in nature. The outlook for big discoveries of light conventional oil supply in the Western Sedimentary Basin is poor, yet Canada was still exporting 1.7 million barrels a day (light and heavy crude and liquids) to American refiners during the first seven months of 2000, making it the top supplier of U.S. oil imports (just ahead of Saudi Arabia and Venezuela). Canada will have to rely upon Hibernia and other offshore oil projects, plus a massive expansion in production from the heavy oils and oil-sands, if it intends to offset the depletion of its conventional light oil reserves. This shift to high-cost resources is part of the depletion cycle, and it has been underway in Western Canada since the 1970s.

One of the great lessons of the crisis in 1986, when world oil prices fell below \$9/bbl for several months, was that large, vulnerable supply projects like Suncor and Syncrude could only survive in a low-price environment if they cut costs dramatically and then expanded their daily production. Mega-projects were too risky; they were on the way out. At this date, they could not expect to be heavily subsidized by governments as they had been in the 1970s when prices were high and security of supply was a central political issue. Either the oil-sands plants would close or they would adapt via produc-

The NEB starts from the premise that the market is generally working so that the requirements of Canadian natural gas buyers are being satisfied at fair market prices, but it is unclear what would change the Board's definition of satisfaction with "fair market prices." Is \$9 per thousand cubic feet (mcf) fair? Many supply sources were available in the winter of 2000-01, but all offered gas at the same high or higher prices. Where was market competition? So long as gas buyers in the United States are paying four-fold increases in prices, then the NEB will presumably consider it fair that Canadians pay the same four-fold increase.

As of 1998, more than 30% of our total energy supply was sold to the U.S. The numbers vary slightly from month to month, but Canada produces about 2.1 million barrels per day (b/d) of crude oils and exports 1.5 million b/d to the U.S. About 600,000 b/d of the production are from the oil-sands area. We also import about 850,000 b/d into eastern Canadian refineries. And we produce 6.1 trillion cubic feet (tcf) per year of natural gas and export—via established and new pipeline capacity—more than half: 3.3 tcf. Most of it goes to Chicago, the Northeast, the Pacific Northwest and California. Gas exports will increase by a billion cubic feet per day or more with the Alliance export pipeline now on stream (Dec. 2000). Gas exports approached 4 tcf in 2000, and they could be close to 5 tcf in 2001, depending on U.S. demand and finding rates in Western Canada.

The United States expects to need more—perhaps most of the gas we can produce. The Americans (led by the power and gas industries) have ambitious plans to shift their energy and power consumption away from oil and coal toward natural gas, and they are projecting a gas market of 30-34 tcf in the next decade. Where will the new incremental production and supplies come from? From within the deregulated North American market. Initially, from Western Canada and the Gulf of Mexico, according to the Gas Technology Institute's outlook for gas supply. After that, the environmentally sensitive Arctic and East Coast frontiers would be in line for development.

Simultaneously, the oil and gas producers of the U.S. want "access" to the full resource base, especially the unconventional gas sources of the Rocky Mountains and the reserves on the North Slope of Alaska. The new Bush administration clearly favours these production-oriented schemes. After a year of very high prices, the industry will have the cash-flow to tackle these hard frontiers.

Studies done by the U.S. Department of Energy’s Energy Information Administration (EIA) have stressed the acceleration in the depletion of gas wells on the continental shelf in the U.S. Gulf of Mexico, the principal source of domestic supply. While natural gas wells drilled in 1972 declined from their peak at an average rate of 17% a year, gas wells drilled in 1996 have been declining at an annual rate of 49%. Moreover, exploratory drilling fell off before 2000 because of low prices.

The EIA has argued that resource depletion and much higher prices could be moderated via: a faster pace of technological innovation; access to the unconventional gas resources (coalbed methane) on U.S. federal lands, especially in the Rocky Mountains; and a greater availability of natural gas imports. Higher imports from Canada could allow the U.S. to forestall accelerated depletion and conflicts between environmentalists and other citizens on the one hand, and the American gas industry on the other hand over energy development in the Rockies.

Natural gas accounts for some 40% of Canadian primary energy production (followed by oil at 24%, hydro 20%, coal 9%, and nuclear power 5%). Canadian gas exports have been the most dynamic factor in the growth since 1989 of an integrated continental market in energy. In the first weeks of what was expected to be a cold winter in Europe and North America, heating oil and crude inventories were low, and natural gas storage in some regions was very tight in what was a strong seller’s market. A low rate of drilling in the U.S. during the 1998 downturn had led to these tight conditions. Exports to the U.S. rose sharply. And, because of deregulation of gas in both countries, three-quarters of Canadian gas exports are now marketed on short-term (usually one-month) contracts. The risk is greater, but so is the reward.

The old system of regulated pipelines and distribution systems operating with regulated prices and “take or pay” contracts is dead. It is being “unbundled” so that buyers and suppliers can deal directly with one another in a deregulated, market-driven environment. In such a North American market, where oil and gas are commodities flowing to the highest price, how can Canadian end-users be assured of future supplies and affordable, sustainable energy? What have deregulation and the creation of a North American energy market meant for consumers and producers?

biggest operators in a supposedly deregulated market. There is no inherent reason why a systemic breakdown like this could not happen to Ontario or British Columbia.

4. Markets Gone Wrong

There is plenty of evidence that the existing continental natural gas market is not working and delivering natural gas supplies at a reasonable price to consumers. Natural gas is a resource that literally demands regulation by the state. The systems for marketing and distributing gas are natural monopolies, thus the exercise of market power by the largest firms is inherent and is not limited by naive schemes of deregulation.

Enron Corp. of Houston is the U.S. energy industry's biggest marketer/trader/risk manager, and one of the largest operators of natural gas pipelines. Much of its business is carried out through its own EnronOnline system, founded in 1999. EnronOnline is so big and successful—it handles around 2,000 transactions a day with a value of about \$1 billion—that its competitors and critics call it the “Big Brother” of the energy marketplace. The transaction data gathered online is thrown into a historical database that is not available to other traders or the public, and this gives it the power to shift prices and, it's charged, to manipulate the market. That is, EnronOnline—an electronic exchange system—has given Enron Corp. market power which it can use to exploit consumers. Canadian gas is traded through this efficient, low-cost e-commerce system of commodity trading. Enron has tried to put Canadian gas e-trading competitors out of business with costly lawsuits.

Market factors and deregulation were largely to blame for California's serious “dual shortages” of power and natural gas during much of the year 2000 and into 2001. Here is a very big and populous consuming region that is very dependent upon outside sources for its energy, and the integrated continental market failed to deliver the goods. California's fiasco of escalating energy prices, emergency alerts, and bankrupt utilities was basically a very costly failure of deregulation. The deregulating power market did not provide enough new generating capacity to keep up with increases in demand. High natural gas prices added to inflation in the cost of producing new power, so that the marginal operating cost of a combustion turbine went from \$70/MegaWatt hour to prices approaching \$250/MWh. Natural gas traded on the spot market for over \$60 mcf, evidence of something less than the “fair market prices” consumers had been promised. This was painful scarcity caused by the manipulation of power and gas markets by the

This Report supplies some critical analysis of the emerging North American market for oil and gas. It identifies the social and economic group—“the generation of '86,” the independent producers of Calgary who were thrown up by the 1986 collapse in oil prices—that promoted this market. The closer integration of Canada's energy industries with the interests of the United States—an integration envisioned in many earlier schemes, but only achieved in the 1980s after bitter conflicts over energy policy and over free trade—may seem at first glance to confirm the arguments of those who fought for trade liberalization, deregulation, and the privatization of energy. Oil and gas revenues reached \$35 billion in 1999, and were expected to be much higher in 2000. This export-led growth is driven by an Alberta industry of some 1,700 corporations, many of them small, but others able to operate on an international basis; in the 1970s, it was an industry of just 70 firms.

There are important senior independent producers—Calgary-based, Canadian-owned—which have helped to organize the expansion of the industry, and which are, in many cases, succeeding the major oil companies in parts of the Western Canadian Sedimentary Basin. Several of the larger Canadian independents helped to deregulate oil and gas markets in the mid-1980s and then pushed for new export pipelines or pipeline expansions as the way to open up a continental market in energy and higher production. They wanted the higher gas prices prevailing in the U.S. The push for an integrated North American market came from companies such as PanCanadian, the Alberta Energy Co., Talisman, Petro-Canada, and another 15 or so Calgary-based producers, all of whom had gas reserves building up behind limited pipeline capacity. Far from their existing markets, they disliked TransCanada Pipelines and found that junior companies could not get room for their gas on the existing system. They had reserves but little cash flow, and they faced stagnation or being taken over by the bigger fish. If they were to succeed, it would be at the expense of the dominant gas marketers, such as Nova and TransCanada.

In 1986 (before deregulation had occurred), the top ten producers controlled 47.6% of gas production. The majors were dominant. The top producer was Shell Canada, followed by Dome Petroleum, Mobil Canada, Petro-Canada, PanCanadian, Gulf Canada, Amoco Canada, the Alberta Energy Co., Imperial Oil, and Chevron. By 1995 (after deregulation and NAFTA), there was less concentration—the top ten controlled 40%—and among the big producers we find more Canadian independents. The top gas producer was now

Amoco, followed by PanCanadian, Shell, Talisman, Petro-Canada, Imperial, Anderson Exploration, Mobil, Norcen, and Renaissance Energy; and beneath these, a lot more junior independents.

This period (1986-1995) was characterized by falling natural gas prices. The real wellhead price of natural gas fell by 40% in this period, and Canadian prices were well below those prevailing in the U.S. By the year 2000, the dominant gas producers were three of the senior Calgary-based independents: Alberta Energy Co., PanCanadian, and Canadian Natural Resources, followed by Petro-Canada, BP Amoco, Talisman, Anderson, Shell, Imperial, and Renaissance.

The same independents also had strong proven gas reserves, which is a key to future growth. Of the top 15 holders of proven gas reserves, only three were foreign-controlled multinationals. Outside the oil sands, the leading interests in the Western Canadian Sedimentary Basin are the indigenous companies, many of them founded after 1986, although some of the best independents, such as Poco and Renaissance, have been lost to foreign takeovers.

From the standpoint of these producers, the watchword today is: “Our time is finally here. The market no longer has restrictions. The time to develop reserves is now.” The barriers to selling their natural gas and light and heavy oil in the continental market are virtually gone, thanks to deregulation, free trade, and the addition of new pipeline capacity. Canadian governments no longer threaten to intervene to protect consumers, or take away the economic rents from producers, but are content to facilitate rapid growth of the market via exports with minimal regulation.

NAFTA rules out the energy policy instruments that Canadian governments have used in the past: different prices for domestic and export users; export taxes; restrictions on export supplies; and incentives favouring Canadianization. All such initiatives by our governments would make them liable to costly suits by foreign investors under NAFTA’s infamous Chapter 11. As a former chairman of the National Energy Board remarked, “We have a continental energy market. We do not have a continental energy policy.” NAFTA changed the orientation of the Calgary-based NEB from the (nominal/formal) function of protecting domestic supplies to supporting and deepening an integrated North Ameri-

Further, we have noted that most of the exploratory drilling has been in the shallow gas areas of southern Alberta and Saskatchewan, where wells are cheap and unprolific and decline rapidly. The more prolific areas are located in the west, where drilling costs are much higher and the risks of pollution and of environmental opposition are significant.

The economic and environmental limits of replacing conventional oil and gas reserves are bound to be central to Alberta’s political economy in the coming years. Increasing production and a mediocre rate of reserve replacements means that in the Western Sedimentary Basin the remaining reserves-to-production ratio dropped from 18 years in the early 1980s to ten years by 1998.

The estimation of reserves is really something of a junk science, since the producers, aiming to attract new capital and to ramp up productive capacity, routinely exaggerate their annual reserve additions: by as much as 100% in some cases. In Calgary, a town that treasures its doers, this is known as “producer optimism.” This is the same optimism or euphoria that gives us phrases such as “the vast untapped reserves of the Arctic,” and “this [building a gas pipeline from Alaska to the Mackenzie Delta] is like building the first railroad to California,” and “we could get this thing built in five years and have natural gas flowing into Chicago”—i.e., if someone else paid for it. (But why would they do so when they can drain Alberta first?)

up competitors once prices fall. Under NAFTA, Canadian governments can do little more than wave farewell, so the independents are on their own.

There are some further difficulties, and some realities. One concerns the future of TransCanada PipeLines and the domestic—including prairie—markets it serves. Having lost a number of its producers to the Alliance-Vector system, TransCanada has shut down compressors and taken other cost-saving steps. If it is unable to make up its lost contracts and loses more, the TransCanada system might become uncompetitive—something that would impair all of its industrial and residential markets.

TransCanada was put together as a coalition of politics and business in the 1950s—i.e., it was not an offspring of market forces. Now, with the orientation of the industry so focused on North-South transportation and sales in the U.S., what politician or government would urge assistance for this huge but unpopular TransCanada pipeline system? The Alliance system, the creature of the ambitious independents, ironically is thus far carrying little new gas supply; what it is carrying is gas from TransCanada's disgruntled shippers. So, some crucial questions arise: Is there enough demand and enough gas to fill all the pipelines? Are Canadian consumers assured of supply? Or is there now a serious oversupply of gas pipeline capacity? Have we overbuilt takeaway capacity, and will we soon see “stranded gas” and prices falling again?

One way or another, these same oil and gas companies must replace the reserves they are using up. They must run harder just to keep standing still. Production rates from wells now producing will soon contribute half of our overall gas deliverability. The decline-rates from currently producing wells in Western Canada are estimated to be 19-20% annually. But from 1994 to 1998, cumulative additions of marketable gas reserves replaced just 60% of total production; in 1998, new reserves were said to be 74% of production. When it has actually been drilling (as opposed to buying the reserves of others), the industry has been drilling mostly for gas, but most of the drilling has been for development, not exploration for new gas: i.e., exploitation of old reserves rather than exploration for undiscovered gas.

can market. In such a continental market, an emphasis on “Canada first” would be impossible.

In the new market-driven energy regime, production is the order of the day: this can be said of oil, but it is very true of natural gas as well. It can be called the political economy of speed. The role of governments is simply to “remove the barriers,” as the American Petroleum Institute puts it—especially the environmental restrictions that prevent oil companies from having access to the Rocky Mountains, Western Canada's foothills, and large parts of Alaska. Volume of production, reserves, and growth of pipeline capacity are keys to this supply-side strategy; but capturing rents is not, and neither is redistributing the gains.

Canadianizing the industry is not part of the strategy. Conserving scarce resources is the antithesis of the political economy of speed. “Get out of the way,” a prominent American oilman reportedly told the newly-elected Alberta Premier, Ralph Klein, “and we'll create the jobs.” He meant: deregulation; full-out production; and an open door to exports. “Ralph bought it,” one industry observer said. And so did the federal authorities.

One way to expand production is to build new pipeline capacity, increase exports, and earn the reputation of a reliable, willing seller in the North American market. Fearing nothing so much as a gas glut, the NEB and Canadian diplomats periodically reassure Americans that Canada has plenty of gas and that we are a reliable seller. But we appear to have oversold the image of an unlimited resource base. Guided by NAFTA, Canadian regulatory agencies no longer apply security-of-supply protection formulae or quotas, but use market assessments and market-based procedures in assessing long-term export applications. The policy of reserving a 25-year gas supply has been abandoned in Canada. Short-term exports are not regulated. Canada's reserves to production (R/P) ratios are much lower than they were, in part because the industry does not have to build up a large surplus of proven gas reserves before it can export the available supplies.

As a result, the long-term energy security of Canadians is being jeopardized by a policy that favours a virtually unlimited export market. In such a market, gas has no nationality. The pipelines run to the south. That is where the demand and the price are the highest. Under deregulation, Canadians who need the gas reserves in their own country have to bid against the consumers in New York, Boston, Chicago, and Los Angeles. That is the grim situation their elected representatives have created through deregulation and free trade.

We used to take it for granted that Canadians had first call on their energy resources, with only the surpluses, if any, being available for export. That was a natural and essential policy for the citizens of a cold, vast country so dependent on energy. But that security is gone, surrendered by a national government that agreed to measures that dismantle national controls on the supply, price and exports of energy in favour of market-driven principles and the creation of an integrated North American market. Such a self-shackled government can no longer control the timing or the rate of development of what we used to call our resources but which now are sold, like sow bellies, as commodities on various North American exchanges. Natural gas contracts used to require several months to negotiate. Now they can be completed in a second via electronic trading. Our governments have become little more than bystanders.

It is useful to know that in 1986 Canada marketed 2.9 trillion cubic feet (tcf) of natural gas, and that 75% was sold to Canadian users and 25% was exported to the U.S. In sharp contrast, in 1998 Canada produced 5.7 tcf of gas and exported 54% (3.3 tcf) to the U.S., leaving 46% for consumers in eastern and western Canada. The numbers show a basic strategic shift toward exports. But how did the gas producers and pipeline companies strengthen the North-South lines in such a brief period of time? What are the implications for Canadian industries and consumers if so much gas is exported, and gas prices are determined in the North American market, a market dominated by U.S. pipelines, utilities and producers? How is the integrated continental market working?

The issue is not whether to export any energy; indeed, it is difficult to see how Canada could have built its continent-wide pipeline systems without the export components of the projects. Alberta's prosperity is based in part on its successes as a trader. Exports permitted the realization of scale economies and allowed pipelines to be built from the west to distant markets in eastern Canada. But the rapid growth of exports since 1989

in Toronto and Edmonton would soon be paying much higher prices, too, if they wanted gas.

The independent gas producers, the generation of '86, were thus remarkably successful in their challenge to the 40-year dominance of Nova and TransCanada Pipelines. They found allies among American pipeline companies—Coastal, Williams—and Canadian pipelines, such as Enbridge and Westcoast. Threatened by surpluses and stagnation, they seized the opportunities created by deregulation and NAFTA to drive the price of Canadian gas up to North American norms through their gas export strategy.

These producers were also motivated by the perceived need to seize a much larger market share in the U.S. before rival Gulf Coast producers could act. As noted, some very bullish estimates have Canadian gas exporters acquiring a fifth of a market that could soon grow to 35 trillion cubic feet a year. The euphoria goes up as the weather gets worse.

On the other hand, under free trade it is also attractive to buy other companies and then export their reserves, so a number of the independents have either been taken over themselves, or they have gone after other companies. A number of the successful Calgary firms were swallowed up after the crash in oil prices in 1998, and even Peter Lougheed, former Alberta Premier, complained about the pace of foreign takeovers in the oil patch. Poco, an original '86er, was taken over. Renaissance, one of the most active new companies, was swallowed by Hong Kong-controlled Husky Oil. Big American independents, such as Apache, have bought up Canadian companies and reserves of gas with the clear intention of exporting back to the U.S. Indeed, the logic of acquiring upstream properties in western Canada in an integrated continental market and with a favourable exchange rate is unassailable.

Canadian independents have been victims of their own success. Short-term pressures from stockholders to increase value and please the markets have undoubtedly influenced the rush to produce, export, and either drill or buy new assets. We should see much more of this activity in 2001 and after, as big cash-rich producers move in to buy

If there was one problem that dogged independent producers in the late 1980s and early '90s, however, it was the very low price of their “trapped” gas resources. The deliverability surplus kept growing, prices were very low, and there were few ways to reach the big markets. Like prairie agricultural producers who saw the CPR as a barrier to their growth, the generation of '86 focused their hostility on the big pipelines to whom they sold their gas: Nova and TransCanada first and foremost. To get the producers' price up, there would need to be new export lines, more competition for Alberta gas. Gas prices in New England were three times higher than in western Canada—there was a market they wanted.

By 1995, a group of the senior independents had reached a consensus on the need for an all-export pipeline, Alliance, to carry 1.325 billion cubic feet a day from northeast B.C. to the Chicago hub—a non-stop “bullet” into the energy-guzzling heart of the American market. Unremarkably, Nova and TransCanada, “the old guys” who controlled most of the takeaway capacity, fought these plans to the bitter end (and finally were merged): Nova resisted because new higher-priced exports threatened the growth of its gas-based petrochemical plants and its gas-gathering monopoly in Alberta, and TransCanada was fiercely opposed because it would likely lose export sales and domestic business to Alliance Pipeline and its main downstream supply outlet, the 270-mile Vector Pipeline, which would transport 700 mcf/d from Joliet, Illinois, through Indiana and Michigan to Dawn, Ontario. The conflict was settled in 1998, but not to TransCanada's preference. Alliance and Vector went into operation on 1 December 2000, and much of the gas that went into the initial Alliance shipments was not new gas but gas earlier committed to TransCanada.

Pipeline expansions in 1998 had already permitted the gas industry to reach record levels of production and exports, and at the end of 1999 Canadian gas from Sable Island began to be piped into the Boston region. Even before Alliance and Vector went on stream, then, export capacity and gas exports had reached record volumes and record revenues. (Export revenues from gas rose above \$10 billion in 1999). The new pipelines started operations in December 2000, as luck would have it, just as a huge Arctic high (“a polar pig”) settled on the American Midwest. Short-term gas contracts in parts of the U.S. were going well above \$15(US) per mcf. This of course meant that consumers

takes us well beyond that rationale. Now we have built large new “bullet” export pipelines from northeastern B.C. to Chicago, and the question is: how are we going to keep them full over the long haul, and at what cost to Canadian consumers?

Building a pipeline involves a commitment of resources for at least 25 to 30 years. What if a new gas surplus emerges in the U.S. because of lower economic growth and higher domestic production? If natural gas is the low-polluting prince of hydrocarbons that can ease (if not resolve) some of our global environmental dilemmas, it makes no sense to export so much of it so quickly to the United States. Where are the feedstocks going to come from to support value-added industry such as petrochemicals—in Alberta, not Chicago? There is no value-added on the several trillion cubic feet of gas that is exported to the U.S. It is impossible, therefore, to give priority to the interests of Canadian users in a market organized on an integrated, continental basis. Nor is a NAFTA-based energy policy consistent with conservation.

2. Deregulation, NAFTA, and the Promotion of Exports

Our interest here is in the reorganization of oil and gas since deregulation and free trade (under NAFTA rules), and not in the historical events and forces that brought these features of the new economic regime into being. But we need to understand why the prior system of “regulated stability” was abandoned, especially in the case of natural gas. Briefly, Canada was following U.S. precedent. Canada began to decontrol oil and deregulate the oil and gas industries in 1985 with the Western Accord: the Mulroney government, strongly supported in the West, was fulfilling its pledge to producing provinces and its supporters in the petroleum industry to roll back the National Energy Program and go to full market prices for oil and gas. The 1985 Accord clearly anticipated a wide-open continental market. At the same time, Petro-Canada was partially privatized and foreign ownership restrictions in the industry were removed.

Going to world oil prices was simple but painful: the industry was fully exposed when the price of oil collapsed in 1986. But the natural gas industry was deregulated in Canada for more complex reasons. It was already being deregulated in the U.S., and much of the risk and instability in the U.S. industry had been shifted all the way upstream to Canadian exporters. The big gas pipelines, formerly merchants and carriers of only their own gas, were now required to act as common carriers, transporting other companies’ gas, and the Federal Energy Regulatory Commission (FERC) issued orders promoting competition (and weakening regulation) all the way up the chain to the producers.

The FERC’s orders opened up the pipelines and forced them to unbundle their services, so buyers and producers could deal directly with one another. The big companies and pipelines were losing their power because they weren’t delivering the goods. The rules of the game were changing in the U.S., and Canadian gas exporters either had to accept it and move to market prices to build new markets, or be shut out by U.S. competitors. They were in no position to dictate terms or to impose uniform export prices. They were price-takers, not price-setters.

Cost-conscious, highly focussed on a few opportunities, and keeping high working interests in their projects, the new breed sought to be free of the majors and resilient to low prices. They were a remarkably tight-knit group, a number of them survivors of the huge blood bath of 1986, when so many of Calgary’s best engineers, technicians, geoscientists and other professionals were tossed out on the street – albeit with attractive buy-out packages – by the major oil companies. That was a seminal moment for Alberta’s oil industry because many of these talented people stayed in Calgary and began setting up their own companies. They would only work for themselves. They were committed to lowering supply costs while increasing volumes of production, building a resilience to the world oil cycle, exploiting the newest drilling technologies, and “doing it right together,” as one of the most successful of them stated. They wanted very few employees, only the best and those fanatically motivated. With 400 employees, Canadian Natural Resources built up \$4 billion in assets in under a decade. The philosophy was that “the low-hanging apples might be gone” but there were opportunities galore a little higher up the tree. The major companies, having grabbed the low-hanging apples, had packed their bags after 1986, writing off the remaining conventional oil fields of Alberta as mature, in decline, and ultimately too costly to reinvigorate. Some of the majors kept land and positions in gas and the oil sands, but in general they were moving on to the East Coast offshore and non-Canadian frontiers like the Caspian Sea, where huge oil discoveries still could be made. Petro-Canada, a company with a strong position on federal lands and a share in Hibernia and the operator’s role at Terra Nova, made a “staged exit” from Alberta’s conventional oil industry. BP dumped its Canadian affiliate, and a new oil independent, Talisman Energy, appeared. Suncor was cut loose by its US parent. The larger independents saw growth and profits overseas. These new firms had autonomy: they could, if they wished, go find oil in the Caspian Sea, offshore West Africa, Libya, the Sudan, Ecuador, Argentina, Indonesia. And by 1999 they were producing around 500,000 barrels a day of overseas crude oil. Almost inevitably, some of them were also involved in serious conflicts over human rights in Africa and South America. The expansion of the Calgary independents was a direct effect of the 1986 crisis. It restructured the industry.

1974. It has a strong position in heavy oils and the oil-sands. The AEC was founded to increase Albertans' participation in the Syncrude oil sands project and bolster their trust in the private enterprise system; many Albertans have held shares in it, as their parents held shares in Nova (Alberta Gas Trunk Line) in the 1950s.

These companies, with their origins in a “people’s capitalism” tradition in Alberta, have had relationships with the province that other companies have lacked. Wholly private-owned though generously endowed by the province of Alberta, AEC is now the largest Canadian independent with assets of \$8 billion and international investments in Ecuador, Argentina, the Caspian Sea and Australia. It calls itself a “global super-independent” able to operate in the age of globalization. The AEC is not as large as, say, Imperial Oil. But it is large enough and evidently has the legitimacy to cooperate with the federal police in the ongoing struggle against ecologists and many farmers who view the sour gas wells being drilled in the west/northwest of Alberta as a menace to the health of entire communities.

This struggle has occasioned numerous acts of sabotage and violence against drilling companies, but there is little doubt that what touched it off was the acceleration of the industry’s campaign for large new gas reserves for the export market. It is a social and political offshoot of Alberta’s integration into the North American energy market. The companies, the province, the regulatory boards, the police, the courts—all this power exists for one purpose: to defend the market.

The AEC, working with a handful of other Calgary-based upstream independents, such as Renaissance, Chauvco, PanCanadian, Norcen, POCO, Alberta Natural Resources, Canadian Hunter, Canadian 88, Talisman, Ranger, Suncor, Precision Drilling, Occidental Canada, and First Energy, had decided by the early 1990s that diversification was altogether the wrong strategy for Alberta and for themselves. The owners and executives of the independents, with a nudge from NAFTA, intended to focus on their competitive advantages in natural gas, conventional oils, and the oil-sands, and thought they had room to grow, provided new export pipeline capacity was quickly built.

The consuming provinces and some gas-using industries, fearing that this move would lead to a deeper involvement by the producing industry in the North American gas trade, opposed the move to market export prices. They rightly feared that this could leave them in a situation where they would have to bid for Canadian supplies against U.S. pipelines and distributors, and that this would force up domestic prices. But Canadian exporters were also moving to deregulation in the mid-1980s at a time when producers had a very large “deliverability surplus” on hand. It was referred to as “trapped gas”—i.e., gas that had no place on the export pipelines. This weakened the bargaining power of gas exporters and held prices down for years—to the great benefit of gas users in Canada and the U.S.

The Americans had for years used cheap Canadian gas to hold a small surplus on their market and keep producer prices down. The smart policy would have been to withhold additional Canadian gas from the market for some time, to “bank it,” but the Canadian producers were typically small and had short-time horizons. Instead of holding back export approvals, the National Energy Board kept offering the Americans more and more gas at declining real prices. Leaving resources in the ground was unthinkable. We were “willing sellers,” reliable and good for U.S. national security.

Growth in volume was the target: unload the surplus, protect our existing markets. So, after access to the U.S. market had been guaranteed via NAFTA, we built more pipelines and pipeline extensions, and these began to come on stream by 1998. This, in essence, is why prices converged and the exports grew to 3.3 tcf in 1999—and that is by no means the ceiling. Canadian diplomats pleaded with the Americans to use our gas; we had plenty to offer. If the Americans are under the impression that Canada has limitless supplies of oil and gas, there is no doubt about who told them. The claim that “We’ve got too much gas” is hardly the best way to open negotiations!

But it was NAFTA that administered the coup de grace to the national energy policy. The energy provisions of the 1989 Free Trade Agreement and of the subsequent (1994) North American Free Trade Agreement are similar and cover much of the same ground, but NAFTA extended coverage to basic petrochemicals and brought in a free trade zone between Canada, the United States and (despite reservations on energy) Mexico. NAFTA applied the principles of “non-discrimination” and “national treatment” to the actions of

energy regulatory bodies, including sub-national bodies, forcing them to treat producers and investors in the NAFTA partner states no less favourably than domestic ones. And these clauses were inserted at Canada’s insistence because of a squabble in the early 1990s between Canadian gas producers and the California Public Utilities Commission over the Commission’s attempt to void existing sales contracts between the gas exporters and Pacific Gas and Electric in favour of short-term contracts.

That episode saw the National Energy Board use the Canada-U.S. FTA in a bid to strengthen its own control over exports, and the government of Alberta threaten to withhold gas from PG and E if the Commission began buying gas on short-term contracts. The CPUC, a “sub-federal” body, backed down because California’s security of supply was in jeopardy—a rare example of Canadian governments successfully exploiting their bargaining power vis-a-vis a major consuming region. It was this episode that prompted Canadian trade negotiators to push for the “national treatment” language in Article 606 of NAFTA. Provincial and state regulatory bodies were henceforth to be “subject to the disciplines” of NAFTA’s free trade principles.

Unlike Canada, however, Mexico refused to have its energy sector covered by NAFTA. Arguing that its sovereignty over energy was part of its Constitution and thus not subject by a trade agreement, Mexico reserved to its own control virtually every “strategic activity” in the energy sector.

NAFTA creates a continental market in energy services as well as goods, and transforms electricity into a good rather than (as in the GATT) a service. It bans export taxes on energy and basic feedstocks, and prohibits minimum and maximum import or export prices (no floor, no ceiling). It allows the three countries to place qualitative restrictions on non-NAFTA trading partners. As noted, it subjects energy regulators to the discipline of national treatment (they must give the same treatment to foreign as well as domestic companies), and in the most controversial Article of Chapter Six (605), the governments are restricted from limiting the volume of exports of any energy or basic petrochemical good under the usual justifications.

How does the growth of the world and U.S. market for natural gas affect the strategies of Canadian oil and gas producers? The Alberta Energy Company, the leading gas producer, set out its thinking in its 1999 annual report. This key Alberta corporation, always close to the centre of power in Calgary and the province, is strongly involved in crude oil and oil-sands production, but, says the AEC:

Natural Gas Strategy

Leverage Canada’s strongest natural gas production, reserves and exploration land position to take advantage of the expanding continental gas market.

Western Region: focus on deeper formations which hold significant multi-zone, liquids-rich potential by leveraging dominant land position in the Grande Prairie area, Edson region and northeast British Columbia.

Eastern region: pursue production and reserves growth through low-risk exploration of sweet, dry, shallow gas in the plains area of the Western Sedimentary Basin.

...Alberta natural gas prices have strengthened as additional export capacity came on stream in late 1998 providing access to U.S. markets. The Company expects continuing growth in U.S. natural demand, coupled with declining U.S. domestic production, will result in stronger prices for both U.S. and domestic markets in 2000.

The Alberta Energy Company is Canada’s leading gas producer; in North America, it is one of the top producers. It produces about one billion cubic feet of gas per day and holds huge reserves of 4.3 tcf. It is able to balance the low-risk sweet gas exploration of the southeast of Alberta with the high-risk deep sour gas of the northwest and the foothills, in part because it was “gifted” with the exclusive mineral rights to the vast gas-rich Suffield military block by the Alberta government when it set up the company in

3. Corporate Strategies: Pressures to Export

The prize that Canada's largest gas producers have been chasing at least since the Western Accord in 1985 is the potential 30-35 tcf American market for natural gas that so many people believe is just over the horizon. U.S. consumption of natural gas has risen quickly, and will keep rising as long as gas prices are competitive with alternatives, especially oil, so the target is not a fanciful one. Canadian producers have approximately 12%-14% of this market now, and expect to capture a larger market share in the future. But they are dreaming if they think that supplying 15% or more of a 35 tcf market would be sustainable. That implies a very high rate of reserve additions of gas and the exploitation of new frontiers. The National Energy Board, in a December 2000 market assessment, pointed out that the productivity of gas wells connected in 1999 was 40% lower than for wells connected in 1996. They are drilling for the fast buck, not for tomorrow's market. And NAFTA literally invites them to act that way.

At the global level, gas production has increased 30% or more since the mid-1980s when prices began to fall sharply in nearly all the major countries. Uncertain oil prices, the insecurity of oil supplies, changing technologies and, perhaps above all else, the environmental advantages of natural gas relative to coal and oil: these are among the leading factors favouring it over other energy forms.

Natural gas is especially in demand as a fuel for new co-generation power plants, as a substitute for heating oil, and for a myriad of other industrial and consumer uses. Provided that the resource is as abundant and low-cost as many scientists believe it is, gas should displace both oil and coal as favoured primary fuels in the early part of the century.

Natural gas is of course only "clean" in a relative sense. It is mainly methane, a greenhouse gas, but on combustion it produces 30% less carbon dioxide per unit of energy than does oil, and 45% less than an equivalent unit of coal. The impact on the atmosphere is reduced, but not eliminated. A natural gas boom, proponents argue, would create a cleaner environment. We return to that claim later.

NAFTA has a "proportional access requirement" (only between Canada and the U.S.) that may be triggered when energy or basic petrochemical imports are cut by a government on the basis of one of several GATT justifications, which includes conservation of exhaustible resources, the need to supply domestic processing, and relief of critical shortages. If Canada were to reduce its oil exports to the U.S. under one of these headings, then it would be obliged to supply a proportion of the existing supply to both export customers and domestic users. The proportion would be calculated on the basis of the average share purchased during the previous 36-month period.

If the Canadian government wanted to cut back gas exports by 20% for, say, conservation, it would have to treat domestic consumers the same as the export market: it would calculate the amount each had consumed over the past three years, and that would be the basis of proportional access. If—as is approximately the case with natural gas—Canada had exported 60% and consumed 40% of its gas production over three years, then proportionality would favour the U.S. on a 6:4 basis, i.e., Americans would be free to purchase, on commercial terms, 60% of the remaining Canadian supply, with Canadian consumers having to settle for the leftovers.

It is not so obvious why Canadian producers would have lobbied for this "proportional access" Article of NAFTA, but they did. The measure works in favour of Canadian exporters of energy and the producing provinces, as well as the U.S., by effectively tying the hands of the federal government of Canada, and it was inserted in the treaty at their insistence. It strongly promotes production and limits any possibility of governmental cutbacks in exports. It has the effect of discouraging consumer-oriented federal measures that would restrict supply and interfere with North American energy integration. It could act as an effective constraint if Canada gets into trouble through its excessive energy exports and needs to cut back, but its true underlying function is to deter federal intervention.

The ghost of the National Energy Program kept sending shivers through the Canadian designers of NAFTA as they lunched at the free trade banquet. This ghost, who may have resembled former Prime Minister Pierre Trudeau or his Energy Minister, Marc Lalonde, was one that many Western Canadians and Trudeau's successor, Brian Mulroney, hoped to bury by strengthening the hands of the Americans and tying their own. Needless to say, the United States did not refuse this generous offer of proportional access to Canadian resources!

Overall, NAFTA creates the framework for integrated North American energy and basic petrochemicals markets, asserts the pre-eminence of supplier-purchaser markets, and facilitates the expansion of energy exports and imports. It grants access to the U.S. market in return for the gutting of Canada's energy powers and sovereignty. The energy thrust of NAFTA is rooted in a producer's viewpoint because of the near-exclusive emphasis it gives to expanding production in a wider market. It also reflects conservative fears of the national government.

NAFTA's Chapter Six is particularly strong on growth and trade, but very weak on the conservation of scarce North American energy resources. It appears to leave room for subsidies to preserve the resource base, but makes it politically difficult, if not impossible, for any Canadian government to restrict production and exports to the U.S. without inflicting shortages on its own people. In that sense, Article 605 places Canada (the supplier) under a self-denying ordinance. One can envision a number of scenarios in which the United States could use this article to gain "proportional access" to Canadian resources or to prevent limits being applied to our exports of energy. Any policy restriction on volumes of exports (under, say, the need to conserve scarce resources over the long run or to cope with sudden shortages) would allow them to invoke Article 605. The higher our exports relative to consumption, the greater the Americans' proportional access.

NAFTA, however, provides a stronger legal and, perhaps, financial basis for the expansion of pipeline takeaway capacity and the elimination of the surpluses that had challenged producers since the early 1980s. With NAFTA in place, Canadian producers could go to their banks looking to finance new pipelines.

Chapter Eleven of NAFTA, on investment, reinforces the energy provisions by placing a very broad ban on conditions, standard of treatment, and performance requirements demanded of foreign investment. It prohibits governments from fixing levels of equity in multinational enterprises, or from imposing levels of goods, employment, services, and domestic content, or from restricting technology transfers. Chapter Eleven basically nullifies the option used in the past by many provincial and federal governments of utilizing their natural resources for purposes of economic development. To do so now would violate NAFTA and expose an offending government to punitive damages resulting from charges laid by foreign investors.

The growth-export thrust of NAFTA might be tolerable if oil and gas prices were stable enough to allow reserve additions to keep up with production and exports. But reserve additions of oil and gas have not kept pace with production in recent years: the emphasis has been on development rather than exploratory drilling. In the West, it is the shallow and quickly-exhausted pools of the plains which have been drilled, not the costlier but prolific wells of the northwest.

The broader economic and ecological limits are part of what is real resource scarcity—not a physical shortage, but the rising costs of moving from the best supplies out to the margins where production is more difficult and the returns are problematic. The B.C. and Alberta Foothills are an example: high drilling costs and environmental barriers—e.g., "sour" gas containing dangerous amounts of hydrogen sulphide—but very good (though costly) exploratory prospects. There is plenty of evidence that both the U.S. and Canada are already facing these tradeoffs. Their best conventional oil supplies are depleting rapidly, gas is abundant but no longer cheap, while most of the remaining undiscovered reserves of oil and gas on the continent are located in difficult, hotly-disputed wilderness areas: the eastern Gulf Coast, the Rocky Mountains, the Alaskan wildlife refuge, the Alberta and B.C. Foothills, and the West Coast offshore and the Beaufort Sea.

NAFTA has promoted exports, but it has nothing to say about these disputed zones or the conflicts over new developments that will have to be resolved politically, not with market forces. (It should be noted, that NAFTA allows governments to subsidize corporate explorations for gas and oil—so that taxpayers end up paying twice for new supplies: for their discovery and at the gas-pumps.)