

**From Public Good
to Private Exploitation:
Electricity Deregulation, Privatization
and Continental Integration**

By Marjorie Griffin Cohen

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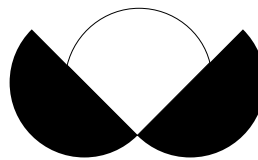
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Abstract

This study examines the WTO initiatives on energy taking place through the new round of negotiations on the General Agreement on Trade in Services (GATS). These new negotiations coincide with the U.S. drive for an integrated continental energy policy and would particularly affect the nature of the electricity industry in Canada. Canada currently has a limited, but significant commitment under GATS for electricity. But if the U.S. proposal for energy in GATS succeeds, it would support complete electricity deregula-

tion, the move toward privatizing electrical generation, and full-scale continental pricing. The cautious approach to deregulation that many provinces have undertaken paves the way for the GATS to force further deregulation. A Canadian agreement to include electricity as a covered industry would privilege private energy producers and traders, a move that would erode the security of supply, drive prices up, and have negative consequences for energy conservation.

From Public Good to Private Exploitation: Electricity Deregulation, Privatization and Continental Integration^{1*}

By Marjorie Griffin Cohen

Introduction

When George W. Bush announced the U.S. would pursue a North American Energy Framework, his idea was greeted with enthusiasm by the Canadian government and energy exporting provinces. The public outcry that could have been expected a decade earlier has so far failed to materialize—probably because of a general sense that a continental energy policy is on a steamroll that is not going to be stopped. As one commentator put it, “there isn’t a lot left to negotiate when it comes to Canada-U.S. energy relations.”² His take is that the FTA and NAFTA have pretty much sewn up Canada’s energy integration with the U.S. and since these agreements came into effect a web of pipelines all across the country from Sable Island off the coast of Nova Scotia to the Beaufort Sea are carrying oil and gas south of the border.³

In some respects this sense that the setting for a common continental energy policy is already in place is correct. The combination of the deregulation of the oil and gas industries in the late 1980s that accompanied the Western Accord, privatization of production in provinces where it was still in the public sector, and the signing of the continental trade agreements radically changed the energy regulatory regime in Canada.⁴ These changes accelerated production for exports, so that Canada now exports about 59% of its natural gas and 30% of its oil supply, proportions that are likely to continue to increase since recent price hikes for energy in the U.S. have further stimulated explorations and plans for new pipeline connections.⁵

Almost all of Canada’s oil and gas exports are to the U.S., with gas accounting for 94% of all U.S. natural gas imports and 15% of its total market. Canadian exports of crude oil are 14% of U.S. imports and account for 8% of the total U.S. market. The integration of the U.S. and Canadian oil and gas markets has had the effect of creating a common energy market for these forms of energy and there is almost nothing, except the re-regulation of the entire industry, that will halt the convergence of domestic and export pricing.

Mexico, unlike Canada, would experience enormous changes in its oil and gas industries through a U.S.-led continental energy deal. Mexico has an exemption in NAFTA for most activities relating to exploration, refining, storage, transmission, and distribution of crude oil, natural gas, and basic petrochemicals, so any policy that affects this exemption would bring about a diminution of state powers over oil and gas.⁶

Despite the highly integrated nature of the Canadian and the U.S. oil and gas industries, Canada would not come out of this unscathed—mainly because of changes that a U.S.-inspired energy policy would bring to the electricity industry. Electricity is one part of the energy sector where the U.S. still does not have common pricing and unrestricted access to investment, resources and sales within Canadian markets. While some provinces have deregulated electrical generation to encourage private production of electricity, most of the value of Canadian electricity remains in publicly-owned and regulated institutions. Of the five main electricity-exporting provinces, only one, Ontario, has a plan for

complete deregulation and open market access. The other four electricity-exporting provinces—B.C., Québec, Manitoba and New Brunswick—rely primarily on publicly- owned institutions for generation, transmission and distribution of electricity.

The public provision of electricity in Canada is in a precarious position because of a number of forces that are driving the deregulation of the industry—forces that relate to both domestic and international pressures. Both domestic and international private power marketers and suppliers want access to government-controlled markets.⁷ They usually justify deregulation ideologically by the claim that private producers operating through the market are inherently superior to government-provided services, and that the introduction of competition in electricity markets would reduce prices.

Another force for deregulation relates to the drive for exports in many provinces, a process that brings the regulated market in conflict with the deregulated system in the U.S.⁸ In exporting provinces, the requirements of access to U.S. markets bring these jurisdictions under the aegis of the Federal Energy Regulatory Commission (FERC), the U.S. regulatory body.⁹ This in turn requires allowing specific kinds of access to private producers and traders to the infrastructure of the electricity system in Canada in

order to ensure reciprocal access to markets here.¹⁰ As the high prices of electricity in the U.S. make production for export increasingly attractive, more demands will be made on Canadian suppliers to conform to U.S. requirements.

The intent of this study is to examine the initiatives on energy at the WTO that are occurring through the new round of negotiations on the General Agreement on Trade in Services (GATS). These initiatives coincide with the U.S. drive for an integrated continental energy policy. The proposals for the comprehensive inclusion of energy in the GATS would cement the deregulation process and, hence, the move toward privatization of the provision of electrical energy in Canada. The U.S. proposals for the GATS would privilege private energy producers, should they succeed, and result in changes that would radically change the electrical energy industry in Canada. Countries that currently have public control of the oil and gas industries could be seriously affected by GATS measures on energy, and it is likely that the GATS could further restrict Canadian access to its own oil and gas resources. The focus for this study, however, will be on electricity because that is the major energy utility that is still controlled by governments in Canada and is the most threatened by the possibility of GATS coverage.

I. Electricity Deregulation

Changes in the Electricity Industry

In most countries, the electrical industry is a very big public business that has the potential to provide the private sector with huge profits. Revenues, world-wide, from generation and distribution of electricity are estimated to be over \$1 trillion a year, or roughly more than double the revenue generated from the international auto industry. Until fairly recently, it was widely accepted that the electrical industry was best served by large-scale monopoly production and, until the 1990s, most countries in the world, with the exception of the United States and Japan, relied on vertically integrated, state-owned utilities for electricity.¹¹

In Canada, the capital costs involved in providing electricity were larger than private corporations wanted to risk, so the establishment of the modern electrical system was accomplished through the public sector, with considerable encouragement from private industry.¹² The primary mandate of these government utilities is to provide electricity to people and industry within a provincial boundary, and their operations are characterized by long-term planning for adequate supply, equitable distribution, and low and stable prices. Exports, while often important for provincial revenue, were usually limited to the sale of surplus electricity through long-term contracts with guaranteed pricing.¹³

The move toward privatization, as a result of the competitive pressures of globalization, came more slowly to the electrical industry than to other utilities in the public sector. The landmark case in the deregulation of utilities in North America was the U.S. court decision in 1984 ordering AT&T to open the U.S. telephone

system to competition. Since then, the U.S. has introduced legislation to deregulate the telecommunications industry, the gas industry, and the electricity industry. In 1992 the Energy Policy Act opened ownership of electrical generation and access to transmission systems. This provided competition at the wholesale level. Competition at the retail level, through the “Comprehensive Electricity Competition Act,” is to extend competition to the retail market, allowing all customers to choose their electricity supplier by 2003.¹⁴ Similar changes in electrical utilities have occurred in other countries such as Argentina, Australia, Chile, Norway, Sweden, the United Kingdom, and New Zealand.¹⁵ The deregulation of utilities in the U.S affected Canada, and now both the telecommunications and gas industries are competitive and largely deregulated.

The electrical industry was relatively insulated from deregulation pressures because the technological advantages of large-scale generation, transmission and distribution created natural monopolies and this, coupled with the history of public development of the infrastructure, kept the industry firmly under government regulatory control.¹⁶ The huge capital costs for reservoirs, generation facilities, and transmission and distribution lines brought governments into the industry in the first place. As well, the physical constraints of transmission and distribution meant that the most efficient relationship between high-voltage transmission and low-voltage distribution demands an exclusive line or network of lines, both to reduce costs and to minimize losses of electricity. Both the cost of establishing the infrastructure and the technical requirements of transmission and distribution kept the industry either under government

ownership or government regulated—mainly to protect the consumer from monopoly power, but also to ensure long-term planning for sufficient supply and equitable distribution.

Most analysis of deregulation in recent years point to the significance of changes in the technology of electricity generation as the primary force for change, mainly because it has made investor-owned, relatively small-scale electrical generation more viable.¹⁷ In some instances it is true that the economies of scale that have historically dominated the industry have been undercut by the use of new technologies such as combined cycle gas turbines (CCGTs) that make smaller-scale production more efficient and cheaper than it has been.¹⁸ But the significance of new technologies as the driving force behind deregulation is hugely overstated and really applies only to those jurisdictions that have turned away from coal and nuclear energy to gas.

This occurred in Great Britain, where the industry rapidly shifted from coal to gas, and in California, where attempts were made to switch electrical generation from nuclear energy to gas. Private power producers (frequently termed Independent Power Producers [IPPs]) and energy traders, while arguing for deregulation on the justification of cleaner and cheaper electricity through competition, tend, once the market is deregulated, to focus on the least expensive, not the cleanest, method of generation. Also, as electricity prices increase significantly, many relatively expensive forms of generation that are available to the private sector become more viable.

The main point is that changing technology is a convenient excuse to justify the deregulation of markets, but it is not the driving force behind deregulation in Canada. In most cases the technologies used in private generation are not new and rely on older, dirty, and sometimes expensive ways of generating electricity. The driving force for deregulation is the desire on

the part of the private sector to participate in a market that has either been closed to them (as in most of Canada) or existed as a highly regulated monopoly (as in the U.S.).

In the U.S., probably the most compelling factor leading to the deregulation of electricity was the introduction of the concept of “unbundling” of integrated electrical systems. This concept, first seen with the deregulation of telecommunications, requires that the advantages (and efficiencies) of vertically integrated utilities be dismantled so that new suppliers can have access to transmission and distribution networks. The argument usually used to justify “unbundling” the three major components of electricity entities (generation, transmission, and distribution) is that existing vertical integration leads to “natural monopolies” unfairly capturing the electricity market. This train of thought is reinforced by the promise that a competitive, deregulated market would elicit more supply, be more efficient, and produce lower prices.

The attractiveness of the market for private companies relies heavily on the availability of a well-developed, usually public, infrastructure of transmission and distribution lines, because new technologies have not changed the natural monopoly of these components for delivering electricity to where it is needed. Independent power companies focus on the deregulation of generation, rather than pushing for the ownership and operating of transmission and distribution lines, mainly because these systems are expensive to operate and the margins are thin.¹⁹

Under systems that have been characterized by large-scale, vertically integrated natural monopolies, the supply, distribution, and prices of electricity are regulated by public entities. The regulator would normally oversee long-term planning for supply, and monitor all price changes.²⁰ Through these measures, both the supply and price of electricity is guaranteed for specific long-term periods. Under a deregulated system, this role of the regulator is removed and

the market acts as the adjudicator of both supply and pricing decisions. This means no collective long-term oversight ensures building for an adequate supply in the future, and prices to consumers shift from reflecting costs of production to reflecting what the market will bear.

These are the most fundamental characteristics of the shift from a regulatory regime to a deregulated one—not the absence of regulation itself. The term “deregulation” is a misnomer because considerable re-regulation is necessary in order to limit the advantages the existing “natural monopoly,” (whether public or private) is seen to have. In a deregulated regime, the state’s role shifts from being a provider of electricity or a regulator of private monopolies to one of being a facilitator of marketization.

The period of relatively low prices for gas from the mid-1980s until fairly recently spurred the “dash to gas” in many places where coal or nuclear generation dominated production.²¹ Gas is relatively clean, at least compared with coal, and is certainly much less environmentally dangerous than nuclear power generation. But so far it has had less of an impact in places where the traditional source of electricity supply has come from water because of the huge advantages hydroelectric power has over any other conventional source of electricity. Once the system is in place, it is cheap and clean.

Hydroelectric production accounts for the largest portion of electricity exports in Canada: B.C. Hydro, Hydro-Québec, and Manitoba Hydro all rely primarily on water to generate electricity. Huge hydro-based systems are not without problems, however. The initial creation of large reservoirs and transmissions systems plays havoc with the environment and results in damage to wildlife, terrain, local communities, and the socioeconomic way of life of many Aboriginal people. But, once the systems are in place, they provide a secure, reliable supply of inexpensive and clean electricity.

U.S. Drive for Energy

U.S. energy policy seems to be based on a goal of increasing energy consumption 32% by 2020.²² This means the U.S. will need vast amounts of oil, gas, and electricity—much more than can be met with existing U.S. reserves. In fact, almost all increases in the use of energy in the U.S. during the past 10 years have been met through imports, something that indicates a serious problem with domestic supply. The drama of energy shortages in the U.S. is reflected in the language of the U.S. *National Energy Policy*, the document produced by Vice-President Dick Cheney, Secretary of State Colin Powell, and others of the National Energy Policy Development Group (NEPD) in May 2001: “A fundamental imbalance between supply and demand defines our nation’s energy crisis.” It talks about how “millions of Americans find themselves dealing with “rolling blackouts or brownouts,” employers who “must lay off workers or curtail production to absorb the rising cost of energy,” and of the families who “face energy bills two to three times higher than they were a year ago.”²³

U.S. electricity use is expected to increase 45% within the next 20 years, something that will require, in order to meet this demand, between 1,300 and 1,900 new electric plants. This would mean bringing into production about one new plant a week over the next 20 years, something that almost no one thinks is likely.²⁴ Despite the relatively unsuccessful attempts at deregulating the electricity market, deregulation is still the cornerstone of the U.S. electricity policy. The assumption is that, with a completely deregulated market, private companies will undertake the financial burden of increasing electricity supplies. In the face of recent market responses to deregulated markets, this assumption seems curiously optimistic: although 25 states have opted to open their retail electricity markets to competition, very little new electrical generating capacity has come on line.

The NEPD says new capacity is expected to come into production within the next four years, but the clear message of the U.S. policy report is that there is, and will be, a mismatch between generation of electricity and demand where it is needed.²⁵ Currently, and within the foreseeable future, the major problem areas for electricity are California, New York, and the New England states, all areas that could dramatically increase their supply from Canada.²⁶

Considering the potential problems of energy supply, it seems odd that increasing, rather than reducing consumption, is the kingpin of the National Energy Policy. While the policy document contains much hype about conservation and the success of energy conservation in the U.S., it nevertheless says, “energy use per person in the United States is expected to rise, as is overall demand for energy.”²⁷ It is hard not to notice the inherent contradiction between rhetoric about conservation and plans for increased consumption in the U.S. energy policy. But, despite this contradiction, there are rational political objectives for instituting a policy that focuses on increasing consumption.

First, it can address some fairly tricky political headaches for the Bush administration by permitting a return to favour of dirty or dangerous energy sources, like coal and nuclear energy. This move has the backing of key supporters of the Republicans. Some 91% of the electricity generated in the U.S. comes from steam from burning fossil fuels, and from nuclear fission. Nuclear power accounts for about 20%, thermal generation about 71%, hydroelectric generation 7%, and alternate sources like wind and solar energy make up only about 2% of all electricity generation. The *National Energy Policy* specifically favours the increased use of coal and nuclear energy in domestic production.

Second, pricing problems can be mitigated by vigorously pursuing a continental energy policy to make sure these resources are available from Canada and Mexico. In this, the U.S. policy is extremely clear: “Energy security must

be a priority of U.S. trade and foreign policy.”²⁸ Security will be achieved on a variety of fronts, including support for a “North American Energy Framework to expand and accelerate cross-border energy investment, oil and gas pipelines, and electricity grid connections...”²⁹ Canadian and Mexican resources are to be the U.S. energy storehouse, and policies that make sure that these storehouse supplies increase is crucial to preventing the continuation of price escalations in the U.S.—something that any politician worth a campaign contribution knows is essential at election time.

Polls show Americans are worried about global warming and are prepared to pay more for cleaner power, but politicians tend not to believe this, despite the rhetoric on sustainability and clean energy: As Al Gore said early in his term as vice-president, “The minimum that is scientifically necessary [to combat global warming] far exceeds the maximum that is politically feasible.”³⁰ The average U.S. family increased its total energy bill by 26% between 1999 and 2000, although in some areas like California the price hikes were much more dramatic.³¹ Higher energy prices tend to demand that “something be done,” and that something is guaranteeing a secure supply at prices Americans find reasonable. As the chair of the Western Governors’ Energy Committee, Jim Geringer, noted at a 2001 conference at Whistler, “The best way to drive prices down is to increase supply.” As he observed, the heavy reliance on Canada by the U.S. can create conflicts, as is evident in the allegations that B.C. Hydro gouged California, and the likelihood that these charges will be upheld in U.S. courts. But these kinds of problems with price spikes can be averted if Canada assures adequate supply through an “energy policy for the Americas.”³²

The *National Energy Policy* is candid in its assessment of its energy security, specifically stating that it “depends on an efficient domestic and international infrastructure to support all segments of the energy supply chain.”³³ Promoting

the liberalization of the global energy sector means not only securing access to supply, but also promoting U.S. energy investments in other countries: "American energy firms remain world leaders, and their investments in energy-producing countries enhance efficiencies and market linkages..."³⁴ To this end, the NEPD recommends that the U.S. specifically focus on meeting U.S. energy objectives through international trade agreements. It says the U.S. should support "American energy firms competing in markets abroad, and use our membership in multilateral organizations, such as the Asia-Pacific Economic Cooperation (APEC) forum, the Organization for Economic Cooperation and Development (OECD), the World Trade Organization (WTO) Energy Services Negotiations, the Free Trade Area of the Americas (FTAA), and our bilateral relationships to implement a sys-

tem of clear, open, and transparent rules and procedures governing foreign investment; to level the playing field for U.S. companies overseas; and to reduce barriers to trade and investment."³⁵

The outlines of U.S. energy policy are eminently clear: the objective is not simply to secure adequate trade in energy resources, but to ensure the right of U.S. energy investors to exploit the resources of other countries. It specifically refers to the opportunities at the WTO to open markets "for private participation in the entire range of energy services, from exploration to the final customer."³⁶ That the U.S. is extremely serious in this objective is evident from the section in the *National Energy Policy* that recommends a comprehensive review of the use of "economic sanctions" so that energy security can be included in U.S. policy.³⁷

II. The GATS

The GATS – Main features and what it covers

When the GATS was created in 1994, as part of the new World Trade Organization, relatively little attention was paid to it by those concerned with the negative effects of trade agreements. Yet the GATS is among the most important of the WTO agreements—for two reasons: 1) services comprise the major part of economic activity of most nations, and 2) the GATS is an investment agreement.

Compared to the GATT, which dealt mainly with tariffs and other border measures, the subject matter of the GATS is incredibly broad. Because services include such a vast and diverse variety of activities, the GATS expanded binding international trade rules into areas never before considered trade-related. The WTO's summary of the GATS is explicit in how important the GATS is as an investment document: it states clearly that it "is the world's first multilateral agreement on investment, since it covers not just cross-border trade, but every possible means of supplying a service, including the right to set up a commercial presence in the export market."³⁸

Where member nations make specific commitments, the GATS can ensure the right of foreign investors to enter a market, either through the purchase of existing service investments (including publicly-owned or controlled investments), or through the establishment of "greenfield" investments. No other WTO agreement contains this right of establishment for investments.

The GATS is an extremely powerful and very complex instrument that has a built-in agenda

that aims—in the words of the agreement—at "achieving a progressively higher level of liberalization."³⁹ This "built-in agenda" means that countries have already agreed to continuously re-negotiate the GATS in order to increase commitments by members, as well as to broaden and deepen the rules that restrict or limit government actions. The current round of GATS negotiations began in February 2000. These services talks have now been folded into the ambitious new set of negotiations launched at the November 2001 WTO Ministerial meeting held—to avoid the protests that occurred in Seattle—in the desert emirate of Qatar. The WTO negotiations, including those on services, are to be concluded by January 1, 2005. The services negotiations are a very significant part of the WTO agenda: services account for up to 75% of the economy and labour forces of developed countries, and a growing proportion of economic activity in the developing world.

One of the main effects of the GATS is to give private companies access to services that are now in the public sector. It does this by providing rules that will inhibit both government regulatory measures and governments' provision of services. The GATS explicitly limits and restricts what governments can do, and includes the actions not simply of federal governments, but also of sub-national governments. The GATS covers all "measures," including legislation and regulations, as well as procedures, requirements, practices, or any other form of action affecting trade in services.

The GATS does not explicitly define "services," but does define four all-inclusive "modes," or ways that services can be delivered internationally. These four modes are as follows: *Cross-border supply* (mode 1) occurs when a service

provider located in one country provides services to a consumer located in another, such as when a consultant provides advice by phone, mail, or electronic means to a client in another country. *Consumption abroad* (mode 2) occurs when a consumer travels to another country and purchases services, such as a tourist or a foreign student. *Commercial presence* (mode 3) occurs when a foreign service provider establishes a physical presence in a foreign market, such as when a multinational energy company establishes a foreign subsidiary or takes over a local company. *The movement of natural persons* (mode 4) occurs where a person travels to another country to provide a service, such as when an engineer travels internationally to work on a construction project.⁴⁰

The GATS agreement includes certain rules of general application, as well as more onerous rules that apply only in sectors where countries make specific commitments.⁴¹ Part II of the agreement, “General Obligations and Disciplines,” contains requirements that all countries are obliged to observe and that are intended to apply to all services.⁴² Part III, “Specific Commitments,” details the additional requirements that apply when countries make commitments for specific services.

General Obligations and Disciplines

Among the 14 articles in this section are those requiring “transparency,” “most-favoured nation” treatment (MFN), provisions on monopolies, and on “domestic regulation.”

Transparency requires all nations to inform the Council for Trade in Services of any changes in existing laws, or new laws that affect trade in services, and to respond to any nation’s request for information. A major purpose of the transparency provisions is to enable parties to increase pressure on each other to further “liberalize” between and during negotiations. During the current round of negotiations, there have been new proposals to toughen GATS transparency requirements.

The ‘*most-favoured nation*’ (MFN) rule requires that the best treatment given to *any* foreign service or service provider must be given immediately and unconditionally to *all* foreign services and service providers. MFN obligations make reversing any step to open markets difficult, because it gives all foreign investors equal access and a stake in lobbying governments to maintain liberalized regimes. Where MFN obligations increase the participation of foreign services and providers, then equivalent domestic market liberalization will most likely follow.

Ongoing negotiations are examining ways to develop restrictions on “*domestic regulations*” that relate to qualification requirements and procedures, technical standards, and licensing requirements. The parties are developing criteria for ensuring that domestic regulations are the least trade-restrictive possible to meet a legitimate objective, and are being designed to ensure that such measures are not more “burdensome than necessary.” It is important to stress that these provisions are not concerned with discrimination between domestic and foreign companies, the usual focus for trade agreements, but are targeted at any regulatory measures deemed to be unnecessary barriers to trade. For example, large-scale construction for energy projects is covered by a huge number of municipal, provincial, and federal regulations that affect the nature of the construction project, including environmental regulations, technical standards, and licensing provisions. All of these measures, and almost any other construction-related measure, could be subject to tests to determine if they are “more burdensome than necessary,” or not the “least trade restrictive” option available for governments. Also, once implemented, a domestic tribunal or administrative body that will allow individual service providers, foreign and domestic, access to a dispute process based on GATS rules, may enforce these rules.

The GATS also contains rather formidable restrictions on *monopolies*:

- Article VIII.1 obliges governments to ensure that the actions of monopolies, public or private, conform with the most-favoured nation obligation and a government's specific commitments.
- Article VIII.2 obliges governments to ensure that a monopoly supplier—where it supplies services outside the scope of its monopoly rights, but that are covered by a government's specific commitments—does not “abuse” its monopoly position.
- Article VIII.3 stipulates that, if a government grants a monopoly in sectors where it has previously made GATS commitments, it must negotiate compensation with other member governments or face retaliation.

These “General Obligations and Disciplines” can have significant negative implications for public electrical utilities, when the GATS requirements apply. For example, applying MFN unconditionally could conflict with many activities of public electrical utilities. Typically, the sale of power or the wheeling of electricity can involve preferential agreements that could be challenged. The GATS monopoly restrictions also expose public electrical utilities to charges that they are competing unfairly in listed services outside the scope of their monopoly. The contrast with the GATS treatment of private power suppliers and marketers who compete with public utilities is striking: they not subject to binding GATS restrictions.⁴³ Although GATS restrictions on monopolies are usually justified as constraining the monopoly power of public utilities, they actually handicap public utilities vis-à-vis their private competitors.⁴⁴

Specific Commitments

The most restrictive GATS provisions apply only to sectors where governments make specific commitments to open up sectors for further liberalization.⁴⁵ Each country now decides the extent that it wants specific sectors, such as education and health-care, liberalized. The country can open the entire sector, or specific aspects

of it. So, for example, a country like Australia has agreed to cover some aspects of secondary and higher education under the GATS, but not primary education.⁴⁶ A country currently can commit to liberalize one or all of the modes of supplying a service. Governments can also list country-specific exemptions and limitations on coverage.

For the energy sector, the most significant of the GATS “modes of supply” will be cross-border supply, which deals with energy created in one country transported to another; commercial presence, which would include all foreign investment in energy production, transmission, and distribution, in addition to the activities of foreign energy traders; and movement of natural persons. The movement of natural persons relates to the rights that are given to foreign nationals to work on a temporary basis in countries' sectors that are covered by GATS commitments. For energy companies, this could include any movement of labour that would facilitate a foreign energy company's operations.

These specific, or “bottom-up,” rules apply only to those sectors, or portions of sectors, that a government has opened up for further liberalization. The two most significant bottom-up provisions are the requirements for “*market access*” and “*national treatment*.” The “*market access*” provisions, if fully applied, are designed to allow foreign service providers full access to domestic markets. This is a very powerful article because it prohibits governments from setting any numerical limits on the scope and size of activities within the market, as they now do in electricity production in the domestic market. It specifically says that governments cannot limit the number of service suppliers, limit the value of a market share, limit the total number of operations, or put any limitations on the participation of foreign capital in terms of limits on foreign share-holding or the total value of individual or aggregate foreign investment. Market access provisions also ensure that governments cannot limit the legal form of a serv-

ice provider. This means that there can be no requirements that electrical utilities be constituted as public or not-for-profit, rather than commercial, entities. Where specific commitments are made without limitation, there can be no monopoly service provider.

National treatment requires that governments provide foreign services and service providers with treatment at least as good as that provided to “like” domestic services and service providers within covered service classifications. National treatment obligations cover formal discrimination, as well as actions that result in discrimination, even if there is no intent to discriminate. Further, the obligation has been interpreted as requiring a “level playing field,” an interpretation that can mean that a foreign service provider may need and demand *better* treatment than a domestic equivalent in order to be competitive.

The GATS is the only WTO agreement that applies national treatment obligations to subsidies. This is one of the more worrisome parts of the GATS, since subsidies likely include grants such as those given to hospitals, education facilities, and electrical producers. For example, subsidies given to green power services could end up being national treatment violations if the green power services are overwhelmingly domestic and the “dirty” sources of power mostly come from foreign service providers. Under the GATS, all “like” power services must have access to these subsidies. Trade panels will have the discretion to decide if “dirty” and “green” power are deemed to be “like” services.

Government Services

Right at the beginning of the GATS, the definition of services covered says that “services include any service in any sector except services supplied in the exercise of government authority.”⁴⁷ This seems to protect public services from the application of both general rules and specific rules, because these services are supplied “in the exercise of government authority.”

However, the GATS then further clarifies this exemption by explaining that “a service supplied in the exercise of government authority means any service which is *supplied neither on a commercial basis, nor in competition with one or more service providers.*”⁴⁸ While there is no definition of “commercial,” if a fee is charged for a service (such as a fee for electricity), the public service is likely not exempt from GATS.⁴⁹ Also, as soon as there is some kind of competition between the public and private sectors, the GATS rules would apply. It is extremely rare that any public service has neither a commercial component nor competes in some way with the private sector. While electricity is largely in the public sector in Canada, in virtually all markets there is some private generation of power, an activity that can be said to compete with the public sector in some way. And, as will be seen in the next section, in many provinces a certain amount of deregulation has already occurred, so that some forms of private generation of power are allowed. According to a recent discussion paper prepared by the government of B.C., “only a small sub-set of services—those that are provided by completely non-commercial, absolute monopolies—appear to be protected by this exclusion.”⁵⁰

The GATS covers all service providers, whether public, private for-profit, or private not-for-profit entities, further undermining the governmental authority exclusion.⁵¹ “Essential security interests,” as defined by each member country, is the only clear and totally carved-out exemption for government measures, and it is important to note that the language in this section, which is clear and unambiguous, is not replicated when other government services are mentioned.⁵²

Horizontal Rules

Liberalizing trade through the “request-of-fer” negotiating process is extremely slow, and private service providers want to avoid spending decades trying to get countries to open all

service sectors. The “request-offer” process requires that each member list its demands for market access to another member or members, and in turn offer up services that it is prepared to commit. One of the objectives of the major service stakeholders in the new round is to achieve a greater inclusion of “horizontal” rules, such as is the case with existing general rules. That is, they are hoping to get whole sectors or sub-sectors completely and rigidly included, or “bound,” across the four modes of supply.⁵³

The GATS – Current coverage on energy⁵⁴

The fairly recent deregulation of the electrical industry in countries like the U.S. and the U.K. has meant that electricity services are being negotiated in the GATS to achieve coverage of these services under specific commitments for all countries. When the GATS was originally negotiated, most electricity markets were characterized by state-owned, vertically integrated monopolies with relatively little trans-border trade, so not much was done to sort out the problems of dealing with energy issues in these original negotiations. One of the major problems is that energy is not always easily distinguishable by what is a “good” and what is a “service.” Before deregulation, these aspects of production were so integrated that distinguishing between the two was both unnecessary and virtually impossible.⁵⁵ However, with the introduction of a separate trade agreement on services and the “unbundling” of the components of electricity production, deciding what constitutes a service has become significant, although it is not always straightforward. It is most problematic for electricity.

Electricity—unlike oil, for example—does not have a physical quality that allows it to be stored. As soon as it is produced, it needs to be transmitted and used. So, while electricity is often made from a tangible item that has value

and can be traded (i.e., water, coal, gas, uranium), trading electricity itself is primarily a transmission and distribution problem. Under a wide definition of what constitutes a service, virtually every aspect of the electrical industry could be covered.

The definitional issue is further complicated by jurisdictional differences within the different WTO bodies, depending on whether an aspect of electricity is considered a good or a service. A WTO Appellate Body ruling on the GATS noted three categories of government measures: first, those that fell exclusively within the General Agreement on Tariffs and Trade (GATT 1994), that is, measures dealing exclusively with goods; those that fell exclusively within the GATS, that is, measures dealing exclusively with services; and those that involve both the GATT and GATS, that is, measures that affect both goods and services. The important point is that both the GATT and the GATS can be applied to the same measure or set of measures, something that expands the scope of trade agreement rules and increases the limits imposed on government measures. With the electricity industry, most goods embody services, and most services are related to the use of goods, so it is likely that both GATT and GATS restrictions on governments will apply.⁵⁶

A further complication in the GATS is the ambiguity and complexity surrounding the classification system, especially as it relates to energy. Under the current GATS, there is not a separate comprehensive classification category for energy services. Rather, in the WTO “Services Sectoral Classification List” (referred to as W/120), services related to energy are listed separately under headings related to Business Services, Construction and Related Engineering Services, Distribution Services, Transportation Services, and Other Services Not Included Elsewhere. WTO member countries must now specifically commit to opening these sectors, something that relatively few have done. Opening these sectors means granting trading partners

“market access” and “national treatment,” unless limitations to this are specifically stated.

Under Business Services, “services incidental to energy distribution” have been signed-on to by eight WTO members, including the United States.⁵⁷ “Incidental” is an imprecise word that, if taken in its usual meaning, would refer to services like consultancy services and other business-type services, that is, services that are not the main business of energy distribution. However, this meaning is not entirely clear because an explanatory note to the United Nations Provisional Central Product Classification (UNCPC) indicates that these services would include core distribution and transmission activities.⁵⁸ The lack of clarity on this issue is important because, unless a country specifically limits transmission and distribution services (core activities of utilities), these would be open to market access and national treatment when signing-on to “services incidental to energy distribution.” Canada so far has not signed-on to open this sector.

Under Transport Services, three countries have signed on for pipeline transport.⁵⁹ No countries have signed on for wholesale trade services and retailing services under Distribution Services, although, according to the WTO background note, these distribution services cover oil, but do not cover electricity and natural gas because these are covered under “services incidental to energy distribution” under the UNCPC definition.⁶⁰ It is important to reiterate the lack of clarity on the classification of core electricity activities, because it is something that could easily be misinterpreted: under the interpretation of the WTO’s background note to energy, the core business of electricity transmission and distribution are covered through “services incidental to energy distribution.”

The only specific commitments Canada has made on energy relate to general construction work for civil engineering on power facilities and pipelines (See Appendix I). Alberta, Newfoundland, and Nova Scotia have stipulated a

general “horizontal” limitation on national treatment (but not market access) for cross-border trade, basically to allow companies located in these provinces (or Canada) to have priority in competitive bidding for energy projects. Alberta’s limitation covers large-scale energy projects, while Newfoundland and Nova Scotia’s limitations are restricted to petroleum operations.⁶¹ This likely means that all other provinces cannot give priority in any way to local, provincial, or Canadian firms in the construction projects covered. In the sign-on for construction services, the only limitation to complete market access and national treatment is Ontario’s stipulation under Mode 3 (commercial presence) that an applicant and holder of a water power site development permit must be incorporated in Ontario. Since the Canadian commitment is in the area of construction services, it is not entirely clear why Ontario would make a limitation on the use of water power site development permits. This further highlights the ambiguity in the classification system and the uncertainty associated with both commitments and their limitations. Unfortunately, clarification will only be possible if there is a dispute and a subsequent ruling by a WTO dispute panel.

Some might argue that Article VIII on Monopolies provides protection for many of the provincial Hydro authorities in Canada. But in fact monopolies must be explicitly exempted whenever a party makes a specific commitment regarding the monopoly service, or when a monopoly engages in activities outside of the scope of its monopoly rights. The definition of a monopoly includes public monopolies. Article XXVIII(h) is extended in Article VIII to a “Member [who] formally or in effect, a) authorizes or establishes a small number of service suppliers, and b) substantially prevents competition among those suppliers in its territory.” So, if B.C., for example, wanted to reserve some aspects of gas pipeline construction, electrical transmission construction, or new dam construction to B.C. Hydro, in order to provide for

local economic development and employment, this action could now be subject to a WTO challenge.

B.C. Hydro has designed construction projects in recent years to specifically include Aboriginal firms and local workers in the construction of power projects. This was undertaken because of the historical tendency for regional benefits from large-scale construction projects to be minimal because local construction companies and crews were not used. In some respects, the increased objections by First Nations to the use of Aboriginal lands in the building of dams and transmission systems has forced provincial governments and power companies to institute local and “equity” hire initiatives. While Canada has a horizontal limitation on ‘national treatment’ that may protect preferences for Aboriginal persons, some “equity hire” and local preference provisions could now be subject to challenge by any WTO member whose services providers wish to bid on energy construction services. Unfortunately, even the apparent protection for Aboriginal preference is unclear because of the language in Canada’s limitation in the Schedule of Specific Commitments. Specifically, it is not certain whether this limitation applies only to existing measures, or whether the limitation would also apply to future measures.⁶²

While the Canadian energy commitments under GATS are minimal, they are not insignificant, particularly considering the rapid expansion that is likely to occur in energy production in the future. In addition to the above, all energy services are now covered by the horizontal requirements for all services—transparency and most favoured nation—mentioned earlier. This means that, whenever any changes are made to laws or regulations affecting energy and that might affect trade in services, this information must be made available to the WTO Council for Trade in Services. The “most-favoured-nation” treatment means that, if a province enters into agreements with a *single* U.S. corporation for the

development or delivery of energy, then that province must extend the same treatment immediately and unconditionally to *all* foreign service providers. This is a powerful tool to spread and consolidate privatization and deregulation initiatives. Where any single energy corporation gets a foot in the door, that door must be swung wide open to all.

Negotiating Issues

Negotiating a comprehensive separate energy section within GATS, such as exists for telecommunications, is a very important interest of major energy investors and traders. Most of the world still does not engage heavily in electricity trade, and in a great many countries energy is considered an essential service and is either highly regulated or is in the hands of government monopolies. World trade in electricity is regionally based, because of its non-storability and reliance on limited transmission networks, and exists primarily between Canada and the U.S., Paraguay and Brazil, Russia and other countries in Eastern Europe, and among Western European nations (France, Germany, Italy, Netherlands, Switzerland, Finland, and Spain).

In Europe, the major exporter is France (due to its huge nuclear industry), while Germany, Italy, the Netherlands, and Spain are net importers. Sweden and Switzerland have small positive trade balances in electricity.⁶³ In North America, the electricity trade is primarily from Canada to the U.S., with negligible amounts to the U.S. from Mexico.

European energy deregulation has begun through various directives of the European Union. Electricity deregulation is planned to be phased-in so that, by 2003, at least one-third of all national markets are to be fully open to private generation.⁶⁴ The Energy Charter Treaty (ECT) that has been signed by 49 states, including members of the EU, Russia, and several central and Eastern European countries, provides

Table I World Electricity Trade

(Billion kilowatthours 1999*)

Area:	Exports	Imports
Canada	42.91	12.95
Mexico	0.01	1.00
United States	14.00	42.92
North America	56.92	56.20
Paraguay	46.03	0.00
Brazil	0.01	39.86
Central and South America	48.28	48.28
France	68.70	5.00
Germany	39.50	40.50
Italy	0.53	42.54
Netherlands	3.97	22.41
Sweden	15.90	8.35
Switzerland	31.96	21.72
Western Europe	216.03	232.19
Czech Republic	12.26	8.98
Poland	8.43	3.49
Russia	20.00	6.00
Tajikistan	3.90	4.10
Turkmenistan	4.10	2.20
Uzbekistan	3.92	7.50
Eastern Europe & Former USSR	72.85	56.63
Middle East	1.07	1.07
Mozambique	1.90	0.07
South Africa	3.88	2.46
Zimbabwe	0.00	1.56
Africa	10.15	10.32
China	7.20	0.09
Hong Kong	0.63	7.05
Far East and Oceania	10.69	10.65
World Total	415.98	416.02

Source: U.S. Dept. of Energy, Energy Information Administration, *Country Energy Data Report*, International Energy Database, January 2001.

* Totals within areas and for the world are larger than column additions because other small amounts of trade take place but are not included in this chart.

protection for foreign direct investment, rules on energy transportation, and contains language to enforce competition laws. The important point is that electricity trade in Europe is covered by existing agreements and that the current GATS negotiations are aimed primarily at areas of the world where electricity markets are still relatively closed or are taking tentative steps toward deregulation.⁶⁵

Large electricity traders are aggressively pursuing comprehensive coverage for energy in the GATS. The now bankrupted and discredited energy trader, Enron Corporation of Houston, spearheaded this effort through a business coalition that is enthusiastically supported by a variety of energy business groups. As a spokesperson for a coalition of energy producers and traders has noted, there are numerous barriers to trade and energy, but the "inclusion of energy services under the World Trade Organization would mandate an open and transparent tendering process..."⁶⁶

Priorities for Member Countries

The U.S. supports a comprehensive energy section in GATS to make it easier to open energy markets for both trade and investment. The U.S.'s stated negotiating objectives, as defined in a WTO document submitted to the Council for Trade in Services, are broad and deep.⁶⁷ The four most important objectives relate to the classification of energy services, very broad market access and national treatment commitments, and commitments that address national regulations.

Classification: The U.S. proposal wants to see an Index of energy activities that would incorporate all energy services and energy-related service activities, "*including those energy activities identified as not falling within the GATS,*" in the WTO Services Sectoral Classification List (commonly referred to as W/120). Classification is an important issue because a very broad classification scheme could include virtually every

aspect of the electricity industry, and this would pave the way for incremental listings of ever-increasing aspects of the industry under GATS rules. As mentioned earlier, distinguishing between a good and a service in electricity production is difficult and it is highly probable that even electrical generation and storage could be classified as a service. According to the U.S. document, energy services "are those services involved in the exploration, development, extraction, production, generation, transportation, transmission, distribution, marketing, consumption, management, and efficiency of energy, energy products, and fuels." The European Community has submitted a detailed list of the energy services that supports those defined by the U.S. As a U.S. document on reforms in worldwide electricity industries indicates, deciding what is classified as a service (as opposed to manufacturing, as generation might be classified because it "materially transforms energy") is crucial for investment treatment under the GATS: "Should WTO members choose to define generation as a manufacturing process, then foreign firms that seek to own or acquire power generation facilities will have no rights or privileges under the GATS."⁶⁸ Accordingly, the U.S. government considers power generation a service.

Nothing related to the energy industry is left out of the U.S. and EU proposals to GATS for definitions of energy services, with the exception of the actual ownership of the energy source. In this, the U.S. document tries to be reassuring by stating that, "in a large number of countries, including our own, many natural resources are held in trust for the public. The United States recognizes this, and is not proposing to address issues of ownership of natural resources."⁶⁹ Similarly, Canada, in its negotiating proposal on oil and gas services, says, "Nothing in these negotiations will address the ownership of resources."⁷⁰

When the U.S. (or any other government) says it does not intend the GATS to address

Table II: European Community List of Energy Services

The EC notes that this list related to energy activities "irrespective of the energy source concerned and includes in particular coal, electricity, gas, heat, oil, renewable and, subject to the specific conditions related to this energy sector, nuclear."

Services related to Exploration and Production

Services related to the construction of energy facilities

- Construction
- Installation
- Maintenance and repair

Services related to networks

- Operation of transportation/transmission and distribution
- Connection services
- Ancillary services

Storage Services

Services for the supply of energy

- Wholesale sales of energy products
- Retail sales of energy products
- Trading
- Brokering

Services for final use

- Energy audit
- Energy management
- Metering
- Billing

Services related to decommissioning

Other energy-related services

- Installation
- Maintenance and repair of energy equipment

Source: WTO, "Communication from the European Communities and their Member States," 23 March 2001, S/CSS/W/60

ownership issues, they are referring to something quite limited and specific. It is the ownership of the physical energy asset: e.g., the water, coal, oil, and gas. They recognize that resources are often (in fact, most often) owned in common by people of a country and, if not exploited directly by government agencies, are allocated to private corporations on some basis that provides a return to the common ownership. In Canada, many resources (oil, gas, trees, coal, water) are owned by the Crown but are leased on a long-term basis to private companies (both Canadian and foreign) for rents returned to the Crown.

Frequently, however, governments directly own the companies that extract and distribute the resources, such as in the case of electricity production. While the stated U.S. intention is to leave the actual ownership of the resource intact, everything else could change. The introduction of competition in markets that are currently government monopolies could initiate a change in the "ownership" structure of other aspects of the market under GATS. If GATS fully covers electricity (and energy in general), a commitment by a country will make it virtually impossible to maintain a government monopoly or

control over generation, and will force the other monopoly aspects of transmission, distribution and storage to be open for competing electricity producers.

The main issue is determining what constitutes a service and, within the proposed items, it seems that the objective for the private sector and the U.S. is to cover everything—including extraction, generation, transmission, storage, and distribution. Only the ownership (but not the use) of the physical resource seems to qualify as something that can remain as public property. The use of the resource would be subject to GATS rules regarding market access and national treatment, should these requirements be negotiated to broadly cover energy.

A very important issue on classification will be whether energy services will be classified as one sector, or whether different parts of it will be classified under relevant sectors such as business services, distribution, etc., as they now are. Complete sectoral classification would facilitate a more aggressive horizontal inclusion of all aspects of energy when countries sign on, but this approach could present problems for countries that face domestic opposition to energy deregulation. A disaggregated approach may make it easier for countries to make commitments to specific sub-sectors, and thus diffuse anxiety about having an entire sector committed, particularly because many of the commitments will be open to differing interpretations of what is included.

Perhaps in anticipation of negative public reaction to an “energy agreement” in GATS, Canada seems to prefer a disaggregated method of classification, at least with regard to oil and gas services. (Canada has not yet indicated a negotiating position on electricity). Canada’s argument is that all services in the oil and gas sector can be found in the existing classification lists, and that this is a logical way of grouping things; that is, all engineering services being grouped together, all business services grouped together, etc. However, Canada does say that

there could be a special clustering or checklist for all energy services that “Members could use as an *aide-memoire* during the negotiations.”⁷¹

In light of the ambiguity regarding where electricity falls in the classification scheme, it is interesting to note that, in Canada’s initial negotiating proposals, electricity is not listed under their discussion of business services: “These so-called ‘business to business’ services include, not only professional services and computer and related services, but also services as diverse as R&D services, market research services, consulting services, technical testing and analysis, and maintenance and repair of equipment services.”⁷² Canada’s negotiating position on business services is to:

“broaden and deepen existing sectoral commitments, with particular emphasis on the elimination of: a) any remaining cross-border supply limitations given the increasing importance of this mode of delivery for these sub-sectors; b) limitations on commercial presence where Member countries have been reluctant to make commitments...”⁷³

As noted above, Canada has not yet made commitments under “services incidental to energy distribution,” although this negotiating position may signify an intention to include this sector during this round of negotiations.

Market Access, National Treatment and Domestic Regulation

The U.S. wants to “negotiate the broadest possible market access and national treatment commitments” for energy services, and in particular it wants to eliminate the “barriers” U.S. firms face, such as the lack of a “right of establishment” and an “inability to provide cross-border services.”⁷⁴ It also discusses the elimination of discriminatory treatment between foreign and domestic service providers, but signals that merely achieving a lack of discrimination between the two is not sufficient to give access to markets. It specifically wants to see regula-

tory reform, because without it “market access and national treatment commitments, while necessary, may not be sufficient to assure liberalization for energy services.” Recognizing that within countries there are differing levels of competition, the U.S. is calling for a staged process of energy liberalization, and calls for a “study” that mirrors the steps taken with telecommunications in order to encourage countries to undertake commitments in a highly regulated sector. It calls for this study to address, among other things:

- non-discriminatory third-party access to and interconnection with energy networks and grids, where they are dominated by government entities or dominant suppliers;
- an independent regulatory system separate from and not accountable to any supplier of energy services;
- non-discriminatory, objective and timely procedures for the transportation and transmission of energy;
- requirements that parties maintain appropriate measures for the purpose of preventing certain anticompetitive practices in these sectors; and
- transparency in the formulation, promulgation and implementation of rules, regulations, and technical standards.

All of these requirements, should they eventually become part of GATS, would substantially change the regulation and operations of most electrical utilities in Canada—even those that have begun to open markets to private providers of electricity. **[See Appendix II for a list of GATS provisions that pertain to electricity.]** Some of these provisions could threaten the security of domestic consumption at differential prices. In a time when power traders are increasingly active in electricity markets, open and non-discriminatory access to transmission systems would not only have to be accorded to those who want to sell to domestic customers, but also to foreign traders who may prefer to export electricity. The result would be either less supply

for Canadian consumers, or increased prices driven up by export markets.

The U.S. makes it clear that achieving market access and national treatment does not fully address important issues that it would like to see in the GATS. In order to achieve regulation over issues, it plans to introduce the use of Article XVIII, in much the same way that it was used in the negotiation of the telecommunications section in order to deal with issues related to interconnection issues and the ability to have “effective” market access.⁷⁵ This is the GATS article that deals with “Other” issues to ensure that the GATS meets U.S. deregulation objectives.

As can be seen in Table III, the U.S. objectives on deregulation can be met with a variety of permutations in the use of GATS instruments.

The next section will examine the nature of the electrical industry in Canada and the restructuring that is occurring in some jurisdictions. It will also examine the ways that a full commitment on electrical energy by Canada in GATS could thwart the attempts by some jurisdictions to protect consumer interests in Canada as they deregulate. As the WTO background paper on energy notes, “In those countries where vertically integrated public utilities maintain a monopoly on the supply of energy, there is no scope for international competition,” which reduces GATS impacts.⁷⁶ However, in countries that have initiated some aspects of deregulation and where markets are partially liberalized, GATS rules can have significant implications for further liberalization. As will be seen below, most provinces have initiated some type of open access to transmission systems, as a result of complying with FERC regulations for trade. As the WTO background paper notes:

“The breaking up of the public monopolies and the unbundling of vertically integrated utilities is the first market access issue on the road of multilateral liberalization in this sector. Once Members have chosen to liberalize this sector, major regulatory aspects need to be addressed in or-

der to ensure that such liberalizing effort is not nullified by the market power of existing suppliers, especially those who control the transmission and distribution networks.”⁷⁷

Through these initial deregulatory measures, provincial jurisdictions have opened themselves to major changes that may have been unintended, but will have a huge impact on the pace and direction of deregulation in the Canadian market.

Table III
Comparison of U.S. Market Reform Objectives with GATS Instruments

Market Reform Objectives	Market Access	National treatment	MFN Treatment	Transparency	Domestic Regulation	Monopolies and exclusive suppliers	Other
Privatization							
Ensure that:							
All potential bidders may participate on equal terms	X	X	X				
All necessary information is publicly available				X			
The privatization process is unbiased					X		
Restructuring of Management Control							
Ensure that:							
Entry and exit for all competitive sectors is not impeded by regulatory or market barriers	X	X					
Cross-subsidization does not take place						X	
No firms have an information advantage					X	X	
Market concentration does not limit competition							X
Regulatory reform							
Ensure that:							
Access and interconnection to existing energy facilities and networks is open, based on objective criteria (including technical standards and specifications), and not unduly burdensome to obtain					X		X
Interconnection to the transmission grid is provided in a timely fashion, on terms, conditions (including technical standards and specifications) and cost-oriented rates that are transparent, reasonable, having regard to economic feasibility, and sufficiently unbundled so that the supplier need not pay for network components or facilities that it does not require to provide service					X		X
Transmission constraints do not distort competition by limiting access to power produced in other domestic regions							X
International cross-border transmission may take place where economically feasible		X	X				X

III. The Electricity Industry in Canada

Major Features

The Canadian electrical system is oddly structured, reflecting the historical peculiarities of federal/provincial jurisdictions and competition between the provinces. Rather than developing a national grid system, or even substantial regional grids, to take advantage of efficiencies and low-cost producing abilities of some provinces, the bickering between provinces prevented the development of a mechanism that could have regulated the transmission of electricity across provincial boundaries. Instead, each province developed electricity for distribution within its borders and, when they could, exported electricity to the U.S. rather than to other provinces.

The result is that north/south inter-ties are considerably more developed than those between the provinces.⁷⁸ This has produced unfortunate results, such as Ontario developing nuclear power rather than importing significant amounts of hydroelectric power from Québec, and Alberta relying on coal rather than importing much hydroelectric power from B.C. or Manitoba. Most exports of B.C., Manitoba and Québec, three very low-cost producers, go to the U.S.

Canada is the largest producer of hydroelectric power in the world, and is the world leader in long-distance electric power transmission. Total electrical production is about 567.2 billion kilowatt hours per year (bkwh), with 60% of this coming from hydro-power, 19% from coal, 13% from nuclear, 7% from gas, and less than 1% from renewable resources other than water.⁷⁹ The contrast with the U.S., which supplies only 7% of its electricity through hydro-power, is

striking. Electric power is the most important energy source in Canada and accounts for 43% of all energy income, with oil and gas providing 35% and pipelines 7%. The enormous value of electricity makes it a prime target for private interests that stand to benefit enormously when the industry is neither controlled nor operated by governments.

Canada has had a long history of electricity export to the U.S., beginning with American utilities setting up powerhouses on the Ontario side of Niagara Falls early in the 20th century. As industry analyst and historian Karl Froschauer noted in his book, *White Gold*, “In small southern Ontario towns, casket makers, mill owners, cigar box manufacturers, carriage makers, and furniture factory owners (most still using steam engines to run their machinery) watched as Ontario’s power drove electric motors in modern factories in industrial parks across the border, and they looked with envy at the economic success of American industries perched on the cliffs on the U.S. side of the Falls.”⁸⁰ Niagara Falls was the power supply that lay at the heart of American industrialization and was the power that made the automated assembly line possible.

Ontario manufacturers had lost something critical to their success, and so put their weight behind attempts to repatriate water rights and electricity under the slogan that “Power exported is power lost.”⁸¹ The struggle Canada had with the U.S. over this issue is a long story, but it ultimately came to a head during the First World War when Canada was not able to reclaim the electricity it needed for its own production. That is, the U.S. did not respect Canada’s restrictions on exports, even at a time when Canadians most needed electricity—during wartime

Table IV
Canadian Electrical Trade: Interprovincial and U.S.

YEAR:	2000 Annual Report Total													
FROM	Nfld	PEI	NS	NB	QUE	ONT	MAN	SASK	AB	BC	US	Total Receipts		
Nfld					12.307							12.307	US	
PEI				980.712								980.712		
NS				171.516								171.516		
NB			0.000	207.387	2915.256							3122.643	18.416	
QUE	31908.308			43.591		1997.473						33949.372	3953.226	
ONT					2968.144		1361.903					4330.047	1879.413	
MAN						1.909		658.547				660.456	715.570	
SASK							2027.266		205.024			2232.290	696.855	
AB								532.197				1856.506	176.015	
BC									487.202			487.202	5244.920	
US				4352.542	20232.744	4421.744	9303.105	228.779	127.206	9946.619				
Total Deliveries														
Provinces	31908.308		0.000	207.387	5895.707	1999.382	3389.169	1190.744	692.226	1324.309			0.000	12684.415
US				4352.542	20232.744	4421.744	9303.105	228.779	127.206	9946.619			48612.739	

Source: StatsCan Electric Power Statistics Monthly

Note: All values in GW.h

Note: Interprovincial numbers are Nov 1999 to Oct 2000
International figures are Jan 2000 to Dec 2000

and for war manufacturing.⁸² This experience pointed to the huge dangers to Canada of not having control over its electricity supply. But these are dangers that have been forgotten in the rush to sell ever more power to the U.S.

Since the electricity industry developed primarily within provincial boundaries, most of the regulation of the industry is under provincial control. Until recently, all provincial governments either directly owned the major electrical utilities or asserted strong regulatory control over private monopolies. This meant that in most cases the security of supply and prices were firmly in the public sphere. The federal government regulated the export of electricity to the U.S., and regulatory approval was needed from the National Energy Board (NEB) in order to enter into any export agreement. Export agreements were subject to public scrutiny through hearings to determine the effect on various groups of people and the environment.

This federal control and public scrutiny began to change, however, with the gradual opening of the market to comply with FERC demands and the signing of the Free Trade Agreement and NAFTA. U.S. interests, such as Bonneville Power Authority, that limited access to its transmission lines even when firm power arrangements had been made between Canadian suppliers and U.S. utilities, had frequently thwarted access to U.S. markets. It became eminently clear to Canadian utilities that, if they wanted to increase sales to the U.S., they would need to begin the process of deregulating their markets.

The oversight of the NEB changed considerably with changes to the NEB Act that removed the necessity to consult the public about the economic and social significance of proposed exports. Now export permits are allowed to proceed in a more routine way without public hearings, and in most cases without any federal scrutiny. In response to changes in the market, and in particular with the rise of power trading and the increase of Canadian utilities' actions on spot markets, blanket export permits are issued to

exporting companies. As a result, virtually no control or oversight exists over Canadian exports of electricity. This is especially important because changes in the entire industry are being made as a result of U.S. policy directives, rather than an assessment of the best interests of Canadians. When relatively small amounts of electricity are exported, the lack of federal review may not appear to be a situation that places the security of electricity supply in jeopardy. However, the relative size of the export market is much less significant than the fact that the export market is the stimulus behind an "open access" policy that led to increasing demands from U.S. electricity companies and power traders to have access to the Canadian market.

Since Canada is blessed with such a huge supply of the basic materials to generate electricity, few could imagine a decade ago that international trade would threaten domestic consumption. The difference now is that the powerful trade agreements that have followed from an export-driven energy policy can compel markets to open in ways that will jeopardize the stability of both the supply and pricing that Canadians take for granted.

Today, between 5% and 10% of Canada's total generation is exported, something that is highly dependent on weather conditions and how much water is stored in dams. Between 1988 and 1996, an average of only 6% of total production was exported to the U.S. Considering the dominance of electricity exports in the reshaping of the entire electricity industry in Canada, exports' share of total electrical production is rather small. Export sales are primarily to the New England states, New York State, the upper Midwest, the Pacific Northwest, and California.

Deregulation and privatization of electricity has moved rather slowly from its initial beginnings in the U.S. in the late 1970s. This speeded up considerably after the dramatic privatization exercise in the U.K. in 1990. A driving force for

Table V: Canada – Electricity Exports to U.S. by Province

Province	1997	1998	1999	2000
B.C.				
Value (\$millions)	222.6	323.3	458.0	1,986.6
% of total value	16%	20%	24%	49%
Volume (GWh)	10065.5	9261.7	10922.9	9946.6
Quebec				
Value (\$millions)	515.2	608.2	715.8	1,062.6
% total Cd.value	37%	38%	37%	26%
Volume (GWh)	11844.9	13058.3	15475.0	20232.7
Manitoba				
Value (\$ millions)	309.8	356.2	343.0	442.7
% total Cd. value	23	22	18	11
Volume (GWh)	11689.5	11857.2	6701.5	9303.1
Ontario				
Value (\$million)	161.6	121.1	172.6	288.8
% total Cd. value	12%	8%	9%	7%
Volume (GWh)	7315.9	5675.9	4599.2	4421.7
New Brunswick				
Value (\$ millions)	165.1	183.9	225.3	254.2
% total Cd. value	12%	11%	12%	6%
Volume (GWh)	3928.5	4394.9	5045.4	4352.5
Saskatchewan				
Value (\$ millions)	3.0	6.6	7.8	17.8
% total Cd.value	0.2%	0.4%	0.4%	0.4%
Volume (GWh)	224.6	302.1	160.5	228.8
Total Volume Exported*				
	45230.3	44611.7	42929.5	48612.7

*Totals include a small export from Alberta, not shown. Alberta is a net importer from the U.S.

Source: Constructed from data from Statistics Canada, Trade Data Online, Electrical Energy Trade Balance <http://www.strategic.ic.gc.ca/>; StatsCan Electric Power Statistics- Annual Statistics; StatsCan Electric Power Statistics Monthly.

deregulation and privatization in many countries where it has occurred relates to some specific problem with the nature of the electrical industry itself: either problems with supply, high prices, a desire for cleaner or safer fuels, or a combination of all three factors.⁸³ Usually the decision to solve the problems through deregulation is a result of a shift in the political climate to allow the dismantling of public enterprises.

Public policy to encourage competition through the deregulation of electricity in the U.S. and outright privatization in the U.K. had some relationship to the economic problems the industry faced in each country: the justification for change in each case was to lower prices. Any number of solutions could have been used to solve the problem of high prices, but the political fashion in both countries favoured a shift

Table VI: Comparative Electricity Prices in North America

(Canadian cents per kWh)
Average Prices on May 1, 2000

Cities	Residential	Medium Power	Large Power
Power Consumption	1,000 kWh	1,000 kW 400,000 kWh	50,000 kW 30,600,000 kWh
Canadian			
Winnipeg	5.89	4.44	2.96
Montreal	6.03	6.10	3.83
Vancouver	6.12	4.56	3.36
Ottawa	7.36	6.88	5.78
Edmonton*	7.51	5.81	5.30
Toronto**	8.32	7.31	6.24
St. John's	8.37	6.22	3.49
Regina	8.20	6.79	4.10
Moncton	9.14	6.62	4.95
Halifax	9.40	8.27	5.57
Charlottetown	10.06	8.80	5.45
U.S.			
Seattle	6.75	5.28	4.92
Portland	9.36	6.40	5.70
Nashville	9.41	8.50	6.41
Miami	10.22	7.79	5.77
Houston	12.07	8.85	5.77
Chicago	12.26	10.98	7.09
Detroit	14.63	10.53	7.39
Boston	16.82	14.76	11.96
New York	21.24	17.52	12.63
San Francisco	17.18	12.76	7.33
Average	10.30	8.34	6.00

* Statistics Canada reports electricity cost increases of 21.3% that caused an inflation spike in Alberta. ["Alberta Inflation Leads Nation," *Calgary Herald*, July 21, 2001.] The price of electricity rose from 5 cents to 25 cents per kWh, although a rebate prevented residential customers from experiencing the 500% increase in electricity bills. Large business customers experienced large increases because their rates were not increased, although this was partially offset by rebates of up to 7.6 cents per kWh.

** In June 2001 Toronto Hydro-Electric System increased residential rates 8.6% or \$7.35 per month. Medium industrial users rates increased 8.9% and for large industrials rates increased 11.6%.

Source: Hydro Québec, *Comparison of Electricity Prices in Major North American Cities; Toronto Hydro Electric System, Important Information about Rates; National Energy Board, Canadian Electricity: Trends and Issues, May 2001.*

toward private energy producers and deregulation.

The circumstances in Canada are radically different. No province has faced problems, either with insufficient supply or high prices. As can be seen from Table VI, electricity prices for all classes of customers are lower in Canada than

the average price for electricity in North America. The only U.S. cities that have the low prices associated with electricity in Canada are in the Pacific Northwest and Tennessee, cities whose systems are supplied by hydroelectric generation. Also, Canada's generation is relatively clean, with over 60% coming from renew-

able resources and only about one-quarter from thermal generation. All large-scale electrical generation has environmental costs, so any increases in production affects the environment in some negative way. But the use of thermal generation, particularly coal and nuclear energy, fuels that are regaining favour in North America, are either harmful to the environment or potentially dangerous.

Clearly, the reasons for deregulation in Canada do not mirror the attempt to “solve” problems faced in the U.K. and in the U.S. Deregulation in Canada has several causes and the strength of each differs, depending on the province where it occurs. Ideological imperatives that favour private markets whenever possible are behind the changes in provinces like Alberta and Ontario. But for provinces like B.C., Quebec, and Manitoba, deregulation measures so far have been forced upon the markets by an exposure to the U.S. deregulated system through export

markets. As will be seen below, exporting provinces have initiated some deregulatory measures in order to comply with FERC regulations for exporting into the U.S. market.

Major Electrical Utilities, Exports, and State of Deregulation⁸⁴

Only one province, Alberta, has a fully deregulated market, although Ontario has indicated its intention to fully deregulate. In Ontario, the full deregulation process was postponed for a time in response to the huge difficulties of deregulation in Alberta and U.S. states. However, the deregulation process has resumed and some privatization measures have been announced. B.C., Quebec, and New Brunswick, all exporting provinces, have done at least the minimal deregulation necessary to assure continued access to U.S. markets, although B.C. appears to

Table VII: Levels of Deregulation of Electricity in Canada
(as at Dec. 2001)

Province	Fully Deregulated	Wholesale Access	Limited Retail Access	Deregulation Planned	
				Full	Partial
Alberta	x				
B.C.		x	x		x
Manitoba		x			x
Ontario		x	x	x	
Newfoundland	-	-	-	-	
New Brunswick		x	x		x
Nova Scotia	-	-	-	-	
PEI	-	-	-	-	
Quebec		x	-		x
Saskatchewan		x	-		

be about to change substantially. Quebec has gone the furthest in protecting its domestic consumers through reserving a portion of its generation at specified pricing for the people of Quebec. The provinces that have not embarked on some form of deregulation are those that have no export market and do not anticipate having one.

Alberta⁸⁵

Over 80% of Alberta's electricity is generated by coal, with about 8% by natural gas, 4% by hydroelectricity, and 7% from other sources. Alberta has a small trade deficit in electricity, and has a very small export market. Its access to the U.S. market is through B.C. Hydro's transmission lines. Most electricity is provided by the private sector. Oil and gas companies have been relatively uninterested in electricity generation, but this may be changing. PanCanadian Petroleum Ltd. is now selling electricity to the Alberta Power Pool, and has received a 10-year electricity export permit from the National Energy Board for sales to the U.S.⁸⁶

TransAlta, an investor-owned company, provides 63% of Alberta's electricity (4,500MW), with 95% from thermal plants (coal) and 5% hydro. *EPCOR* is publicly-owned by the citizens of Edmonton, and generates 20% of Alberta's (1,701MW) electricity through gas and coal-fired plants. It mainly services the Edmonton region. *ATCO* is an investor-owned company that supplies 15% of Alberta's electricity by selling mainly in small and rural areas. *Trans-Alta* is active in foreign electricity markets. It is the largest electricity retailer in New Zealand with the 1998 acquisition of South Power soon after the deregulation of the N.Z. electricity market. It wholly owns two generating facilities in the U.S. and one in Mexico, and has the majority interest in two generating facilities in Australia.

In 1999, Alberta restructured the electricity industry to permit competition in generation. All electricity generated or imported is sold to the Power Pool of Alberta, where it is distrib-

uted through an hourly spot market. Once Power Pool members purchase power at the auction, they are free to re-sell it or distribute it to their customers. Huge price increases during 2000 and a provincial election led the government to substantially subsidize consumers affected by the restructuring measures. It is interesting to note that *TransAlta's* web-site, last updated June 25, 2001, still promises that competition "ensures customer choice and prices set by an open, dynamic and competitive market instead of complicated and expensive regulatory processes. Increased competition, the innovation it brings, and lower regulatory expenses work together to bring the price of electricity down over time—to the benefit of all consumers."⁸⁷ Before deregulation, Alberta had one of the cheapest and most reliable electricity systems in North America. After deregulation, it experienced regular brown-outs and was the third most expensive jurisdiction in the U.S. and Canada, after California and Hawaii.

Despite the failure of electricity deregulation in Alberta, considerable pressure is being exerted on Edmonton and Calgary to sell their municipal electrical utilities. The arguments are either that electricity in a deregulated environment is a highly risky investment for a city, or that deregulation will require massive capital costs to expand in order to be a player in the international market.⁸⁸ Both fear of huge costs and the future opportunities available on an expanded market are bolstering the ideological bent in Alberta to privatize these utilities. As has been pointed out by industry analyst Myron Gordon, the risk to the people of these cities through privatization is considerable, but with careful planning the municipal utilities could continue to operate in the interests of the people of Edmonton, both as owners and as consumers.⁸⁹

B.C.⁹⁰

B.C. Hydro is a Crown Corporation and is the third largest electrical utility in Canada. It

provides about 85% of the electricity sold in B.C., with a generating capacity of 11,133 megawatts. The other major supplier in B.C. is *Utilicorp Networks*, (until recently *West Kootenay Power and Light Company*), a private utility owned by the U.S. corporation Utilicorp, that supplies the southeast section of the province. B.C. Hydro's generation is primarily from its 32 hydroelectric facilities, which provide about 90% of its supply of generated electricity, two gas-fired thermal plants, and two non-integrated diesel. It also purchases small amounts of electricity from Independent Power Producers and engages heavily, through PowerEx, in electricity trading.

The B.C. Utilities Commission (BCUC) regulates both B.C. Hydro and Utilicorp Networks. While the B.C. system is regulated, it is in the process of deregulating, a process that has been facilitated by the separation of B.C. Hydro's integrated system into three separate and distinct units dealing with generation, transmission and distribution. B.C. Hydro is required to provide non-discriminatory wholesale transmission access. Retail competition in B.C. is allowed on a limited and trial basis to Utilicorp Networks and four industries, a move that indicates an inclination of the BCUC to allow retail competition (and hence deregulation) of the B.C. market. The Crown corporation also recently put three of its units up for sale: customer service, its vehicle division, and Westech.

In 2000-2001, B.C.'s export revenues increased enormously, with the export price rising from 47.2 cents per MWh in 2000 to 227.1 cents per MWh in 2001. This was largely because of the disastrous problems with deregulation in California that bid up the price of electricity. Revenues from the California market accounted for 42% of the total electricity trade revenues BCH received, although \$289 is still to be recovered because some California utilities defaulted on their obligations to the power exchange and system operator. Also, BCH faces charges of "gouging" California and may have restitution

to pay when the matter is decided in U.S. courts. The revenues BCH received from trade increased from 32% of total revenues in 2000 to 69% of total revenues in 2001, representing a substantial ratcheting up of the significance of electricity trade to government revenues. It is not expected that these kinds of conditions in the export market will be replicated in the future.

While the volume of electricity trade sales did not increase dramatically, the revenues from these sales did. The result was a net income in 2001 (before transfers to customers and a rate stabilization account) of \$859 million, \$314 million higher than the previous year. Domestic tariffs have been frozen since 1993, resulting in the real cost to customers (adjusted for inflation) declining by 13% in the past decade. The volumes of electricity trade sales did not change much from the previous year, but are up about 128% from 1999 and 243% higher than in 1997. This is largely a result of power trading through PowerEx, rather than an increased generation in the hydro system. In 1998, PowerEx received a 10-year blank export permit from the National Energy Board to facilitate trading activities.

Until the election of the Liberal government in 2001, B.C. managed to stave off the strong pressure from the private energy sector to deregulate the electricity market. A major task force undertaken in 1997-98 ended without agreement among its members, although the task force chair, Mark Jaccard, who was head of the B.C. Utilities Commission, strongly favoured deregulation.⁹¹ Since the election of the Liberal government, strong signals indicate that the deregulation and privatization of some parts of the system are extremely likely. The first step was the appointment of Larry Bell as both CEO and Chair of the Board. During his leadership of B.C. Hydro in the 1980s under a Social Credit government, Bell oversaw the privatization of B.C. Gas, which was then part of B.C. Hydro, and since then he has been a director of TransAlta, Alberta's main private electrical corporation.

The Liberal government's Task Force on Energy Policy issued its interim report in November 2001, in which it strongly advocated moving to a deregulated system based on a "market" price, the establishment of an independent transmission company, and separating generation and distribution into distinct companies with the possibility that the generation company be broken down into multiple companies in the future.⁹² It also recommended that 1) the province eliminate the requirement for provincial Energy Removal Certificates that are now necessary in order to export energy from B.C., 2) that industrial and high-voltage customers be able to participate in the wholesale market, and 3) that all generators of electricity be encouraged to develop facilities for domestic and export customers. It specifically discouraged any type of pricing arrangement, such as that initiated by Quebec, that provides customers with electricity at "below market prices."

If these recommendations are implemented, as is highly likely, B.C. electricity prices will be integrated with those in the U.S. because B.C. customers will be competing with American customers for electricity, and new sources of generation will come primarily from the private sector. The government admits that prices could increase between 30% and 60%. As Myron Gordon noted in his submission to the 1997 task force, the large energy corporations want to enter B.C. Hydro's market, "disrupt B.C. Hydro, and make it unprofitable and ultimately capture the enormous profits to be made from taking over the province's magnificent low-cost hydro sources of power."⁹³

Big electricity consumers and B.C. Hydro workers are resisting the recommendations of the task force. The industrial users anticipate that the huge rate increases would create "serious economic dislocation, destroy the fundamental economic health of many firms, and result in serious unemployment, community instability, and reduced government revenues."⁹⁴

The significance of allowing private corporations to export electricity from B.C. is rapidly capturing the attention of major U.S. electricity traders. The private sale of a major gas exporter, West Coast Energy, to a U.S. corporation, Duke Energy, is a further signal that B.C. is about to experience a deregulated regime that would allow private producers to export electricity. Duke Energy is an aggressive private electricity producer and was a major player in the California deregulation story. According to California state officials, Duke Energy participated in the most "egregious example of price gouging." Duke Energy charged the state \$3,800 for a single megawatt hour, more than a 12,600% increase over the \$30/MWh charged the previous year.⁹⁵

Manitoba⁹⁶

Manitoba Hydro is a Crown corporation that supplies most of the electricity needs of the province through its 12 hydroelectric generation stations with an installed capacity of 5000 MW. A small proportion is generated from two thermal (coal) and six diesel power plants to serve remote northern communities. Manitoba Hydro, since acquiring Centra Gas from Westcoast Energy in 1999, is also the largest distributor of gas in the province, servicing 100 communities in the southern portion of the province. It is the lowest-cost electricity producer in Canada for all classes of customers, and has among the lowest costs among electricity suppliers in the world.

Export sales account for about 37% of the company's total sales. It currently has nine formal long-term export trade agreements, with six electric utilities and many short-term agreements with over 30 electric utilities and marketers in the U.S. Midwest, Ontario, and Saskatchewan. Manitoba Hydro normally accounts for between 18% and 22% of Canada's total electricity exports to the U.S. Its active participation in the U.S. market through the Mid-continent Area Power Pool (MAPP) required a change in

the Manitoba Hydro Act to allow wholesale competition. To comply with the MAPP agreement, it was required to open its transmission grid to other wholesale users, which it did in 1997. However, this seems not to have seriously affected the market of the public utility, since any private power generator would have to match the prices of the lowest-cost supplier in the country.

To date there are no plans for deregulation of Manitoba Hydro. According to its Annual Report, “the Corporation expects to preserve an energy system that is among the most reliable and lowest cost in North America.”

Ontario⁹⁷

In 1998, the Ontario government dismantled the Ontario Hydro system that was responsible for the generation and transmission of electricity. (Municipal electrical utilities [MEUs] distributed electricity transmitted by Ontario Hydro and were regulated by Ontario Hydro.) In a move to deregulate electricity and generate competition in the industry, Ontario passed the *Energy Competition Act, 1998* and, as a result of this process, five separate entities emerged from Ontario Hydro. *Ontario Power Generation Inc.* (OPG) is responsible for electricity generation and the sale of wholesale energy. *Hydro One Inc.* assumed the transmission, rural distribution, and retail energy services business. An *Independent Electricity Market Operator* (IMO) was established to be the market operator responsible for the dispatch of generation and control over the transmission grid. *The Electrical Safety Authority* was established to perform inspections of electrical equipment and wiring installations. The management of the outstanding debt of Ontario Hydro became the responsibility of *The Ontario Electricity Financial Corporation* (OEFC).

Ontario’s deregulation was scheduled to take place in 2000, but the debacles in California and Alberta and the inability of the IMO and MEUs to cope with deregulation so quickly, led

the Ontario government to postpone it. The government now refers to deregulation as a two-step process. The initial period that dealt with the breakup of Ontario Hydro is known as the “Transition Period.” During this period, OPG is required to sell energy at regulated rates, although these rates increased 0.7 cents per kWh in June 2001. During the transition period, customers still pay their bills on a “bundled” basis—that is, there are no separate charges for generation, transmission and distribution, although, once this phase is over, customers will have separate charges for each activity.

The second step, which was originally to occur in 2000 but was postponed until May 2002, is the “Open Access” period when competition was introduced in generation on both the wholesale and retail markets, and full access given to private suppliers to the transmission and distribution systems. This means customers at all levels now have “choice” in their electricity supplier. A process of “decontrol” limits the generating capacity of OPG and it will be required to sell-off or lease its generating capacity so that it reduces its market share to 35% within 10 years. It currently has 85% of the market share. Also, because it is expected that most energy sales still will be from OPG for some time, a price threshold of 3.8 cents per kwh will be imposed on OPG’s sales, and any earnings over this amount are to be rebated to Ontario customers through the IMO.

As an initial move toward “decontrol,” it has leased its Bruce A and Bruce B generating stations to Bruce Power L.P., an entity controlled by British Energy PLC. Industry analysts Myron Gordon and John Wilson estimate that the province gave up, through this lease, an operating cash flow (that is, earnings before deducting depreciation, interest and taxes) of at least \$600 million per year for 20 to 25 years, making this the “largest gift to a private corporation by a Canadian government in the country’s history.”⁹⁸

At the end of 2001 the privatization of Hydro One was announced. This action, billed as the largest privatization in Canadian history, was planned to take place in 2002 through an initial public offering that the province hoped would raise about \$5 billion.⁹⁹ But the sale had to be postponed when a provincial court ruled in April 2002 that the government had no legal right to privatize Hydro One under existing legislation. His ruling supported an objection to the deal filed by two unions, the Canadian Union of Public Employees and the Canadian Energy and Paperworkers Union.

Hydro One owns \$10 billion in assets that include almost all the high-voltage transmission lines in the province and about one-third of the distribution system, primarily in rural areas. While the province's energy minister, Jim Wilson, insists the sale will not translate into higher electricity prices for consumers, consumer groups (which include industrial heavyweights such as General Motors of Canada and Dofasto) are vehemently opposed to the privatization.¹⁰⁰

Although private companies have so far applied to build 13 electricity plants in Ontario, worth \$3 billion, they decided to delay construction until deregulation actually occurred on May 1, 2002. Since Ontario is relying on the private sector to build all new generation capacity, the delays in initiating deregulation had made many private producers uneasy.¹⁰¹ If the private producers do not build, there could be problems with adequate supply in Ontario in the future because there will be no planning or oversight for new facilities.

OPG is one of the largest electricity generators in North America, with 69 hydroelectric, six fossil fuel, and five nuclear generating stations. In 2000, it generated 136.2 TWh of electricity, with about 44% coming from nuclear energy, 31% from fossil fuels, and 25% from hydroelectric generation. OPG has historically exported energy to the Midwest and northeast regions of

the U.S., and also has small markets with Manitoba and Quebec. The amount sold on these interconnected market varies considerably, from a high of 12.6 TWh in 1994 to a low of 3.0 TWh in 1998, but average sales are about 4.8 TWh per year, or about 4% of total electricity generated. Ontario sales to the U.S. were affected by the refurbishment of eight nuclear reactors, but these reactors are now coming back on line, so export sales are likely to increase.

Privatization efforts in Ontario continue at a rapid rate. The generating stations Lakeview (1,140 MW), Lennon (2,140 MW), Thunder Bay (310 MW), Atikokan (215 MW), and four Mississagi River generators (490 MW combined) are for sale. These stations, plus the Bruce nuclear reactors, will place about one-third of all generation in Ontario in private hands. According to one analyst, "this cut means Ontario can no longer supply enough electricity to get us through a cold winter."¹⁰² The main problem is that, with the possibility of selling to the U.S. market, private electricity companies will have little incentive to sell in Ontario unless the prices there match those in the U.S.

Newfoundland¹⁰³

Distribution and generation are split between two companies in this province. *Newfoundland Power*, a regulated, investor-owned utility, is the major distributor of electricity in Newfoundland. It has a small hydroelectric generating capacity itself (148 MW), but purchases 90% of its power from the Crown Corporation *Newfoundland and Labrador Hydro*. Newfoundland neither exports nor imports electricity from the U.S. Newfoundland and Labrador Hydro owns about 65.8% of Churchill Falls Ltd., in partnership with Hydro Québec, and has entered into an agreement to last until 2041 to sell all power generated by Churchill Falls to Hydro Québec. About half of the income of Newfoundland and Labrador Hydro comes from the Churchill Falls sales.

The Board of Commissioners of Public Utilities of Newfoundland regulates both Newfoundland Power and Newfoundland and Labrador Hydro, monitoring capital expenditures, corporate policies, rates, and the issue of securities. There has been no electricity rate increase in Newfoundland for 10 years, although one is planned for 2002. This is because a small proportion (about 16%) of the power sold in Newfoundland is generated from thermal sources that have become more expensive with increased fuel prices. There does not appear to be any plan to deregulate the electricity industry in Newfoundland.

New Brunswick¹⁰⁴

New Brunswick Power is a Crown Corporation that provides most of the power for the province. It operates 14 power plants with a total generation capacity of 3,140 MW. About 13% of total generation is from hydro, 21% from nuclear power, and 67% from thermal sources (coal and oil). New Brunswick normally accounts for about 12% of Canada's total electricity exports to the U.S. Exports and out-of-province sales account for about 25% of total revenues.

While no specific plans for restructuring the market have been announced, the Select Committee on Energy tabled a report recommending a gradual transition to competition in the wholesale market: *White Paper—New Brunswick Energy Policy 2000-2010*. The implementation of non-utility generation, wholesale competition for municipal utilities, and retail competition for large industries is scheduled for April 2003. In preparation for this, in 2000 N.B. Power restructured its operations into three distinct units: generation, transmission, and distribution. As the annual report notes, "A new business unit structure for transmission better positions N.B. Power for open access to regional transmission networks and facilitates opportunities for energy trading."

While the restructuring process is at an elementary stage, the White Paper calls for an open access transmission tariff, including ancillary services, provisions for stranded cost recovery, and the possibility of a "standard offer service" for customers who do not select a competitive supplier. The Chairman's message in the 2001 annual report contained an ominous note: "The provincial government is currently examining options for the future of N.B. Power."

By the end of the year, the board of directors was seriously considering a bid by British Energy PLC to purchase or lease the Point Lepreau nuclear generation station. The plant needs to be completely refurbished and the cost, estimated at \$750 million, is something that may be used to justify privatization. When this occurs, it will place a substantial portion of New Brunswick's electrical power generation in private hands.¹⁰⁵ As industry analyst Myron Gordon noted in a presentation to the N.B. government, divesting itself of PLGS will not eliminate the province's problems, but will only "make certain that this debt burden will fall on the province, while continued ownership provides a high probability that PLGS will be a financial bonanza for the province."¹⁰⁶

Full deregulation exposes N.B. to the probability of rapid and steep price increases for electricity. The large gap in prices that now exists between N.B. and New England would not continue, primarily because private generators would have the option of selling in a much more lucrative market. N.B. consumers would be bidding against New England consumers for electricity. As Myron Gordon pointed out, with prices in Maine, the rest of New England and New York two to three times higher than in N.B., the argument that lower prices would result from deregulation exists only in theory.¹⁰⁷

Nova Scotia¹⁰⁸

Nova Scotia Power Inc. (NSPI) is an investor-owned utility that provides most of the electric-

ity consumed in Nova Scotia. It is a wholly owned subsidiary of *Emera* (N.S. Power Holdings until 2000), a private company that trades on the Toronto Stock Exchange as EMA. The Utility and Review Board (UARB) has supervisory powers over NSPI's operation, expenditures, and electricity rates. NSPI electricity is generated primarily from five thermal power plants with an installed capacity of 2,200 MW. About 70% of electrical generation is from coal, 17% from oil, and less than 9% from hydro. Emera owns a 12.5% interest in the Maritimes & Northeast Pipeline, the pipeline that exports natural gas to the northeastern U.S. and Eastern Canada.

Nova Scotia does not import or export electricity, and there have been no initiatives to restructure the electricity market in this province. Emera is in the process of gaining regulatory approvals for the acquisition of all of the common shares of Bangor Hydro-Electric Company in Maine.

P.E.I.

Maritime Electric is a private utility and is the only supplier of electricity on Prince Edward Island. Most of its supply of electricity (98%) comes from N.B. Power. It has two power plants totalling 104 MW, and a fully integrated system. No deregulation initiatives are on the horizon.

Québec¹⁰⁹

Hydro-Québec, a publicly-owned utility, is the largest electrical utility in Canada and one of the largest in North America. It operates 51 hydroelectric and 29 thermal generating stations with an installed capacity of 31,512 MW. Hydro makes up 93% of the installed capacity. Hydro-Québec is the major purchaser of the generation from Churchill Falls power plant, which has a capacity of 5,428 MW. It usually exports about 37% of total value of Canadian electricity exports to the U.S., representing about 20% of Hydro-Québec's total sales. In 2000, its proportion of

total Canadian electricity exports fell to 26%, even though it increased its exports by over \$346 million because the spectacular crisis in California resulted in such a huge increase in revenues for B.C. Hydro.¹¹⁰

Hydro-Québec has a power license, through its subsidiary H.Q. Energy Services (U.S.), to buy and sell electricity under market conditions in the U.S. In 2000, Hydro-Québec set up an energy trading floor in Montreal, and as a result has greatly increased its volume of power purchases and sales on all markets outside Quebec. However, the volume it generates for export has remained relatively constant.

Hydro-Québec is actively involved in power generation in other countries, primarily in China and Central America, where it participates in the financing and management of infrastructure projects. It operates Panama's largest hydroelectric facility, Fortuna, and holds a 16.6% share in this facility. In China, Hydro-Québec holds a 20% interest in Meiya Power Company, the major independent power producer in the country, and also has a stake in the Qingshan power plant in Hunan province.

Hydro-Québec is also involved in transmission systems in South America. It built the Mantaro-Socabaya interconnection in Peru and continues to operate this project, and recently acquired Transelec, Chile's largest power transmission company.

Since 1998, Hydro-Québec has been regulated by the Régie de l'énergie (Energy Board). In 2000, Hydro-Québec was required (through *An Act to amend the Act respecting the Régie de l'énergie*) to begin a process to allow competition in generation by unbundling its distribution and generation activities. Through this deregulation exercise, electricity generation will be removed from the jurisdiction of the Régie de l'énergie. However, in order to protect consumers in Québec, the government has established a "heritage pool," giving Québec consumers access to a maximum of 165 TWh per year of Hy-

dro-Québec's generating output at a fixed price of 2.79 cents per KWh. Beyond that volume, the law opens the wholesale market up to competition. Hydro-Québec's transmission and distribution costs, which continue to be regulated, are added to the cost of supply.

Saskatchewan Power¹¹¹

Saskatchewan Power is a publicly-owned utility that provides most of the electricity to the

province. It operates 14 power plants that generate 2,889 MW, with about 74% from coal-fired plants, 20% from hydro, and 6% from gas. It has run a small trade deficit in electricity since 1997 and has a very small export market. The Saskatchewan government opened access to its transmission system in July 2001 in order to increase power exports. However, it is watching the restructuring process in Alberta before fully committing to restructuring.

IV. GATS Implications for Electrical Utilities

The Canadian government's GATS negotiating position seems reassuring when it states that any services in the public sector should not be subject to GATS. Canada says:

"The GATS cannot be interpreted as requiring governments to privatize or to deregulate any services. We recognize the right of individual countries to maintain public services in sectors of their choice: this is not a matter for the GATS negotiations. However, in sectors where countries have chosen to undertake specific commitments under the GATS, the mutually-agreed rules of GATS should apply."¹¹²

Unfortunately, these soothing words are misleading. The general rules in the GATS apply to government measures in the vast majority of cases, whether or not member nations so choose. As noted above, it is hard to find a service sector where the governmental authority exclusion (Article I.3.c) would be effective. This exclusion for government authority is highly restrictive and would not appear to apply to the electricity sector in any jurisdiction within Canada.

The purpose of the GATS negotiations is to open markets to service exporters, and this can only be done if a country provides reciprocal access to its own markets. If a government commits services like electricity to specific GATS rules (National Treatment and Market Access), then it can no longer claim that governments are not required to deregulate, re-regulate and privatize. If negotiations go on for a long enough time (there is no time limit to the ongoing negotiation obligation in Article XIX), then each member government will be pressured to make specific commitments covering more and more services.

Negotiations may also result in more horizontal obligations that could increase the exposure of electricity services without specific commitments. The EU, for example, has proposed an expansion of Canada's current horizontal commitments on energy that are fairly sweeping. These include horizontal commitments on transmission and distribution facilities, the trading and brokering of energy products, and services related to decommissioning.¹¹³

With the beginnings of a deregulatory regime in most provinces, the door has been opened for not only the private delivery of electricity, but also the shift to a system that is no longer controlled by the public in the public interest. While some provinces have indicated a desire to completely deregulate (Alberta and Ontario), not all have indicated they wish to move in this direction and have done the minimum they can to comply with FERC regulations without jeopardizing public interests in electricity.

The main problem with Canada agreeing to any provisions for electricity in the GATS is that it provides the means for escalating the commitments provincial governments have made so far to deregulate under FERC requirements. Should Canada sign-on to energy in the GATS, the benefits of any public ownership of resources would be nullified because access to use of the resources would be open to challenge through a variety of GATS requirements, including market access, national treatment, and controls over domestic regulation.

It is also important to note that, when Canada talks about the "public sector," it seems to focus on a limited notion of what this encompasses. Listed under its objectives during this round of negotiations is the intent to "preserve

the ability of Canada and Canadians to maintain or establish regulations, subsidies, administrative practices, or other measures in sectors such as health, public education, and social services." That is, more commercially oriented types of services, like electricity, are not specifically singled out for this kind of protection in its negotiating objectives. GATS provisions for "market access" and "national treatment" are critical and significant tools for those pursuing private control in a deregulating market. It is likely that the extent to which countries "sign-on" to these measures will be varied, but the strategy will be to get a "foot-in-the-door" and increasingly put pressure on lagging countries to open their markets. Ultimately, the critical question will be who will have access to the power sources. While they can technically remain under government ownership, governments will lose control over determining who will be able to use these resources and on what terms. The U.S. behaviour on "stumpage fees" for softwood lumber under Crown control in B.C. indicates the disposition of private corporations (backed by enormous U.S. power) to insist that any system of ownership that in any way deviates from the private market (in the widest possible sense—i.e., an international market) setting prices and determining who has access to the resource, will be contested through international trade bodies.¹¹⁴

Market access provisions, when they are agreed to, prevent governments from putting limits on the actions of foreign or domestic energy providers. A government could be challenged under market access provisions if it decided that there needed to be some restriction on the number of new gas generators that could be built within a specific area. This is because GATS specifically prohibits governments from placing "limitations on the total number of service operations or on the total quantity of service put..." [Article XVI, 2 (c)] Even if this were a non-discriminatory domestic regulation applying to all corporations, this limit on production possi-

bilities could be challenged as a trade barrier that is illegal under GATS.

GATS provisions also could have implications for a Québec style of deregulation where a large portion of Hydro-Québec's generation is deemed a "heritage pool" in order to assure stable pricing and adequate supply for domestic customers. This could be challenged under GATS as a regulation that limits the value of a market share for foreign investors and providers. Simply maintaining the huge generating capacity of Hydro-Québec could be challenged as an inappropriate monopoly action and could force an Ontario-style deregulation on that province.

In order to protect consumers, provincial governments would need to list an enormous number of current practices as limitations (i.e., country-specific exceptions) on market access and national treatment. Once practices are listed, they are exposed in subsequent rounds of negotiations to enormous pressures put on governments to remove these limitations. With a company like Hydro-Québec, which is actively involved in international electricity projects, this pressure is likely to be very strong.

As restructuring results in changes in the market that lead to privatization initiatives, GATS is likely to have an impact on who owns the existing public enterprises. While Canada has a horizontal limitation on "national treatment" that reserves the right to exclude foreign corporations when privatization occurs, the presence of foreign providers in the existing markets (such as British Energy PLC in Ontario, and Utilicorp in B.C.) could make this limitation without effect in any new privatization initiatives.¹¹⁵

It is important to note that Canada's horizontal limitations on public services that are designed to allow differential treatment in terms of benefits or price only pertain to a small subset of public services. Differential benefits are reserved for income security or insurance, social security or insurance, and social welfare. Dif-

ferential prices are reserved for public education, training, health, and child-care. Neither differential benefits nor differential prices are reserved for any other kind of public service, including electricity. This could have huge implications for any attempts to protect consumers in Canada through differential pricing between domestic and export pricing of electricity, if Canada includes electricity in its commitments under GATS.

Deregulation and Market Power

The major risk with deregulation is the probability that regulated domestic utilities will be replaced by unregulated private monopolies where prices are manipulated and supply is not secure. The way markets behave in a deregulated regime is less predictable than textbooks and those advocating deregulation would lead one to believe. The classically competitive market, the ideal that is held up as a promise of the electricity market in the future, is one in which there are a great many sellers and buyers of a product—so many that no seller or buyer will be able to influence the supply or the prices paid. In this ideal world, the price guides production and distribution decisions, so that the most efficient use of the resource is achieved.

In the real world, competitive markets are rare and only occur in those industries that have relatively small entry costs. This is not a condition that exists in the electrical industry, and the move toward deregulation in Canada is occurring at precisely the time that competitive forces are being thwarted through massive industry concentration, both in North America and throughout the world.¹¹⁶ Imperfect markets, rather than competitive ones, dominate in the industry when deregulation occurs. These imperfections arise as a result of corporate mergers, acquisitions, and predatory pricing, and create unanticipated and exceedingly unattractive distortions in public policy outcomes. The evi-

dence is compelling, in electricity markets that have experienced deregulation and privatization, that corporate concentration in the energy field very rapidly occurs, allowing market control to be exercised by private energy producers or traders from the outset.

The huge problems created through deregulation in California are an obvious example of manipulation and market power. The possibility of collusion between electricity suppliers led California Governor Gray Davis to initiate an investigation into whether price spikes had occurred because of “possible manipulation in the wholesale electricity market.”¹¹⁷ But even less spectacular cases point to the problems that arise. The situation in the U.K. is one of the most telling examples of the way markets become concentrated and targets for takeovers by international energy companies. According to one energy analyst, “the new structure failed [to be competitive] either because it was infeasible or the government lacked the political will to enforce it, so that the industry now lies at the mercy of the players, which inevitably maintain a strong interest in stifling competition, because real competition increases risks and reduces profits.”¹¹⁸

From the very beginning of the U.K. privatization exercise, foreign firms rushed in to control the market. The U.S. 1992 Energy Policy Act allowed, for the first time, U.S. electrical companies to invest in foreign corporations. The attractiveness of foreign markets led to a huge increase in mergers and acquisitions by U.S. firms, and an astronomical growth in size in relatively small, insignificant regional power producers. Deregulation in the U.K. rapidly led to the U.S. ownership of two-thirds of that country’s regional electricity companies.¹¹⁹

Within the U.S. electricity industry, concentration has proceeded at a phenomenally rapid rate since the beginnings of deregulation. Between 1996 and 1998, there were an average of 12 merger and acquisition announcements annually, and there are currently 9% fewer in-

vestor-owned utilities than there were at the beginning of the 1990s, resulting in almost 20% fewer people working in the industry.¹²⁰ One of the major differences in the new round of mergers, aside from the number of mergers taking place, is the size of the companies merging: they have involved some of the largest companies in the industry, giving the merged companies considerable market power. For example, the merger between FPL Group of Florida and Entergy Corporation of Louisiana gives the new company 11% of the U.S. nuclear power generation market. Another company, Exelon, resulting from the mergers between Unicom (Illinois) and PEOC Energy (Pennsylvania), will account for 17% of total nuclear capacity in the country.

These mergers and acquisitions have usually been within the electrical industry, but increasingly electrical utilities are trying to integrate their structures, and so their acquisitions are encompassing natural gas firms, coal mines, and other sources of power generation. According to the Chairman of Dominion Resources (which until recently was an obscure regional U.S. utility), whose recent merger made it the fourth biggest gas and electricity firm in the U.S., “We’ve created a firm that reaches from the well-head all the way to the final destination, the customer.”¹²¹ This is ironic in an era that lauds and even demands the disintegration of vertically integrated public utilities: private corporations are busily replicating significant aspects of the structures of public monopolies, although not with the guarantees for public accountability.

The electricity market is so lucrative that even oil giants like Texaco and Shell are entering it. According to the head of Shell Exploration and Production Company, “We are committed to gas, and so to ensure access to markets and customers, we must get into the power business.”¹²² The emergence of the energy conglomerates is accompanied by total returns in this sector far outpacing every other energy sector.¹²³ Enron, until its recent spectacular decline, was

the largest buyer and seller of natural gas and electricity in North America, Scandinavia, and the U.K. It operated on the notion that the aggregation of the various sectors of the industry was the key to success. According to its former CEO and President, “Our wholesale energy merchant business—the buying, selling, financing, and packaging of natural gas and electricity—is really the centre of the universe for us now.”¹²⁴

Clearly, electricity generation will drive much of gas growth in the future, and any energy company that wants to expand will do all it can to acquire electricity generation firms. The dangers to the public of this private integration of energy resources are clear from the fallout from Enron’s questionable business practices. The inability of the federal regulators (FERC) to understand the complexities of the arrangements of this massive company have created a “regulatory black hole” that leaves the public unprotected from market manipulation.¹²⁵

Industry concentration leads to restrictive practices, a lack of transparency, and price spikes. According to an industry analyst in Australia, John Spoehr, “There is an incentive in the new market-based system to under-invest in new generation capacity to keep supply at levels which maximize financial returns to the generators.”¹²⁶ Even the U.S. Department of Energy, an agency that supports deregulation, recognizes the problem of market power when markets are deregulated:

“Sharp price spikes are not new to pool-based electricity exchange systems. In countries that have adopted pool-based electricity trading systems, such as the United Kingdom and Australia, concerns have arisen about the connection between price spikes and market power. In the wake of California’s recent experience with its electricity pool, a similar concern has arisen that suppliers may have achieved excessive market power.”¹²⁷

The main point to take from this is that, with the huge growth of international power play-

ers, who can rapidly shift in and out of markets because of their size, instability becomes an inherent feature of the system. Investment in new facilities, when it occurs, will be made with a shorter-term profit horizon than was typical of regulated utilities, a tendency that largely ignores national capacity issues. The result is a cycle of capacity shortage that exacerbates price spikes, a process that itself encourages underbuilding.

Instability in a deregulated market is accentuated by a new phenomenon in the electricity industry: energy traders. When electrical generation serviced a defined area, inter-ties between jurisdictions existed for exporting surplus or for importing energy as secondary backups for emergencies. With the expansion of export markets and deregulated systems, energy traders buy electricity on the spot market and trade it in other jurisdictions. Huge trading floors are run by power traders such as Enron Corp., Reliant Energy Inc., Dynegy Inc., and Duke Energy Corporation. Enron, before its collapse, had 1,500 traders and accounted for a quarter of all the natural gas and electricity traded in the U.S.¹²⁸

These traders are in a spectacularly advantageous position to control prices and manipulate supply in a way that leads one analyst to refer to their actions as akin to the actions of junk bond traders on Wall Street in the 1980s.¹²⁹ A report by California's electricity grid managers concluded that 98% of the trading bids between May and November of 2000 were driven up by non-competitive patterns of behaviour. According to an attorney who is involved in a class-action suit against the traders in California, "The whole trading thing is just a front that lets them game the market. They can get away with it because no one (outside the industry) can figure out what they are doing."¹³⁰

One problem private traders experience when in competition with public utilities, such as in B.C. and Québec, is that they do not have access to large storage systems (dams) that are

in the public sector. This gives the traders associated with public companies, like B.C. Powerex, a huge advantage because they can buy power when it is relatively inexpensive and use it for provincial customers, rather than drawing down on the water reserves in the dam. Then, when the company can make money in more expensive markets, it can increase its generation from water that has been saved in dams. The power traders claim this is an "unfair advantage" that the public system has over the private systems, and they want the storage facilities of the public systems included in the common infrastructure that is deregulated so that they can also take advantage of them when trading power. The issue of rights to storage is likely to be one of the first challenges that a public utility could face through "market access" and "national treatment" conditions under comprehensive GATS coverage of electricity.

Deregulation is the objective of the GATS, but its benefits in the electricity industry are narrowly focused. Benefits would accrue to exporters and private producers who want to expand their influence over production and distribution now in the public sector. The concentration of market power that ensues from deregulation would nullify the benefits that exist in a public system—benefits that balance the need for electricity with the problems its creation and distribution create for the environment and communities. It will also create considerable instability within the system, both for prices and for the security of supply of electricity.

The large energy conglomerates have a clear and aggressive strategy to control the major electricity markets in the world. While the private sector has planned and ensured that the world regulatory systems meet their objectives, the same cannot be said for government objectives. The government of Canada has no specific long-term plan for electricity; it has left this planning to the private sector and seems to want to accommodate the needs of this group without an analysis of the implications for the public objec-

tives that are essential to preserve in any electricity system.

Implications for Developing Nations

Venezuela and Chile are the only developing nations that have formally indicated their negotiating positions on energy services in the GATS. Venezuela specifically calls for the energy needs of developing countries to be considered in a way that goes beyond a trade-based perspective:

“It would be in the interests of developing countries if these negotiations were approached with a wider focus than a merely trade-based perspective, and if the results could help to enable them to achieve their objectives linked to the strengthening of their domestic entrepreneurial capacity, technological development, and the protection of the environment and natural resources.”¹³¹

How the electricity needs of developing nations will be able to be accommodated under a GATS regulatory structure is hard to imagine, unless it is merely a short-term accommodation. The interests of the private traders and providers in the developing world are to gain access to these markets, because it is these markets that have the most growth potential in the near future. [See Table VII] The main focus for the Western companies is to bypass the constraints that they have experienced in developing countries because the markets have remained firmly under public control, even when there has been considerable privatization. Some companies, like Enron in India, experience considerable frustration when they try to behave in developing countries in ways that are acceptable in deregulated markets, but that are inappropriate when the wider objectives of development are taken into consideration.

Industrialized countries consume about 60% of the world's electricity, a figure that is expected to drop to less than half total consump-

tion within 20 years as the growth of electricity consumption in developing nations increases at a rapid pace. The significance of electricity growth in developing nations has not been lost on energy producers in developed nations. Virtually all major players have begun to become active in the electricity markets in the developing world, including public utilities in Canada like Hydro-Québec, and private utilities like TransAlta.

The main dilemma for developing nations will be to determine the extent that they will have to agree to the GATS deregulation initiatives in order to have access to Western technologies and Western funds. The IMF and the World Bank often include electricity among the infrastructure that they require to deregulate as a condition for loans. The countries are then placed in the unenviable position of having to try to meet the needs of a poor population with an industry that demands returns for its shareholders. So, for example, when Brazil announced a mandatory scheme of power rationing, a major U.S. company threatened to withdraw from a \$2 billion power plant project.¹³²

The countries that deregulate first and fastest will obviously attract foreign investment, and the more any country tries to maintain control over its electricity system, the more it is likely to be frozen out of both international funding and be dropped by the big private firms interested in working only in a deregulated market. Countries like India are increasingly concerned about the possibility of corruption in the terms of the agreements that have been signed with private Western power producers.¹³³ After Enron entered into an agreement to build the world's largest gas-fired plant in the world, public pressure forced the Electricity Board to reassess the terms of the agreement. The claim was that it would produce power that was much too costly, and would primarily benefit only Enron and the politicians it had allegedly bribed. This resulted in the holding back of payments to Enron, re-

Table VIII: World Net Electricity Consumption by Region
(Billion Kilowatthours)

Region	History		Projections		Change <u>1999-2020</u>
	<u>1990</u>	<u>1999</u>	<u>2010</u>	<u>2020</u>	
<u>Industrialized Countries</u>	6,385	7,517	9,352	10,888	1.8
U.S.	2,817	3,236	4,147	4,804	1.9
<u>EE/FSU*</u>	1,906	1,452	1,760	2,138	1.9
<u>Developing Countries</u>	2,258	3,863	6,191	9,203	4.2
Developing Asia	1,259	2,319	3,883	5,856	4.5
China	551	1,084	2,035	3,331	5.5
India	257	424	656	949	3.9
South Korea	93	233	333	437	3.0
Other Asia	357	578	858	1,139	3.3
<u>Central and South America</u>	449	684	1,035	1,552	4.0
Total World	10,549	12,833	17,303	22,230	2.7

*Note: EE/FSU= Eastern Europe and the former Soviet Union

Sources: U.S. Energy Information Administration, *International Energy Outlook 2001*, p. 119.

sulting in a political mess that led one politician to plea, “Free us from Enron.”

It is experiences like those of Enron that will undoubtedly place pressure on developing nations to ensure that future electricity projects are fully covered by GATS so that corporations will have recourse at the WTO when investment projects run into trouble. But deregulating electricity presents huge perils for developing nations, particularly considering the aggressive nature of large energy companies and the very real possibility that the case of Enron will not be unique.

Environmental Issues

When California and Ontario were contemplating the deregulation of the electricity industry, many environmentalists were supportive of the initiative. Their argument was that, through competition in a deregulated market, more “green power” could be used than in a market where supply and pricing were firmly under the control of monopoly enterprises.¹³⁴ Governments were encouraged by this rosy depiction of the way that a deregulated market would work, and marshalled these groups in support

of changes. The arguments of some environmentalists meshed nicely with private industry's promises that competition would emerge that would allow people to "choose" their energy supplier and would allow people to pay a premium for "green energy" if they were environmentally inclined. [It should be noted that not all environmental groups subscribed to these arguments.]

These environmentalists also argued that, if market activities drove up energy prices (contrary to what the industry was saying), this would be good because it would discourage increased energy consumption. So, even if the promises of private producers under a deregulated system were broken, the outcome would be good for the environment.

There are several serious problems with these arguments. The most significant problem relates to the simplistic notion that high prices will reduce total energy consumption in a deregulated market. The logic of conservation under a regulated monopoly is considerably different than it is in a deregulated system. A regulated utility that is required to provide electricity to its customers faces enormous start-up costs for any new generation of power brought on line. It is in the interests of this utility to encourage its customers to conserve energy, and it will go to considerable lengths to see that this happens through "demand-side management." Most public utilities began programs of demand-side management: for example, B.C. Hydro, before the spectre of deregulation changed its policy, encouraged both domestic and industrial customers to cut back on consumption through time-sensitive pricing and outright rebates for retrofitting and installation of power-efficient appliances.¹³⁵

Even though these initiatives were expensive, paying for this new "found" energy was considerably cheaper than investing in new power plants. The logic of power conservation completely changes in a deregulated market where the whole point of production is to sell

as much as possible. In this case, if competition between suppliers actually emerges (which is doubtful), it will be in their interests to entice customers to consume as much as possible. In that way, everyone will be able to sell more at the highest possible prices.

In a deregulated continental market, as is emerging in North America, a great many conditions arise to encourage both greater production and greater consumption of energy. Energy producers in Canada, for example, will be encouraged to increase production in order to be able to sell into high-priced U.S. markets. Companies like B.C. Hydro may continue to encourage PowerSmart programs, but these programs begin to take a decidedly different approach to conservation. B.C. Hydro (for example, yet again) has begun to buy-back energy it has promised to large industrial producers because it can sell it at a much higher price in the U.S.¹³⁶ It is encouraging conservation in Canada so that it can sell more in the U.S. This is not over-all conservation that will prevent the need for more energy, as was the original PowerSmart design, but merely encouraging low use in a low-price area so sales can be increased in high-priced markets. The ultimate objective is to sell more everywhere, and "demand-side management" has no place in this kind of market.

In a deregulated market, strong incentives exist for new production to come on line. As was noted earlier in this study, the high price of deregulated energy is encouraging the use of dirty and dangerous fuels. When the initial deregulation measures were undertaken, there was some hope that these fuels would be abandoned in favour of natural gas in electricity generation. Both California and Ontario were heavily reliant on nuclear power production, and it was under these circumstances that environmentalists, understandably, supported the deregulation of the industry.

The important point is that circumstances in places where hydroelectric generation dominates production are significantly different.

When a hydro-based industry is deregulated, it is highly likely that most new production through private power producers will be not from hydro sources, but from natural gas, coal, or nuclear energy. These will considerably worsen the environmental degradation from electricity production.

When markets deregulate, particularly electricity markets, they rarely take on the competitive nature usually promised. That is, the markets are not characterized by the classic textbook notion of many small producers who compete with each other to woo customers. Rather, the manipulation of the market, market concentration, and exercise of market power undermine any attempts to use the product in the public interest. When the product is an essential service, like electricity, where the interests of people, the needs of industry, and the environmental damage caused by any form of electricity production need to be carefully weighed and balanced, letting the market take its course is a receipt for disaster. The market simply is not efficient when values, other than property values, are at stake.

While the notion of “choice” as exercised through the market appeals to the democratic

nature of a society based on the significance of individual will, the public has recognized, through time, that market incentives cannot promote the public’s collective interest—especially when environmental matters are concerned.

Canada’s negotiating submissions on the GATS specifically mentions the need for a “systematic process of identifying and evaluating likely and significant environmental impacts of trade negotiations.” To this end, Canada promises to “undertake domestically an environmental assessment of the GATS in accordance with Canada’s *Framework for Conducting Environmental Assessments of Trade Negotiations*.”¹³⁷ The difficulty with this promise is that, until people can know exactly what Canada will agree to with regard to energy, it will be impossible to understand and make representations to the government about the GATS-specific environmental implications. Nevertheless, if the government were to undertake an examination of the GATS with regard to the deregulation of electricity in general, it could fulfill its promise on environmental assessment. If it waits until after the GATS negotiations are completed, the environmental assessment will be useless.

V. Conclusions

The federal government has recklessly allowed the relatively small export market to set the agenda for the future of the electricity market in this country. Ninety-four percent of the Canadian electricity market goes to people and industries within this country, while an average of only 6% is exported, yet both the security of supply and reasonable prices are at risk through deregulation measures designed, for the most part, to accommodate existing and future exports.

When electricity was firmly within government control through both public and private integrated monopolies, and exports proceeded through long-term contracts, international trade agreements did not affect the ways that the public resources were used. Governments could insist on planning for adequate supply in the future, environmental protection, and ensuring a price to domestic consumers that was based on the cost of production. The process of deregulation has exposed this rational use of resources to the chaotic chance of the market.

On top of this reckless approach to an essential service, deregulation has failed to anticipate the consequences of GATS and other trade agreements.

Some provincial governments have tried to limit their exposure to deregulation and do not intend to submit fully to the vagaries of the electricity market, but they may have little choice if the federal government continues to encourage measures that further liberalize energy markets. So far, the Canadian government has been silent about its position on how electricity should be treated in the GATS. It was similarly silent on water in NAFTA, and the result was a lack of clarity that misled the population into thinking water was not included in the trade agreement.

The deregulation of electricity exposes Canada to enormous hazards. The most obvious is the harmonization of prices upward to prevailing U.S. levels. As private firms provide increasing levels of electricity generation, there will be no way to prevent them from exporting power to the market where prices are the highest. With the Canadian dollar at an all-time low, this price increase will cause hardship for many people, particularly those in rural and hard-to-service areas, or with low incomes.

Price increases will also raise production costs for Canadian industrial users, something that will affect their ability to remain competitive, and will ultimately have an impact on the general level of production and employment. Any attempts to protect domestic consumers, such as Quebec's "heritage market" approach, may cushion the full impact of deregulation for a short period, but it will be transitory. Private power traders and producers will be shut out of this market and will be able to complain about this hiving-off of the market as a barrier to trade. Ultimately, Canadian utilities will be forced to raise their prices to continental market levels.

Integrated public utilities are able to balance competing issues that are not easy to reconcile, such as those involving equity and the environment, with the need to exploit resources to generate and deliver energy to end-users. It is highly unlikely that uniform pricing could be maintained in any province through a deregulated market. In remote areas, security of supply may be a particularly serious issue. Environmental issues will be fully exposed to the whims of the market. Fuel sources used will be based on market decisions, not on environmental considerations. And conservation measures that are rational in the market of a public utility make no

sense when producers only have an incentive to sell more. All of the efficiencies that are available through an integrated utility will be broken up when decisions about generation are not directly planned in coordination with the transmission and distribution system.

Some provinces are proceeding with deregulation as though it and privatization are two separate and distinct actions. But deregulation is not a half-way measure; it is the “thick-edge-of-the-wedge” for privatization. Deregulation means breaking up integrated public monopolies and encouraging private participation in the market. When this is done, the major efficiencies that an integrated public utility can realize are lost. As it becomes less efficient, its value to the public ultimately will diminish. Under these circumstances, then, the sale of the public asset seems a more sensible move.

The most serious issue for Canadians is the complete deregulation of the electrical industry itself. Even regulated private monopolies can

and have been made to use the public resource in a manner that is consistent with the public interest. A regulator can demand that they periodically submit plans for future electricity supply, control prices, and review new projects for their impacts on the environment and communities. In a deregulated market—even if some aspects of production remain under public ownership—all of the benefits of a regulated utility are lost. Because the intent of GATS is to increasingly deregulate markets, any incremental movement toward this end with regard to electricity will place Canadian electrical utilities on an escalating path toward deregulation.

Electricity is not a commodity like others; it is an industry that provides for human survival in a densely populated and complex world. Electricity is the basic infrastructure for every industry and virtually every job in the country. The significance of who controls this industry cannot be overstated.

Notes

- ¹ * The author would like to thank the following people for their help and comments on various drafts of this paper: Alejandro Alvarez, Norma Leticia Campos Aragon, John Calvert, Daniel Drache, Stephen Clarkson, Michael Goldrick, Myron Gordon, Ellen Gould, Anil Hira, Margaret Manery, Russell Williams, John Wilson. Noel Shacter and Scott Sinclair were enormously helpful in interpreting the GATS.
- ² Barrie McKenna, "Klein wants to deal on energy, what's left to deal?" *Globe and Mail*, Business Comment, June 15, 2001.
- ³ There have been substantial increases in gas interconnections between Canada and the U.S. recently. In 1999 The Northern Border Pipeline, an extension of the Nova Pipeline, came onstream to connect Chicago thorough the upper Midwest. The Maritimes and Northeast Pipeline running from Sable Island to New England came onstream in January 2000. Even more recently, The Alliance Pipeline came onstream. This is a 1,875 mile pipeline from Fort St. John in B.C. to the Chicago area and is designed to carry about 1.3 billion cubic feet per day of gas. Another pipeline, The Millennium Pipeline, designed to connect Canadian gas to southern New York and Pennsylvania is under regulatory approval. B.C. also exports gas to the U.S. utility Pacific Gas & Electric. [U.S. Government, Energy Information Administration, Feb. 2001.]
- ⁴ For an analysis of NAFTA's implications for oil and gas see Larry Pratt, *Energy: Free Trade & The Price We Paid* (Edmonton: The Parkland Institute, 2001).
- ⁵ Canada, Natural Resources Canada, *Important Facts on Canada's Natural Resources* (July 2000) and U.S. Dept. of Energy, "Country Energy Data Report, Aug. 3, 2001..
- ⁶ NAFTA, Chapter 6, Annex 602.3.
- ⁷ Power marketers buy and sell power on wholesale markets and market electricity directly to utilities or customers. Usually power marketers do not own generation, transmission, or distribution facilities themselves.
- ⁸ This drive for exports comes from provincial governments that derive increased revenues from exports as well as from private producers. For example, in 2000 Cominco in B.C. shut down its operations so that it could export power to the U.S. rather than use it in production. This brought \$137 million in revenue to the company.
- ⁹ FERC has oversight of interstate transportation and sales of natural gas and electric power.

- ¹⁰ FERC orders 888 and 888A require all transmission service providers that wish to sell power at unregulated rates in the U.S. market to post a pro forma open-access transmission tariff with FERC. In doing this they are essentially unbundling the transmission charge from the cost of electric power so that all users pay the same transmission charge – even the public utility that owns the transmission system.
- ¹¹ WTO, Council for Trade in Services, *Energy Services: Background Note by the Secretariat*, September 9, 1998.
- ¹² For an analysis of the development of the public electrical industry in Canada see Karl Froushauer, *White Gold: Hydroelectric Power in Canada* (Vancouver: University of British Columbia Press, 1999)
- ¹³ This needs to be qualified by the recognition that mega-projects such as Churchill Falls and much of the Québec and B.C. Hydro systems had an export objective.
- ¹⁴ This is modified for states that feel a regulated monopoly is more advantageous.
- ¹⁵ For a discussion of deregulation and privatization of electricity in Latin and South America see Anil Hira, "Evaluacion Politica de la Integracion Electrica en el Cono Sur," *Revista CIER*, (Montevideo: CIER)Ano X, No.36, June/July 2001,.
- ¹⁶ A natural monopoly occurs when a single large firm would have the lowest cost of production and could prevent other firms from entering the industry because set-up costs are high and the 'natural monopoly' can sell at relatively low prices. Usually a natural monopoly exhibits economies of scale, which means that as production increases the costs per unit decline.
- ¹⁷ See, for example, Margaret Jess, "Restructuring Energy Industries: Lessons from Natural Gas," *Natural Gas Monthly Special Report* (need date).
- ¹⁸ Early gas turbines were relatively inefficient but in the late 1980s the introduction of the combined-cycle gas turbine changed the economics of this industry — at least in the short-term. In a combined-cycle turbine the excess heat from a gas turbine powers a second steam turbine. The process has enabled efficiencies to rise from 30%, which was typical for the fossil-fueled steam-electric plants and the more conventional gas turbines to about 60% most recently. Harry R. Linden, "Technology as an Enabling Force in the Global Restructuring of the Electric Power Industry," *The Electricity Journal* 18, 10 (December 1995). For a discussion of combined cycle gas turbines in terms accessible to non-experts see Christopher Flavin and Nicholas Lenssen, *Powering the Future: Blueprint for a Sustainable Electricity Industry* (Washington, D.C.: Worldwatch, 1994), pp. 20-23.

- ¹⁹ Calpine's rationale is a good example of sticking to generation and integrating gas and electrical production, but not getting into transmission and distribution. Mathew Ingram, "Calpine rides the power wave into Canada," *The Globe and Mail*, July 27, 2001, B8.
- ²⁰ See, for example the *Integrated Electricity Plan*, January 2000 that B.C. Hydro was required to file with the B.C. Utilities Commission.
- ²¹ For an analysis of the privatizing process in the U.K. see Andrew Holmes, *Privatising British Electricity: Restructuring and Resistance* (London: Financial Times Business Information, 1992).
- ²² Dick Cheney, Colin L. Powell, et al., *National Energy Policy: Report of the National Energy Policy Development Group* (Washington: US Government Printing Office, 2001)p. 1-1.
- ²³ *Ibid.*, pg. viii.
- ²⁴ *Ibid.*, p. 5-10.
- ²⁵ *Ibid.* p. 1-5.
- ²⁶ Other areas in the U.S. that experience problems are more related to transmission capacity limits than to inadequate generation. These areas are The Great Lakes and the Southeast.
- ²⁷ *Ibid.*, p. 8-1.
- ²⁸ *Ibid.*, p. xv.
- ²⁹ *Ibid.* p. xv.
- ³⁰ Bill McKibben, "Some Like It Hot," *The New York Review of Books*, XLVIII, 11, July 5, 2001, p. 38.
- ³¹ *National Energy Policy*, 2-1.
- ³² Chad Skelton, "U.S. delegation in Whistler clear: B.C.'s energy resources in sights," *Vancouver Sun*, July 27, 2001, p. D7/13.
- ³³ *National Energy Policy*, p. 8-3.
- ³⁴ *Ibid.*, p. 8-6.
- ³⁵ *Ibid.*, p. 8-6.
- ³⁶ *Ibid.*, p. 8-7.
- ³⁷ *Ibid.*, p. 8-6.
- ³⁸ WTO, www.wto.org/wto/services/services.htm.
- ³⁹ WTO, General Agreement on Trade in Services, Article XIX, 1
- ⁴⁰ The Canadian Centre for Policy Alternatives has produced several publications that explain the GATS in detail. See Scott Sinclair, *GATS: How the World Trade Organization's new "services" negotiations threaten democracy* (Ottawa: CCPA, 2000); Matthew Sanger, *Reckless Abandon: Canada, the GATS and the future of Health Care* (Ottawa: CCPA, 2001);; Scott Sinclair, *The GATS and Canadian Postal Services* (Ottawa: CCPA, March 2001).
- ⁴¹ There were important political reasons for these two different sections. Service industry coalitions wanted comprehensive coverage, but some countries could not commit to including all parts of their service sectors in the 1994 agreement. The two-part arrangement provided a point of leverage – particularly because a built-in negotiating agenda was included.
- ⁴² GATS, Part II, General Obligations and Disciplines
- ⁴³ GATS article IX recognizes that "certain business practices of services suppliers [other than monopolies] may restrain competition and thereby restrict trade in services." But such practices are subject only to consultation, not legally binding dispute settlement. (GATS Article IX).
- ⁴⁴ It should be noted that GATS restrictions apply to both public and private monopolies.
- ⁴⁵ GATS, Part III, Specific Commitments
- ⁴⁶ Marjorie Griffin Cohen, "The General Agreement on Trade in Services: Threats to Public Post-Secondary Education in Australia," *Australian Universities Review*, Fall 2000.
- ⁴⁷ GATS, Part I, 2(b)
- ⁴⁸ GATS, Part I, 2(c)
- ⁴⁹ While there is no explicit definition of 'commercial' in GATS, there is clear wording in NAFTA which may act as a proxy for the absence of a definition within the GATS. It says requirements to act in "accordance with commercial considerations means consistent with normal business practices of privately-held enterprises in the relevant business or industry." [NAFTA, Article 1503.]
- ⁵⁰ For a thorough discussion of the problems created by the treatment of "exercise of governmental authority" in GATS see B.C. Ministry of Competition, Science and Enterprise, *Discussion Paper*, April 2, 2001.
- ⁵¹ Article XXVIII further confirms the lack of distinction between public and private provision of services in its definitions of "monopoly supplier of a service," and "juridical person."
- ⁵² GATS, Article XIV(b) (i) (s).
- ⁵³ A country can determine if its commitment is 'bound' or 'unbound.' If it is 'bound' the commitment cannot be changed without compensation to other WTO members, if it is 'unbound' governments have a right to alter the commitment without any type of penalty.
- ⁵⁴ Unless otherwise noted, the information from this section comes from the WRO, Council for Trade in Services, *Energy Services: Background Note by the Secretariat*, Sept., 9, 1998.
- ⁵⁵ This intimate connection between services and goods aspect of electricity is reflect in the GATTS, where electricity was not originally defined as a 'commodity,' and while it can be classified as a commodity under the World Custom Organization Harmonized Commodity Description and Coding system (WCO HS), this is an optional decision.
- ⁵⁶ For an assessment of the treatment of electricity as a good under GATT and NAFTA see Robert Howse and Gerald Heckman, "The Regulation of Trade in

- Electricity: A Canadian Perspective," in *Ontario Hydro at the Millennium: Has Monopoly's Moment Passed?*, ed. by Ronald D. Daniels (Montreal & Kingston: McGill-Queen's University Press, 1996), pp. 103-155.
- ⁵⁷ The others are Australia, Dominican Republic, Gambia, Hungary, Nicaragua, Sierra Leone, and Slovenia.
- ⁵⁸ The Sectoral Classification List, W/120, is cross-referenced with the more detailed UN Sector Product Classification list (Provisional CPC).
- ⁵⁹ Those making commitments for pipeline transport are Australia, Hungary and New Zealand.
- ⁶⁰ The UN CPC definition of wholesale and retail trade covers: wholesale trade of solid, liquid and gaseous fuels and related products (62271), and retail sales of fuel oil, bottled gas, coal and wood (63297).
- ⁶¹ GATS, Canada-Schedule of Specific Commitments, GATS/SC/16.
- ⁶² Ibid.
- ⁶³ U.S. Energy Information Administration (EIA), "International Energy Database," January 2001.
- ⁶⁴ Directive 90/547/EEC.
- ⁶⁵ The European Community while saying that it does not propose deregulation of the energy sector, does urge WTO members to adopt a "pro-competitive regulatory framework for this sector. WTO, "Communication from the European Communities and their Member States: GATS 2000: Energy Services," 23 March 2001, S/CSS/W/60.
- ⁶⁶ John R. Irwin, Press Release, Oil and Gas Drillers Group, "Oil and Gas Drillers Group Urges Addition of Energy Services Classification to GATS," May 3, 2000. Irwin pointed out that "the need for such a classification is important not only from a global trade perspective, but also from the point of view of the Houston economy," because 53% of the economy of that city is energy-related.
- ⁶⁷ WTO, "Communication from the United States: Energy Services, 18 December 2000, S/CSS/W/24
- ⁶⁸ United States International Trade Commission, *Electric Power Services: Recent Reforms in Selected Foreign Markets*, November 2000, p. ix. [USITC Publication 3370]
- ⁶⁹ WTO, "Communication from the United States: Energy Services, 18 December 2000, Section II, 9.
- ⁷⁰ WTO, "Communication from Canada: Initial Negotiating Proposal on Oil and Gas Services, 14 March 2001, S/CSS/W/58.
- ⁷¹ Ibid.
- ⁷² Canada, "Canadian Initial GATS Sectoral/Modal/Horizontal Negotiating Proposals," 2001.
- ⁷³ Ibid.
- ⁷⁴ op. cit., Communication from the U.S.
- ⁷⁵ USITC, op. cit., p. 21-4.
- ⁷⁶ op. cit., WTO S/C/W/52, Section F.
- ⁷⁷ Ibid., Section A.
- ⁷⁸ Karl Froschauer (op. cit.) gives a detailed analysis of the politics involved in the failure to develop a national grid system.
- ⁷⁹ These figures are based on 1999 production.
- ⁸⁰ Op. cit. Froschauer, p. 3.
- ⁸¹ Ibid.
- ⁸² Ibid., p. 72-73.
- ⁸³ For example, in California the average price for residential consumers was 36% higher than the average U.S. rate and the average industrial user paid 52% more than the average in the U.S. [U.S. Energy Information Administration, *International Energy Outlook 2001*), p. 126.
- ⁸⁴ Export statistics for all provinces are from Statistics Canada, *Trade Data Online*, "Trade Balances for Electrical Energy," www.strategis.gc.ca
- ⁸⁵ Rick Wallace, *The British Columbia Advantage* (Edmonton: The Parkland Institute, 2001); newsreleases, www.transalta.com
- ⁸⁶ *Globe and Mail*, August 23, 2001, B6.
- ⁸⁷ TransAlta, "Deregulation: Our Changing Industry," June 25, 2001.
- ⁸⁸ Myron Gordon, "An Examination of the Comparative Financial Consequences of Owning and Selling EPCOR for the People of Edmonton," for the City Council of Edmonton, June 28, 1999.
- ⁸⁹ Ibid., p. 4.
- ⁹⁰ B.C. Hydro, *The Power of Sustainability: Annual Report 2001*.
- ⁹¹ Dr. Jark Jaccard, *Reforming British Columbia's Electricity Market: A Way Forward*, British Columbia Task Force on Electricity Market Reform: Final Report, January 1998.
- ⁹² B.C. *Strategic Considerations for a New British Columbia Energy Policy*, Interim Report of the Task Force on Energy Policy, November 30, 2001.
- ⁹³ Myron Gordon, "Financial Implications of Competition in the B.C. Electric Power Sector." Submission to the British Columbia Task Force on Electricity Market Reform, 1997.
- ⁹⁴ Ian Mulgrew, "Energy task force report 'a dangerous piece of work,'" *The Vancouver Sun*, January 14, 2002.
- ⁹⁵ Timothy Egan, "Once Braced for a Power Shortage, California Now Finds Itself with a Surplus," *The New York Times*, November 4, 2001, A17.
- ⁹⁶ *Manitoba Hydro-Electric Board 50th Annual Report, 2000-01*, *Manitoba Hydro and Electricity Exports*, www.hydro.mb.ca/exports
- ⁹⁷ Ontario Power Generation, *Annual Information Form*, April 30, 2001. Ontario Power Generation, *OPG in Motion: Annual Report 2000*.
- ⁹⁸ Myron J. Gordon and John Wilson, "Statement on Bruce Nuclear Station," unpublished document,

- Dec. 27, 2001. See also, Myron J. Gordon, "Can we Stop the Bruce Givaway?" *Toronto Star*, May 5, 2000.
- 99 Martin Mittelstaedt, "Utility sale seen hurting users," *The Globe and Mail*, Dec. 14, 2001.
- 100 The view that privatization of *Hydro One* will not increase energy prices is also shared by Tom Adams, the head of Energy Probe.
- 101 Janet McFarland, "Indecisiveness on energy leaves us in the dark" *The Globe and Mail*, July 21, 2001.
- 102 Myron Gordon and John Wilson, "Consumers will get bill for the deal with British energy firm," *Toronto Star*, November 21, 2001, A 29.
- 103 Newfoundland and Labrador Hydro, *2000 Annual Report*; Newfoundland Power, *About Us*, www.nfpower.ca
- 104 New Brunswick Power Corporation, *2001 Annual Report*.
- 105 "British Energy bidding for Point Lepreau: minister," *Globe and Mail*, Dec. 17, 2001.
- 106 Myron J. Gordon, "The consequences of Privatizing New Brunswick Power and Deregulating the Electric Power Industry in New Brunswick," paper presented to the Select Committee on Energy of the New Brunswick Legislature, January 6, 1999, p. 29.
- 107 *Ibid.*, p. 5.
- 108 NS Power Holdings Inc., *On Course: 1999 Annual Report*
- 109 Hydro Québec, *Annual Report 2000*.
- 110 Hydro Québec did benefit, however, from huge price increases in New York. Electricity bills of New Yorkers rose an average of 43% in July 2000. "New York Mayor Wants Cap on Power Fees," *The Associated Press*, March 28, 2001.
- 111 SaskPower, *2000 Annual Report*.
- 112 Canada, 'Canadian Initial GATS Sectoral/Modal/Horizontal Negotiation Preposals, op. cit.
- 113 "Request from the EC and its Member States to Canada," GATS, AD Hoc 133 Committee Services, 06-03-02.
- 114 Dale Marshall, "Finding Solutions to U.S. Bullying in Softwood Lumber," Canadian Centre for Policy Alternatives. *Nelson Daily News*, August 27, 2001, p. 4.
- 115 Canada's limitations on national treatment says: "Federal and sub-central governments, when disposing of their equity interests in, or the assets of, a service supplier which is owned by such governments, may prohibit the ownership of such interests or assets by non-Canadian investors or their investment; and may impose limitations upon the ownership of such interests or assets, and on the ability of owners of such interests or assets to control any resulting enterprise, by non-Canadian investors or their investments." "GATS/SC/16.
- 116 For a thorough discussion of the contrary forces of market liberalization and industry concentration see John Ernst, "Public Utility Privatization and Competition: Challenges to Equity and the Environment," *Just Policy: A Journal of Australian Social Policy*, no. 9 (March 1997), pp. 14-26.
- 117 "California Looks in Every Direction Seeking 'Fix' for Power Market Shock," *Electric Utility Weekly*, August 7, 2000, p. 1.
- 118 Steve Thomas, "Electricity Reform in Great Britain: An Imperfect Model," *Public Utilities Fortnightly*, June 15, 1996).
- 119 ILO, *Public Services Privatisation Research Unit Paper*, ILO Ref IC 12-0-41/CS 1-04, July 10, 1997, p. 13.
- 120 Employment in the U.S. electricity industry fell from 440,000 jobs in 1992 to 360,000 in 1999. [U.S. Energy Information Administration, *International Energy Outlook 2001*, p. 123.]
- 121 "Energy, The New Convergence," *The Economist*, Vol. 351, No. 8121, May 29, 1999, p. 59.
- 122 *Ibid.*
- 123 Brian A. Toal, "The New Majors," *Oil & Gas Investor*, Vol. 19, No. 9, Sept. 1999.
- 124 *Ibid.*
- 125 Jeff Gerth with Richard A. Oppel Jr., "Regulators Struggle With a Marketplace Created by Enron," *New York Times*, November 10, 2001.
- 126 John Spoehr, "Power Struggles – privatization and electricity in South Australia," *Australian Options*, No. 20, (2000), pp 15-21.
- 127 *International Energy Outlook, 2001*, op. cit., p. 128.
- 128 John Emshwiller and Rebecca Smith, "Dynergy's Enron deal faces major uncertainties," *Wall Street Journal*, Nov. 12, 2001.
- 129 Michael Liedtke, "Action on Energy Trading Floors Reverberate in Power-Hungry California," *The Associated Press*, April 17, 2001.
- 130 *Ibid.*
- 131 WTO, Communication from Venezuela, "Negotiating Proposals on Energy Services," S/CSS/W/69.
- 132 Stratfor, "Developing Nations Will Suffer as Power Goes Private," [Stratfor describes itself as "The Internet Source for Global Intelligence"] <http://www.stratfor.com>
- 133 Celia W. Dugger, "Enron's High-Stakes Fight Over Power Plant," *New York Times*, March 19, 2001.
- 134 See submissions to British Columbia Task Force on Electricity Market Reform, 1997 and the Final Report of the task force, *Reforming British Columbia's Electricity Market: A Way Forward*, pp. 29ff.
- 135 This was through its PowerSmart program.
- 136 British Columbia Hydro and Power Authority, *Application for Power Smart Industrial Rate*, June 2001.
- 137 Canada, "Canadian Initial GATS Sectoral/Modal/Horizontal Negotiation Proposals," op. cit.

Appendix I

Canada's GATS Commitments for Construction Services	Market Access Limitations [Mode of Supply]	National Treatment Limitations [Mode of Supply]
<p>A. <u>General construction work for buildings</u></p> <p>Construction work for buildings, including for multi-dwelling buildings, warehouses and commercial buildings (CPC 512)</p>	<p>1) None</p> <p>2) None</p> <p>3) None</p> <p>4) Unbound except as indicated in the horizontal section</p>	<p>1) None</p> <p>2) None</p> <p>3) None, other than: <u>Construction Contractor</u> (Ontario): A nonresident who will be consuming or using tangible personal property in Ontario is required to deposit with the Treasurer 4 per cent of the amount to be paid under the contract or post a guarantee bond for the same. (Newfoundland): A deposit of 6 per cent of the contract amount or a bond equivalent is required from nonresident contractors</p> <p>4) Unbound except as indicated in the horizontal section</p>
<p>B*. <u>General construction work for civil engineering</u></p> <p>Construction work for civil engineering, including for highways, airports, harbours, dams, bridges, construction for mining and manufacturing, rail, power and communications facilities, pipelines and stadia and other recreational facilities (CPC 513*)</p>	<p>1) None, other than <u>cabotage</u> (see transportation section)</p> <p>2) None</p> <p>3) None, other than: <u>Construction</u> (Ontario): An applicant and holder of a water power site development permit must be incorporated in Ontario</p> <p>4) Unbound except as indicated in the horizontal section</p>	<p>1) None</p> <p>2) None</p> <p>3) None</p> <p>4) Unbound except as indicated in the horizontal section, and: <u>Construction</u> (Ontario): An applicant and holder of a water power site development permit must be a resident of Ontario</p>

C.. <u>Installation and assembly work</u>	1) None	1) None
Assembly and erection of pre-fabricated constructions (CPC 514)	2) None 3) None	2) None 3) None
Installation work (CPC 516)	4) Unbound except as indicated in the horizontal section	4) Unbound except as indicated in the horizontal section
D. <u>Building completion and finishing work</u>	1) None	1) None
Building completion and finishing work (CPC 517)	2) None 3) None	2) None 3) None
4) Unbound except as indicated in the horizontal section	4) Unbound except as indicated in the horizontal section	4) Unbound except as indicated in the horizontal section
E*. <u>Other</u>	1) None, other than: <u>Cabotage</u> (See Transportation Section)	1) None
Prerection work at construction sites, including excavation, earthmoving and site work except 5115, site preparation for mining (CPC 511*)	2) None 3) None	2) None 3) None
Special trade construction work (CPC 515)	4) Unbound except as indicated in the horizontal section	4) Unbound except as indicated in the horizontal section
Renting services related to equipment for construction or demolition of buildings or civil engineering works, with operator (CPC 518)		

Modes of Supply:

- 2 Cross-border
- 3 Consumption Abroad
- 4 Commercial presence
- 5 Presence of Natural Persons

Appendix II

Selected GATS Provisions Pertaining to Electricity

Market Access

The GATS market access principle, contained in Article XVI, establishes the objective of progressively eliminating a set of six specific types of limitations to market access. These are:

- a) limitations on the number of service suppliers whether in the form of numerical quotas, monopolies, exclusive service suppliers or the requirements of an economic needs test;
- b) limitations on the total value of service transactions or assets in the form of numerical quotas or the requirement of an economic needs test;
- c) limitations on the total number of service operations or on the total quantity of service output expressed in terms of designated numerical units in the form of quotas or the requirement of an economic needs test;
- d) limitations on the total number of natural persons that may be employed in a particular service sector or that a service supplier may employ and who are necessary for, and directly related to, the supply of a specific service in the form of numerical quotas or the requirement of an economic needs test;
- e) measures which restrict or require specific types of legal entity or joint venture through which a service supplier may supply a service; and
- f) limitations on the participation of foreign capital in terms of maximum percentage limit on foreign share-holding or the total value of individual or aggregate foreign investment.

Nondiscrimination

The GATS principles concerning nondiscrimination are contained in Articles II and XVII. Article II provides for most-favored-nation treatment (MFN), through which WTO members commit to accord to services and service suppliers of any other member treatment no less favorable than that accorded to like services and service suppliers of any other country. Members must adhere to MFN principles except in those areas in which they have listed exemptions. Article XVII provides for national treatment, which is described as treatment no less favorable than that accorded to domestic services and service suppliers. National treatment applies to the extent a member has committed to it on its schedule of specific commitments.

Transparency GATS transparency obligations are contained in Article III, which requires:

- Prompt publication of relevant measures of general application;
- Notification to the WTO of significant changes in laws, regulations, or administrative guidelines with significant bearing on services trade;
- Establishment of enquiry points for use by other WTO members;
- Prompt responses to information requests from other WTO members.

Domestic Regulation GATS domestic regulation obligations, as contained in Article VI, require WTO members to:

- Avoid using regulatory powers in such a way as to create services trade barriers;

- Ensure that measures of general application are administered in a reasonable, objective, and impartial manner;
- For sectors in which specific commitments are undertaken regarding market access or national treatment, ensure that licensing and qualification requirements or technical standards (1) are based on objective and transparent criteria, (2) are not more burdensome than necessary, and (3) in the case of licensing procedures, are not in themselves a restriction on the supply of the service.

Monopolies and Exclusive Suppliers

Article VIII of the GATS asserts that WTO members should ensure that, in cases where a monopoly supplier competes in supplying a service outside the scope of its monopoly rights, such a supplier does not abuse its monopoly position in a manner that limits market access or national treatment.

Additional Commitments

Under Article XVIII, the GATS also provides for the negotiation of additional commitments to

address measures affecting trade in services that are not covered by the market access and national treatment provisions. Negotiation of such commitments strengthened the WTO Agreement on Basic Telecommunications by ensuring that market access commitments would not be undercut by anticompetitive practices. These additional commitments required signatories to:

- prevent cross-subsidization and misuse of bid information;
- implement interconnection rules that favor competition;
- maintain non-discrimination and transparency in the implementation of universal service obligations, implement policies to ensure the transparency or public availability of licensing;
- maintain the independence of regulators from any market competitors;
- ensure non-discrimination in the allocation of scarce resources such as band width.

Source: World Trade Organization, General Agreement on Trade in Services, USITC, Electric Power Services; Recent Reforms in Selected Foreign Markets, November 2000, Publication 3370, pp. 212-214.

Appendix III

Electrical Units of Measurement

Watt: It is the rate of energy transfer equivalent to 1 ampere flowing under a pressure of 1 volt

Watthour (Wh): An electrical energy unit of measure equal to 1 watt of power supplied to, or taken from, an electric circuit steadily for 1 hour.

Voltage: The electrical force that causes a current to flow in a circuit (an analogy is pressure that forces water through a pipe). Voltage is measured in volts (V) or kilovolts (kV).

Kilovolt: One thousand volts.

Kilowatt (kW): One thousand watts. (ten 100W lightbulbs burning for one hour)

Kilowatthour (kWh): One thousand watthours.

Megawatt (MW): One million watts. (or 1,000 kWh)

Megawatthour (MWh): One million watthours.

Gigawatt (GW): One billion watts.

Gigawatthour (GWh): One billion watthours.

Terawatt (TW): One trillion watts

Terawatthour (TWh): One trillion watthours

Appendix IV

Glossary of Electricity Industry

Access Charge: A fee levied for access to a utility's transmission or distribution system.

Aggregator: An entity in a deregulated market that brings together customers into a buying group for the purchase of a product or service. Public utilities perform this function in today's regulated markets.

Captive Customer: A customer who does not have realistic alternatives to buying power from the local utility even if that customer had the legal right to buy from competitors - generally considered to be residential and small commercial customers.

Capacity: The amount of electric power delivered or required for which a generator, turbine, transformer, transmission circuit, station, or system is rated by the manufacturer.

Cogenerator: A generating facility that produces electricity and another form of useful thermal energy (such as heat or steam), used for industrial, commercial, heating, or cooling purposes.

Combined Cycle: An electric generating technology in which electricity is produced from otherwise lost waste heat exiting from one or more gas (combustion) turbines. The exiting heat is routed to a conventional boiler or to a heat recovery steam generator for utilization by a steam turbine in the production of electricity. This process increases the efficiency of the electric generating unit.

Demand-Side Management: The planning, implementation, and monitoring of utility activities designed to encourage consumers to modify

patterns of electricity usage, including the timing and level of electricity demand. It is usually pursued so that utilities do not have to build more generation capacity.

Direct Access: The ability of a retail customer to purchase electricity directly from the wholesale market rather than through a local distribution utility.

Distribution: The portion of an electric system that receives high voltage energy from the transmission system and shapes it so that it can then deliver it to customers such as households and small businesses through low voltage lines.

Electrical Energy: the amount of electrical power produced per second.

FERC (Federal Energy Regulatory Agency): The U.S. Federal Agency that has jurisdiction over interstate electricity sales, wholesale electric rates, hydroelectric licensing, natural gas pricing, oil pipeline rates, and gas pipeline certification. It oversees the nation's utility industry by regulating the conditions of power sold in interstate commerce and regulates the conditions of all transmission services.

Firm Power: Power capacity intended to be available at all times during the period covered by a guaranteed commitment to deliver, even under adverse conditions.

Fossil Fuel: Any naturally occurring organic fuel, such as petroleum, coal, and natural gas

Generating Unit: Any combination of physically connected generator(s), reactor(s), boiler(s),

combustion turbine(s), or other prime mover(s) operated together to produce electric power.

Generation (Electricity): The process of producing electric energy by transforming other forms of energy; also, the amount of electric energy produced, expressed in watthours (Wh).

Geothermal Plant: A plant in which the prime mover is a steam turbine. The turbine is driven either by steam produced from hot water or by natural steam that derives its energy from heat found in rocks or fluids at various depths beneath the surface of the earth. Drilling and/or pumping extract the energy.

Grid: The layout of an electrical distribution system

Hydroelectric power: Power produced by using the power of fast flowing water to turn the shaft of a generator. Hydroelectric power stations are located near dams or on large rivers.

Interruptible power: Refers to contractual arrangements that permit a customer's load to be interrupted at the option of the supplier when power is needed elsewhere. Interruptible power is usually cheaper than firm power.

Independent Systems Operator (ISO): A neutral operator in a deregulated market responsible for maintaining instantaneous balance of the grid system in a deregulated system. The IGO performs its function by controlling the operation of the transmission system and enough generation capacity to ensure short-term reliability.

Investor-owned utility (IOU): A for-profit company owned by stockholders that provides utility services. TransAlta is an IOU.

Marketer or Power Marketer or Power Trader: A marketer would normally represent the interests of the generator for selling electricity on the

market. However, with the introduction of spot markets, the trader buys electricity where the price is relatively low and sells to places where it is more expensive.

Non-Firm Power: Power or power-producing capacity supplied or available under a commitment having limited or no assured availability.

Nonutility Power Producer: A corporation that owns electric generating capacity and is not an electric utility. Nonutility power producers include cogenerators (such as mining companies), small power producers, and other nonutility generators including independent power producers without a designated franchised service area. Frequently in a regulated market the nonutility producers sell power to the utility.

Power: The rate at which energy is transferred. Electrical energy is usually measured in watts. Also used for a measurement of capacity.

Power Pool: An association of two or more interconnected electric systems having an agreement to coordinate operations and planning for improved reliability and efficiencies.

Obligation to Serve: Obligation to provide electrical service to all customers who seek that service at fair and reasonable prices in exchange for the monopoly status of a utility to serve in a designated service territory.

Provider of Last Resort: A legal obligation to provide services to a customer where competitors have decided they do not want that customer's business.

Retail Wheeling: The sale of electricity by a utility or other supplier to a consumer in another utility's retail territory. Refers to the use of the local utility's transmission and distribution lines to deliver the power from a wholesale supplier to a retail customer by a third party.

Regional Transmission Organizations (RTOs) In a deregulated market the RTOs are responsible for the operation of regional wholesale markets by organizing power transactions for participants on spot markets on an hourly or daily basis. RTOs include U.S. and Canadian corporations.

Retail: Sales covering electrical energy supplied for residential, commercial, and industrial end-use purposes. Other small classes, such as agriculture and street lighting, also are included in this category.

Standard Industrial Classification (SIC): A set of codes developed by the Office of Management and Budget, which categorizes business into groups with similar economic activities.

Standby Service: Support service that is available, as needed, to supplement a consumer, a utility system, or to another utility if a schedule or an agreement authorizes the transaction. The service is not regularly used.

Storage: Reservoirs for storing water in hydroelectric systems provide important leverage for utilities that buy power for use when prices are low and use stored power for the electricity trade when prices rise. The ability for power traders to have access to the storage facilities is an important "trade liberalization" and deregulation issue.

Stranded Costs: May be thought of as the amount of book value above market value of a utility's assets. These costs may include federally mandated contracts, the cost of pre-existing debt or assets that are not competitive in the deregulated environment.

Tariff: A document, approved by the responsible regulatory agency, listing the terms and conditions, including a schedule of prices, under which utility services will be provided.

Thermal generation: Electrical generation related to burning fossil fuels or other combustible materials.

Transmission: transportation of electricity from generators to distribution systems and large industrial consumers through high voltage lines.

Unbundling: The separation of a vertically integrated utility into its major component parts, generation, transmission, and distribution. Unbundled rates price the various components of electricity service separately. For example, a consumer's bill might have separate components for electricity, transmission, distribution, efficiency services, and various other related services.

Utility: a large natural monopoly, either publicly or privately owned, providing an essential service through a system that regulates pricing, supply and distribution.

Vertical Integration: An arrangement whereby the same company owns all the different aspects of making, selling and delivering a product or service. In the electric industry, it refers to a utility's ownership of generating plants, the transmission system, distribution lines, and all customer service activities.

Wheeling: The use of the transmission facilities of one utility to transmit power for another utility or power producer. Wholesale wheeling is used to indicate bulk transactions in the wholesale market, whereas retail wheeling allows power producers direct access to retail customers. The term is often used to mean transmission.

Wholesale Sales: Energy supplied to other electric utilities, cooperatives, municipals, and Federal and State electric agencies for resale to ultimate consumers.

Appendix V

Acronyms

APEC
Asia-Pacific Economic Cooperation

BCUC
British Columbia Utilities Commission

CCGTs
combined-cycle gas turbines

ECT
Energy Charter Treaty

EU
European Union

FERC
U.S. Federal Energy Regulatory Commission

FAT
Canada-U.S. Free Trade Agreement

FTAA
Free Trade Area of the Americas

GATT
General Agreement on Tariffs and Trade

GATS
General Agreement on Trade in Services

IMF
International Monetary Fund

IMO
independent electricity market operator

IPPs
independent power producers

MAPP
Mid-Continent Area Power Pool

MEUs
municipal electric utilities

MFN
most-favoured nation trade rule

NAFTA
North American Free Trade Agreement

NEB
Canada National Energy Board

NSPI
Nova Scotia Power, Inc.

OEFC
Ontario Electricity Financial Corporation

OPG
Ontario Power Generation, Inc.

OECD
Organization for Economic Cooperation and Development

UNCPC
United Nations Provisional Central Product Classification

UTARB
Nova Scotia Utility and Review Board

WTO
World Trade Organization

