REPOWERING ELECTRICITY? THE POLITICAL ECONOMY OF CO-OPERATIVES IN A NEOLIBERAL CANADA

by

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THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

in the
Department of Political Science
Faculty of Arts and Social Sciences

SIMON FRASER UNIVERSITY

Spring 2012

APPROVAL

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Degree: **Doctor of Philosophy**

Title of Thesis: **Repowering Electricity? The Political Economy of Co-operatives in a Neoliberal Canada**

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ABSTRACT

Neoliberal governance is setting the context for a revitalization of co-operative development in Canada as provinces retreat from services provided and developed in the welfare-state era. Governments are opening provincial electricity markets to private actors, particularly for new generation from renewable sources: wind, solar and run-of-river hydro. This power sector restructuring has implications for democratic control, economic development, and environmental sustainability in Canada. Some actors hope that neoliberal restructuring will lead to smaller, renewable and more locally based power systems. Others are concerned restructuring shifts power away from public utilities developed in the post-war era to large private actors, with community groups playing a marginal and sometimes legitimating role. This thesis explores the development and potential of electricity co-operatives in Canada as they relate to larger debates over sustainability and power sector ownership. With climate change looming large, the issue of electricity co-operative potential is both theoretically and empirically significant. Co-operatives are unique actors in the power sector with a long history in distribution. They distribute voting power equally within their membership, work within a multiple bottom line framework, and help to reduce local opposition to proposed new projects by engaging the community and giving them a financial stake. I argue that while provincial restructuring has opened up space for co-operative enterprises as an alternate, more democratic and local form of independent power production, these organizations are significantly constrained in practice by broader moves towards continentalism, private ownership and export of Canadian power to the United States.

Keywords: Co-operatives; renewable electricity; Canada; political economy; governance; neoliberalism

ACKNOWLEDGEMENTS

It is difficult to overstate my gratitude to the scholars, practitioners, friends, and family members who have shaped my intellectual life over the past five and a half years. While the writing was a solitary process, the project itself most certainly was not.

First and foremost, I could not have asked for a better committee. I have been extraordinarily blessed to have Marjorie Griffin Cohen as a senior supervisor and, indeed, a mentor. There isn't one aspect of my work that was not strengthened by our relationship; one that is both intellectually challenging and unfailingly supportive. Since my first meeting with Stephen McBride in September 2006, he has been a treasured discussion and debate partner for my thinking on Canadian political economy as well as a tireless editor of my funding applications. Genevieve Fuji Johnson, on a number of occasions over the years, provided thought-provoking and exceptionally detailed feedback on political theory as well as on the craft of research and writing. My research assistantship with her early on in my program shaped the methods used in this work. Each of my committee members also encouraged my interest in complex public policy issues of practical relevance to Canadian communities, as well as my desire to communicate this research beyond the academy.

My thesis defence was one of the most rewarding experiences of my career so far and the suggestions that arose in it to extend and deepen my analysis in the future set a rather exciting challenge for the years to come. For that I have to thank the overall examining committee, which included J.J. McMurtry and John Calvert. Their professionalism, attention to detail, and serious engagement with my work raised crucial and thorny issues concerning the intersection between co-operative development and broader questions of environmental justice and social theory.

These thorny issues, of course, are where the real intellectual excitement is, and this certainly revealed itself in the many interviews and discussions I conducted with co-operative and community development practitioners in my research area. Certainly, my work would not have been possible without the generosity of the almost one hundred people across the country who shared their experiences and sometimes even their homes with great forbearance and, sometimes, no little enthusiasm. For all of my interviewees, my sincere thanks for the work that you do, and for sharing your passions and projects with me (sometimes with many updates) over the course of my research.

My family have profoundly informed this research project and have my deepest thanks for the life they enable me to lead. They have reminded me on many occasions that human relationships are fraught with contradictions and challenges and that working through these is what gives social life its dynamism. Those insights I take with me in my academic endeavours, in both a practical and theoretical sense. My dear husband, Francis Kearney, contributes to my sanity and this work by adding a great deal of levity to my life and reminding me how important culture is to communication. My parents, Ed and Joni MacArthur, have and continue to inspire me; indeed, my first introduction to co-operatives was at home, while they were pursuing their many years of work in education and community economic development. Their influence certainly shapes my normative commitments today, together with the drive that my brother Ryan and I share to make a positive impact in our community.

Finally, I would also like to thank the many other people at SFU and beyond who have discussed, debated and taken an interest in my work over the years. First, my dear friends in the department who have been some of my most sympathetic cheerleaders, office-mates, travel and conference partners and much, much, more: Heather Whiteside, Rina Kashyap, Joshua Newman, Sherri Brown, Robin-Marie Yerex, Patti Ryan, Sima Joshi-Koop, Andrea Migone, Scott MacLeod, Stephen Elliott-Buckley, Dina Dexter, and Kyall Glennie. There are also the many other people on the department faculty and staff including, but certainly not limited to: Alison Ayers,

Sandra MacLean, David Laycock, Andy Hira, Michael Howlett, and Lynda Erickson. My work with the B.C. Alberta Social Economy Research Alliance provided both intellectual and financial nourishment, so thank you to Stuart Wulff, Lena Soots, Mike Lewis, Mike Gismondi, Noel Keough and Paul Cabaj, among many others. The financial support of a number of other organizations was also extremely helpful to my timely completion: the Social Sciences and Humanities Research Council, the Canadian Federation of University Women, and Simon Fraser University.

My sincerest thanks to you all for helping me take this extraordinary journey.

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GLOSSARY

Capacity	The amount of power a given electricity system can sustain. When referring to generation facilities, nameplate capacity refers to the maximum amount of power under ideal conditions that the technology can generate.
Capacity Factor	The difference, expressed in per cent, between the nameplate capacity of a generation source and the actual electricity produced given variable external conditions. These include, for example, resource variability in wind, solar and hydraulic conditions. Wind turbines operate at a capacity factor somewhere in the range of 25–45 per cent.
Co-operative	A flexible organizational form that is owned and managed by its membership. A co-operative can be structured as non-profit or for-profit, and around a variety of member groups: workers, consumers, producers, or a variety of stakeholders.
Co-operative Difference	The ways, both material and ideational, in which co-operatives are thought to be different from private, investor-owned businesses. These include: democratic control through a one member one vote structure, prioritization of member needs over profitability, voluntary and open membership, and the international statement of co-operative principles.
Community Power	Electricity generation projects that are owned and controlled by First Nations, farmers, small businesses, non-profits, co-operatives and sometimes municipalities.
Communitywashing	Misleading claims of the local participatory benefits of a product, policy or activity made in order to gain greater public acceptance. See also: greenwashing.
Deep Ecology	Also known as deep or radical green. This perspective in the environmental literature rejects anthropocentrism. Deep greens advocate significant structural change

	(economic, social, technological, spiritual) in human societies and take issue with the current focus on economic growth and individual responsibility in promoting environmental sustainability.
Double Movement	Concept developed by Karl Polanyi to describe the reassertion of social control over market forces via protective legislation or restrictive associations.
Eco-localism	The view that environmental sustainability is best advanced by local self-reliant economic communities. Social economy advocates interested in environmental sustainability are often eco-locals.
Electricity Restructuring	A process whereby integrated electricity systems, once thought to be natural monopolies, are broken up into generation, distribution, transmission and retail components. Private actors play a larger role in restructured systems either through outright privatization of formerly public utility assets or dominating new areas, like renewable power generation. Power markets (pools) are also sometimes created.
Electricity Units	The standard unit of electricity is the kilowatt hour (kWh), which is equal to a thousand watts expended in one hour. From there, the units increase as follows: megawatt hour, gigawatt hour and terawatt hour. The average Canadian home consumes 1,500 kWh per month. The number of homes powered by one MW depends on the power source and level of consumption, and can range from 300 to 1,000 homes. See: capacity factor.
Empowered Participatory Governance	A model of governance attempting to deepen democracy put forward by Archon Fung and Eric Olin Wright. It advocates participatory socio-economic processes of local ownership, deliberation and empowerment in order to enhance both normative goals of distributive justice and positive ones of effective resilience and complex problem solving.
Feed in Tariff	A set price paid to generators for selling electricity. A popular policy tool to stimulate new renewable electricity generation as the prices paid include a guaranteed return. The tariff can be structured to differentiate between

	various technologies, actors, and/or locales.
Feedback Loop	In the literature on sustainability a feedback loop refers to eco-social links (often geographically based) that produce informational flows needed for systems assessment, re-assessment, and adaptations.
Governance	The complex of actors and processes of power at multiple levels beneath, within, between and above states, whether public or private. Governance structures authority, decision making, and accountability.
Greenwashing	Misleading claims of the environmental benefits of a product, policy or activity, made in order to gain greater public acceptance.
Independent Power Producer	A non-utility generator of power that sells power to utilities for transmission to end-users. A range of actors may own these facilities: investor-owned companies, co-operatives, municipalities, or First Nations.
Neoliberalism	The ideology of socio-economic governance premised on: a reliance on market-based resource allocation, the rollback of state expenditure on public services, privatization, and deregulation
Renewable electricity	Electricity generated from renewable sources like wind, solar and hydro as opposed to fossil fuel based (non-renewable) generation. Significant differences in how renewable is defined exist between various jurisdictions.
Renewable Portfolio Standard	A regulatory obligation for utilities to secure a given percentage of their power from renewable sources.
Set Aside	A renewable generation policy tool that allocates a portion of either grid capacity or procurement of power to a specific actor or technology.
Social Ecology	A perspective in green political theory that locates the roots of ecological problems in social and economic structures of hierarchy and capitalism. Social greens are critical of deep ecology's lack of attention to issues of justice and distribution. They are also critical of mainstream society's domination of nature and seek to find

	a balance between anthropocentrism and ecocentrism.
Social Economy	A broad sector between the public and the private that incorporates: co-operatives, credit unions, mutuals and non-profits. Social economy organizations often prioritize and incorporate social (and/or environmental) goals as well as those of profit. Sometimes referred to as the third sector.
Social Enterprise	Businesses structured to generate income in order to meet social or environmental goals.
Solidarity Economy	A part of the social economy wherein organizations are explicitly connected to promoting social and economic justice. The definition is still being developed, but generally includes a specific concern for issues of labour and social justice.
Sustainability	Most commonly understood in environmental terms as the capacity to meet the needs of the present without compromising the needs of the future. The concept is generally understood to require the reconciliation of three pillars: environmental, economic and social equity.

LIST OF ACRONYMS

AFREA	Alberta Federation of Rural Electrification Associations
AGP	Agreement on Government Procurement
BCSEA	British Columbia Sustainable Energy Association
BCTC	British Columbia Transmission Corporation
CANWEA	Canadian Wind Energy Association
CAREA	Central Alberta Rural Electrification Association
CCA	Canadian Co-operative Association
CCCM	Conseil Canadien de la Coopération et de la Mutualité
CCRL	Consumers' Co-operative Refineries Limited
CEDIF	Community Economic Development Investment Funds
CEA	Canadian Electricity Association
CEP	Community Energy Policy
CEPP	Community Energy Partnerships Program
COMFIT	Community Feed-in Tariff
CPF	Community Power Fund
EPG	Empowered Participatory Governance
FCL	Federated Co-operatives Limited
FERC	Federal Electricity Regulatory Commission

FIT	Feed-in Tariff
GWh	Gigawatt-hour
ICA	International Co-operative Alliance
IEA	International Energy Agency
IOU	Investor Owned Utility
IPL	International Power Line
IPP	Independent Power Producer
ISO	Independent System Operator
IUP	Investigative Use Permit
kWh	Kilowatt-hour
LDC	Local Distribution Company
LREC	Laméque Renewable Energy Co-operative
MAI	Multilateral Agreement on Investment
MEHQ	Marketing d'Énergie Hydro Québec Inc.
MWh	Megawatt-hour
NAFTA	North American Free Trade Agreement
NEB	National Energy Board
NERC	North American Electric Reliability Corporation
NIMBY	Not in my backyard
NovSEA	Nova Scotia Sustainable Energy Association
NSP	Nova Scotia Power
OATT	Open Access Transmission Tariff

OSEA	Ontario Sustainable Energy Association
PEC	Peace Energy Co-operative
PURPA	Public Utilities Regulatory Policies Act
REA	Rural Electrification Association
RESOP	Renewable Energy Standard Offer Program
RFP	Request for Proposals
RPS	Renewable Portfolio Standard
RRO	Regulated Rate Option
TREC	Toronto Renewable Energy Co-operative
TWh	Terawatt-hour
WWEA	World Wind Energy Association

1 INTRODUCTION

What do the core institutions of a just and sustainable energy economy look like? Provincial governments are restructuring electricity systems in order to increase participation by private companies, particularly for new renewable generation. However, the social, economic and environmental outcomes of investor-owned corporate control continue to be challenged by a range of scholars (Beder, 2003; Cohen and Calvert, 2011; Dubash and Williams, 2006; Slocum, 2001). This is, in part, because profit-based incentive structures and lack of local participatory engagement in governance lead to socially and environmentally damaging outcomes (Princen, 2002; Colin Williams, 2005; Chris Williams, 2010; Wright, 2010a). However, a more democratic, participatory and sustainable institutional alternative may be emerging in this sector through the unique ownership structure and priorities of co-operative (co-op) firms. The significance of co-operative development rests on normative accounts of democracy that seek to both broaden and deepen citizens' control over their lives, and also a critique of liberal democracy's close connection with capitalism (Macpherson 1974, 1977; Wood 1995). Substantive democracy, in this view, requires a broadening from formal political, into economic and environmental institutions (Adkin, 2009; Wood, 1995). It also includes deepening democracy (Fung and Wright, 2003; Pateman, 1988; Wright, 2010) via promotion of institutions that enhance both participation and deliberation.

More than 119 electricity co-operatives are operating or near operation across nine Canadian provinces in 2012. These organizations generate electricity, manage local distribution systems, and provide energy retail and education services. Co-operatives, as social enterprises, are private firms distinguished from

conventional shareholder owned corporations by a (relatively) democratic[1] corporate structure, and subscription to a set of seven core principles loosely corresponding to the popular slogan 'people before profit'. The structure is more democratic than shareholder-owned firms in the sense that the co-operative's owners are also project stakeholders (either service users or producers). Together, these factors form what co-operative theorists and practitioners refer to as the "co-operative difference" (Gossen, 1975; MacPherson 2008)[2]. The seven principles are set out by the International Co-operative Alliance. These are: 1) voluntary and open membership, 2) democratic control, 3) economic participation, 4) autonomy and independence, 5) local education and training, 6) co-operation among co-operatives and 7) concern for community (International Co-operative Alliance, 2010b). As far back as 1848, John Stuart Mill argued the benefits of co-operative ownership in his *Principles of Political Economy:*

> The form of association…which if mankind continues to improve, must be expected in the end to predominate, is not that which can exist with capitalist as chief, and workpeople without a voice in the management, but the association of the labourers themselves on terms of equality, collectively owning capital with which they carry on their operations, working under managers elected and removable by themselves.

Co-ops operate across a wide range of socio-economic sectors, from housing and finance to agriculture and energy, and seek to meet the needs of their members through a variety of mechanisms: direct production, bulk purchasing, direct service provision, education and skill development, and facilitating access to capital. They also represent an implicit critique of the for-profit capitalist system's ability to meet local needs, and of the more hierarchical organization of the mainstream economy (MacPherson, 2009; McMurtry 2010; Quarter, 1992;).

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[1] There are, of course, many conceptualizations of what makes an organization, or a society, for that matter, democratic. While a full exploration of these nuances of democratic theory is beyond the scope of this thesis a number of useful explorations of 'deepening' democracy have informed this work: participatory (Fung and Wright, 2003), discursive (Dryzek, 1994), deliberative (Gutmann and Thompson, 1996; Johnson, 2008), economic (Wood, 1995).

[2] The purchase of this difference in practice, together with some of the complexities that arise from idealizing the importance of the 'local' is addressed further in section 1.2 and again in chapter 3.

Electricity co-operatives are re-emerging[3] in Canada in the midst of great change in the power sector. Restructuring of provincial electricity sectors is occurring, I argue, due to three key drivers[4]. The first is the influence of pro-market reforms on the public ownership of electricity production in Canada. These reforms are part of a broader international project of politico-economic restructuring that draws heavily from both neo-classical and Austrian economic thought—referred to in this thesis as neoliberalism[5]. Provincial reforms have resulted in the privatization of new energy production and some aspects of traditional government-owned utilities. The second driver, deeply related to the first, is the expansion of continental power grids that facilitate generation for export and are regulated by U.S.-based bodies like the Federal Electricity Regulatory Commission (FERC) and the North American Electric Reliability Corporation (NERC). The third driver is the rise of environmental issues as a focus for government action and the resulting move towards new renewable electricity generation (or 'green power'). These three are not easily separable and their coincidence has allowed the green power movement to be appropriated by private actors in order to make inroads into territory formerly the realm of crown corporations. These interrelated, albeit distinct, forces have opened up space for co-operatives in ways that were not available over the past half-century, when provincial electricity regimes were, for the most part, controlled by vertically integrated crown corporations.

It is thus in a neoliberal context—fraught with contradictions and challenges—that space is being created for electricity co-operatives to develop. The potential contribution of co-operatives in the electricity sector rests on understanding empirically why, how, where, and with what success these organizations arise. Despite the potential of the co-operative difference to mitigate

[3] During the 1940s and 1950s rural electrification co-operatives developed in Alberta and Québec to extend power lines to rural towns and farms.

[4] These three drivers are addressed in detail in chapters 4 and 5 of this thesis.

[5] The definition of the term neoliberal, together with its conceptual utility, is contested. For example, Boas and Gans-Morse (2000) point out how infrequently the term is defined, how normatively charged it is, together with the breadth of diverse principles and practices it covers. Others, like Peck (2010) as well as Harvey (2005) have developed a sophisticated understanding of both the core principles of neoliberal theory and the diverse mechanisms of its implementation in practice.

some of the effects of neoliberal restructuring in this sector, co-ops' broader systemic contribution requires careful empirical assessment. In terms of both electricity assets and access to finance, co-operatives often lack the ability to compete with private sector developers. A further limitation is that, in practice, the degree of democratic control of the organization varies a great deal from co-operative to co-operative. In addition, "local" and "community" are sometimes idealized in the literature on co-operatives and environmental sustainability in ways that don't always hold up under empirical (or theoretical) scrutiny (Carter, 1996; Lionais and Johnstone, 2010). Whether these electricity co-operatives form the kind of alternative in practice they do in theory is, however, important for the development of sustainable electricity futures in Canada.

In this thesis, I examine the extent to which electricity co-operatives represent a more locally embedded and democratic organizational form in the electricity sector. These two criteria are important because they represent a significant institutional divergence from both investor-owned corporate control and highly centralized crown corporations. Moreover, theorists of participatory governance—and more recently the social economy—have argued that empowering local citizens and democratizing economic institutions can lead to both improved environmental (Ostrom, 1990) and social justice outcomes (Fung and Wright, 2002)[6]. If electricity co-operatives do provide an improved alternative, their practical strength is contingent on an ability both to succeed within and transform neoliberal institutions and norms. Transformational change may, for example, vary based on development in specific settings (urban or rural), provinces, or business areas (such as generation or distribution) or on the specific motivations of key actors in their start-up phase and their willingness to take on broader issues of environmental justice. There is no need for a "one size fits all" model of change (McMurtry, 2010; Wright 2010). Developing an understanding of which characteristics strengthen the ability of co-operatives to respond to social and

[6] These arguments are explored further in section 1.1 of this chapter, and in chapters 2 and 3 of this thesis.

environmental challenges in the electricity sector is thus a key contribution of my work. Co-operatives are well positioned to help particular communities with particular challenges, but in a sector like electricity, there is little to suggest they will play more than a marginal role until they are able to link their efforts to broader political struggles within a global justice movement.

In the following sections of this chapter I outline the basic shape of the thesis, starting with the changing forces in Canadian political economy that provoke the emergence of electricity co-operatives. I outline how neoliberal developments have shaped restructuring in the electricity sector, and how these changes are culminating in extreme contradictions in our ability to understand (and move toward) a truly sustainable electricity future. The latter two sections of this chapter introduce the potential of, and debates surrounding, the co-operative as an alternative. In particular, I highlight the danger in over-generalizing the co-operative potential without adequate understanding of sectoral particularities.

1.1 Electricity Co-operatives in Canada: Why Now?

Development of co-operatives in the electricity sector is provoked, in part, by an interrelated set of social, economic and environmental challenges—a triple crisis—confronting citizens around the world[7]. The triple crisis is an empirical description of mutually reinforcing linkages between ecosystem breakdown, democratic disempowerment, and a capitalist economic system reliant on limitless growth (Daly, 1996; Johnston et al., 2006b; Kovel, 2007; Panitch and Leys, 2006). In practical terms, the triple crisis means that addressing the issue of persistent poverty requires enhancing participation and empowerment, and that dealing with environmental degradation requires more equitable distribution of political and economic power. For Sen (1999), this is because exploitation of both human and natural resources erodes the capabilities of citizens and hence their effectiveness in responding to complex challenges. Analyses of issues of ownership, participation

[7] It is, of course, important to note that not all states, or citizens within a state, are affected equally by these crises (Johnston et al., 2006).

and power in any sustainable transition are thus crucial (Albert, 2003; Burkett, 2006; Faber, 2008; Johnston et al., 2006a). Co-operatives have historically arisen in response to crises and in some cases have also demonstrated effective mechanisms for community development, empowerment and economic democracy (MacPherson, 2009).

Global climate change is one manifestation of the triple crisis. Current patterns of production and consumption are dependent on fossil fuel based energy that provides a high Energy Return on Investment (EROI) but also correspondingly high greenhouse gas (GHG) emissions (Homer-Dixon, 2009). These patterns are a direct result of a system structured around profit maximization rather than human or ecological necessity (Stiglitz et al., 2009). Additionally, severe informational asymmetries obscure the real costs of production and consumption. It is unlikely that these asymmetries will self-correct because social and environmental costs are externalized to geographically disparate communities across the globe, often ones with poor political representation and less economic power. This imbalance severs crucial eco-social feedback loops[8] that could (and should) mitigate self-destructive practices, further reinforcing the triple crisis (Ostrom, 1990; Princen et al., 2002).

In the Canadian energy sector in particular these interrelationships between environmental degradation and concentration of political and economic power are clear. Energy forms one of the foundations of our economic security, and management of resources in this sector needs to form a key pillar in the fight against global climate change. Canada is an energy-rich country and one of the largest producers and exporters of oil, natural gas, coal, uranium and hydroelectricity in the world (Natural Resources Canada, 2008). Canada thus has both an ethical responsibility and the resource capacity to address climate change, with some of the highest per capita GHG and carbon dioxide (CO2) emissions in the world (Homer-

[8] In the literature on sustainability a feedback loop refers to (often geographically based) eco-social links that produce informational flows needed for systems assessment, re-assessment and necessary adaptations. Feedback loops are severed when systems of social organization and governance are stretched across increasingly long distances and decision makers are separated (in both space and time) from affected users.

Dixon, 2007; Paehlke, 2008). However, policy responses have been slow and Canadian citizens are confronting record levels of income inequality and political disengagement (Pilon, 2001; United Nations, 2010). As Gary Teeple argues, this is in part because "the idea that politics determines national policies has gradually dissipated, and in its place has come the open assertion that economics is the deciding factor in more and more aspects of society" (Teeple, 1995: 3). The democratic legitimacy of traditional sites of collective action has been eroded through decades of policy shifts hollowing out state agencies and shifting power to market-based actors (McBride, 2005; Panitch, 2007). A key challenge is to identify institutions that are capable of mitigating these deeper systemic problems, particularly in sectors central to meeting basic human needs: food, shelter and energy.

The triple crisis in Canada has prompted a search for alternative sources of community power: power in the sense of electric power through greener sources, and power in the sense of more democratic and participatory institutions and forms of governance. Co-operatives are part of this broader community power sector, which includes a wide range of actors with diverse organizations and motivations attempting to develop new renewables. Reforming electricity generation, particularly via the development of renewables like wind, solar and tidal power in coal-reliant provinces (Alberta, Ontario, Saskatchewan, Nova Scotia), could play an important part in the transition to a more sustainable future. However, Canada's deep integration within a North American economy (through, for example, the North American Free Trade Agreement and the World Trade Organization), and an increase in private sector ownership of new electricity generation, are leading to an ever-increasing erosion of the public sector's share of generating assets. Without control of resources and methods and mechanisms of production more broadly, social and environmental externalities will continue to erode the security of citizens. The nature of the reforms taking place in the electricity sector in Canada is thus at odds with the holistic systemic overhaul required to deal with the triple crisis. Electricity co-operatives occupy a contradictory position in that they are both a

product of a desire for deep systemic change and a product of policies that deepen the crisis.

1.1.1 Canadian Electricity Sector Reform

Canada's electricity resources are vast and lucrative. Unlike oil, electricity remains primarily in the public sector in Canada (see chapter 4). This is changing however, as provinces are incrementally opening markets to private actors for new renewable (and supposedly greener) power generation. For the last 20 years, provincial and federal governments across the country have been steadily orienting away from nationalism and public control, and towards increased private ownership and continentalism (Calvert, 2007; CCPA et al., 2006; Cohen, 2007). These provincial changes are part of a broader project of neoliberal power sector restructuring around the world (Beder, 2003) wherein nearly 100 countries have privatized their electrical utilities since the 1990s, many through pressure from international financial institutions. In Canada, these developments are taking place in unique (often piecemeal) ways when compared with other states, since many provincial power sectors are still structured around public and often hydro-based utilities. These trends shape both Canada's distribution of wealth and its citizens' ability to address the pressing and interrelated social, economic and environmental challenges confronting the country. Chapters 4 and 5 of this thesis explore these international and domestic processes in more detail.

The current push to increase private sector access to the remaining public aspects of electricity in Canada exists despite the growing recognition of the costs of privatization and deregulation of resources elsewhere (Calvert, 2007; Cohen, 2006b; Doern and Gattinger, 2003). Provinces are ceding public control of critical new assets, and are increasingly reduced to being consumers of rather than stakeholders in their own resources (Hampton, 2003). Some provinces have chosen to restructure more than others. For example, Ontario (in 2002) and Alberta (in 1996) deregulated their electricity markets, while British Columbia is in the process

of shifting new renewable generation (small hydro and wind) to the private sector (Barton et al., 2006; Calvert, 2007).

Those arguing for electricity market restructuring tend to do so on the basis that governments are inefficient, cash-poor, slow to respond to market provisions, captured by private interests, or fail to provide consumer choice (J. A. Anderson, 2009; Howe and Klassen, 1996; International Energy Agency, 2005). In this view, increased competition through privatization may drive prices down (an argument prevalent in the 1990s) and allow for greater variety of generation sources (a more recent justification). There is significant debate over the effect that electricity market restructuring will have on the development of renewable electricity. At issue here are two things. The first is the benefits in terms of cost and efficiency of private sector generation and competition. The second is the definition of green. What the empirical evidence in restructured markets suggests is that the consumers in these restructured systems face black-outs and higher prices (Beder, 2003), large companies dominate and manipulate markets in their favour (Enron, most famously) and the small, green initiatives envisioned by environmental (and co-operative) advocates have a difficult if not impossible time of getting on the grid (Walker, 2008).

Many environmental groups support the restructuring of the electricity sector in the hope that new sources will be greener (Rifkin, 2002; Sheer, 2007) and will lead to a form of distributed generation (Walker, 2008), thus breaking the concentration of power in centralized utilities (and, by extension, the nuclear industry). Herman Sheer (2007), for example, argues that, "The distributed and local nature of RE also enables new (and non-traditional) actors to enter the energy market, giving individual homeowners, farmers, community groups and small businesses the chance to participate in a sector dominated by large corporations. This encourages competition, innovation and self-reliance" (cited in Lipp, 2008b: 1). Actors in the social economy and co-operative sector have also joined in support of distributed generation (Elliott, 1997). While it is indeed true that new technologies open up the possibility of an alternative energy future, there is no reason that

increasing the proportion of renewable sources will lead to distributed generation[9], a problem I deal with in more detail in chapter 4 of this thesis.

What is often lost in this discussion over greening Canadian electricity via private sector development is that hydroelectricity, while not without its critics, was highly developed by public (not private) utilities and makes up more than 60 per cent of Canadian generation by source[10]. Furthermore, the lion's share of the electricity generation GHG emissions in Canada come from fossil fuel reliant provinces. While this certainly does not mean that a shift to renewables is unimportant, it does signify that the idea that public electricity production is somehow not green is problematic. In Canada provinces with more private ownership, like Nova Scotia and Alberta, have the heaviest reliance on carbon-based fuels.

There are, of course, deep-seated reasons why electricity restructuring is taking place, and at this historic juncture, that are not based in environmentalism. First and foremost, ideological commitments of elected officials have, in some cases, directly legislated, private sector involvement in the electricity industry (for example in British Columbia, Ontario and Nova Scotia). These moves came after years of the private actors being shut out of this profitable sector in Canada. Private firms have lobbied heavily to create and then access power markets. Consequently, attempts to green electricity that lack a broader understanding of political economy risk a political naïveté that, ultimately, undermines progress towards deep sustainability.

[9] Distributed generation (DG) is an electricity sector structure—also known as embedded generation or decentralized generation—wherein generation of power is dispersed through the power system often with small facilities operating at the local level rather than concentrated in a few large generation facilities.

[10] While private utilities were often the first to provide electricity, it was the public sector that developed and extended much of the electricity system across the country (Froshauer, 1999). Alberta was a notable exception here, as much of the rural electrification there took place by way of co-operatives rather than a crown corporation.

1.1.2 Neoliberal Governance

The ideological dominance of neoliberalism—defined here as an ideology of socio-economic governance premised on: a reliance on market allocation of resources, the rollback of state expenditure on public services, privatization and deregulation—in Canadian political economy has underwritten the policy shifts that enable electricity co-operative development. Jamie Peck and Adam Tickell, for example, illustrate how neoliberalism provides the "operating framework or 'ideological software' for competitive globalization, inspiring and imposing far-reaching programs of state restructuring and rescaling across a wide range of national and local contexts" (2002: 380). This software includes a powerful and now ubiquitous rhetoric that constructs a narrative of governance without government, and stresses the virtues of private competition, individual choice, and freedom from regulation, taxes and responsibility to a collective public good.

The strengthening of neoliberal ideology in Canada has led, among other things, to the increased marketization and commodification of key natural resources, from B.C.'s rivers to windy coastal sites in Québec's Gaspésie (Byrne et al., 2006; Doern and Gattinger, 2003). This takes place, for example, via the restructuring of power sectors to facilitate private ownership of new renewable electricity generation. Ultimately, this represents a shift in the mode of socio-economic governance, wherein the normative ideals highlight the virtues and benefits of private sector growth and the policy practice cedes ownership, and command-and-control regulation in favour of voluntary, marketized and networked forms of governance. A complex pattern emerges, wherein the relative balance of costs and rents shifts to favour private accumulation over public control.

In light of the complex and often overlapping relationship between the public and private spheres, the lens of governance is conceptually useful. In it, the focus of analysis is placed on the interactions between the actors that regulate and hold power at multiple levels beneath, within, between and above states, whether public or private. Work on governance, and particularly processes and structures of neoliberal governance (Jessop, 1995; Larner and Craig, 2002; Peck and Tickell,

2002), opens up new sites for inquiry into actors and processes that fail to neatly divide along the private/market versus public/state dichotomy. For example, in many sectors actors on both sides work together through networked governance, epistemic communities, or even outright regulatory capture. The complex interplays covered within a governance frame are a useful addition to social economy and co-operative literatures, given that co-operatives are often placed outside (and between) the state and market when they are, in fact, permeated by both (McMurtry, 2010: 6–13). In chapter 2, I develop a conceptual framework for this thesis that draws on political economy theories of two contrasting modes of governance: neoliberal and empowered participatory. I also highlight how widely used conceptual silos—politics and economics, local and global, and social and environmental—serve to limit our capacity to respond to current challenges and so draw on theories that emphasize holism, historicism, and multiple sites for collective action.

Electricity sector restructuring has enabled generation co-operatives, as Independent Power Producers (IPPs), to sell community-based energy to the grid via standard contracts. The reality is that electricity co-ops in generation have only become possible as provincial governments open up electricity markets to private actors and energy trading. This raises interesting questions of how the actors in the co-op sector today view the shifting power in this sector, and the value of public ownership of utilities more generally. Co-ops in this area face not only the challenges of sustainability, visibility and support, but also competition with some of the most powerful corporations in the world. Whether and how they learn to overcome these challenges will provide an important test for any local electricity alternative.

Co-operative firms—individually and as a sector—can fit quite neatly within a system of neoliberal governance. These institutions are private actors anchored by normative values of self-help and entrepreneurialism, and reject explicit politicization. As a movement in Canada, co-operatives have historically distanced themselves from formal politics and government. They, instead, highlight the

important roles of local (and private) ownership and control. Furthermore, co-operatives are uniquely placed as locally owned businesses to act as supportive alternative service providers for basic housing, health and food needs that ameliorate the worst effects of state rollbacks in social services (Restakis and Lindquist 2001). This has the contradictory double effect of legitimating a discourse that private actors can handle these many important tasks while at the same time demonstrating that for-profit private actors abandon critical niches. Of course, despite the fact that co-operatives fit within this frame, most are far from equal participants in the competition in newly opened markets.

1.2 Co-operatives and Participatory Governance

Re-embedding enterprises locally is one way to reconnect environmental and social feedback loops to productive decision making. As illustrated above, doing so may be important in order to empower communities to address the complex challenges facing them in coming years. The electricity sector, however, has been incorporating more private actors, de-localizing, and generally failing in the development of greener alternatives[11]. Co-operatives, at least ideally, address many of the failings associated with conventional socio-economic systems. They are not as divorced from the real needs of Canadian communities and are, on the whole, organizationally more democratic. Indeed, co-operatives historically arose as local responses to the socio-economic dislocations caused by the industrial revolution (Fairbairn, 1990; Fairbairn and Russell, 2004). This organizational alternative is not without its own challenges, however, as the ideal co-operative and co-operatives in practice often diverge. In this section, and further in chapters 2 and 3, I outline the possibilities and challenges raised by Canadian co-operatives.

The co-operative movement was one of the world's first social movements and is resurgent today in many countries around the world (Curl, 2010). The United

[11] In many provinces new renewables like wind, small hydro and solar power form an increasing share of the generation mix. However, chapter five outlines these developments by province, but highlights the fact that, due to the private nature of these developments, export, and ever-increasing demand, they are not necessarily leading to a "green" future in a meaningful sense.

Nations recently declared 2012 the International Year of Co-operatives. Worldwide, over one billion people are members of co-operatives (International Co-operative Alliance, 2010a) and, according to the UN, over half the population of the planet is served significantly in some way by co-operatives (MacPherson, 2008: 640). Canada is no exception. As of 2007, one in four Canadians is a member of at least one co-operative (Co-operatives Secretariat, 2010a). Co-operatives have played and continue to play important roles in community development and service provision across this country, despite the fact that they form a largely forgotten chapter of Canadian economic education, conspicuously absent in business and economic texts (Kalmi, 2007; Restakis, 2010; Schugurensky and McCollum, 2010). This oversight is significant, since these organizations make contributions not only to the material welfare of Canadians, but also to providing an institutional alternative rooted in norms that challenge neoliberal orthodoxy.

Co-operatives—and the social economy[12] more broadly—represent a pragmatic response to the economic and social challenges that both globalization and privatization have created. Co-operatives may make a significant contribution to the renewal of positive and active citizenship locally, nationally and internationally (Lloyd, 2007; Uluorta, 2008). As an institutional form the distinctiveness of co-operatives derives from an ownership structure of local actors based on community membership (stakeholders) rather than financial capital (shareholders) (Quarter, 1992). Since co-operatives are responsible directly to stakeholders, they may engender more environmentally sound and locally responsive practices (through local information transfer and social capital networks), empower underdeveloped areas (by pooling local resources), encourage entrepreneurial growth, and institutionalize an alternative economic rationality that explicitly links social/environmental needs to economic processes (Gertler, 2001). Additionally, co-operatives help to address the principal-agent problem insofar as the users of a good or service also become the owners/sellers, resulting in a

[12] "Social economy" is an umbrella term that incorporates co-operatives, credit-unions, mutuals, non-profits and other organizations that prioritize and incorporate social (and/or environmental) goals as well as those of institutional survival and/or profit.

strengthened corporate framework to help avoid corruption and usury (Ostrom, 1990).

Quarter (1992) argues that associations and networks based on the norm of 'people before profit' form a core strength of this alternative system. Other writers on the subject support this position (Fairbairn and Russell, 2004; Laville et al., 2007; Restakis, 2010). The move to define co-ops as part of a broader global justice master-frame incorporating fair trade, local development, global institutional reform and cultural exchange is an important one. Co-operatives engaging with these areas are part of what Marcelo Vieta has called the 'new co-operativism' based on solidarity and social justice, rather than the narrower business models of many Canadian co-operatives (Vieta, 2010). In this new kind of social and economic system profit is but one of many goals, and participation, inclusion and local development are paramount (McMurtry, 2010)[13].

Despite the potential of the co-operative ideal, serious questions remain about the depth and character of the co-operative alternative in neoliberal times. First, co-ops have traditionally placed themselves (and been placed) somewhere *between* public and private sectors (Fairbairn, 1990). A significant tension thus exists between the co-operative ideal of a networked economic sector based on self-help, and the more hierarchical organization of an interventionist welfare state. These two approaches to organizing society are not mutually exclusive, but the redistributive actions of an interventionist state sometimes stand at odds with a framework where local resources contribute solely to local development[14]. This has created tension and debate over the political goals of the movement and also over the relationship of co-operatives with the state and public policy (Fairbairn and Russell, 2004; Amin, 2002; Graefe, 2006). The co-operative sector in Canada today also lacks overtly political affiliations despite the fact that in other countries and in

[13] Co-operatives are profit-making enterprises. Some American definitions of the social economy thus discount them (Soloman, 2000). Others, in the Canadian, European and Latin American movements, tend to include co-operatives since the profits are redistributed amongst local stakeholders (workers, consumers, residents, etc).

[14] The Columbia Basin Treaty arrangements present one important counterpoint to this argument.

earlier times—as with the CCF in Canada, 1932–1961—the movement led to the formation of political parties (Laycock, 1990; McMurtry, 2004). In response to this passive role in broader political debates and processes, some have argued for more attention to be paid to how deeply public funding, regulatory structures and policy affect co-operative and social economy organizations (LeBlanc, 2006; Vaillancourt, 2008). Finally, their ability to maintain, over the years, a commitment to a meaningful level of democracy and broader social movement awareness is questioned, as is the ability of these institutions to transcend the relatively marginal role they currently occupy in our economy (Fontan and Shragge, 2000; McMurtry, 2010).

1.3 Co-operative Electricity: Towards Community Power?

Co-operatives are one part of a broader community power movement in Canada that includes First Nations, small business, non-profit and co-operative electricity development. The potential for electricity co-operative growth is, in part, reliant on pushing for policy changes that support community power and community development. Within the range of policy options, organizational structures, and actor goals a wide range of tensions emerge. At the heart of the community and co-operative power movement is the contention that local involvement in energy projects is both necessary and desirable. There is a large and growing literature on the contribution that direct ownership of resources through community and co-operative power has on communities (Bolinger, 2005; ENVINT Consulting and Ontario Sustainable Energy Association, 2008; Gipe, 2007a; Jacobsson and Lauber, 2004; Warren and McFadyen, 2010). In short, there are five core arguments for social ownership and control of resources. Social economy energy provision: 1) Combats “not in my back yard” attitudes (NIMBYism), through giving locals a stake in the project; 2) Helps educate communities about their resources; 3) Spurs local development and job creation; 4) Keeps profits in communities and builds local capital (financial and human); 5) Provides legitimacy to renewable energy projects.

Electricity co-operatives are a recent development in most Canadian provinces. Hundreds of rural electricity co-operatives formed between 1940 and 1960 in Alberta and Québec. This provincially concentrated picture, however, has changed over the past thirty years (accelerating in the past ten) as their development shifts east, to Ontario, Québec, and the Maritimes. Today, electricity co-operatives exist in every Canadian province except Saskatchewan. They are developing in both urban and rural areas, and are engaged in generation and distribution, as well as education and retail of new renewable electricity (for example, solar and wind generation). They are also increasingly networking with other renewable electricity players in lobbying provincial governments as part of the community power sector to provide supports (primarily feed-in tariffs, or FITs[15]) for locally based private renewable development.

Electricity co-operatives take a number of forms. One is the generation of power that is then transmitted through the grid and sold to public utilities or private retailers. In Canada, the vast majority of co-operatives working on developing generation have focused on wind power. A second model exists in which co-operative members pool their assets to build (or buy) sections of the distribution system. These co-operatives are concentrated mainly in Alberta and are divided between ones that own *and* maintain the distribution system (self-operating distribution co-ops), and those who own the lines but contract out to other players in the power sector (like Fortis and ATCO Electric) to manage the lines for them. Co-operatives in this sector can also be structured as consumer pools to buy bulk electricity—possible in deregulated retail markets like Ontario and Alberta—for their members at a lower cost. Consumer electricity co-operatives can also source products for their members in order to encourage such things as solar panels on housing and energy conservation. Worker owned co-operatives are rare, but possible, in the power sector. At this point in Canada they are mostly sustainability consulting businesses, but there is also a project in Québec that generates power

[15] A feed-in tariff (FIT) is a policy mechanism used to stimulate renewable electricity development by providing a long-term standard offer contract with a fixed price based on the cost of generation plus a 'reasonable' profit.

using biomass from wood waste. Finally, electricity co-operatives can be structured as non-profit community associations. These focus on conducting educational campaigns for sustainable and renewable energy, and sometimes, as in the case of the Toronto Renewable Energy Co-operative, act as an incubator for generation co-operative project spinoffs.

Co-operative electricity generation projects in Canada are just starting to take operational shape. While some communities have been actively pursuing projects for almost 10 years, a range of problems—from grid connection, to policy supports, to volunteer burnout—have resulted in few projects actually being built. As with all players in the electricity sector, but perhaps more so than most, co-operatives are dependent on state support to do well. Public policy decisions significantly affect the strength of industrial competitors for co-operatives, as well as market prices and the very basic legislative and legal support for the co-operative form. For example, governments grant co-op legal and tax status, provide subsidies for local economic or environmental projects, and grant access for electricity co-ops to the distribution grid. In fact, many electricity co-operative projects attempting to connect to the grid in Ontario's orange zone (an area where transmission has reached capacity) are stalled because of provincial agreements with nuclear power providers.

This picture may be set to change somewhat as jurisdictions across the country— Ontario, Québec, New Brunswick, and Nova Scotia—are starting to support co-op developments. As of 2011, ten projects either owned or initiated[16] by co-operatives were generating electricity across the country: three wind, three solar, two biomass and two hydro. Many more are in the project-development phase: nearly 105 MW of installed capacity from wind-power generation co-operatives in New Brunswick, Ontario and Québec was awarded power purchase agreements in 2010, and these were set to start construction in 2011 or 2012 (total installed wind capacity in Canada, by comparison, was 5,265 MW in March 2012).

[16] The largest co-operative wind-power generation projects are either partially or fully owned by private developers: the 102 MW Bear Mountain Windfarm and the 45 MW Laméque Windfarm.

One of these is the Pukwis Energy Co-op in Ontario, a 20 MW (in phase 1) wind farm joint venture between the Chippewas of Georgina Island First Nation and Windfall Ecology Centre. These projects, and many others like them, are explored in more detail in chapters 6 and 7 of this thesis.

The benefits of co-operative electricity projects transcend material (financial and service provision) benefits. They also play a symbolic role in shaping public perception of the possible. Community electricity projects can be used as demonstration projects and as educative tools to engage broader audiences. This value is often cited by participants and initiators of these projects (Ferrari Personal Interview July 23, 2009; Lipp Personal Interview, July 23, 2009); it extends beyond monetary gain, to the transformative role that projects can play in shaping public opinions, experiences and through that, policy. Indeed, the interactive role between the constituencies created by community groups and policy change is well documented (Walker et al., 2007).

Danish and German experiences with community and co-operative power have led to a significant amount of networking and policy learning about community renewables development between Canadians and their European counterparts. One important lesson was that public policy supports formed a crucial element of these community and co-operative systems[17] (Bolinger, 2005; Walker, 2008). In Denmark—a country with the highest concentration of wind power in the world (20 per cent in 2008)—co-operatives and farmer associations established the majority of wind generation. These projects were developed with state tax incentives during the 1970s energy crisis when the public policy supported a switch from coal[18]. In 2001 over 100,000 Danish families belonged to wind turbine co-operatives (Larsen et al., 2003).

The Danish case is often cited as an example of how electricity co-operatives help to overcome the NIMBYism commonly associated with power (and industrial)

[17] This is also evident in Canada. For example the Windshare Co-operative in Toronto started a coalition and created momentum toward what is now the Green Energy Act.

[18] Nuclear was rejected as these shifts followed closely on the heels of the Chernobyl disaster.

development. By giving locals a stake in the profits, and a say in the development, the co-operative form significantly reduced opposition to the look or noise of turbines. While it is often argued based on the Danish case that community power can help overcome opposition to the cost increases associated with wind and renewables, thorny issues of the definition of community persist. Gordon Walker cautions that "Perhaps the critical judgment here is the extent to which the 'shallow' use of the term community, to include essentially technical projects with minimal local collective involvement or benefit, is corrosive of deeper principles of socialized, locally-led and owned distributed generation" (2007: 78).

The relationship between co-operatives and the broader private sector is both important and problematic as it erodes the co-operative difference. A few key limitations affecting new electricity generation co-operatives illustrate this. First, very rarely are generation projects 100 per cent owned by co-operatives. Indeed, ownership and control ranges from 100 per cent co-operative and community/First Nations ownership in the case of Pukwis Energy Co-op in Ontario, to a minority share in a limited partnership, such as that between Peace Energy Co-operative and Aeolis Wind Power on the Bear Mountain Wind project in B.C. A sliding scale thus exists, with a project solely owned by members at one end, and a project owned by a private or public sector entity at the other. Most projects are a combination falling somewhere in the middle. Private sector partners are sometimes keen to work with community-based groups, like co-operatives, because they help to provide local legitimacy for a project and aid in getting through the environmental assessment and consultation stages. In an industry where years of feasibility studies and approvals are necessary, it can mean significant amounts of wasted time and money if local resistance leads to a project being cancelled.

Access to capital is a second key issue and is one of the main drivers behind the partnership strategy of project development. It is an especially important issue for generation projects since they are capital intensive and require years of development and testing before the returns are realized. This means that a financing structure that recognizes the benefits of community-based enterprise is essential in

Canada. Without this, community groups are often restricted to developing either a) very small (one turbine) projects or b) partnering with larger developers (with reduced control and stake). In Germany, for example, farmer-owned wind projects were feasible because the government gave loan guarantees to farmers to develop their wind resource (Gipe, 2007b; Toke et al., 2008). This gave banks the confidence to lend, and the farmers access to much needed capital without ceding control to non-local developers.

Further assessment of where and how significant contributions are being made by Canadian co-operatives is important in light of challenges and successes in other jurisdictions. What is clear from the discussions above is that the shape and success of these co-operatives is dependent on a wide range of political economy factors. To the extent that these organizations are providing legitimacy, via community buy-in to broader shifts toward electricity restructuring—whether building successful projects or not—they play a role in sectoral social, economic and environmental impacts.

1.4 Chapter Outline

I argue through the rest of this thesis that electricity co-operatives in Canada are seeking to develop community-based electricity guided by principles of democratic decision making and local stakeholder—rather than shareholder—control. These co-operatives represent an alternative form of private sector renewable electricity development. Each chapter develops further the core propositions laid out in this introduction, namely that: the restructuring of Canadian power sectors is taking place and that the policy choices made impact not only co-operative development and potential, but also the safety and security of Canadians. This is, in part, because the green power movement has been appropriated by the private power sector and is being used to undermine public ownership of new generation of electric power in Canadian provinces. Electricity co-operatives are enabled by these developments and despite their democratic and local appeal are

significantly constrained by both internal and external factors in their ability to provide a significant private sector power alternative.

The first two chapters set the structural and theoretical context for my analysis of electricity co-operative development. In chapter 2, "Analytical Approaches and Methods," I develop a conceptual framework for understanding these electricity co-operatives that embeds their development in a political economy understanding of the often contradictory processes and forces of neoliberal governance. This framework is built with an interest in understanding the ideological and material processes that inform not only co-operative developments in the past, but also the potential for these institutions going forward. Chapter 3, "Movement or Sector? Co-operatives in Canadian Political Economy," presents the argument for how, why and where co-operatives may form a more democratic and empowering alternative to other forms of organization in Canada, and explores some of the contradictions and challenges accompanying this form of organization.

The next two chapters focus on developments driving change across provincial power sectors in Canada. Chapter 4, "Power to the Private? International Forces for Power Sector Restructuring," illustrates how ideologically driven policy choices have prompted a global trend towards restructuring of power sectors in countries around the world. That is, that the pressures and changes taking place in Canada are part of global neoliberal processes, embedded in and facilitated by international and continental institutions like the World Bank, the Organisation for Economic Co-operation and Development (OECD), and FERC. Chapter 5, "Continental, Private and Green(er)? The Political Economy of Canadian Electricity Restructuring," links empirical developments towards new private, green and community-based power in Canadian electricity to neoliberal governance. In it, I look at provincial variation in electricity sector ownership and generation sources with a view to situating co-operative development solidly in the material basis of a given electricity regime. I argue that public policy, not technological or financial necessity, prompted power sector reforms across Canada and that the results have been problematic, both for electricity ratepayers and communities more generally.

The second half of the thesis then moves from structure and political economy context to examining co-operative development in provincial electricity sectors. Chapter 6, "Electricity Co-operatives 1940–2011: The Power of Public Policy," charts the development of electricity co-operatives across Canada, from the 1940s up to 2010, and highlights similarities, differences, and the diverse contributions these organizations have made through periods of electricity sector development. Overview data is presented on the total population, geographic distribution and diversity of electricity co-operatives existing in the country. The final two chapters, 7, "Off the Ground and On the Grid: Promises and Pitfalls of New Electricity Co-operative Development," and 8, "Power Networks: Co-operatives and the Politics of Community Power," examine in more depth the promises and pitfalls of recent electricity co-operatives, particularly those participating in renewables generation. I examine the participation and role of co-operatives within policy networks and tensions within the 'community power' movement.

The organizational diversity of co-operatives—distribution, generation, consumer, and networking—mean they play different roles in the electricity sector. While certainly contributing to community development and control in specific instances, they are at present far from a significant challenge to the broader involvement of for-profit private actors in the electricity sector. The empirical data, as illustrated in the final chapters, demonstrates that the structural challenges presented by neoliberal politics in the electricity sector are significant and limit co-operatives' potential. Finally, in chapter 9, "Empowering Power? Crisis, Co-operatives and Public Electricity in Canada," I return to the challenge of developing more democratic, green and local electricity in Canada, and articulate how, and where, electricity co-operatives may play an important role, and what other paths need to be examined more fully to build on my research.

2 ANALYTICAL APPROACHES AND METHODS

In this study of electricity co-operatives the word power has a double meaning. There is the physical electric power that is generated, but also the power to govern, to control what gets produced, where, when, and for whom. The importance of analyzing both these changing forms of power is not merely in describing the world, but contributing to and understanding transformations towards the normative goals of increasing both participatory democracy and environmental sustainability. This follows Marx's urging for us not just to study the world, but also to *change it* (Marx, 1974 [1885]). I am not interested in the shape and form of co-operatives for their own sake, but for what these mean for the development of an empowering form of economic democracy in Canada today. So, what makes for a substantial contribution in this direction and how would we know?

My theoretical and philosophical commitments are based in a critique of capitalism in the tradition of critical (or radical) political economy. Political scientists have traditionally focused their attention on power: who has it, how it is used, whether it is institutionally embedded and—importantly—whether the exercise of power is sanctioned or legitimized by the polity, often through a variety of democratic practices. Political economists then take these issues of power, bringing to light the embedded relationship between political and economic power: how power is distributed and exercised not only in traditional areas of the economy, like finance, but how economic power shapes access to mechanisms of governance and decision making. The theoretical approaches discussed below help us to understand co-operatives at this particular historical juncture, where a confluence of crises—social, environmental, economic—loom large.

My argument in this chapter is that political economy approaches, particularly those that focus on the processes of neoliberal restructuring and

empowered participatory governance, provide an important theoretical lens through which to understand co-operative development. This is because political economists have concentrated heavily on the role of crises in provoking socio-economic change, as well as the particular role that economic structures play in facilitating (or transforming) crisis (Johnston et al., 2006a; Kumhof and Ranciere, 2010; Chris Williams, 2010). I anchor my research on electricity co-operatives in what we already know about shifting modes of neoliberal governance as these apply to the electricity sector. Governance is put front and centre conceptually because, as a theoretical approach, it problematizes and focuses on the different geographic levels (local/national/global), actors (public/private/network) *and* ideologies at play structuring socio-economic relations at a given point in time. Each of these (levels, actors and ideologies) forms an important part of the theoretical justifications for the co-operative difference.

These multi-level changes are important for tackling the large project of developing a sustainable electricity sector and structures where Canadians have a say in, and understanding of, their own systems of governance. The meso-level of institutions—co-operatives, for example—transforms micro-level individual behaviour as well as macro-level forces. A political economy study of electricity co-operatives can also illuminate the role hybrid actors (situated between the conventional public and private spheres) play in transitions, and contribute to our knowledge of these actors in complex infrastructure sectors. It is also important to develop an understanding of community-level institutions and change that is both theoretically informed and respectful of the real work that is being done on the ground, often by volunteers. In order to do this, this thesis needs to seek answers to specific questions. For example, what kinds of institutions are likely to deepen both democracy and sustainability in our society? How can we evaluate these institutions and what challenges might we expect to emerge in terms of credibility and/or efficacy?

To answer these questions, I draw on a heterogeneous collection of theorists whose perspectives get at the structures of political and economic power

underpinning co-operative development. Some of these perspectives, described below, come from institutional theory (Ostrom, 1990, 2002), governance (Jessop, 1995; Rosenau, 2003) and eco-political theory (Johnston et al., 2006a), and others from theories of crisis and transformation (Cox, 1996; Harvey, 2010; Wright, 2010a), capitalism (Polanyi, 1944) and community economic development (Loxley, 2007). What unites these theorists is a perspective of socio-economic change that is historical and dynamic. Theories of change that are mechanistic, stress inevitabilities and irreversible processes are problematic (Ostrom, 2007; Rosenau, 2003; Wright, 2010a) as they underestimate and/or misrepresent the role for human agency, contingency and contextuality. Social change is always taking place and, as Cynthia Enloe (1990: 17) so eloquently put it, "the world is something that has been made; therefore, it can be re-made."

This level of analysis where agency and structure meet is also critical for an understanding of which specific actors may be useful in bringing about transformation. This perspective is often missed in the literature, which focuses more on diagnosing the structural problem rather than on the agents of change. On the other hand, a focus on individuals and individual level rationality—typical in economics and increasingly in political science—is problematic. The values and structures that underpin particular organizations can have an effect down to the people who are members of them and up to the governing structures. Elinor Ostrom's Nobel prize-winning work has been instructive here. She argues that institutions, collective action and rationality have been both understudied and misunderstood (Ostrom, 1990, 2002, 2007). Furthermore, the structures and forms of co-operation within which collective action takes place are critical for informed political analysis. These structures include locally based management systems for resources, such as co-operatives. Ostrom, as a critic of simplistic economic and institutional thinking, argues that co-operation and property rights regimes are a critical site of inquiry. This is because social networks, communication and trust are crucial for overcoming collective action problems (Ostrom, 1990).

While empirically the triple crisis—social, economic and environmental facets—sets the context of this work, the theoretical understanding of specific actors, institutions and mechanisms for transformations are front and centre in this chapter. The analytical approaches outlined in the first part of this chapter provide a framework not only for why institutional innovations, like co-operatives, are theoretically interesting but also what particular aspects of their structure and/or activities have the most potential. Chapters 3, 4 and 5 of this thesis then deal with the specific literatures and debates on co-operatives and electricity reform. In the second part of this chapter, I outline the methods used in this study that apply this framework to co-operatives developing across Canada. These methods included, for example, interviews with a cross section of policymakers, co-operators and researchers working on issues of renewable energy.

2.1 Transitioning from Crisis to Sustainability

Three central points on crises raised by political economists are relevant to our understanding of the roots of the triple crisis: first, economic crises are endemic to capitalist economies; second, both social and environmental degradation are a result of commodification and exploitation of human and natural resources; and third, crises create opportunities and from within these contradictions new and potentially transformative forms and modes of socio-economic activity may arise. Each of these points forms a baseline for the core point of this chapter, which is that institutions that arise from within capitalist processes, like co-operatives, may form part of a transformational response to the dislocations and contradictions within the current system.

First, economic crises are endogenous to the capitalist mode of production and accumulation. David Harvey's work, for example, reviews many of the theories of crisis that were raised after the global financial crisis of 2008. Mainstream accounts ranged from Allan Greenspan's contention that people are essentially greedy individuals, to blaming regulatory institutions for not being "Keynesian enough" or, conversely, "regulating too much" (Patel, 2009). Harvey, like Marx

before, challenges these mainstream accounts and locates the cause of current crises in the circuits and processes of (particularly neoliberal) capitalism itself. The constant need for growth, for more profits at faster and faster rates pushes capital to continue expanding ad infinitum. This requires creating and opening new markets and spaces for accumulation through privatization, financialization and accumulation by dispossession. These processes, in turn, lead to destabilization and volatility and, ultimately, crashes and crises. The Enron scandal—wherein new deregulated markets led to blackouts, soaring electricity prices and (illegal) predatory practices by energy traders—was one example of this.

Second, social and environmental crises are tied to the processes of neoliberal capitalism (Albert, 2003; Bowles and Gintis, 1986; Kovel, 2007). Karl Polanyi's account of the development of the idealized self-regulating market in *The Great Transformation* is instructive as he, like Marx, focused analysis on the relationship between the economic and social systems (1944). For both, albeit in different ways, the market is intrinsically a structure of power. Polanyi illustrated how social dislocation and ecological destruction—processes coming to a head today—are the result of developing an economic system that is guided by the myth of a self-regulating market. He argued that by turning nature into a "fictitious commodity" the now mainstream market capitalist system erodes the very basis for human survival. Thus, economic democracy is essential, and is achieved by asserting social control over the economy and society at multiple levels and across issue areas. Marx[19] and Polanyi also recognized the key role that nature played in human development, and how it was threatened by exploitative systems of production and consumption (Burkett, 2006). While most accounts focus on the social aspects of exploitation in alienating humans from the fruits of their labour, their political economy analyses continue to be relevant today in how we conceive of the root

[19] While Marx has been criticized in the past for championing industrial development (by Herman Daly and Robyn Eckersley, for example), work by James O'Connor (1998), Chris Williams (2010), Paul Burkett (2006), John Bellamy Foster (2006, 2009), and Joel Kovel (2007) have shed new light on Marx's insights into alienation and exploitation of the natural environment.

causes of social disempowerment and ecological degradation (Fitzpatrick, 2002; Foster, 2002; Chris Williams, 2010).

Given these important interconnections between economic and ecological crises, it is problematic that environmental and radical political economy literatures have talked past each other until quite recently (Brecher et al., 2008; Burkett, 2006; Faber, 2008). In particular, literature from the deep green and deep ecology perspective takes the view that nature is not a resource to exploit, but is instead the fundamental basis for all human life with inherent value of its own (Luke, 2002; Næss, 1973). This is a valuable contribution to contemporary debates over the triple crisis as it situates human society within biophysical limits. Eco-centrism in the deep ecology literature, however, fails to adequately address issues of human justice and distribution such as employment, class, or north-south exploitation as they relate to environmental policy. On the other hand, traditional left analyses too often fail to accept or develop an understanding of ecological limits to growth, even though the seeds of this existed in the work of both Marx and Polanyi (Foster, 2002, 2009). The result of this gap has been the near universal dominance of free-market green politics, which is clearly represented in the literature on renewable electricity (Ontario Power Authority, 2009; Sawin, 2004; World Watch Institute, 2009). With the rise of the environmental justice movement, however, this dominance is being challenged and new sites of debate are emerging over the appropriate values and institutions of sustainability. Two potentially fruitful lines of inquiry that draw both together are eco-localism (see next section) and eco-socialism (Curtis, 2002; Sandberg and Sandsberg, 2010; Vanderheiden, 2008; Chris Williams, 2010). The former connects environmental outcomes to place-based governance, and the latter links common ownership with collective public management of the commons.

Third, crises lead to ruptures in traditional systems, allowing for rapid systemic change wherein new forms emerge from the contradictions and challenges of old systems (Homer-Dixon, 2007; Wright, 2010b). Robert Cox argues that it is the crises and contradictions, which open up ruptures between the political powers and the economic systems, which then allows for the seeds of a new system to take root.

Whereas neo-classical scholars treat crises as exogenous to the system, in the neo-Marxist literature, for example, theorists in the Social Structure of Accumulation (or Régulation) school highlight both the centrality of crisis in capitalism and that the roots of its transformation lie within current systems (Boyer and Saillard, 2002). Institutional variation within capitalism is thus important in producing different sorts of arrangements, contradictions, norms and opportunities for substantive transformation. Bob Jessop (1995) links the SSA work on institutional variation to recent work on governance, arguing that both approaches provide nuanced accounts of socio-economic dynamism.

Within the current system then are planted the seeds of its demise as new forces rise to address crises. This understanding of the genesis of transformation echoes Polanyi's insight in what he called the "double movement" (Polanyi, 1944): the re-assertion of social control over market forces via protective legislation or restrictive associations (like co-operatives). A problem in the literature regarding double movements and civic counterforce has consistently been the ambiguities regarding potential agents of change. Theorists have variously located this agent with unions and organized labour (Gamble et al., 2007), with community associations (Scholte, 2003), collectives (McMurtry, 2004) or even environmental and peace movements (Della Porta and Tarrow, 2004). These movements can arise from both material and ideational developments. For Antonio Gramsci, for example, an important role in transformation is allocated to ideational factors, in particular the role that consent plays in upholding relationships of hegemony and force (Gramsci, 1971). Thus, it is not only the material changes in the structure of ownership and production that guide transformation, but also the norms and ideas legitimating material structures.

2.1.1 Democratic Theory and Eco-Localism

The theory and practice of "eco-localism"—the view that environmental sustainability is best advanced by local self-reliant economic communities—sets a foundation for interest in and support of electricity co-operative development (Albo,

2006; Carter, 1996). This eco-local perspective is also supported by environmental advocates of Schumacher's *Small is Beautiful,* which sets out a vision of a future of small-scale communities operating with appropriate technologies and within ecological limits (1973). Unpacking the democratic and environmental theoretical commitments of this view is important for our conceptualization of both co-operative potential and empowered participatory governance.

The first set of connections links democracy, participation, empowerment, and local institutions. Key democratic theorists like Carole Pateman (1988)—and also Aristotle and Rousseau—have held up participation as a crucial pillar of democracy, wherein citizens share in decision-making processes in a meaningful (rather than consultative) way. Meaningful, in the sense that the issue areas open to public control extend into social and economic policy, rather than infrequent elections. It is also meaningful in the sense of a deeper level of participation that includes debate and deliberation (Johnson 2009; Wright 2010). Pateman argues that for a healthy democracy, people need to learn the skills of self-government through, for example, local processes like participatory budgeting (1988). This form of democracy is empowering, for her, because citizens develop their capacities, and governance is enhanced through important feedback loops connecting local conditions to policy: "only if the individual could become self-governing in the workplace, only if industry was organized on a participatory basis, could…[individuals] gain the familiarity with democratic procedures and develop the necessary 'democratic character' for an effective system of large-scale democracy" (Ibid.: 39). Local level institutions may play an important role in facilitating participatory democracy in that the scale of the institution is often (but not always) smaller, allowing for more time, room for development of capacities, and inclusion of marginalized groups.

In the field of green political theory, scholars have built (sometimes rather loosely) on the foundations of these theories of participatory democracy, and also on Schumacher's vision (1973). In part, this was a response to Malthusian strain in ecological thinking in the 1970s that focused on the need for a coercive state or even

eco-dictatorship (Hardin, 1968; Opphuls, 1973) and population controls (Ehrlich, 1968) in order to halt environmental degradation. These theorists, while popularizing environmental issues, have been criticized by democratic theorists. As a result of the tensions between earlier "deep" green theories and democratic theory, scholars like Eckersley (2006), Ostrom (1990) and Bookchin (1991) have all urged for synthetic theories to address both politico-economic and environmental issues. The need for state control or private ownership is questioned by Elinor Ostrom, who focuses on the role that participatory, local, and democratic institutions play in managing resources sustainably (1990). Murray Bookchin develops a theory of "social ecology" rooted in socialist, communitarian and anarchist political thought, again, with a significant institutionalization of direct and participatory economic democracy.

In recent years, several important clarifications and critiques of eco-local thinking have emerged. Bookchin, for example, points out that "decentralism, small-scale communities, local autonomy, even mutual aid and communalism are not intrinsically ecological or emancipatory" (1999: 286). Likewise, Johnston, Gismondi and Goodman highlight the importance of not idealizing local but focusing instead on 'multi-scaled' governance interventions (2006: 32–33). These cautions are appropriate for this research on electricity co-operatives because not only are electricity systems in Canada highly interconnected and geographically spread out, but issues of community capacity and distribution are far too often ignored by fetishizing the local. In addition, Neil Carter's (1996) important work on green worker co-operatives identifies how many of the assumed environmental benefits of localism and co-operative ownership have yet to be sufficiently demonstrated in many cases. Moreover, he argues—pointing to the very significant diversity in forms, intents and democratic aims of co-operatives—that co-operative models need to be empirically examined in different sectors and contexts. That is certainly not to say that local institutions that support democratic governance are unimportant. Far from it—but provincial, national and international policy contexts form a fundamental constraint on their development (Albo, 2006; Johnson, 2009;

Johnston et al., 2009; Lionais and Johnstone, 2010). Consequently, what is required is a framework situating co-operative development within broader socio-economic governance, which looks at the local institution as one part of a wider complex of participatory governance.

2.2 Towards Empowered Participatory Governance

While there are many interests and actors that compete and jockey for position in the messy reality of a given historical juncture, there are sets of accepted rules and principles that characterize different epochs. Dominant rules and principles, together with the actors and structures, matter (Forsyth, 2010; Ostrom, 2007; Wilkinson and Hughes 2002). Co-operatives, for example, and the social economy more generally, play an understudied role in socio-economic transformations as structures that embed particular norms with respect to profit (chapter 3). By using Archon Fung and Eric Olin Wright's (2003) concept of "empowered participatory governance" as a framework, co-operative developments can be usefully assessed and understood as part of a process of deepening and democratizing economic governance in times of crisis. They represent an institutional variation within the current capitalist system that carries different norms and practices than other, more dominant, institutional forms.

James Rosenau defines governance as that which "encompasses the activities of governments, but it also includes the many other channels through which 'commands' flow in the form of goals framed, directives issued, and policies pursued" (1995: 14). Studies of governance, as with those of political economy, emerged out of the understanding that the exercise of power in society covers much more than what governments do, and that market-based actors play important roles in directing both stasis and change[20] (Held and McGrew, 2002; Ostrom, 2007). A focus on governance captures the institutional configurations at multiple levels beneath, within, between and above states, whether public or private.

[20] See the BCNI role in McBride (2005), energy industry lobby (from U.S. or in Canada) the neoliberal consensus, enduring alliances between actors.

Understanding the pathways of power is essential in neoliberal times when the impact of private sector actors is so pervasive in shaping not only public policy, but also nearly all aspects of socio-economic life. This is why the study of governance is conceptually useful. There is no governance without government in practice; the private sector is, even in a neoliberal era, reliant on public sector power to create new spaces for private accumulation, and to financially guarantee investment in new and risky ventures like renewable electricity development. Public policy choices thus underpin this neoliberal shift. Consequently, tracking policy changes and identifying the specific actors and forces behind them is important. These actors may come from the formal public and formal private sectors, as well as sectors that sit between these poles, like co-operatives and social economy organizations. Broadening the lens to include the complex of actors and mechanisms where power resides allows for an understanding of the real, rather than ideal, channels through which crises are created and transformations can occur.

2.2.1 Modes and Mechanisms of Neoliberal Governance

The particular ideas underpinning neoliberalism shape governance in Canada today. Many scholars argue that there has been a marked shift in the ideas and institutional configurations (or paradigms) that have governed Canada's economy in the past 50 years (Clarkson, 2002; McBride, 2005; Panitch, 2007). Governance has shifted power from public hands to private, and governments both provincial and federal have ceded much authority to international bodies. This change in modes of governance, from Fordist to post Fordist, and Keynesian to neoliberal, is significant. Larner and Craig (2002: 4) argue that "a mode of governance is…a set of rules, a set of knowledges and a structure of collaborations for day-to-day decision-making. It includes the social world that is part of these practices in terms of both the subjectivities of the actors and the material objects that are produced."

Neoliberal governance arises from ideological norms embedded in governing institutions as well as the concrete structural, material and legal relationships of power between various actors. These relationships are embodied in specific institutional, policy and legal changes (Larner and Craig, 2002; Peck and Tickell, 2002). Peck and Tickell (2002: 37) developed a useful account of how neoliberal ideology and governance translates into policy initiatives. They distinguish between "roll-out" and "roll-back" neoliberalism. While interrelated, roll-out neoliberalism involves, for example accumulation by dispossession, commodification and bringing new goods in to the market economy. Roll-back neoliberalism, on the other hand, involves scaling back and constraining state agencies through policies of privatization, deregulation and a general discrediting of Keynesian institutions.

Cross sector (or public private) partnerships represent a further policy manifestation of neoliberal governance. Tim Forsyth elaborates on how these use the language of participation, democracy and empowerment to devolve (and often privatize) formerly state functions:

> Accordingly, cross sector partnerships (CSPs) have become something of a panacea for some analysts—often those proposing neoliberal, or New Public Management approaches to public policy—because they attempt to empower individuals and businesses within public policy, while also diminishing the reliance on states. Indeed, CSPs form part of a growing trend toward a more deliberative and devolved form of governance using concepts such as 'public policy partnerships', the 'mutual state', or 'network' or 'hybrid' governance. These approaches, in principle, aim to harness civil society more effectively within public policy by increasing public debate, and passing greater responsibility for certain public services to the local level. Proponents claim doing this will increase the speed and accountability of local public service provision, and decrease costs by reducing the need for a centralized state (Forsyth, 2010: 683).

Indeed, securing consent for some practices and policies through CSPs, public consultations (as opposed to empowerment), and elite centred elections continues to form an important substructure of the neoliberal project. Whether in roll-out or roll-back form, maintaining and extending neoliberal governance requires the

reinforcement of capitalist norms through social and cultural projects that emphasize individualism, competition, and marketization.

Electricity co-operatives, and co-operatives more generally, form a growing part of roll-back neoliberalism (see chapters 3, 7 and 8). Where crown corporations have their service mandates scaled back or de-listed (as with wind generation in British Columbia), co-operatives can participate with other private actors in newly opened markets. In other areas, like health care and social housing, co-operatives have also stepped in to fill roles in public private partnerships, and alternative service provision (Graefe, 2006). Co-operatives, non-profits and other social economy institutions are well suited to play these gap-filling roles, requiring less profit, with generally local and democratic organizational structures, and a tradition of volunteerism and service. Institutions like co-operatives play an important role in mediating, translating and sometimes challenging socio-economic norms, dominant structures and processes. While in one sense they are responding to the roll-back policies initiated in other areas of a given society by policymakers and private sector actors, they are also active participants in accepting, or reshaping these processes.

2.2.2 Empowered Participatory Governance

Radical critiques of contemporary neoliberal economic institutions and governance are prefaced on a holistic understanding of the social and environmental foundations of economic systems. Karl Polanyi's (1944) work on social embeddedness, the myth of the self-regulating market, and the double movement, as developed in *The Great Transformation,* helps to explain the emergence of alternatives and their role in overcoming contemporary economic, social and sustainability challenges. For Polanyi, asserting social control over the market society at multiple levels and across issue areas is a natural response to the expansion of markets, particularly when they threaten society and lead to crisis. The agents of this double movement come from within market society itself, so to understand the creation of new forms of socio-economic control one need only look

to areas where the market is displacing earlier forms of organization: provincial electricity sectors in Canada, for example.

A rich and growing literature seeks to reconnect economic governance to social and community roots and to redefine and revitalize the theories and practices of democracy (Adkin, 2009; Harcourt and Wood, 2004; Lambert, 2007; McMurtry, 2004, 2010). These represent an alternative to what Robert Cox (1996: 303) calls the "limited democracy" of neoliberal governance. He argues that occasional elections and consumer choice do not equal democracy in a meaningful sense. Substantive democracy, therefore, requires a re-linking of the economic policy to social and political control via the formation of institutions and norms of *economic* democracy. It also requires deliberative and participatory policy mechanisms that are inclusive, informed, and uncoerced so citizens have a more legitimate say in their own governance (Johnson, 2004, 2008).

Empowered Participatory Governance (EPG) represents an alternative mode of governance through which electricity co-operatives may operate. It is a framework developed by Fung and Wright outlining how participatory and democratic institutions can, via development of what they call "countervailing power", further progressive goals within broader structures of powerlessness and lack of democracy. The EPG framework addresses issues such as institutional resilience, networking and participatory democracy, identified early as crucial elements for addressing the triple crisis. Fung and Wright's work helps to address some of the key critiques brought up by critical political economists about the potential for co-optation and neoliberal support in organizations like co-operatives. The EPG framework also focuses attention on the relative balance of power between different actors within and between institutions and levels within a given system of governance.

This framework helps to address the infamous and perennial reform versus revolution debate. One of the most interesting critiques of co-operatives as an alternative comes from scholars sympathetic to the goal of community ownership or empowerment, but cognizant that the co-operative sector has operated throughout

Canadian history more as a complement than a challenge to the mainstream economy (Albo, 2006; Wright, 2010a). Indeed, the cited strength in the flexibility of the co-operative movement can also be seen as a weakness—more palatable to the mainstream but also easily co-opted, more a complement than a challenge (see chapter 3). Marxists also criticized these movements and the organizations within them (like co-operatives) for supporting the structures of power and exploitation of capitalist accumulation by ameliorating the worst excesses of market society (Fontan and Shragge, 2000). Social democracy was gradualist, focused less exclusively (or not at all) on class and strategically planned to either overthrow capitalism from within or make capitalism "with a human face," as Slavoj Žižek puts it (2009). A co-operative movement silent on the erosion of community power through privatization and continentalism certainly supports this skeptical position.

Fung and Wright concede that co-optation and participatory window dressing are one possible outcome of participatory collaboration, but again, not a necessary outcome. Likewise, Johnson finds that it is not simply the structure of participatory institutions that matter, but the political context and motivations of elite actors (Johnson, 2009, 2011). There are a variety of mechanisms that reduce the advantages of powerful actors through empowered participatory governance (EPG). Fung and Wright argue that the more participatory the institutions of governance and the higher the degree of countervailing power, the more empowered (and effective) these alternatives can be in transforming dominant relations. The development of this countervailing power depends on a number of factors such as the size of the organizational network, its degree of mobilization and resource base (Fung and Wright, 2003: 260–264). Table 2-1 outlines the breakdown of governance relationship to countervailing power.

Table 2-1 Countervailing Power

Governance Institutions	*Degree of Countervailing Power*		
		Low	High
	Top-down Administration	I Captured Sub-government	II Adversarial Pluralism
	Participatory Collaboration	III Co-optation, participatory window dressing	IV Empowered participatory governance (EPG)

Source: Fung and Wright, 2003: 262

What this means specifically for the analysis of electricity co-operatives is that strong networks, political mobilization (both material and ideational), and strong participatory institutions are important. These factors signify the difference between the organizations being participatory window dressing (communitywash), and significantly transformational. Ultimately, the political economy of the electricity sector forms a crucial set of constraining circumstances on whether and how these factors develop (further explored in chapters 4 and 5). Eric Shragge (1997, 2003) suggests four specific contributions co-operatives may make, to 1) democracy, 2) education, 3) alliance building and 4) mobilization. These factors form the basis of the shift from a "pragmatic/reformist" tradition in co-operative and community development to an "utopian/social change" position. Taken together with Fung and Wright's countervailing power framework, these theoretical contributions form a basic framework for evaluating the transformative potential of co-operatives in the electricity sector.

Local co-operative ownership by itself is clearly not enough to mark a transformative break. The latter would require local ownership and control over production and distribution combined with a level of political movement development. Fung and Wright develop this idea of supplementing ownership with strong networks and movement-based mobilization, and of moving in this way

toward countervailing power and empowered participatory governance. This would involve sustainable economic development, job creation, engaged marginalized populations, and scaled up actions to push supportive state policy. A further transformative role would involve a complete shifting consciousness about our place/role in the planet and the appropriate scale and mechanisms of development. Together, these would support a degree of lock-in or "ratcheting up" of effects.

Table 2-2 highlights five elements identified by Shragge, Fung and Wright, and Harvey that will be used in this thesis and revisited in the concluding chapter to assess the electricity co-operative difference and potential. These factors are also drawn from the grounded research methodology used and described in the following section. This analytical framework focuses on whether electricity co-operatives: are consciousness changing (via, for example, public education); own and control electricity assets (production, distribution); have policy influence; embody a normative set of principles (democratic and participatory) that challenges neoliberal orthodoxy; are networked within and beyond the co-operative movement with other social/economic and environmental justice advocates and are resilient and creative in times of downturn and crisis.

Table 2-2 Framework for Assessing Co-operative Transformational Potential

	Neoliberal (mainstream)	**EPG (transformational)**
Policy Impact	Negligible; used to support increase marketization/ commodification	Significant; challenges existing centres of power in society/economy
Public Education[21]	Unimportant;	Key priority

[21] "Education", as mentioned earlier in this chapter, can be used in many ways to either challenge conventional practices or to support them (see, for example, Herman and Chomsky, 1988). As a result, the *content* and not just the presence of an educative focus deserves attention. However, in the table above, I highlight whether co-operatives demonstrate in practice both a commitment and ability to engage in public education. Without this, the content point may be moot. The role of education is developed more in chapters three, seven and eight.

Ownership and Control of Electricity Assets	Partial or minority partnerships	Across distribution, generation and significant portion of total
Networks	Partial or fragmented	Well developed at local, national and international levels
Participatory Democratic and Anticapitalist Norms	Unimportant	Central to organizations (solidarity economy)

2.3 Research Design and Methodology

There are three specific goals of this research: 1) explain the emergence of electricity co-operatives; 2) assess their successes and failures; and 3) analyze the potential role of contemporary co-operatives to support a transition to empowered participatory governance in Canada. In order to accomplish these goals, I draw on a range of largely primary but also secondary qualitative and quantitative data sources. These include: semi-structured key informant interviews with academics, practitioners, stakeholders and policy makers; annual reports of associations; federal and provincial public policy documents; and academic literatures on electricity restructuring, Canadian co-operatives and community power generation.

A vast literature exists to help guide qualitative researchers in constructing and conducting valid research designs. Since the object of my study is a particularly understudied corporate form—the electricity co-operative—and how this form interacts with the shifting political economy of the electricity sector, the selection of qualitative methods as a significant component of the research was clear. Qualitative methods are useful to establish the temporal sequence of events and to test the validity of particular concepts, for example, attributing the term 'democratic' to co-operative organizations (Brady and Collier, 2004). Qualitative research is especially helpful in new and understudied phenomena, where secondary information may not be readily available (Yin 2009) and where the field is not well known and the precise parameters and boundaries are unclear (Stebbins

2001). These methodological approaches are well suited to developing an understanding of complex and sometimes contradictory social phenomena, particularly where issues of public policy and context are important (Brady and Collier 2004).

I explicitly sought out variation on the total population of electricity (originally energy) co-operative cases in Canada, not just those deemed successful examples; i.e., where electricity projects went ahead.[22] Selection of cases on the margin (either successful or failures) would have restricted my ability to grapple adequately with the challenges of community and co-operative organizing in this sector. This attention to the variation between successful and unsuccessful co-operatives was paired with a sub-national (provincial) comparative focus (Snyder, 2001). Co-operatives across the country are subject to very different regulatory regimes. This provincial lens allowed me to understand more clearly the role that the state, together with community mobilization and motivation, plays in co-operative development. This included assessing which specific policy initiatives made the most difference in shaping the number and structure of the co-operative contributions.

The research was concentrated in two phases. The first involved establishing an understanding of the extent, geographic distribution and contours of electricity co-operatives in the country. Co-operatives form a largely invisible part of private and non-profit sectors in Canada. As a chronically understudied (MacPherson, 2009; Quarter, 1992) part of Canadian economic and social life, research on co-operative firms requires both significant primary data gathering and exploratory work. The data on co-operatives—let alone electricity co-operatives in Canada specifically—is sparse. The processes for collecting this data are outlined below. Interview questions (attached in appendix 1) that focused on perceptions and motivations, as well as those regarding privatization and public/state supports, formed a crucial analytical base for the thesis.

[22] A further reason for developing as comprehensive a list as possible was to contribute to other researchers' and practitioners' work in this area.

The goal in this research was not confirmation, but discovery, and this required respect for the knowledge and experiences of the explored. Practically, this means that it was not until quite late in the research process before the extent, history and nature of co-operatives in the electricity sector in Canada became clear. This then required a great deal of revision, re-conceptualization and narrowing of the project (for example, from 'energy' co-operatives to 'electricity' co-operatives). These earlier stages of the research were illuminating in that they illustrated the fragmented nature of data and understanding of co-operative electricity activity in Canada. This stage also involved asking questions about the relationship between shifting public policies and the emergence of new co-operatives in the electricity sector, where the chicken and egg problem of policy support and organizational formation are difficult to disentangle. It also involved a broad survey of the main actors involved in co-operative development, their political orientations (explicit or not) and understandings of electricity restructuring.

In the second phase of research, I examined the forces and contextual factors underpinning neoliberal electricity restructuring and consequent provincial policy changes. Analysis of the data from both phases demonstrated how, why and with what success electricity co-operatives play a role in current developments in Canadian provinces. Here, I gathered information from federal and provincial policy documents, conducted interviews with energy ministries, regulators and electricity industry groups on the changes taking place in Canadian electricity markets. I focused attention on policies that facilitate or impede co-operative development and that suggest broader trends in the sector. This data provided the raw material to develop an assessment of challenges and opportunities for co-operatives, as well as understand more clearly how neoliberal electricity developments were being implemented in different provincial jurisdictions. My questions focused not simply on description of these institutions in this particular sector, but also on assessing the deeper implications of their development on electricity policy and the sustainability challenges facing Canadians. In order to dig into these deeper implications, I needed to understand the strength of the co-operative form in terms

of its democratic constitution, local involvement (financial and participatory) and the relative size of co-ops in the electricity sector by comparison with other private actors.

Finally, the traditional formulation of developing dependent and independent variables made little sense for this project. As James Rosenau illustrates, in studying complex macro-micro dynamics "each dependent variable at one moment in time, that is, quickly becomes an independent variable at the next moment, just as every independent variable was a dependent variable in the prior moment" (2003: 46). In practical terms, this means that electricity co-operatives both shape and are shaped by public policies, just as those same policies both shape and are shaped by dominant ideological constructions of a particular time and space. Of course, it does not necessarily follow from this position that the relative weights of structure and agency, or of different actors and forces in a given time, are equal. Indeed, they are not. The nodes of power driving change in the constitution of the power sector continue to be concentrated, rather than diffuse and dispersed. This is illustrated in this thesis by quantitative data on the number, total megawatts (MW) of power generation, funding supports and relative proportions of electricity co-operative generation in provincial electricity sectors.

2.3.1 Overview of population

The first step in the process was to identify electricity co-operatives across the country. This was no small feat. I began in 2007 with online searches for energy and electricity co-operatives and then contacted both provincial and federal co-operative associations to see if they collected this data. Statistics on the co-operative sector rely heavily on an annual survey conducted by the Co-operative Secretariat at Agriculture and Agri-Food Canada, as well as basic corporate data (such as incorporations, de-mutualization/dissolution) collected by each province and by Industry Canada. Thus, the key set of baseline data for historical and current co-operative development came from the Co-operatives Secretariat in the Department of Agriculture and Agri-Food Canada's yearly Co-operative Survey.

The co-operatives in the survey are grouped by business area, so the cases of relevance to the electricity sector fell across a number of sub-categories: utility, other utility, rural electric, natural resource, petroleum consumer and other agricultural service. Some co-operatives, for example, operate across a number of business areas and as such are categorized in the survey based on the largest per cent of sales activity. A significant part of the research involved tracking down co-operatives working in energy industries more broadly (including biofuels, natural gas and oil refining), then, after follow-up, narrowing to electricity. This included identifying how many co-operatives were active at a given time (since 1940) in the utility sector in Canada, the ebbs and flows in their development, which industry area (for example, generation or distribution) they operate in and provincial breakdowns.

The data from this list includes incorporation dates and major activity sector for specific firms[23]. The challenge at this point was to determine which organizations were relevant for the study and trace each in order to find out what they did and why. From there, I began sorting the co-operatives in to active/non-active and into generating, distributing or networking. It was also necessary to go beyond the co-operatives survey, particularly to gather data from newly incorporated co-operatives. To do this, I gathered data from interview subjects on new co-operative development, together with extensive online searches for key terms (such as electricity co-operative, Canada). With this information on co-operatives established, I was able to make links more clearly between specific provincial and federal policy trends at particular times, and in specific locations across the country. The number and variety of co-operatives in Canada allows for significant comparative analysis across policy jurisdictions as well as energy sources and co-operative forms. While each of these cases is not explored in depth in this thesis, the main contours of co-operative development in this sector are outlined, as

[23] The survey data also included aggregated employment and financial data for sub-categories (for example, natural gas co-operatives). However, given the fact that electricity co-operatives fall across a number of sub-categories of utility co-op, as well as beyond this grouping, these figures are not particularly useful for this study .

are specific co-operatives that stand out as representative of particular trends or developments. This data is presented in chapters 6, 7 and 8.

2.3.2 Interviews

Interviews formed a key part of my research design. They were important for concept formation, establishing relationships/trust with participants and gaining access to local networks, reports and other participants. Interviews enabled an empirically informed analysis of the motivations, objectives and justifications actors had for forming these organizations. The interviews provided the comparative data needed to address the key issues of motivation, perception (internal and external) and helped to create valid indicators for what constitutes success or failure for these organizations as well as to establish the philosophical or ideological commitments of actors. Furthermore, interviews with actors outside the co-operatives sector, in energy ministries and environmental organizations, for example, provided important data on broader context and forces driving change in the sector.

Interview subjects were selected in two ways: through online research identifying them as a key informant, for example, as the director of a provincial co-operative association, or through the "snowball effect" wherein an interview subject recommended other people and sources. I found the latter particularly important as the research progressed, as interview subjects initially unwilling to meet eventually agreed after learning of a recommendation from a colleague.

Some electricity co-operatives are low profile and information is not easily accessible, so interviews by phone or in person served important fact-finding roles. Interviews were semi-structured and lasted approximately one hour each. Interview questions addressed the three main themes (economic, political, environmental), but varied based on whether the informant was a co-op participant, researcher or government employee. Separate questions were prepared for each of these target groups, but focused on three key areas: co-operatives and green electricity, co-operatives and privatization, co-operatives and public policy. For a complete list of interview questions, see appendix 1 of this thesis.

Over the course of the research, 121 people were contacted for interviews, and of these, 74 consented (69 in person, 5 by phone). Of the 74 interviews there were:

- 9 academics in fields of co-operatives, electricity and social economy
- 33 co-operators (board members, managers, general members)
- 6 policy researchers in fields of alternative energy and community power
- 6 co-operative association employees (provincial and federal)
- 6 federal government employees in energy and co-operative ministries
- 9 provincial government employees
- 4 lawyers working with co-operatives involved with electricity; and
- 1 municipal government employee.

Of the 74, the geographic distribution of interview subjects was as follows: British Columbia: 3, Alberta: 12, Saskatchewan: 11, Ontario: 22, Quebec: 7, Nova Scotia: 10, New Brunswick: 4, U.S.A: 1. This distribution amounted to a fairly even representation across provincial regions of Western (26), Central (29) and Atlantic Canada (14). I transcribed each of the interviews, producing 403 pages of text, which was then coded and analyzed for themes and patterns.

2.3.3 Field Research

The data collection from field research took place during three separate trips, in July 2009, December 2009 and May 2010. These amounted to 11 weeks of field research. The first segment focused on Saskatchewan and Ontario, the second on Alberta, and the third on follow-up meetings in Ontario and research in Québec and the Maritime provinces. During each of these I collected data from both urban and rural co-operatives, a factor that is important insofar as urban centres are not where the bulk of generation and distribution takes place.

On these trips, I attended the Federation of Rural Gas Co-operatives annual meeting (2009) in Edmonton, the Community Power Finance Forum (2010) in Toronto and was in Nova Scotia just as the Community Renewable Energy Policy (2010) was announced. The research in Québec took me to the Gaspé region where significant wind farm development (and opposition to it) has taken place. These experiences, while not formal interviews, allowed me significant access to the

broader debates and tensions both within and surrounding co-operative developments. This led to a perspective that was far more locally informed than reliance on secondary literature could have allowed.

Finally, the on-the-ground research also allowed me to visit the Centre for Co-operative Studies at the University of Saskatchewan which houses a library of works on co-operatives in Canada. I spent a number of days in Regina, conducting interviews and searching the library for historical pieces on co-operatives in the electricity sector in Canada. There were a number of sources that are unavailable anywhere else that provided invaluable historical perspective. Similarly, while researching rural electrification in Alberta, I discovered that one of the local co-operatives had produced a relatively uncirculated history of the REA movement in the province that did not come up during the course of my earlier research and that contains key information not found anywhere else.

2.3.4 Other Primary and Secondary Sources

The triangulation of data sources/types is an important method of establishing motivation and meaning for social actors (Yin, 2009) just as it is necessary for compiling the most accurate list of key actors. This approach helped to maximize the validity of the conclusions drawn from interviews. As such, this research incorporates the collection and analysis of internal documents, legislation and reports from relevant groups, such as the Canadian Co-operative Association, Statistics Canada, Co-operative Secretariat of Agriculture and Agri-Food Canada, Canadian Social Economy Hubs, Canadian Wind Energy Association, Ontario Sustainability Energy Association and Natural Resources Canada. Indeed, in new and understudied areas, the "grey literature" of industry, blogs and NGO websites is far richer than what has been published so far by academic presses on the subject of co-operative electricity in Canada. Recognizing this, I expanded my searches for electricity policy and regulatory changes regularly to take this content into account.

I conducted an academic literature review on co-operative electricity development and the political economy of electricity reform at three points in this

process: the first was when designing the study in 2008, the second during early 2010 after a significant number of interviews were completed, and the third in fall 2011 during the final drafting. These reviews involved a survey of international as well as domestic literature on the subject, since the majority of what has been written on co-operatives in this area deals with the United Kingdom, Denmark, Germany and, to some degree, the United States. This international literature is important as many of the advocates for community and co-operative power in Canada refer often to the Danish and German experiences as ideal-type models for Canada to emulate.

2.4 Summary

Assessing electricity co-operative development in Canada requires significant methodological and theoretical pluralism. The paucity of data on electricity co-operatives, together with the fact that they straddle a range of research areas makes designing a significant yet rigorous study a challenge. The research conducted for this thesis was both qualitative and quantitative, spanned 10 provinces and 4 years. Moreover, during this study a number of developments occurred which demanded attention and, in some cases, significant amounts of further research. There is no inevitable land of freedom and democracy at the end of a particular set of regimes or relations of accumulation, however; there is only a series of historically specific struggles and contexts, with uncertain outcomes. The actual political and economic constraints on individual agency and collective action, as well as the ideational ones (Freire, 2000; Žižek, 2006) are crucial given the significant and interrelated crises facing citizens. It is for this reason that we need to look at the kinds of organizations and institutions that people are choosing to form and analyze their success within a current politico-economic context. Cataloguing and analyzing these tensions between corporate forms can help point to specific nodes for activity, for strengthening the networks for progressive change, and for building real on-the-ground alternatives to the crisis-laden dominance of neoliberal governance.

3 MOVEMENT OR SECTOR? CO-OPERATIVES IN CANADIAN POLITICAL ECONOMY

Canadian electricity co-operatives are part of a broader co-operative sector with deep historical roots in this country. Examining the ideological and material roots of contemporary co-operation tells us much about the ultimate contribution that this organizational form can make. Canadian Alexander Fraser Laidlaw argues:

> No co-operative exists in a vacuum but must operate in a given economic and social environment. It must strive, of course, to modify and improve that environment, but it cannot do so unless it recognizes the overriding problems, first of the immediate community, then of the larger region, and finally of the nation and indeed of humanity itself. In the long view the question will be asked: what have these co-operatives and the co-operative movement as a whole done to help people wrestle with the difficulties of life? What is the relevance of co-operatives to the nation's basic problems? (Laidlaw, 1980: 51)

Some co-operatives have and continue to support dominant arrangements in society as part of a small niche corporate sector. At the same time, co-operatives challenge these arrangements as part of a broader *movement* with countervailing power leading to a more empowered and participatory form of governance in the country. The transformative potential of electricity co-operatives thus depends on their intersection within and awareness of specific political economy arrangements and public policies that are, in turn, shaped by co-operative mobilization and movement building.

Co-operatives are diverse and flexible organizations. According to the International Co-operative Alliance (ICA): "A co-operative is an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise." (ICA, 2011) This captures the uniqueness and variability at

the heart of the co-operative form: the member-owner link. Co-operatives are not owned or directed by financial speculators, hedge funds or (inter) national investors; they are owned by their members[24]. Of course, not all co-operatives fit an idealized model of the structures and values. In practice, they vary in their practice of democratic engagement, as well as in their treatment of profit, capital, and commitment to the co-op principles. In order to understand how the co-operative form as a whole fits into our current political economy we need to understand how—both materially and conceptually—it arose and the specific forms these organizations take.

Co-operatives emerged in times of socio-economic crisis in Europe[25] with, for example, Robert Owen's villages of co-operation in Scotland and the Rochedale pioneers in 1830s and 1840s. The emergence of these organizations followed Polanyi's insights that co-operation and reciprocity, rather than competitive markets, formed the natural institutional bases of economies, and that self-regulating markets were a "dangerous fiction" eroding society. Historically, as today, new co-operatives represented a collective response of underserved populations to fill a collective need. They are rooted in redistribution, reciprocity and use-based (rather than trade-based) economics. They are also rooted in the acknowledgement that markets are imperfect and that that collective associations, like co-operatives, were one way to engage in the marketplace in a more advantageous way, either to reshape it or, at a minimum, to bypass concentrated market power.

In this chapter I trace the contours of contemporary co-operativism in Canada, with a particular focus on the theory and practice of co-operatives' role within neoliberal governance and state restructuring. Despite great potential in this movement, there is a tendency to oversimplify either the form or contribution of co-operatives. I argue that their contribution to a more progressive political economy

[24] Co-operatives are not the only organizations like this. For example, there are farmer-owned companies, non-profits and a range of other ownership structures that are not co-operatives but that share some characteristics of co-operatives. Indeed, in the electricity sector in Germany, many of the German farmer organizations that developed wind projects were 'community' (i.e. locally) based but not co-operatives per se.

[25] Some Rochedale co-operators were Owenites, others were chartists and Fabians.

hinges on what one is shifting from. That is, in the case of the power sector, shifts from public utilities towards more co-operatives and private power actors may not be a progressive change, whereas a change from solely investor-owned corporations to more community ownership may indeed result in a positive change for citizens. There are many diverse contributions they may make to communities, but these are dependent on political cultures, public policies and the membership's political and material (or sectoral) orientation.

I am not alone in raising these complexities (Asiskovitch, 2011; Graefe, 2006; Stanfield and Carrol, 2009). Kasmir's (1996) study of the Mondragon Co-operatives and the working class in the Basque region of Spain, for example, warns against idealizing co-operatives and ignoring the multiple and multilayered forms of exploitation that can take place within them. Avi Lewis, filmmaker of *The Take,* recently commented in a new book on co-operatives and capitalism that "the global co-operative movement could provide a genuine alternative to the ravages of predatory finance capitalism—if only it started acting like a movement!"(Restakis, 2010: i) Put simply, the challenge is that as Canadian co-operatives have moved along a trajectory from their early days as part of a social movement to a more established role in the economy they have narrowed, and this reduces the kind of challenge they can pose in neoliberal times.

In what follows below I outline the shape and distribution of Canadian co-operatives, their potential to contribute to empowered participatory governance, and the challenges faced given the current political economy context in Canada. The first half of this chapter covers what co-operatives are, what they do, and illustrates the co-operative difference in, for example, the treatment of profit and organizational norms. The second half of the chapter delves into the complex relations that these organizations have with the Canadian state restructuring and argues the need to build a new co-operativism (Vieta, 2010). This relationship to the state, public policy and broader projects of accumulation is particularly important today as we progress through financial crises and processes of neoliberalization.

3.1 Canadian Co-operatives

Co-operative development has a long history in Canada, beginning with the dairy and grain co-operatives of the late nineteenth century, through the Desjardins development of caisses populaires in Québec and the Antigonish movement of the early twentieth century. This last movement blended co-operative businesses with microfinance, adult education and rural community development in Nova Scotia and formed the basis for the expansion of the credit union movement across English Canada. While co-operatives as a corporate form are virtually ignored in economic and business texts, they are startlingly common: 4 in 10 Canadians is a member of at least one co-operative[26]. In Quebec and Saskatchewan, these numbers are 70 per cent and 56 per cent, respectively (Co-operatives Secretariat, 2010b).

Canadian co-operatives are part of this historic movement, stretching back to nineteenth century cheese factories, creameries, and insurance societies. Canadian co-operatives were leaders in North American co-operation. For example, the Farmer's Bank of Rustico, on Prince Edward Island, was the first people's bank in North America. The first consumer co-op store was in North America was established in 1861 in Stellarton, Nova Scotia, and founded by British coal miners only 17 years after Rochedale (1844) (Gossen, 1975: 44). These early co-operatives emerged to service the needs of populations that were either underserved or exploited (MacPherson, 2010). According to co-operative historian Jack Trevena (1976: 5), Canadian co-operatives formed out of:

> …the need for people to decrease the power which others held and used against them…retail co-ops were born because farmers felt a need to act against the power of merchants who charged excessively high prices. Later, credit unions were formed, in part at least, to provide loans at more moderate rates of interest…Many co-operators deplored the fact that many business places in their communities, large and small, are owned by people living in far-off places and whom they do not know…who are alarmed at the extent to which Canada's industries and resources are owned or controlled from outside this country.

[26] When credit unions are factored in, ten million Canadians are members, or nearly one-third of the total population (Co-op Zone website, 2009).

The concerns expressed by early co-operators about market power of large companies, local control, security and nationalism, echo those of many Canadians today (Bradford, 2005; Neamtan, 2002; Teeple, 2000).

Fascism, state socialism, and the advent of the welfare state led to more centralized economic systems and a correspondingly diminished role for co-operatives. In fact, throughout the long history of co-operatives, they have developed in cycles, with significant development during times of crisis and ebbing when key needs are met. There was, for example, a surge in co-operative development in Canada between the 1930s and 1940s. In 1933 there were 686 co-ops with 325,369 members. By 1944 this number had more than doubled to 1,792 with 690,967 members (Faucher, 1947: 188). As earlier larger co-operatives merged, consolidated and settled into the broader economy, many co-operatives became more of a sector rather than an oppositional and transformative movement. While this may reflect a natural progression of social movements along a life cycle (Gamble et al., 2007), it supports claims that co-operatives are a source of systemic and transformative response to neoliberal globalization.

3.1.1 Types of Co-operatives

Contemporary Canadian co-operatives are no one thing. They can be asset rich or poor, small or large, technologically complex or simple, and exist across an extremely wide range of sectors (Fairbairn, 2003; Fulton, 1990; MacPherson, 2009). These sectors include, for example: dairy marketing, petroleum refining, lumber, financial services, coffee roasting, health care, car, and insurance services. Despite the significant diversity that exists between these organizations, five main types exist based primarily on the nature of the member link to the organization: consumer, producer, worker, financial and multi-stakeholder (see table 3-1). The member link is one of the key factors that differentiate co-operatives organizationally from investor-owned actors in the private sector as it connects those that control the organization with an interest in the good or service itself, rather than profit alone (or even at all).

Table 3-1 Types of Co-operatives

Members	Description	Canadian Examples
Consumer	Members are the customers (both goods and services) of the business.	Mountain Equipment Co-op, Federated Co-operatives
Producer	Members use the co-operative to sell or market goods, also sell business inputs to members.	AgroPur, Gay Lea
Worker	Members are the employees of the business.	Girardville Forestry Co-operative, Sustainability Solutions Worker Co-op
Financial	Members are the customers of the financial institution.	Desjardins, VanCity, The Co-operators
Multi-stakeholder/Solidarity	Newer form; different members all form the co-operative: workers, service users and locals. E.g. health care and tourism co-ops.	La Corvée, co-op de solidarité en soins et services de St-Camille

Source: Adapted from MacPherson 2010; CCA 2010.

Whereas worker co-operatives are formed to meet the needs of employees—including good-quality stable work—producer co-operatives are aimed at helping farmers and craftspeople market, sell, and distribute their goods. Consumer co-operatives operate in order to supply goods and services that populations are otherwise unable to secure. Retail Co-op stores across western Canada are often the only local grocer/hardware store in rural communities (MacPherson, 2010). Solidarity co-operatives have arisen predominantly in Québec. According to the Direction des co-operatives in Québec, there were 549 registered solidarity co-ops in the province in 2011, up from 124 in 2004 (Ministre du Développement économique, de l'Innovation et de l'Exportation, 2011). Their members come from many different member groups (consumer, worker, stakeholder) and are unified in a similar goal; for example, when health-care workers form a home care co-operative with elderly patients and broader community members.

3.1.2 Co-operative Assets and Membership 2009

The material strength of Canadian co-operatives—in terms of assets, membership and geographic purchase—matters for the ultimate potential of the sector to contribute to empowered participatory governance (EPG) (see chapter 2). Co-operatives form a surprisingly large and growing area of the Canadian economy. The 2007 Co-operatives in Canada report[27] illustrates the contemporary size and scope of the co-op sector in Canada: there are 6,738 co-operatives in the country, (5,679 non-financial and 1,059 financial credit unions/caisses populaires). Despite the fact that there are more than five times as many non-financial co-operatives, they hold 1/10 the assets of financial co-operatives (Co-operatives Secretariat, 2010a). Between 1930 and 2007, the number of co-operatives more than quadrupled from 1,100 to 5,700 and membership grew almost eightfold from 756,000 to 6,638,000, outpacing population growth in the country by a multiple of three (Co-operatives Secretariat, 2010a: iv). Co-operatives serve 17.4 million members and employ 142,948 employees, and according to the latest comprehensive data from the Co-operatives Secretariat (2009), co-operatives employed 11 per cent more people from 1998 (78,662) to 2007 (87,221).

3.1.2.1 Provincial Distribution of Co-operatives

Co-operative membership and penetration differs across the country, with the majority (by number of co-operatives) located in Québec and Ontario. Table 3-2 illustrates the number of co-operatives by province and total membership in 2007. Co-operative membership (as a percentage of population) is strongest in the Prairie and Atlantic provinces (Co-operatives Secretariat, 2011). Note that the figure for British Columbia is inflated because Mountain Equipment Co-op membership (with more than 2 million members in 2007; up to 3.3 million in 2009) is accounted for in the data for B.C., while in practice their membership is spread across the country. The non-financial co-operative numbers below show their prevalence in smaller and

[27] This data is based on responses to an annual survey of co-operatives conducted by the Co-operatives Secretariat at Agriculture and Agrifood Canada.

more rurally based provinces, particularly where co-op stores and farm co-ops play a large role.

Table 3-2 Co-operatives (non-financial) by province and membership 2007

Province	# co-ops	% of total co-ops	members[28]	% of provincial population[29]
BC	601	8	2,908,685[30]	67%
AB	705	9	1,176,724	33%
SK	1,081	14	558,548	56%
MB	354	5	382,636	32%
ON	1,564	20	174,608	1%
QC	2,666	34	1,126,436	15%
NB	244	3	193,028	26%
NS	340	4	46,334	5%
PE	138	2	22,719	16%
NL	84	1	27,508	5%
YT	6	0	9	0%
NT	25	0	7,891	18%
NU	31	0	20,506	66%
Total	7,839		3,736,947	11%

Source: Adapted from Co-ops in Canada, Co-op Secretariat 2009: iii

3.2 The Co-operative Difference

The co-operative difference is used to justify not only academic scholarship on co-operative development but also to encourage state agencies and policy makers to recognize the value of these organizations to key policy goals such as

[28] Member data is based on reporting of co-operatives on the annual co-operative survey conducted by the Co-op Secretariat. These made up 72 per cent of co-operatives (5,679 of 7,839) in Canada in 2007 as determined by the secretariat through analysis of provincial and Statistics Canada data (Co-op Secretariat, 2010).

[29] Members may belong to more than one co-operative at the same time (for example MEC and a car co-op or co-op store) so the percentage is likely smaller. That said, the membership number (see note above) is understated by underreporting in the survey.

[30] Note: Mountain Equipment Co-op is headquartered in B.C. and all national members are included in the B.C. figure.

employment, training, social cohesion and rural development, and to support them financially and legislatively (Vaillancourt, 2008). Co-ops can be differentiated from other businesses on a number of fronts (See table 3-3). These differences are both material (legal form/structure) and ideational (co-operatives values, ideals) and are embodied in the ways in which profit, control and membership are constituted in the organization.

Table 3-3 Co-operative and Business Comparison

	A co-operative	Private, investor-owned business
Profit	Surplus refunded to members in proportion to patronage.	Surplus allocated in proportion to investment.
	Surplus earnings or profits belong to members, distributed at annual meeting, yearly as recommended by board.	Surplus earnings or profits belong to the corporation, distributed by board of directors.
Control	A co-operative is a system that guarantees Canadian control of Canadian enterprise.	Constant vigilance is needed to prevent takeover of Canadian business and industry by foreign interests.
	Ownership is in the hands of its members in the community who use the service.	Ownership is in the hands of investors.
	Its control is democratic; each member has one vote.	Control is unequal: by majority of shares.
	Shares are held in name of members only and are not traded for speculation.	Shares may be freely traded and fluctuate in value.
	Proxy control rare.	Proxy control commonplace.
Organization	An organization of users.	An organization of investors.
	Essentially a union of persons.	Essentially a union of capital.

Source: Gossen, 1975

Three elements of the co-operative difference are addressed below: 1) international principles, 2) profit, and 3) democratic constitution.

3.2.1 Principles

The differences between co-operatives and shareholder owned businesses arise in part from their federation in the International Co-operative Alliance (ICA) and the international co-operative principles (revised in 1937, 1966 and 1995) developed by it. These non-binding principles are based on those of the 1844 Rochedale movement in England and work as rules of conduct "subject to interpretation" (Bergen, 1984: 184). The principles, presented fully in appendix 4, are (International Co-operative Alliance, 2010c):

1. Voluntary and open membership
2. Democratic member control
3. Member economic participation
4. Autonomy and independence
5. Education, training, and information
6. Co-operation among co-operatives
7. Concern for community

The international principles of the co-operative movement serve as guidelines to assess whether any particular organization is working within the remit of the movement more generally. They form a key part of the multiple bottom-line approach of the movement, which prescribes a lens of 'people before profit', and the integration of social (member and community) concern as a fundamental part of the organizational form. From time to time, the principles are reassessed and revised to take in new challenges, and allow for more flexibility. The most recent revision of principles in 1995 was chaired by Ian MacPherson and focused on the challenges that globalization presented to the co-op movement. The 1995 revisions added a seventh principle that focused on the broader community and sustainability. Other changes made included adding gender as one of the types of discrimination to avoid, removing a limitation on interest to share capital and reintroducing the principle of independence present in earlier manifestations but absent in the 1966 principles.

The ICA serves as a space for discussion and debate between international co-operators over principles and provides a focal point for interacting with international bodies like the United Nations. In fact, in 1946 the ICA, together with the World Federation of Trade Unions, the International League for Human Rights and the International Chamber of Commerce, was one of the first NGOs assigned consultative status at the United Nations. National and international mobilization led to 2012 being declared an international year of co-operatives by the UN general assembly, raising the profile of these organizations worldwide. In 2009, the Canadian government ratified this move, and in 2011, the U.S. Senate followed suit. The networking and movement building that takes place within the ICA is important, as it provides a space for strengthening the degree of countervailing power that these organizations can exert on policy makers.

3.2.2 Profit

Co-operatives are voluntary organizations that often operate in the market as social enterprises. Profit is not the purpose of a co-operative. Service to members—as defined by those members—is, so co-operatives can also be non-profit organizations. Co-operatives differ significantly from other businesses in their treatment of profits can be structured as either for-profit or not-for-profit. They key difference between these two (other than tax implications) is that for-profit co-operatives distribute their profit—'savings', in co-operative language—back to their membership. According to Art Postle, former CEO of Federated Co-operatives Limited (FCL), there are benefits "from coming together as a co-operative because it gives you some benefit of availability of supply, cost of supply, quality of product, all of those sorts of things. But you don't form one from the perspective of 'we can make an investment in a co-operative.'" (Personal Interview, July 8, 2009)[31].

[31] The role of investment for profit is contested in the co-operative movement. Attempts to loosen the rules on outside investment and the member-user link that provide a return on capital rather than patronage dividends are often seen as capitalistic and compromising co-operative principles (Alkalay, 2010).

The treatment of profits and member orientation leads to a flow of capital and skills back to their local communities leads to local economic development benefits over other corporate forms (Fairbairn et al., 1995; Ketilson et al., 1998). The role of co-operatives in rural (and particularly northern) development has been well documented in Canada (MacPherson, 2009). Where co-operatives engage in lucrative business areas, as with the Consumers' Co-operative Refineries Limited (CCRL) and oil refining, the returns are circulated back through the membership and into Canadian communities. For example, since the CCRL is wholly owned by Federated Co-operative retail stores, these rural stores continue to operate supported by funds from the refining side of the organization. In fact, according to FCL, an umbrella co-operative for retail co-op stores in western Canada, they returned $355.7 million in patronage refunds to members on 2010 FCL purchases[32]. This included $207.3 million in cash equity to individual members, and more than $1 billion cash in the past five years (FCL, 2011).

The profit orientation of co-operatives also leads to economic advantages and local development in other ways. First, when primarily locally financed they don't need to come up with market rates of return for investors (often in excess of 10 per cent). According to one co-operative developer in Québec's lower St. Lawrence region, in the forestry sector the only mills open and functioning now are co-operatives, because they can function with 3 per cent returns (Gagnon Personal Interview, May 16, 2010). Secondly, in a 2008 study, the Québec Ministry of Industry and Commerce study found that co-operatives have almost twice the survival rate compared to other businesses in that province, with the co-operative advantage (gap between the two rates) growing as time goes on.

[32] Patronage works in proportion to what the co-op used. The more a co-op buys from Federated the more savings they get in patronage, and likewise the more an individual shops at the co-op store locally the more they receive. A portion of this comes to the member in cash (there are Revenue Canada holdbacks) so members get 35 to 95 per cent of their allocation. You need to buy a certain amount to qualify (this is so the co-op doesn't waste its time with 50-cent transactions). There are also age by-laws wherein members who reach 65 years old can have their equity in the co-op paid back to them.

Table 3-4 Co-operative vs. Business Survival Rate Québec

	After 3 years	After 5 years	After 10 years
Average survival rate of co-operatives	75%	62%	44%
Average survival rate of Québec companies	48%	35%	20%
Co-operative Survival Advantage	1.56 times greater	1.77 times greater	2.2 times greater

Source: Adapted from Clement and Bouchard, 2008: 22

The lack of prioritization of profit for profit's sake in the movement may also make these organizations more likely to take other values, including environmental ones, into account (Gertler, 2001). Even if sustainability is explicitly listed in the co-operative principles, the role and circulation of profit, together with local connection to resources (Ostrom, 1990) may play a key role in better positioning co-operatives to help address future challenges. Co-operative association employees in Ontario and Nova Scotia put the issue this way:

> If the co-op when they start understands people before profit [sustainability] is an easy sell if they aren't there already. The green solution doesn't get reduced to 'Oh god, it's so expensive to buy recycled paper'…the resurgence of the local food movement has been hugely co-op centric. Most are saying, 'Why would you want to do this any way other than farmer owned or consumer controlled or both?' (Hennenbury Personal Interview, July 20, 2009)

> I think there is always the self interest that the co-operative sector can't capture, that is, I don't want to pollute my own community, you've got peer pressure, you've got other things. It maybe shifts the decision making on a social level. (McLelland Personal Interview, May 18, 2010)

3.2.3 Democratic Governance and Accountability

Members control co-operatives through equal voting rights and each member, regardless of financial investment or use, gets an equal vote. Decision-

making power is not based on how many shares or how much capital you have. This particular allocation of voting power is one of the reasons that advocates for co-operatives argue they are more democratic than other businesses. Member control of co-operatives also means that, in general, the businesses operating in the community are subject to the population that owns and patronizes them. The same people in the co-operative sit on the school boards are involved in local politics and live in the same geographic area. This means that the interests represented in the co-operative are not solely (or even partially) that of profit maximization, but often revolve around service provision, employment and identified member needs.

The co-operative governance difference is further supported by Ostrom's (1990) argument that there are significant informational and co-ordination advantages to structuring institutions (in her case resource management) locally and collectively. For example, organizations where resource users themselves have a say and stake in their governance are better placed to adapt to local conditions and complex policy challenges (Bradford 2005). In co-operative parlance, the emphasis is on stakeholders, and not shareholders. The theorized benefits of closing the user-owner loop and tightening feedback between managers, owners, producers and consumers is that adaptations can be made more quickly and that the users have incentives to ensure sustainability of their livelihoods while the requisite social networks deepen compliance.

Control of local retail co-operatives, housing and workplaces (for example) can affect the availability of supply, cost of supply, and quality of product. This control is, of course, bounded significantly by the state regulations and the political economy within which co-operatives operate. Indeed, the value of co-operatives is often in responding to broader economic conditions and problems. A number of examples illustrate the impacts co-operatives can have in this regard. In Québec, co-operative ownership prevented closure of lumber mills, as the membership prioritized secure local employment over the profit margins private companies require to stay in operation (Gagnon Personal Interview, May 16, 2010). In Saskatchewan, the Consumer Co-operative Refinery Limited (CCRL) produced a

unique diesel product (EP3000) at the suggestion of its farmer-members, with more energy and miles per gallon (Postle Personal Interview, July 8, 2009). In Ontario, the EverPure co-operative is supplying biodiesel to local residents, keeping prices competitive with gasoline by buying in bulk. In daycare, housing, and a wide range of other sectors similar examples are found (Deller et al., 2009; Quarter, 1992; Restakis, 2010).

The direct and local connection co-operatives embody between the management and the users thus provides more stability, and resilience from the vagaries of businesses trying to maximize a bottom line for disembedded shareholders. The stability arises from the fact that co-operatives are less likely to cease operations when profit margins shrink, as the member interests are only partially financially driven. According to Hammond Ketilson it was through the use of democratic structures and processes that co-operatives survived where other business could not, developing and utilizing social cohesion to mobilize scarce resources (Fulton and Ketilson, 1992; Ketilson et al., 1998).

Co-operative development also leads to information and capacity building at the local level. According to one Nova Scotia Co-op Council employee, "it is always good to have competition if you can have local competitors whether energy or not, that brings a good dynamic to a community whether it is food processing or energy generation; if someone is inflating their price they can be undercut; that knowledge is there." (McLelland Personal Interview, May 18, 2010) Hence, the development of local alternatives, of having locally controlled agents, skills and options, makes a difference in the capacity of memberships and the communities they live in to respond to failures in the marketplace more broadly.

3.3 Challenging the Co-operative Difference

Despite the many contributions that co-operatives can and do make for Canadians, thorny issues persist over how deep the co-operative difference goes towards creating empowered forms of governance. These issues include, for example: the role of investment, lack of movement building, member participation

and adherence to social and environmental bottom lines. At the heart of these challenges is not the potential of the co-operative structure itself, but the actual practice of boards and members. Co-operatives (particularly for-profit ones) are like private sector corporations insofar as they operate in the marketplace, selling goods and services to the public. They are owned and governed by private individuals, not the public at large and are in many ways firmly part of the private sector. This is particularly the case with larger co-operatives that work as bulk purchase arms, as the member-governance link is diffused through the organization. In response to these challenges, a new co-operativism is emerging that seeks to move beyond some of these challenges to reinvigorate the solidarist and anti-capitalist underpinnings of co-operativism (Vieta, 2010).

Member engagement is a real limiting factor and challenge for co-operative democracy and accountability. It is possible to be a member of a co-operative in name only, with little understanding of your rights, or of the co-op structure itself. Low member engagement also leads to challenges of staffing volunteer boards and bringing new generations into co-operative development and participation. A 2010 Ipsos Reid poll on co-op awareness in Canada found the following (Ipsos Reid, 2010):

- 59 per cent of respondents were 'not at all' or 'not very' familiar with co-operatives. Only 7 per cent reported being 'very familiar'.
- One in five respondents was actually a member of a co-operative.
- 44 per cent did not know the difference between co-operatives and other types of businesses.
- Respondents were confused as to which businesses were co-operatives. When provided with a list of different organizations 49 per cent thought Costco was a co-operative, 40 per cent thought WestJet was, and 35 per cent thought CUPE was a co-operative.

According to one thesis interviewee: "we're not promoting the co-operative spirit. I don't care, we just aren't. Unfortunately, it'll probably take a catastrophe and

usually it's the small guys that suffer when that happens" (J. Anderson Personal Interview, December 1, 2009).

Challenges of representation also persist in these organizations. The board-membership relationship is an identified governance issue in the co-operative literature, as is the role of volunteers in co-operatives, and the treatment of non-members (workers and other community members). For example, professional managers and boards can manage and steer information flows in ways that the membership is unaware of, or unengaged with. This is not a problem unique to co-operatives, but it certainly affects the depth and veracity of any claims in a specific co-operative to engendering economic democracy at a broader level for communities. Addressing the localization and community representation argument seriously means dealing with the sticky issues of political ideology that have plagued the co-op movement from day one: Is it conservative or solidarist? What is the content of those values? Co-operatives "don't necessarily practice the principles, they don't necessarily believe in democratic participation, [members] do have a vote for the board because that's in their bylaws but they don't necessarily believe in that" (Gipe Telephone Interview, April 7, 2010).

Neoliberal governance is setting the context for a revitalization of co-operativism in Canada as provinces retreat from services provided and developed in the welfare-state era (WSE). New co-operatives are being pushed from both the grassroots level of material need as well as policy from the state and transnational organizations. This state support raises both challenges and opportunities for co-operatives as the specific policy intention varies greatly between states: from the support for an expansive co-operative economy in Venezuela to a marginal neoliberal role in Britain and Canada. If anything should be clear from this chapter so far, it is that co-operatives are no one thing; they are fluid, flexible and reflect the societies within which they operate. Co-operatives, as creatures of their member's needs are affected in role, nature and number by state policy and larger shifts in political economy. Public policy choices can either strengthen or weaken the co-operative difference. Neoliberal policies that devolve responsibility for social service

provision to co-operatives, without the requisite funding or policy co-ordination, ensure that initiatives remain gap filling and partial.

The agnostic politics of the co-operative form provides an opening for state agencies seeking to marketize state services. This is not to say that co-operative leaders are unaware or sanguine about these developments. Crucial tensions thus emerge, as they always have, between short-term provision of needs and long-term socio-economic transformation and change. Without an institutional program to enhance the progressive and democratic aspects of co-operativism, existing centres of state power will shape them in a neoliberal direction (Graefe, 2006; Keevers et al., 2008). Clearly the latter is taking place both in Canada and in the U.K. Co-operatives play a role in shaping that context, but the emphasis on independence and "self help" in the co-operative literature does little to advance countervailing power. At the same time, elements within and around the co-operative movement, in labour, social and solidarity organizations and progressive political circles, are forming a response. The new co-operativism (Vieta, 2010) is a re-articulation of the movement, enhancing solidarity and progressive political struggles. For Vieta: "Even with the entrenchment of neoliberalism over the past four decades, co-operative practices and values that both challenge the status quo *and* create alternatives to it have returned with dynamism in recent years." (2010: 2)

3.4 Co-operatives, Public Policy and Neoliberal Governance

One of the reasons co-operatives are resurgent today across the provinces (and beyond these provincial development networks) is that they contribute positively to local economic development. Another is that they straddle two problematic dichotomies for policymakers: public (state) and private (market), left and right. Co-operatives are remarkably flexible institutions, and suit the political leanings of both the ideological right and left. Being in the private sector, they also allow states to remain rhetorically committed to letting the private sector operate with limited intervention from the state. The co-op movement itself is ideologically rather agnostic. The core values can certainly fit within a neoliberal context. This

flexibility is a short-term strategic asset, but in the long term is problematic for the kinds of contribution the social economy and co-operatives can ultimately make (Graefe, 2006). Canadian co-operators made similar points. For Jen Heneberry of the Ontario Co-operative Association:

> We've really benefited from the ability to look past ideology. There's a fair bit of us that have very strong ideological viewpoints…The CCF was left wing…but lots of the social credit guys formed federated co-ops. The key is that the ideology doesn't necessarily come along with the model and the ability to see the commonalities has done the co-op model well. (Heneberry Personal Interview, July 20, 2009)

One Albertan co-operator described the politics of his co-op members as follows:

> Most of us are right wing. We're not an old line co-op either. I think my grandfather in 1905 was the first president of the Killim co-op store…he came out of Iowa to here. I'm sure he was the first chairman, formed a co-op and brought barbed wire in…I wouldn't vote NDP if my life depended on it. But we shop at the co-op all the time. (Brav-C Member, Personal Interview, December 1, 2009)

As a result of the political diversity within the co-operative movement NDP, Conservative and Liberal parties in Canada support them, to differing levels. There was a range of responses from interviewees regarding the role that political parties played in aiding co-operative development, with roughly half arguing that it doesn't matter which party is in power when it comes to facilitating co-ops.

> The [Nova Scotia] Conservative government was also very supportive. There hasn't been a big change really. It is maybe like farmers' markets; no matter how political you are it is hard to argue against them. Here we've had a good relationship with both. I wouldn't say co-ops have anything to fear with an NDP government, when the government was in opposition if there was a grant to Michelin that would be criticized, there's not the same dynamic about co-operatives. (McLelland Personal Interview, May 18, 2010)

But for others, the NDP was clearly more supportive:

> In 1992 when the NDP was in power in Ontario we negotiated an agreement with them to support worker co-operative development and we had five offices across Ontario with…regional developers, a development strategy process with prefeasibility through

> formation…It was fantastic. When the NDP didn't get elected all that was swept away, we lost all our momentum. (Christianson Personal Interview, July 23, 2009)

The relationship of co-operatives within broader processes of accumulation and legitimation is complex. Co-operative activity is, on the one hand, indicative of co-operative success at filling and meeting the needs of a population. From another perspective, the fact that those needs exist in the first place, or are increasing, means that other elements of the political economy picture are eroding the security of populations, so that co-operative development may actually be a symptom of deeper problems in a given political economy. Hence, the relationship between political ideologies, the state and co-operatives is relevant to the question of co-operative potential going forward.

3.4.1 Policy Support for Co-operative Development

Public policies and state agencies at both the provincial and federal level support co-operative development.[33] State policy and programs, together with the work of co-op associations and the communities they locate in, explain the diversity of co-ops across the provinces. The table in appendix 3 provides an overview of the relevant co-operative agencies, legislation and tertiary co-op associations at the federal and provincial levels. When comparing government institutional support for co-operatives, four provinces stand out: Québec, Nova Scotia, Manitoba and, most recently, Newfoundland (table 3-5). Unlike the rest of the provinces in Canada where co-operatives deal with broader business development or financial regulatory agencies, in these four provinces targeted support has been set up for co-operatives specifically. In three of these cases the provincial co-operative associations do the up-front development work, while funded by a provincial department.

[33] Most co-operatives are regulated under provincial acts. If a co-operative operates in more than two provinces (with fixed offices) it falls under the federal legislation (CCA, 2011). Without formal incorporation at the federal or provincial level a co-operative is unable to use the name co-op or co-operative legally.

Table 3-5 Provinces with Specific Co-operative Agencies

Province	QC	NS	MB	NL
Department/Policy	Direction des Co-operatives Investissement Québec, (administers the Co-operative Development Program)	Co-operatives Branch, Access Nova Scotia	Housing and Community Development (Co-operative Development Services)	Newfoundland and Labrador Registry of Co-operatives Department of Innovation, Trade & Rural Development (Co-op Zone project and a Regional Co-op Developers Network)

Source: Canadian Co-operative Association, 2011

Strong co-operative development systems, like those in Québec and Nova Scotia, lead to a sector that is better resourced, better networked, and better able to push its agenda into many parts of the economy. By far the most advanced is the province of Québec, which funds and administers a co-operative development program. This program works in conjunction with the Fédération des Co-opératives de Development Regionale (CDR) to support 12 regional CDRs across the province. A 2007 initiative in Newfoundland used a similar model wherein the Department of Innovation, Trade & Rural Development partnered with the provincial co-op association to fund and administer a program called Co-op Zone. Through it, nine regional development staff facilitate, educate and promote co-operative development in the province.

In Nova Scotia, the Co-operatives Branch of Access Nova Scotia works with the Nova Scotia Co-operative Council to help fund and promote co-operative development in that province. The province of Manitoba's Co-operative Development Services branch provides help (for example, on incorporation, and navigating regulations) and in 2010 the Housing and Community Development Minister announced a tax credit for donations of up to $50,000 to a new co-operative development fund (Manitoba, 2010). Until 2007, Saskatchewan was on this list of supportive provinces, as it had a department for Rural and Co-operative

Development, but with the 2007 election in that province, development and business fell under the remit of a new agency, Enterprise Saskatchewan, and co-op targeted organizational support ended.

3.4.2 Neoliberal Co-operatives?

The contemporary resurgence of policy interest in co-operatives arises in response to the processes of state restructuring that neoliberalism brings with it. This interest has surged since the global financial crisis of 2008, with states looking to cut budgets and find new and cheaper ways to provide services that the public has come to expect but with reduced revenue. Up until recently, the development of crown corporations and provision of public electricity, education, social security and health care all served to reduce the need for co-operatives. According to MacPherson, "To a significant degree, the historic communitarian instincts of the international movement were blunted by the advent of the welfare state" (2008: 636). One interviewee in Alberta articulated the tension and connection between the co-op/public ownership relationship this way:

> If you have public why would you even have co-op? It really is one big co-op, only the government controls it: a co-op of the whole province. It is the same concept [as co-operativism], we're all owners because we all own everything in the province. (Nagel Personal Interview, November 27, 2009)

The political variability and flexibility of the co-operative form and values, together with the very real contributions to social and economic development of the co-operative difference make them an appealing vehicle and useful ally for neoliberal states. Further, using co-operatives as service delivery mechanisms, as Alberta did with gas co-operatives, adds a level of legitimation to the withdrawal (or even refusal to enter) service provision. For John McLelland at the Nova Scotia Co-op Council: "To be honest, politically there's some sectors of the economy that if a co-op becomes involved (health care) there's probably less of a backlash against privatization and big bad government coming in." (McLelland Personal Interview, May 18, 2010)

Co-operatives and organizations like them can thus play a flanking role for neoliberal policy, essentially cleaning up after and supporting neoliberal processes (Jessop, 2002). With basic needs met by pooling and community action, the most profitable parts of the economy are left to the private sector, and in so doing "self-help" erodes broader progressive goals. Being consigned to the flanking role also leads to dangers for co-operative survival and the co-operative contribution. For MacPherson:

> The withdrawal of the state from so many activities opened opportunities for new co-ops, especially health and social co-ops. The apparent triumph for liberal, capital-driven firms seemed to some to beg other challenges: how were co-operatives different? Were successful co-ops destined inevitably to become private firms, "demutualized" to pursue market advantages and profit for small groups if not their entire memberships or their communities? (MacPherson, 2008: 639)

The experiences of UK co-operators suggest cautionary lessons for their counterparts in Canada (Jordan, 2010). The enthusiasm for co-operatives in Britain has come from both Labour and the Conservatives, keen to appropriate the volunteer time, energy and skills for social cohesion whilst keeping the services off the state ledgers by contracting out public services to private organizations (Hunt, 2010). The U.K. Co-operative association has urged co-operators to be cautious of how the movement is being used to justify public austerity measures. In a 2011 press statement Ed Mayo, secretary general of Co-operatives U.K., argued that:

> …we are wary of some elements of the government's approach to opening up public services to outside providers…First, there are serious issues facing public sector employees and users looking into the co-operative option—from uncertainty about jobs and pensions to the challenge of public sector workers setting up new businesses—that need to be addressed if public sector mutuals are to succeed. Second, in the current context, it won't help staff or users if all the government does is to open the door to privatisation with fake mutuals that fail basic quality tests of member ownership and democracy. (2011)

3.5 Summary

Co-operatives are no institutional panacea, but they certainly can play an important role, together with labour unions, the solidarity economy and more conventional political agents in working towards the creation of what Tim Hunt (2010) calls a "polyculture of dissent." The co-operative model, despite its challenges and problems, still represents a unique and potentially more democratic organizational form. The institutionalization of closer feedback loops, transparency, member voting and economic development support a "co-operative difference" from shareholder owned firms. With its roots in solidarism, collective action and early social movements, the potential for contributing to a more progressive political economy exists. The significant purchase that these organizations have in the Canadian economy, together with the lack of attention paid to them, makes them an important area for study. So too does the recent re-emergence of policy initiatives aimed at contracting out services to co-operatives.

A sober analysis of co-operative development and potential, however, needs go beyond cheerleading and advocacy of these interesting and unique institutions to address critiques that the movement represents a gentler form of capitalism and is eroding the welfare state from the left. Co-operative values can be read as either conservative or progressive, depending on which ones you highlight. Many co-operatives that have existed for many years are not part of international solidarity movements, and are openly hostile to these broader movements to re-politicize co-operatives. The co-operative *difference* does not always lead to preferable outcomes for social justice advocates. It is, however, strengthened by solidarist projects, by political mobilization and by a focus on participation and public education within certain sectoral contexts. The following two chapters examine the specific challenges and changes facing the electricity sector in Canada.

4 POWER TO THE PRIVATE? INTERNATIONAL FORCES FOR POWER SECTOR RESTRUCTURING

Just as our understanding of Canadian co-operativism matters for analyzing the impact of electricity co-operatives, so too does the changing political economy of electricity generation and distribution. The electricity sector is undergoing momentous change and, as Ted Craver of Edison International argues, faces "more change in the next ten years than we've seen in the last hundred" (quoted in Achenbach, 2010: 138). These changes include a restructuring of grids, of ownership structures, governance arrangements and the introduction of new technologies. The driving forces behind how, why and where power sector reforms are taking place shape the potential for electricity co-operatives to contribute to a more locally embedded, sustainable and democratic ownership structure. This is because co-operative feasibility is shaped by the macro-political context within which the possible is set. Currently in Canada, a neoliberal frame sets the boundaries for what is financially possible and politically imaginable, and for likely future policy tradeoffs. Despite the rhetoric of open competition that pervades neoliberal reform models, real cultural and material constraints exist in the electricity sector in the way in which particular actors—in this case co-operatives—are treated.

The forces driving Canadian restructuring arise from both domestic and international sources. They are complex and, as a result, will be addressed over two chapters. This chapter covers the international drivers of power sector restructuring. It outlines the overarching forms and forces of reforms, with a particular focus on the United States and continental pressures on Canada. This is important because neoliberal reforms in Canada, explored in chapter 5, are part of a broader project of electricity market restructuring that has taken place in many jurisdictions around the world—for example the United States, United Kingdom,

India and Chile—since the 1980s, often with problematic results. These changes cannot be explained simply as a function of domestic financial or technological challenges. Rather, these reforms are being pushed by a range of actors in governments, international organizations, regulatory bodies (like the Federal Electricity Regulatory Commission) and corporations seeking to open public services to private accumulation (Blue, 2009; Cohen, 2004; Slocum, 2001). These pressures also spill across international borders and create a climate for states that have yet to conform to start adapting marketizing processes and institutions for their power sectors.

Power sector restructuring has manifested in different ways in various places. In some countries, like Chile and the U.K., restructuring involved outright privatization. In other cases, like California, the primary mechanism was deregulation. The incumbent fuel sources, domestic political coalitions and governance structures in different states have led to a patchwork of power sectors internationally wherein both public agencies and private actors play important roles (Victor and Heller, 2007). In each of these diverse national experiences, restructuring has come with significant controversy and cost (J. A. Anderson, 2009; Dubash and Williams, 2006). For Canadians, developments in the United States are of particular interest since the two countries are so closely linked by ever-deepening trade ties. Indeed, according to Howse and Heckman, a "combination of American regulatory activism, Canadian regulatory inertia, international trade law rules and Canadian interest in continued access to American market may bring about an integrated Canada/US [power] market" (Howse and Heckman, 1996: 134).

This chapter contains two parts. In part one, I examine the ideological underpinnings and justifications for a "standard' model" of electricity restructuring. I also outline common technical and political economy challenges that arise from these initiatives and trace the history of power restructuring from its roots in Chile and the United Kingdom, through to the California electricity crisis and the Enron scandal. I raise two key challenges to the argument that restructuring facilitates a greener or more democratically constituted power sector. The first is the increase in

power trade and generation for profit, and the second is the diminished incentives in restructured markets for demand management. Part two focuses on the Canada-U.S. relationship and addresses the growing continentalization of the North American power market. Particular attention is paid to the role of exports and U.S.-led regulatory harmonization between the two countries, together with the constraints that trade agreements set for future policy reversals.

4.1 The What, Why and How of Electricity Restructuring

Power sectors are structured along a continuum of integration and marketization (see table 4-1). At one end is a service-oriented system wherein one actor (typically a public utility or regulated private monopoly) is responsible for all aspects of power delivery within a given jurisdiction, from generation, through transmission and distribution, to retail. At the other end is a functionally unbundled market-oriented sector with competition and actors at each point in the generation, transmission and retail process of service delivery (International Energy Agency, 2005). Electricity restructuring involves breaking up integrated monopoly utilities and creating markets for different aspects of the electricity sector: generation, transmission, distribution and retail.

Table 4-1 Electricity Sector Restructuring

		Marketization		
		Monopoly	*Open Wholesale Market*	*Open Retail and Wholesale*
Utility Integration	*Bundled*	Generation, Transmission Distribution, and Retail (GTDR) functions are all provided by a regional (public or private) utility.	-	-
	Unbundled (restructured)	Generation separated from Transmission, Distribution and Retail. Space for generation competition to sell to monopoly utility.	Unbundled utility provides open access for wholesale market actors to sell power through the grid.	GTDR functions are broken up and an open power market at the retail level is added to the already existing wholesale market.

The standard model of restructuring based on the U.K. experience involves functionally separating the formerly public utility (into transmission and distribution, generation, retail) and opening the sector to private competition. Victor and Heller (2007: 6) outline the four steps:

1) generation, transmission and distribution are 'unbundled';
2) privatization of parts of the public utility;
3) regulatory institutions to oversee conduct in the newly 'competitive' parts of the system are created; and
4) power pools are created for electricity trading.

This restructuring takes place in order to open up space for private sector accumulation through, for example, Independent Power Producers (IPPs), open retail markets and power trading. The role of the public sector in a restructured

system then shifts from an active manager of and participant in all aspects of the sector, to a more circumscribed role as market rule-enforcer and referee to national and international corporations[34]. This scale-back of state participation has also been accompanied by a shift more generally from command-and-control regulation of the sector to market-based voluntarism and, in cases like California, *de*regulation (Doern and Gattinger, 2003). These reforms are accompanied by the myriad challenges of coordination and policy coherence given the complex systems that emerge.

Restructuring is underpinned by neoliberal ideology: the *appropriate* governance framework for electricity requires private actors and markets to play the central allocative roles. As an article in *The Economist* put it, "The rigidity of the public sector does not merely reduce the quality of services. It also discourages innovation. In the private sector innovative firms routinely experiment with new business models, measure the success of those models and then expand successful ones" (2011). How this ideological commitment manifests in various jurisdictions differs from place to place. In the case of the United Kingdom, challenging the power of the coal unions played an important role. In California, Enron and the private sector saw an opportunity to open new markets for accumulation. The specific policy packages are not uniform in either speed or scope, but they move power sectors along the continuum from integrated service provision toward market-based private systems.

Around the world restructuring is justified with reference to a wide range of factors: debt reduction (via sale of public assets), reducing economic inefficiencies (via competition), and most recently a need to shift to renewables (via innovation). This latter link between innovation, markets and renewable (or green) power is complex, important, and addressed further in chapter 5. Briefly, however, the hope for environmentalists long frustrated with fighting against centralized coal and nuclear systems is that broken up and restructured systems will allow for a broader diversity of (ideally new and greener) technologies and actors (Cohen, 2006b). For

[34] In Canada these include: Plutonic Power (now Alterra), Transalta, TransCanada and Brookfield.

example, Herman Sheer argues renewable energy can be smaller scale, and thus empowers homeowners and community groups to participate. (Sheer, 2007). Sheer is joined by advocates of 'soft energy paths' in popularizing the support for generation sources that are small and distributed near demand (Lovins, 1977). These links between innovation, new renewables and new actors have led some environmental groups—the Sierra Club in California and Energy Probe in Ontario, for example—to support power sector restructuring, despite the fact that restructured and deregulated systems undermine the very public powers required for conservation and widespread renewables development (Cohen, 2006b; Heiman, 2006). There are also significant problems of efficiency, cost and implementation of widespread distributed systems (Akorede and Hizam, 2010; Jenkins et al., 2009; Quezada et al., 2006).

Three distinct but often co-existing visions of electricity governance have thus emerged out of contemporary restructuring debates: public/state, private, and social economy/eco-local (see table 4-2). Within each, a different conception of the role of electricity, and prescriptions for how it should be structured, owned and regulated exist. The main shift taking place today is between vision one (public/state) and vision two (private). In both, generation tends to be large scale, geographically concentrated due to cost and resource efficiencies. The key difference is how the benefits and costs of power generation, transmission and retail are structured. The deep green and social economy ideal is far less mainstream than the others, and will be explored more fully in chapters 6 and 7, but it is important to note here that this vision is increasingly being used as a foil for the kinds of developments that support restructuring. In reality what is taking place is a somewhat misleading rhetorical opposition between vision 1 (public/state) and the other two (private and social economy/eco-local).

Table 4-2 Electricity Governance Regimes

	Public/State	Private Market-based	Social Economy/ Eco-local Ideal
Conception of Electricity	Core public good	Commodity	Local asset
Financing/Investment	Public debt	Private Investors	Local Investors/Users
Generation	Large scale, geographically concentrated in resource rich areas	Large scale, geographically concentrated in resource rich areas	Smaller scale, distributed and diversified based on local generation assets.
Role of state/regulation	To ensure public utilities provide maximum public benefit	To coordinate and develop markets; address market failures where necessary	To ensure true cost pricing for environment and privilege local ownership and grid access.
Transmission/ Grid Structure	Centralized	Coordinated through central agency to facilitate open access and reliability.	Decentralized

4.1.1 Roots of Restructuring: Chile, the U.K. and the U.S.

Power sector restructuring first emerged as an issue in Chile, the United Kingdom and the United States in the late 1970s and then spread via transnational actors over the next three decades to many countries around the world. In both Chile and the U.K., governments embarked on radical reforms of previously publicly owned power systems. Also in both cases, ideologically driven actors, rather than consumer demand, played central roles in reform (Beder, 2003). In Chile, the overthrow of the Allende government in 1973 ushered in Pinochet's military dictatorship. The latter, together with an influential group of Chicago school

economists—including Milton Friedman—privatized state-owned utilities, unbundled portions of the power sector, and allowed wholesale retail competition with the country's 1982 Electricity Act. In 1986, an independent system operator and open retail markets were created. Chile's power sector is now 100 per cent private and assets are owned by foreign multinationals, including Spanish Endsea and American AES Gener (J. A. Anderson, 2009; Hall, 1999).

In the United States, restructuring efforts aimed at breaking up private and public monopoly utilities and creating markets for independent (non-utility) generation and power trading. At the federal level, the push to restructure began in 1978 with the Public Utilities Regulatory Policies Act (PURPA) where congress mandated utilities purchase power from private (non-utility) generators with the condition that this power was obtained at lower cost. According to Heiman, the act emerged "in part, to circumvent monopoly control over power provision that was threatening to block the energy independence programs of President Carter" (2008: 97). While Carter was concerned with the Organization of the Petroleum Exporting Countries (OPEC) crisis of 1973 and energy security, subsequent administrations dropped the federal support for renewables and energy security but deepened market restructuring via rulings by the Federal Electricity Regulatory Commission (see section 4.2) (B. Sovacool, 2011).

Pressure to restructure, then, was driven primarily by private actors and facilitated by state policy. For example, the three major private power utilities in California spent $69 million between 1994 and 2000, pushing deregulation (Beder, 2003: 96). The state passed legislation—AB 1890—in 1996 which deregulated private utilities, created an independent system operator (ISO) to manage transmission systems and opened the retail market to competition (J. A. Anderson, 2009; Burtraw et al., 2000). A 'benefit to consumers' argument played an important role in justifying these moves, as did reference to the new opportunities for non-traditional actors (communities) and generation sources (including wind and solar) (J. A. Anderson, 2009). In the words of the United States Accountability Office:

> The federal government has pursued a policy to restructure the electricity industry with the goal of increasing competition in wholesale markets and thereby increasing benefits to consumers, including lower electricity prices and access to a wider array of retail services. In particular, federal restructuring has changed how electricity is priced—shifting from prices set by regulators to prices determined by markets; how electricity is supplied—including the addition of new entities that sell electricity; the role of electricity demand—through programs that allow consumers to participate in markets; and how the electricity industry is overseen—in order to ensure consumer protection (United States Government Accountability Office, 2005: 2).

The United Kingdom was the first major industrialized nation to fully restructure its power sector and is considered by some the gold standard in restructured electricity market design (Joskow, 2009). While the PURPA set the framework for restructuring in the United States, their federal system meant that the degree of restructuring often varied from state to state. Margaret Thatcher's Conservative government privatized public utilities in 1990. The 1983 and 1989 Electricity Acts went on to set what is now known as the standard model of power sector reform, with the unbundling of centralized utilities, the privatization of state-owned corporations, opening of transmission lines to power trading and competition, and introduction of competition to retail and wholesale markets. These initiatives also served to undermine the power of the British coal unions (Beder, 2003: 198–199) and reduce the size of state services.

From these first key experiences, a powerful policy package and supportive narrative emerged, promoting the virtues and customer benefits of restructuring power systems. These actors and forces continue to push for restructuring today through a network of think tanks, and government agencies across the developed and developing worlds. According to Gratwick and Eberhard, actors in the World Bank, IMF, London Economics (a consulting firm) and Oxera, as well as think tanks like the Adam Smith Institute and the Heritage, Cato and Fraser Institutes played key roles. Gratwick and Eberhard argue: "A number of the consultants involved in the reforms in Chile, Argentina (later) and the UK, subsequently were involved as

advisors to development finance institutions and developing country governments, and were often directly involved in the design of power sector reform in developing countries." (p. 3949) Countries that have subsequently reformed their power sectors have included India, Tanzania and South Africa. Among industrialized nations, New Zealand, Australia, and the provinces of Ontario and Alberta in Canada have also restructured their power sectors, implementing many, if not all, of the standard model of reforms.

4.1.2 Drawbacks of Electricity Restructuring

Power sector reforms have been and continue to be problematic in the jurisdictions where they've occurred. These reforms include price manipulation in power markets by powerful actors (Enron, for example), the co-ordination costs of a decentralized system, and the environmental costs of privileging markets when environmental degradation and climate change loom large. Power sector restructuring thus raises both technical and political economy challenges.

4.1.2.1 Technical Drawbacks

The specific technical requirements of generating and transporting electricity make restructuring the sector a particular challenge. Two technical limitations—capacity and reliability—make central co-ordination of the flows though the system a vital part of electricity infrastructure. This need for systemic co-ordination, together with the sector's importance to society, has necessitated significant public investment and oversight in the electricity sector and, up until fairly recently, heavy regulation (Freitas et al., 2007). Electricity system capacity[35] represents the ability of the power system (the grid) to handle overall increased power generation[36]. This is a challenge because if a generator connects to a power line already at capacity, it

[35] This is different from *installed capacity,* which refers to the maximum electricity that a particular plant/source can produce, which can be further differentiated by *nameplate* capacity (maximum technically possible) versus *actual* capacity (predicted output given local resources/other constraints).

[36] System administrators need to maintain a cushion of excess capacity to deal with temporary fluctuations into the grid.

can result in an oversupply and all parts of the grid are put at risk. In 2003, perhaps the largest blackout in history resulted in tens of millions of people being without power across eastern Canada and the United States. Reliability is a function of a highly interconnected power system wherein the system is more stable because shortages in one region can be supported by increasing power from another (balancing out the system). Where variable power sources like wind and solar make up a significant part of the mix, reliability is a particularly important issue. This is significant because it encourages integration within a power system, which then requires central co-ordination to deal with capacity and load issues.

As a result of these two technical issues a key challenge emerging from restructured systems is that restructured markets don't result in genuine competition and always require significant government support—via investment, co-ordination and regulation (J. A. Anderson, 2009). Secure and uninterrupted supply of electricity is, in a broad sense, a public good (Abbott, 2001; Nelson, 1997) with monopoly characteristics[37]. The finished product is unlike those in many economic sectors as it is difficult if not impossible to store after it is produced in large quantities[38]. This means that at all times demand and supply (voltage and current) of the power on the lines needs to be precisely matched. It is also unlike the telecommunications sector, where the distribution is non-rivalrous, so that managing (and sometimes prioritizing) user demand on infrastructure is important.

Market restructuring increases administrative co-ordination required in this complex sector—and thus risks of expanded grid interconnection—between actors with significantly different goals and incentive structures. For example, the old public utility often retains a degree of market power by virtue of its size and, prior to reform, its management of grid access. In restructured hybrid systems, Independent System Operators (ISOs) are sometimes created to replace utilities to

[37] There are elements of electricity that conform to a more narrow use of the term in economics as a specific good that is non-rivalrous and non-excludable: for example, reliability, security of supply (Houldin, 2004: 61) and voltage management on the grid.

[38] While electricity itself is not storeable, some components (dams in hydro systems, for example) provide storage capacity.

manage the grid and ensure open access for newly competing generators (IPPs), and engage in transmission planning and oversight. However, Lyster (2005: 419) points out that "designing such an institution does pose significant difficulties for matching risks, responsibilities, and authority." Interconnected systems enhance reliability with a high degree of regulation, co-ordination and system management. Adequately managing these systems across national and provincial borders raises complex issues of which regulatory actor is in the driver's seat. This becomes particularly problematic when the public needs require power systems to be reliable, affordable and environmentally sustainable. More interconnections can mean more instability, as evidenced in the rolling blackouts across eastern Canada and the United States in 2003 (National Energy Board, 2009).

4.1.2.2 Political Economy Drawbacks

In addition to the technical challenges of managing a non-integrated system, restructuring allows private actors to engage in profit-seeking activities that can damage public interests. California's spectacular failure in restructuring in 2000–2001, for example, illustrated the vulnerability of the public to market manipulation by energy companies (Beder, 2003; Cohen, 2004). In its electricity crisis, rolling blackouts and price spikes of 800 per cent resulted from lack of regulation and profit-maximizing activities of Enron, the now infamous company that manipulated power shortages for private gain. Following this debacle, the enthusiasm for rapid power sector deregulation in North America has dimmed, but not abated (International Energy Agency, 2005).

The claims of reform advocates make about market efficiencies, competition and renewable energy are challenged on a number of fronts (Abbott, 2001; J. A. Anderson, 2009; Dubash and Williams, 2006). What has emerged from empirical research is a set of cautionary lessons detailing how the promised benefits of power sector reform rarely occur in practice. Electricity consumers are a captured market, and public bodies are under pressure to ensure reliable and reasonable access, whether they own generation or not. The partially reformed systems that have

emerged let the public sector assume these costs while the private sector takes the profits from generation and trading and doesn't have to take on the systemic risk or management (Cohen, 2006b). Private actors in restructured markets thus have incentives to cost-shift unprofitable infrastructural investments to public agencies[39]. The short-term nature of private actors is a real challenge, as they discount important long-term investments that are essential to rational environmental calculations (Barkin, 2006). For example, power grids are expensive to maintain and are required (particularly in Canada) to stretch over long and often sparsely populated distances (Achenbach, 2010). The distance factor negatively impacts the willingness of private for-profit firms to build universal access, and means that public funds are nearly always required in the industry. This raises issues of inadequate system maintenance and investment in upgrading infrastructure to meet new demands. Neoliberal restructuring is at odds in many ways with the interventionist state needed to address not only coming environmental challenges, but fuel-poverty ones as well.

As a result of these issues, many analysts have found the outcomes of power sector restructuring wanting. For example, John Anderson, President of the Electricity Consumers Resource Council in the U.S. (2009, 82–84) argues that blind ideological faith is not a useful route to the creation of functioning markets and derives a number of lessons from the practice (rather than theory) of reforms around the world. He argues that the benefits have accrued to suppliers, and the drawbacks to the average power consumer, a position echoed by some Organisation for Economic Co-operation and Development (OECD) commentators (International Energy Agency, 2005; OECD, 2001). Restructuring has also not led to "free" or even particularly competitive markets, as powerful (often multinational) corporations dominate. Adequate regulation and system co-ordination is plagued by informational asymmetries between the actors in restructured systems. Anderson concludes by saying, "It is striking that industrial and other consumers from around

[39] This is certainly the case both for public construction of major transmission lines for industrial use and for the construction of new transmission and distribution for widespread distributed generation.

the world have come to the conclusion that today's 'restructured' markets are far from the competitive markets that they envisioned and that these markets have failed to achieve the stated goals and provide net benefits to consumers." (Ibid, p. 85) Taken together, these issues and critiques of restructuring illustrate how continued and significant public involvement in the power sector is both necessary and desirable.

4.2 North America: Towards a Continental Power Market

International power sector restructuring exerts pressure on Canadian provincial systems. Actors in the United States like the FERC and NERC work as part of a neoliberal tag-team with domestic agencies and actors advocating reform in Canada. These efforts continue, despite the problematic results of restructuring in reformed systems in part because of the relative wealth of hydroelectric resources in Canada and the desire to export to U.S. markets. Regulatory leadership from the United States and private gain, and not reliability and environmental needs, motivate the policy shifts described in the following chapter of this thesis. One aspect of these shifts is that continental grids are being strengthened (Gattinger and Hale, 2010). The opening up of provincial grids to private entities, and strengthened north-south transmission lines, provides opportunity for power for private gain rather than for community and local needs. Given the environmental consequences of expanding generation and consumption, this trend is problematic. I illustrate these changes in three parts: 1) the export orientation of some provinces (B.C., Manitoba, Ontario and Québec), 2) the focus of new transmission for north-south export, rather than reliability and, 3) U.S. regulatory pressures (via FERC and NERC) pushing harmonized market structures.

The quest to integrate more fully with U.S. electricity markets is represented across Canada in the publications of the National Energy Board (2009, 2010c), Natural Resources Canada (2008), provincial energy ministries (Ontario, 2011) and industry associations such as the Canadian Electricity Association (Egan and Turk, 2008) and Electricity Sector Council (ESC, 2009, 2010). Roger Goodman at the

Canada International Council, argues that there needs to be *more* integration at the policy level so that Canadian resources and production potential can be exploited to its fullest (Goodman 2010), a position popular in the oil and gas sector (Ethical Oil, 2011). Goodman's position is echoed by governments and businesses focused on selling to the vast market south of the border.

4.2.1 Canada-U.S. Electricity Trade

Canada and the United States have one of the largest trading relationships in the world and this close interconnection holds true for the power sector. This means that changes in the United States have significant (and disproportionate) impacts on Canadian exporters and, by extension, Canadian citizens. This is because power exports play an increasingly important role across Canada. Exports of electricity to the United States grew by 215 per cent from 1990 to 2008 (Environment Canada, 2010: 28). Since 2008, net electricity exports have continued to grow: from 29.5 net terawatt hours (TWh) to 36.8 net TWh in 2011 (National Energy Board, 2008, 2012). As trade links increase, they create continued pressure on provincial electricity governance and infrastructure, particularly as market reform has become a condition for access to U.S. export markets (Cohen, 2004: 2).

The role of international electricity exports is key to understanding why provinces like Québec and B.C. are under pressure to allow private actors to generate and sell power. The electricity sector is a target for reform in part because generation of power in Canada is big business, netting $1.67 billion for Canadian exporters in 2011 (NEB, 2012). The majority of exported power, 67 per cent, was generated by firm hydroelectric sources (NEB, 2012: 22). While it is important to remember that exports vary from year to year, the largest Canadian exporters in 2010 were Quebec (17,006 GWh), Ontario (11,004 GWh), Manitoba (9,071 GWh), and British Columbia (5,259 GWh). Table 4-3 illustrates the differences between provinces exporting power to the United States in 2010, including the total export revenues and the proportion of generation exported. Manitoba, for example, exported 27 per cent of its total generation that year. The prevalence of

hydroelectric power storage in British Columbia, Manitoba and Québec allows for electricity storage (or banking) that other provinces do not enjoy[40].

Table 4-3 2010 International Exporting Provinces by MWh, Revenue, Company and Price

	MWh	**Revenue** (million$)	**Main exporting companies** (MWh) (Total number of exporting companies)	**Price /MWh**	**Exports as % of provincial generation** [41]
QC	17,006,291	921	Hydro Québec, Brookfield, MEHQ; (4)	47.88	9
ON	11,004,574	457	Brookfield, Constell ECG, OPGI, MAG Energy, Transalta; (41)	41.44	8
MB	9,071,355	320	Manitoba Hydro; (1)	35.32	27
BC	5,259,012	235	Powerex, Teck Metals; (4)	44.69	9
NB	1,036,696	72	NB Power, Fraser Inc, Emera; (5)	68.80	9
AB	255,542	8.6	Transalta, Morgan Stanley, TransCan Energy; (10)	33.87	1
SK	125,509	4.4	Northpoint; (2)	35.22	1
NS	4,112	0.4	NS Power; (1)	95.82	0

Source: National Energy Board, 2010, CANSIM 127-0009

Electricity export growth is only predicted to increase in the future as United States policy shifts toward enhanced energy security and clean power development (Goodman, 2010). The U.S. is currently under pressure to meet environmental policy goals as demand is increasing, and it is heavily dependent on coal for almost 50 per cent of its electricity.

Unfortunately, once opened, Pandora's box is difficult, if not impossible to close. When opened to private sector actors, industries fall under NAFTA and General Agreement on Trade in Services (GATS) rules regarding market access and competition (Cohen 2004) and are locked into a supra-national conditioning framework (McBride, 2005). Under the national treatment clause of NAFTA, for example, Canadian provinces are required to treat private U.S. firms just as they

[40] Hydroelectric power is 'bankable' insofar as it can be stored in reservoirs and generation can be rapidly increased or decreased, as required by demand, by letting more water flow through the turbines.

[41] Exports are complex and include more than provincial generation. They are also a function of actors in one province purchasing power (e.g. B.C. with Alberta) from neighbouring jurisdictions and selling it.

treat Canadian firms in the same area. As currently written it is legitimate for the provinces to maintain integrated monopolies in the public interest. However, the more Canadian provinces open electricity markets to allow for private ownership and competition, the more open these markets become to international regimes governing trade. Provinces that open access for private retailers, generators and wholesalers in order to gain access to U.S. export markets are thus paving the way for significant limitations on what governments can (and cannot) do to direct the price and structure of electricity in the future domestically. U.S. initiatives to deregulate electricity have significant spillover effects in Canada (Cohen, 2004, 2006a; Horlick and Schuchhardt, 2002).

4.2.2 Regulatory Harmonization: FERC and NERC

Access to U.S. markets is vital for export-oriented provinces; this access is regulated by the Federal Electricity Regulatory Commission (FERC) in the United States. More interconnection with the U.S. and subsequent policy harmonization with the FERC mean that Canadian actors increasingly need to conform to U.S. regulatory standards. J. Owen Saunders argues that,

> The FERC, through its rulings on reciprocity of access, has had an important influence on the structuring of the Canadian electricity industry …Moreover, it has exercised this influence while all the time insisting that it was deferring to the jurisdiction of Canadian regulators in Canada. What the FERC was essentially doing in its rulings, however, was overruling the principle of national treatment set out in the NAFTA (and the GATT) and replacing it with the principle of reciprocity. Put differently, it was replacing the principle of free trade with the principle of fair trade, with FERC as the adjudicator of what is fair. (2001: 347)

Since 2007, the North American Electric Reliability Corporation (NERC) has enforced electricity reliability standards in the U.S. and also in Ontario and New Brunswick. It is seeking to expand this to include other Canadian provinces and Mexico (NERC 2011). Prior to 2005, NERC was the national regulatory body for American electric reliability standards. However, after a working group in 2004 found that the 2003 blackout affecting 50 million people was preventable, and was

due to the failure of actors to comply with voluntary reliability standards, pressure developed for mandatory bi-national standards. The NERC applied to FERC after the 2005 Energy Policy Act for a name change and became the North American Electric Reliability Corporation. Even though Canadian agencies have a seat at the table, the U.S. has greater influence and U.S. agencies approve standards before Canadian ones (Gattinger, 2010). These regulators have teeth: financial and export penalties result from non-compliance with NERC standards.

Canada's national energy regulator, the National Energy Board (NEB) has willingly ceded its regulatory role. It announced in 2010 that they recognize the North American Electric Reliability Corporation (NERC) standards and are working with provinces to implement them:

> The NEB has recognized the North American Electric Reliability Corporation (NERC) as the Electric Reliability Organization in North America, as applicable to IPLs. In 2007, NERC reliability standards became mandatory in the U.S. Canadian regulators, including the NEB, are working toward the implementation of mandatory standards in their respective jurisdictions…For instance, NERC standards are adopted through legislation in B.C. and Alberta, and are mandatory in Ontario and New Brunswick through the market rules governing transmission in those provinces. NERC standards apply in Saskatchewan and Manitoba through contractual agreements with the Midwest Reliability Organization. (National Energy Board, 2010c: 31)

The abdication of Canadian federal responsibility for managing electricity systems in the national interest means that FERC is left as the de facto regulator for the continent.

FERC regulatory changes push the unbundling and marketization of electricity here in Canada. For example, in 1996 FERC issued order No. 888, which required utilities that operated and owned transmission to file Open Access Transmission Tariffs (OATTs). The stated goal was to facilitate competition and bring more efficient, lower cost power to Americans (Cohen, 2004). Canadian provincial governments see their interests in conforming to FERC requirements for both ideological and export-driven reasons. FERC requirements are not simply about system reliability, and have led directly to market restructuring in Canadian

provinces. Without restructuring, for example, Canadian exporters were denied export permits to the United States.

Ian Blue, Q.C., (2009) covers the important history of the relationship between FERC and provincial electricity bodies, illustrating that in 1995 a Quebec-Hydro partially owned company (Energy Alliance Partnership) was denied access to sell at market rates into the U.S. by FERC on the basis that Hydro Quebec had 'too much market power'. In 1997, FERC rejected the PowerEx Corporation's (B.C.) application to sell electricity because of BC Hydro's market power. It also rejected Ontario Hydro's export application in 1997 based on their market power. In contrast, in 1996 FERC approved TransAlta Energy's application because of Alberta's 1995 market restructuring (2009: 344–5).

These decisions led to a clear set of policy changes in exporting provinces. Once B.C. and Québec filed OATTs in 1997 their export permits were approved by FERC. Ontario started reorganizing its electricity system in 1998 and, like the others, was then allowed to sell power to the U.S. In Nova Scotia, one interviewee at the Department of Energy put the drive to market reforms this way:

> This was being driven at the time by a lot of influence from FERC, for example, any of the interconnected utilities with the U.S. were being forced at that time to move to FERC proforma open access transmission tariffs (OATT) and at a minimum an opening of their wholesale markets to competition to have access to the U.S. markets. (Personal Interview, May 19, 2010)

> So Nova Scotia, because we wanted to have reciprocity with our New Brunswick neighbour, who was our main system operator for the Maritime region here, we moved forward after the electricity marketplace governance committee report made its recommendation with essentially creating or forcing Nova Scotia Power to create a FERC pro forma open access transmission tariff and we opened up our wholesale market in N.S. which is six municipal electric utilities to wholesale competition, so they're open for competitive supply. And we've established an initial set of market rules under the electricity act and a set of regulations that opened up the wholesale market in N.S. to full competition. (Personal Interview, May 19, 2010)

Interprovincial competition for export ability also plays a role in market restructuring. Just as governments use FERC rules as justifications for power sector reform, private actors can apply to FERC for rulings against integrated public utilities. The province of Alberta lodged complaints with FERC about BC Hydro, alleging that B.C. was not granting them non-discriminatory access to wheel power through the province (Alberta does not have direct access to the Western Grid). In British Columbia in 2003, the provincial government separated the transmission components of Hydro into a separate company, the B.C. Transmission Corporation (BCTC). This was done to conform to FERC preferences for separation of functions in order to provide non-discriminatory access for private entities to the transmission system. One estimate put the cost of this separation to $65 million (McMartin, 2010). In 2010, the B.C. Clean Energy Act reversed this separation and again re-housed transmission within BC Hydro.

4.2.3 Strengthening the Continental Grid

The continental push for electricity systems in Canada exists at the ideological level and is represented in concrete north-south orientation of transmission infrastructure. The more continental interconnections exist that are regulated by FERC and NERC, the stronger the pressure on Canadian provinces to continue restructuring. International transmission construction has intensified since the signing of the North American Free Trade Agreement. There are ten new lines to the U.S. to be completed in the next five years, further strengthening the export capacity of Canadian provinces. Appendix 5 contains a list from the National Energy Board of major proposed International Power Lines (IPLs). According to an NEB presentation in 2011 to the New England-Canada business council, there are more than 30 major transmission interconnections between the two countries (NEB, 2011). The most recent, a 1,000 MW IPL, connected New Brunswick and Maine and doubled the interconnection between the two jurisdictions.

These continental changes impose significant infrastructural costs on provinces and, ultimately, ratepayers. Private actors, be they energy traders or

generators, seek to maximize profits by directing electricity toward the consumers paying the highest rates and externalizing management costs and risks to the public sector. The buy low, sell high mentality that forms the modus operandi of private markets results in large volumes of power being moved from one jurisdiction to another. According to the NEB:

> Electricity transmission over IPLs has almost doubled since electricity markets started to restructure in the mid-1990s. Imports from the U.S. have increased as demand growth has outpaced supply growth in provinces like Ontario, B.C. and Alberta. The north-south trade exploits the complementary seasonal peaks between the winter heating demand in Canadian provinces and the summer cooling demand in American states. (2010b: 29)

In Alberta, proposed new transmission lines have been particularly contentious as critics charged they were being built for exporting electricity to the U.S., rather than for local need or reliability. The 345-kilometre Montana-Alberta Tie-Line (MATL), for example, owned by Enbridge, would connect Alberta to the Western Interconnection. The Alberta government maintained that reliability, rather than export, was the goal and passed Bill 50 in 2009 taking away the requirement for needs assessment hearings on the $16 billion transmission system investments (Alberta Electric System Operator, 2011). Wikileaks cables released in 2011 between U.S. and Alberta politicians from 2003 and 2008 "show that Alberta politicians offered to export power to the United States using excess electricity generated by oil sands facilities" (Nikiforuk, 2011). Subsequently, oil sands developers reduced their estimated co-generation capacity and are now expected to be net consumers (rather than producers) (Genalta Power, 2011). Export for private profits for generators and private grid owners, rather than reliability, is thus a central driver of publically funded grid expansions.

The International Energy Agency estimates that US$7.6 billion per year of electricity infrastructure investment will be needed in Canada from 2005 to 2030. The NEB cites the positive role of interconnections for increased reliability within the system (NEB, 2009). They argue that "this inter-jurisdictional trade provides

reliability benefits and increases overall system efficiency." (2010c: 29). Since electricity needs to be used and is difficult (hydro is an exception) to store, grid interconnections (with other provinces and U.S. states) provide stability within the system, protecting against power shortages or overloads, and facilitate export. Of course, these reliability benefits can also be derived from national, rather than international, interconnections. These issues become even more important going forward, as pressure for new renewables, together with distributed generation and smartgrids become a larger focus for provinces.

4.3 Summary

Power sector restructuring—starting with Pinochet in Chile and Thatcher in Britain—was ideologically driven, rather than necessary for efficiency or consumer choice, as often claimed. In many countries, the U.K. excepted, the ultimate result was not the creation of competitive markets and lower prices, or the promised environmental gains spurred by the private sector. Indeed, the results have been disappointing on most fronts except for those corporate actors who gained new avenues for profitability. Where shifts away from coal-based generation have occurred, it has been as a result of public funding and public policy, rather than a product of private markets. Regardless, a powerful coalition of international actors is pushing restructuring in Canada.

Far from shifting towards the social economy/eco-local governance model then, the international forces shaping Canadian electricity emphasize increasing generation, not sufficiency, and less rather than more democratic control. Expanded continental electricity markets are designed to give Canadian exporters access to U.S. markets, and open Canadian markets to American investors. These market structures for retail and wholesale then put pressures on Canadian transmission infrastructure by requiring support for larger volumes to be traded over ever-increasing distances. The rules of the expanded grid and export access are shaped, increasingly, by the electricity market and governance structures in the United States (Gattinger, 2010) via FERC and NERC. These trends matter a great deal for co-

operative development in the power sector since community-based actors are but a small part of these broader developments since the 1970s.

5 CONTINENTAL, PRIVATE AND GREEN(ER)? THE POLITICAL ECONOMY OF CANADIAN ELECTRICITY RESTRUCTURING

Ownership of electricity in many Canadian provinces, particularly for new renewable generation, is shifting to the private sector. Domestic policies, together with the international forces outlined in chapter 4, are restructuring provincial power systems away from the post Second World War public systems toward deeper marketization. These developments have implications not only for the potential of electricity co-operatives, but also for environmental sustainability. In this chapter, I focus on the interplay between electricity restructuring policies, renewable generation, and sustainability in Canada. I argue that electricity reforms taking place in Canada are not uniform; they are being implemented in provincially distinct and often piecemeal ways. Three major changes stand out: 1) more private power generation, 2) deepening continental power grids and markets and 3) more alternative renewable generation. Canadian reforms rarely include wholesale utility privatization (as happened with Nova Scotia Power in 1992), but, rather, involve incremental market restructuring, justified with reference to environmental sustainability and new renewables development.

Despite the fact that they open space for electricity co-operatives, these changes are often problematic for Canadian communities. This is particularly the case when private ownership of new renewable generation is subsidized by the public purse. Canadian reforms, like those in other countries, are political, not arising out of economic necessity, or even commitment to environmental principles[42], but to create markets and avenues for private accumulation in sectors previously considered off-limits. For example, a significant increase in (and variety

[42] Ontario and its commitment to phase out coal completely by 2014, as well as Nova Scotia's public mandate that their private utility add more renewable sources, are examples that exhibit a stronger environmental policy stance.

within) independent power producers (IPPs) has occurred in many provinces (Datamonitor, 2010). With this entry of private power generators has come a call from U.S. companies to gain "equal access" to Canadian power markets, long protected by the public utility structure. This restructuring push is thus accompanied by significant long-term social, financial and environmental implications for Canadians.

Despite these developments and pressures, most provinces in 2012 retain significant public control (and ownership) of generation. Restructuring policies have not yet succeeded in privatizing power to the degree that exists in the United States, making critical analysis of current policy initiatives even more pressing. The environmental justifications given for private restructuring are, ultimately, unconvincing. In coal-generation based provinces (Alberta and Nova Scotia) there is an environmental need to diversify generation sources. However, it does not necessarily follow that diversification of sources need be rooted in private accumulation and increasing generation. Provincial moves to green power generation are being used to justify further restructuring of public power systems, despite the fact that renewable hydroelectricity is the dominant fuel in many provinces (British Columbia, Québec, Manitoba). This is accomplished, in part, via a rather narrow definition of green that excludes both large-scale hydro and nuclear generation (Weis et al., 2009).

I am not suggesting here that public utilities in Canada are faultless advocates for deep sustainability. Many valid and well-documented critiques of the environmental and democratic record of these institutions exist from, for example, environmentalists and First Nations groups (Brooks, 2006; Cohen, 2006b; Froschauer, 1999; Netherton, 2007). What is important today, however, is that the vast differences that exist between different provinces and market structures mean that in many cases, environmental sustainability is best advanced through conservation and efficiency measures rather than creating private power markets for new renewable generation. Within this context the potential role for co-

operatives in either legitimating these new markets or challenging them becomes important for their potential for empowered participatory governance.

The scale of restructuring needed to shift the Canadian economy off an environmentally and socially self-destructive path *requires* systemic and radical change, requires taking on powerful actors and industries, reshaping prices and consumption preferences (Daly, 1996; Faber, 2008; Robinson, 2004). Market-based environmentalism is simply not up to the task. Real sustainability requires strong co-ordinated intervention across industrial sectors by the federal and provincial governments, as well as significant infrastructural spending on grids and generation (Jaccard and Simpson, 2007; Weis et al., 2009; Weis, 2010). Without this co-ordinated investment and intervention, policy targets are far more likely to lead to *greenwashing*—wherein companies and governments spin policies as environmentally friendly to appease public opinion while continuing to degrade the environment.

This chapter is divided into two sections. The first provides a basic overview of the Canadian power sector, illustrating key provincial differences in fuels used, ownership structure and export role. The data on Canadian electricity by source, generation, and price reveals key differences from our southern neighbour; differences that, in many cases, undermine the rationales for reform (e.g. the need for greener or cheaper power). The second section highlights the specific policy instruments and outcomes of reform in key provinces, including a discussion of the two Canadian provinces that have gone furthest down the restructuring road: Alberta and Ontario. This information sets the context for how, where and why co-operatives find themselves with the opportunity and the need to participate in provincial power sectors.

5.1 Canadian Power: (Relatively) Public, Cheap and Renewable

The Canadian power sector is characterized by a far greater degree of public ownership than our major trading neighbour, the United States. The dominance of public generation sources—72 per cent of installed capacity in 2009—and the

relatively low prices in hydro jurisdictions mean that, on the whole electricity in Canada is public, cheap and (again, relative to our southern neighbour) renewable. Provincial differentiation along two axes: share of renewable generation (high/low) and degree of private participation (high/low) is important, because it demonstrates that in Canada renewable power was developed by the public (not private) sector due to their willingness to take on long-term debt and build infrastructure for public need rather than private profit.

The model for power development in Canada has been, until recently, one of public, vertically integrated utilities. In all provinces, save Alberta, Nova Scotia and Prince Edward Island, crown corporations are the major source of generation and system management. Provincial electric utilities are vertically integrated: with transmission, distribution, generation and retail operations owned by the province. In Ontario and Alberta, local distribution companies (often municipal) also play a role[43]. This model of sectoral organization was developed to ensure reliability, availability and affordability for a given jurisdiction's citizenry. The private sector was, before the public sector stepped in, either unwilling or unable to meet these goals. Public investment continues to play a critical role in renewables development across the country, albeit without the financial returns of actually owning the new generation in most cases.

Public sector willingness to take on long-term debt mattered for the development of significant renewable (58 per cent hydro) power capacity in Canada. Public investment, together with the available natural resources, played a central role in determining which energy sources were developed in Canada. This is because development of large-scale renewables, like hydro, tends to have significant up-front costs and long payback timeframes.

[43] Pressure from the FERC in the 1990s, outlined in section 1.4, has led to functional separation of most provincial utilities exporting to the United States. Vertical integration remains, through the common provincial ownership of the utility and its parts, but separate business units and/or organizations for transmission (like the BCTC, or TransÉnergie), and generation and distribution aspects are created.

Table 5-1 Majority Ownership and Fuel Source by Province

	Renewable	Fossil fuel
Public	BC, YT, MB, QC, ON, NL	SK, NB, NU
Private	PE*	AB, NT, NS

* PEI imports the vast majority of its electricity from New Brunswick. So, while the renewable installed capacity on the island is a significant percentage (56 per cent), residents consume their power from New Brunswick.

In provinces with hydro resources, like British Columbia, Manitoba and Québec, investment decades ago is now paying off in the form of lower prices from old generation assets (See hydro in table 5-2). Construction costs, when amortized over 20 years, mean that hydro is one of the most cost effective and (relatively) environmentally friendly sources of electricity.

Private actors were (and still are) unlikely to undertake new renewable generation projects without financial guarantees. For private actors drawing financing from international financial markets, 20 years is too long for a shareholder return (Froschauer, 1999). Public power can be distributed on a cost-of-production basis, whereas private sector generators are required to maximize profits. It is, therefore, not a coincidence that the relatively restrictive nature of the markets in most Canadian provinces correlates with some of the lowest electricity prices in North America. In 2010, for example, electricity prices in New York and San Francisco were 22.82 and 21.84 cents per kilowatt hour (kWh), respectively, while Montreal was 6.88 cents/kWh (Hydro Québec, 2010).

Table 5-2 Residential Electricity Price and Fuel Source

	2010 c/kWh	Main Generation Source
Charlottetown	16.15	wind/imported power (NB)
Regina	13.15	Coal
Halifax	12.89	Coal
Toronto	11.82	Nuclear
Moncton	11.66	Coal
Ottawa	11.00	Nuclear
St. John's	10.73	Hydro
Edmonton	9.27	Coal
Vancouver	7.79	Hydro
Winnipeg	7.08	Hydro
Montreal	6.88	Hydro

Source: Hydro Québec, 2010, CANSIM 127-0009

Canada has the fourth largest national share of hydroelectric generation in the world[44] at 62 per cent of installed capacity in 2009 and the second highest total generation at 369.5 gigawatt hours (GWh) in 2009 (after China). Hydroelectricity as a generation source is renewable and significantly greener in terms of life-cycle air emissions than coal, natural gas[45] and diesel and is, over the long term, cost effective (Hydro Québec, 2003). Steam plants fired mostly by coal make up 17 per cent of the mix, and nuclear comes in third with 14 per cent of the share in generation (see table 5-3). New renewables like wind and tidal power play a small, albeit growing, role in Canada's generation mix. Between 2004 and 2009, wind, tidal and hydropower grew from 58 per cent to 64 per cent of total generation in Canada (National Energy Board, 2009a, 2010b). Each fuel source, from hydro, wind and solar to uranium, coal and natural gas comes with a unique cost, reliability and

[44] After Norway, Brazil and Venezuela.

[45] Not all fossil fuels are created equal. Natural gas generation, for example, has a significantly lower GHG intensity than coal or diesel generation.

environmental footprint. The vast majority of power generated in Canada comes from large, centralized power plants (between 100 and 5,000 MW)[46].

Table 5-3 Generation of Electricity in Canada 2009

	GWh	% Share
Total	592,346	
Hydro	365,685	62
Tidal	30	0
Wind	6,627	1
Conventional Steam (Coal)	100,963	17
Nuclear	84,992	14
Combustion	32,472	6
Internal Combustion	1,574	0

Source: Statistics Canada, CANSIM table 127-0007

The changing generation sources of power matter, both economically and environmentally. The International Energy Agency's 1998 comparison of GHG emissions, nitrous (NOx) and sulphuric (SOx) oxide emissions from large-scale hydro plants performed relatively well. The technologies used to generate power from these sources vary (seasonally and daily) in their ability to provide predictable fuel on demand (base-load power). Hydro, nuclear and coal are highly reliable, whereas wind and solar are variable. Finally, the lead time and capital investment needed to develop new generation varies significantly between power sources. Nuclear plants take the longest to develop and are prone to significant cost overruns (B. Sovacool 2010). Table 5-4 illustrates a life-cycle comparison of different generation technologies.

[46] Large-scale hydro also has negative environmental impacts, as every generation source does, which include: flooding of often prime agricultural land, displacement of human and animal populations from large areas of land, and disruption of fish populations (Froschauer, 1999).The benefits of hydro as a firm power source and the economic efficiencies that arise from a large-scale project may, in some cases, trump the alternatives in a life-cycle analysis, but a diversity of renewable sources suited to different human and natural geographic conditions is critically important.

Table 5-4 Life Cycle Assessment of GHG emissions (kt eq. CO2/TWh)

	Best Commercial Technology	Typical Existing Technology
Oil sands	1,019	1,177
Bituminous coal	941	1,022
Heavy oil	841	999
Diesel	649	787
Natural Gas (CCGT)	422	499
Solar PV	38	121
Hydro reservoir	10	33
Windpower	9	20
Nuclear	6	16
Run of river hydro	3	4

Source: Hydro Québec, 2002

5.1.1 Provincial Variation

The federal picture of electricity generation in Canada obscures important differences between the provinces. The provincial structure of the electricity sector means that power sector reforms are taking place to different degrees across each of the 13 provinces and territories. Provincial generation source diversity creates uneven environmental impacts of generation across the country, and with this comes the need for provincial co-ordination (for example, for reliability) and targeted policy. Table 5-5 illustrates the concentration of generating fuels by province. In 2009 the provinces break down into three main groupings: 1) hydro dominant: Québec, B.C., Newfoundland and Labrador, Manitoba, and the Yukon; 2) fossil-fuel dominant: Alberta, Saskatchewan, Nova Scotia, Nunavut and the Northwest Territories; and 3) mixed: Ontario, New Brunswick and PEI.

Table 5-5 Installed Capacity and Major Generation Fuel by Province 2009

Province	Total Installed Capacity (GWh)	Coal (%)	Oil (%)	Natural Gas (%)	Hydro (%)	Wind (%)	Tidal (%)	Nuclear (%)	Other Fuel (%)
QC	42,485	-	4	1	91	1	-	2	1
ON	34,276	18	6	10	24	3	-	35	3
BC	15,220	-	0*	10	85	1	-	-	5
AB	12,298	52	0*	34	7	5	-	-	2
NL	7,417	-	7	1	91	1	-	-	-
MB	5,640	2	1	6	89	2	-	-	-
NB	4,626	12	34	8	21	2	-	15	9
SK	4,042	45	0*	29	21	4	-	-	-
NS	2,470	44	22	4	16	2	0*	-	10
PE	269	-	43	-	-	56	-	-	1
NT	183	-	55	15	30	-	-	-	-
YT	110	-	28	-	71	1	-	-	-
NU	54	-	100	-	-	-	-	-	-

Source: Statistics Canada, 2011, CANSIM tables 127-0009 and 127-0010

*Installed capacity for fuel source is available, but less than 0.5%.

Three provinces stand out in their consumption of fossil fuels for electricity generation: Alberta, Saskatchewan and Ontario. Overall, in 2007, Alberta used 52 per cent of all coal and 36 per cent of all the natural gas consumed in Canada for the production of electricity, while Ontario consumed 24 per cent and 34 per cent respectively and Saskatchewan consumed 17 per cent and 9 per cent respectively (Statistics Canada, 2009: 5). This leads to an uneven environmental impact of electricity generation across the provinces, from 930 kilograms of CO2 per megawatt hour (kgCO2/MWh) in Alberta, to 6 in Québec (Bell and Weis, 2009: 7).

The share of public and private ownership of generation between the provinces also varies. As table 5-6 illustrates, Nova Scotia is the only province where the ownership of generation is almost wholly in private hands. In all other jurisdictions, save Nunavut, which is entirely in the public sector, there is some

combination of public and private generation. Dominant ownership sources are in bold.

Table 5-6 Federal and Provincial Installed Capacity by Ownership 2009

	Public (%)	Private (%)	Industry (%)	Total (GWh)
AB	15	**70**	15	12,298
BC	**75**	9	16	15,220
YT	**93**	7	0	110
NT	48	1	**51**	183
NU	**100**	0	0	54
NL	**94**	4	2	7,417
PE	15	**85**	0	269
NS	0	**98**	2	2,470
NB	**87**	11	2	4,626
QC	**87**	5	8	42,485
ON	**65**	33	2	34,276
MB	**98**	2	0	5,640
SK	**87**	12	1	4,042
Canada	72	21	7	129,090

Source: Statistics Canada, CANSIM table 127-0009

5.2 Provincial Policy Shifts: Private Markets and Renewable Generation

For the last twenty years in Canada, both at provincial and federal levels, the language of austerity has been used to justify public sector cutbacks, frozen wages and public asset sales (Hampton, 2003; Harden-Donahue and Peart, 2009; Howe and Klassen, 1996). It is within the framework of austerity (both manufactured and real) that space is opened up to justify "belt-tightening" measures that amount to a transfer of assets—and thus power—away from public control. In the power sector, one form this takes is outright privatization, as in the case of Nova Scotia Power. In 1992 the public provincial utility was sold to private investors in what was then the "largest private equity transaction in Canadian history" (Nova Scotia Power, 2010). The justification given for the sale of the utility was to raise capital to service the provincial debt. Avoidance or reduction of public sector debt plays an important role in the neoliberal rhetorical toolkit in some Canadian provinces. In others, like Ontario, the justification for restructuring was the high cost of new (nuclear)

generation and the debts of Ontario Hydro. In this section I outline how and where provincial power sectors have been restructured across the country, with particular focus on Alberta, Ontario and British Columbia. I argue that these changes have been damaging to both public pocketbooks and public control. More than this, though, the use of environmental reasons to justify restructuring amounts in some cases to greenwashing of what is essentially a transfer of public funds to private entities. Dealing with the environmental impacts of generation across Canada requires far more than market-based solutions can provide (Cohen and Calvert, 2011; Lyster, 2005).

Participation by for-profit actors is increasing in the sector across the country due to strong regulatory and financial support from provincial governments from B.C. to Nova Scotia (Datamonitor, 2010; Nova Scotia Department of Energy, 2010; Ontario Sustainable Energy Association, 2009). These began in the late 1990s. Table 5-7 illustrates the initial restructuring policies by province. These include changes to retail, transmission and generation of power in nearly all Canadian provinces. For example, the signing of Open Access Transmission Tariffs (OATTs), which set rates and rules for actors to move power over provincial power grids, facilitates wholesale (and in some cases retail) power trading. Other important policy initiatives involve the unbundling of integrated utilities (as in B.C. and Ontario), the establishment of independent system operators, the creation of power pools (as in Alberta), and policy initiatives mandating that public utilities purchase power from private generators. These initiatives began in the mid-1990s, and are continuing today. The most recent policy initiatives (not necessarily represented in this table) provide financial incentives for private renewable electricity through, for example, feed-in tariffs.

Table 5-7 Initial Provincial Electricity Restructuring Policies

Province	Policy	Details
Alberta	1996 Electric Utilities Act (EUA)	-Created power pool. -Opened transmission (OATT)

Ontario	1998 Energy Competition Act	-Unbundling of transmission, distribution and generation (integrated utilities). -Break up of Ontario Hydro. -Creation of wholesale and retail electricity markets (opened May 2002).
	2004 Electricity Restructuring Act	-Tasked public agencies with incentivizing the development of new generation. -Started making large IPP power calls for new renewable generation.
	2009 Green Energy Act	-Brought in North America's first Feed-in Tariff (FIT) (guaranteed price contract) for renewable generation.
Québec	1997 filed Open Access Transmission Tariff (OATT)	-Opened transmission grid to private generation.
	2006 Energy Policy	-Ended moratorium on private hydropower below 50 MW. -Started making large IPP power calls for new renewable generation (wind, in particular).
British Columbia	1997 filed Open Access Transmission Tariff (OATT)	-Opened transmission grid to private generation.
	2002 Energy Policy	-Limited role of BC Hydro in building new generation. -Functional separation of BC Hydro, privatization of admin functions to Accenture. -Creation of B.C Transmission Corporation (reintegrated in 2010). -Started making large IPP power calls for new renewable generation.
	2007 B.C. Energy Plan	-required BC Hydro to buy private power for self-sufficiency by 2016
Nova Scotia	2004 Electricity Act	-Mandated (private) that Nova Scotia Power allow other private generators of power (IPPs) access to the grid via an open access transmission tariff (OATT).
Saskatchewan	2001 filed OATT	-Opened transmission grid to private generation.
Manitoba	1997 filed Open Access Transmission Tariff (OATT)	-Opened transmission grid to private generation.
New Brunswick	2003 filed OATT	-Opened transmission grid to private generation.

	2004 Electricity Act	-Expanded IPP opportunities for generation. -Created independent system operator. -Changed into NB Power into a holding company with subsidiary structures -Created competitive market for wholesale, industrial and municipal utility customers.
Newfoundland and Labrador	2007 Energy Plan	-Created NL Energy (parent company for NL Hydro).
Prince Edward Island	Electric Power Act 2005 2007 filed OATT	-Enacted cost-of-service model of price regulation. -Maritime Electric (Fortis) OATT approved in 2009.

Source: Adapted from Blake's, 2008; Datamonitor 2010; Canadian Electricity Association, 2010.

As a result of these provincial policy initiatives, markets to buy, sell and trade power either openly, or with the public utility, have created more incentives for profit and for private actors in the electricity sectors across the country. From 1999 to 2009, private generators increased their share of installed generating capacity from 11 per cent of the Canadian total, to 21 per cent (see table 5-8), all at the expense of public, rather than industrial, generation.

Table 5-8 Changing Public and Private Share of Installed Capacity in Canada 1999–2009

	% of total 1999	% of total 2009	10 year change
Public Utilities	82	72	-10
Private Utilities	11	21	+10
Industry	7	7	-

Sources: Statistics Canada Electricity Power Statistics, 2000, CANSIM table 127-0007; Energy Statistics Handbook, 2010

5.2.1 Public Utilities: Privatizing, Unbundling and Restructuring

Market restructuring policies are shaped by pressure from private sector actors keen to exploit Canadian resource wealth, but also by neoliberal ideologues that mistakenly associate the private sector with innovation and efficiencies via competition (Howe and Klassen, 1996; OECD, 2001). In Canada, the electricity market restructuring that has occurred (most notably in Ontario and Alberta in the 1990s) was based on the argument that competitive markets and private actors are

not only better able to deliver power, but *necessary,* for innovation, renewables and to avoid public debt. Policy initiatives centre on rolling back the share and scale of electricity sector control that public utilities hold.

Electricity sector reforms have had problematic impacts in the two Canadian provinces that have gone furthest along the standard model road to restructuring: Ontario and Alberta. In other provinces, like Nova Scotia and B.C., partial reforms have led to more Independent Power Producer (IPP) development. The OECD economic survey of Canada from 2004 points out that "Although some provinces generally consider reform of the electricity sector to be necessary, reforms have been aimed at inducing private-sector investment and protecting access to US electricity markets while avoiding full competition in generation and retail markets (*e.g.* establishing wholesale access and, in some cases, an open-access transmission tariff)" (OECD, 2004: 1).

5.2.1.1 A Private Monopoly: Nova Scotia

Nova Scotia is unique in Canada in that a private company, Nova Scotia Power, operates as an integrated utility, running generation, transmission and distribution in the province. Since 1992, Nova Scotia Power has been a private wholly owned subsidiary of Emera. The company operates 97 per cent of generation, 99 per cent of transmission and 95 per cent of distribution in Nova Scotia (the balance is from six municipal utilities) (Blakes Lawyers, 2008: 27). Privatizing the public utility did not lead to lower rates, greener sources, or more competition in the power sector in that province. In fact, changes under the province's 2004 electricity act were aimed at forcing Nova Scotia Power to allow other private generators of power (IPPs) access to the grid via an open access transmission tariff (OATT). The act also allowed the 6 municipal utilities to buy power wholesale from other providers.

The majority of new renewable power generation in Nova Scotia is procured by the utility through request for proposals (RFPs). Provincial policies for renewable IPP projects did not result from a strong IPP lobby but rather, according

to one developer, "here it's more [the government's] ideological commitment combined with information from other jurisdictions" (Personal Interview, May 19, 2010). This unique market structure, in which a private integrated utility is the central player being forced to open to other private generation, makes restructuring in Nova Scotia somewhat different from that in British Columbia or Québec. While similar policies are being enacted to those in B.C., the incumbent utility was already both private and fossil fuel based.

5.2.1.2 Market Reformers: Alberta and Ontario

The earlier claim by restructuring advocates (outlined in chapter 4) that electricity competition leads to lower prices and consumer choice has not been borne out by the experience in Canada so far. What have emerged are volatile prices, controversies over management of grid infrastructure, increased bureaucracy and significant opportunities for private profit. The restructured marketplace in Ontario has also led to an increase in exported power: from 4,324 GWh and 4 exporting companies in 2000, almost tripling to 11,004 GWh and 41 exporting companies in 2010 (National Energy Board, 2000, 2010).

In Alberta and Ontario, the two most deregulated electricity markets, the wholesale electricity prices more than doubled (3.1 to 8.2 cents/kWh in Ontario in 2002) (Trebilcock and Hrab, 2003: 6) or tripled (4.3 to 13.3 cents/kWh in Alberta in 2000) (Thon, 2005: 3) in the months after restructuring. This prompted the governments in both provinces to step in and control prices for retail customers, providing in Alberta a regulated rate option, and in the case of Ontario subsidizing the rates for industry and consumers. Ten years on, market prices in both jurisdictions remain volatile (National Energy Board, 2010b). As of July 1, 2010 the stabilized Regulated Rate Option (RRO) in Alberta was phased out and residential power rates are based on short-term (monthly) market prices, exposing consumers to far more volatility in their power bills.

Even without the price increases, Trebilcock (2003: 1–2) points out that restructuring did not deliver on debt reduction, another cited benefit of restructuring. Indeed, the reality was quite the opposite:

> Initially, the government of the day assured electricity consumers that restructuring would lead to a reduction in Ontario Hydro's swollen debt and that the entry of private-sector companies would create competition, leading to stable, and perhaps lower, electricity prices. That did not happen…the first year of the price freeze resulted in the issuance of approximately $730 million of taxpayer-guaranteed debt.

Restructuring was also supposed to bring new generators and investment into markets, to take some of the infrastructural investment (in new generation) pressure off public entities. The price freezes in Ontario in December 2002 had the effect of discouraging the very private investment the province wanted to create in the first place. So, in 2004 the Electricity Restructuring Act created the Ontario Power Authority (OPA). The OPA was created specifically to procure new generation via long-term Power Purchase Agreements (Blakes Lawyers, 2008: 9) since investors didn't want to assume risk to build new generation. This undercuts one of the key rationales for restructuring, namely: the offloading of risk (and debt) onto the private sector. Again, the record of restructuring is problematic. Today, the argument has shifted to justifying higher costs with reference to a need for new renewables. Failing that, high prices are supposed to encourage conservation. As a result, new private generators are playing a larger role in newly opened markets in Canada, as is explained in the next section of this chapter, but only when the (relatively) short-term market prices are high (in Alberta) and/or they are supported by long-term government-backed contracts (as in Ontario or B.C.). Far from a weight off the public, the costs of new generation are still borne by public actors through their taxes, or higher retail prices.

Market restructuring models also promise to lead to less bureaucracy, and more efficient regulation. The exact opposite has been true in practice. In fact, where once a single entity or regulatory body managed and oversaw the system, now many exist, each with a specialized role. In Alberta, deregulation has resulted in four

regulators: the AESO (Alberta Electric System Operator or ISO), MSA (Market Surveillance Administrator), AEUB (Alberta Energy and Utilities Board) soon to be the AUC (Alberta Utilities Commission). This is an exceptionally *in*efficient structure as it has created more places where information is stored and managed, necessitating more memorandum of understandings (MOUs) to share information across agencies.

The Utilities Consumer Advocate was created in Alberta to help citizens understand the new market structure. It deals with the many consumer complaints about the rates and helps customers translate their bills. One interviewee (October 13, 2009) argued that the complexity of navigating the new power system in Alberta leads to a number of problems for consumers. They are at an informational disadvantage, faced with bills that they are ill equipped to evaluate. In Ontario, in 1999, Ontario Hydro was unbundled into: Ontario Power Generation (generation and retail/wholesale) with shares held by the province; Hydro One, Inc. (transmission, rural distribution), a crown corporation owned by province; the Independent Electricity System Operator (IESO) (administering markets and overseeing the grid); the Ontario Electricity Financial Corporation (other assets and liabilities); and the Electrical Safety Authority (enacting regulations).

5.2.2 IPPs and Piecemeal Restructuring

While Alberta and Ontario have gone the furthest in Canada with their market reforms, other provinces are also, for ideological and export-based reasons, reforming who generates, governs, and transmits power in their jurisdictions. IPP development is playing an important role in these shifts, as are piecemeal sell-offs of public utility functions. In 1999, Bruce Howe, former CEO of Atomic Energy of Canada, and Frank Klassen, former BC Hydro Vice President, argued that privatizing B.C. Hydro would: reduce the provincial debt, improve efficiency and effectiveness, protect consumers, and eliminate political interference in utility management (Howe and Klassen, 1996). While the utility was not ultimately privatized, actors have succeeded in having some functions shifted to the private sector. For example,

in 2003, Dublin-based Accenture took over a range of human resource and accounting functions from BC Hydro. The company argued that it would save British Columbians in the order of $250 million over 10 years, a savings that as of 2010 has not materialized (McMartin, 2010).

In addition to the break-up of utility functions, there are mandates in provinces like B.C., Ontario, Québec and Nova Scotia that public utilities leave the development of wind, solar, bio-mass and micro-hydro projects to the private sector (IPPs). British Columbia's experience illustrates this type of partial market restructuring via IPP development. While the public crown corporation still retains its generation assets, the utility was functionally separated, with separate transmission and oversight bodies created. These moves have since been rescinded. The 2001 shift to a Liberal government led to a policy mandate for BC Hydro to purchase new renewable power from private IPP sources. In 2002, IPPs selling power to BC Hydro were exempted from regulation as a public utility. Starting in 2003, a number of calls for power initiated a series of bids from private developers to construct, for the most part, run-of-river power plants. In the 2003 call, 16 20-year contracts were awarded. As of April 1, 2011, BC Hydro has signed 68 Power Purchase Agreements (PPAs) worth 3,183 megawatts of installed capacity and 12,524 GWh of supply annually to the provincial utility (BC Hydro, 2011). According to a 2011 review of BC Hydro undertaken by the Province of B.C., "in fiscal 2010, IPPs produced 16% of total domestic energy requirements; however IPP electricity costs represented 49% of the overall domestic energy cost" (Province of British Columbia, 2011: 107)

Table 5-9 IPP Purchases in B.C. 2000–2010

	2000	2002	2004	2006	2008	2010
Purchases from IPPs & long-term contracts ($ millions)	116	180	367	449	481	568
Price paid for IPP power ($/MWh)	54	72.9	59.8	66.61	61.39	63.85

IPP purchases as % of total (domestic) energy costs[47]	8%	4%	23%	18% (38%)	18% (51%)	32% (49%)
Annual payment to province (millions)[48,49]	343	333	73	223	288	47
% of BCH power from long-term contracts (IPPs)	10.4%	10.2%	12.8%	12.9%	12.3%	16.1%

Source: BC Hydro Annual Reports, 2000–2010

The (usually 30 year) contracted purchases from private power generators, at rates high enough to guarantee them a profitable rate of return (and thus get the projects built), has resulted in financial pressure on the public utility. This affects, for example, the level of annual payment that goes back to the province, as it is capped by ensuring an 80/20 debt-equity ratio for the utility. In the BC Hydro 2000 report: "The incremental cost of energy purchases is substantially higher than the embedded cost of existing hydro sources, thereby putting pressure on the gross margin. As energy purchases become a more significant portion of BC Hydro's energy supply portfolio, there will be continued downward pressure on BC Hydro's gross margin percentage. As a result, BC Hydro is facing increasing pressure to find efficiencies in other areas in order to offset the impact of increasing energy costs" (BC Hydro, 2000: 47). These efficiencies have included the outsourcing of BC Hydro staff and payroll operations, and a transfer of one-third of the utilities operations and more than 1,500 employees to Dublin-based global consulting giant Accenture.[50]

[47] Prior to 2005, BC Hydro did not separate domestic energy costs from the total in its financial statements, so only total is reported.

[48] Payments to province do not include the payments from water rentals, school taxes, grants and capital tax to provincial and municipal governments.

[49] BC Hydro pays 85 per cent of its distributable surplus to the province. If the surplus causes the debt/equity ratio to exceed 80/20 it pays the maximum amount that lets it stay within this ratio.

[50] The savings promised from this outsourcing in 2003 were meant to be in the order of $250 million over 10 years. Unfortunately, as of last year the utility is actually paying more to Accenture than originally contracted (McMartin, 2010).

In Québec IPPs are also playing a growing role. The majority of wind development in the province (on the Gaspé peninsula) was undertaken by private companies under long-term power purchase agreements with the crown utility. There have been three main Hydro Québec calls for private power: in 2001, in 2008 and in 2010. From 2006 to 2009, all installed capacity growth in wind power in Québec came from private utilities. From Mont Jolie to Gaspé there are 2,000 windmills, stretching 500 kilometers, generating over 4,000 MW in total (Gagnon Personal Interview, 2010). The Québec 2006 energy strategy ended the moratorium on small, privately owned hydropower stations (below 50 MW) as well. Hydropower, however, has continued to be developed by public utilities: 80 per cent of installed capacity between 2006 and 2009 (the other 20 per cent was industrial hydro development) (Statistics Canada CANSIM table 127-0009, 2010). At the time of writing, there is also wholesale competition for domestic loads greater than 165 TWh (CEA, 2011).

5.3 Green Electricity Restructuring: Public Funding, Private Ownership

The increase in private ownership across Canada is particularly apparent in the case of new renewables generation: wind power, solar and run-of-river hydro. Neoliberal policies over the past 20 years have opened electricity to the private sector, particularly for new renewables generation. Consequently, the structure of wind ownership across the country looks significantly different than it does for the power sector as a whole. The table below illustrates the relative shares of public, private and industry owned wind generation. Note that only in Saskatchewan, New Brunswick and the Yukon is there more than 30 per cent public ownership of wind power. This is due to policies, like B.C.'s, that prevent this renewable source from being developed by public utilities. B.C.'s one wind farm to date (March 2011), the Bear Mountain Project in Dawson Creek, was being mapped for development by B.C. Hydro (Rison, Personal Interview, October 2009) before the public utility was directed to cede new renewables generation to the private sector. While some provinces (see chapter 6) have initiated policies to support community ownership

of new renewable power a contradiction has emerged wherein getting projects developed overrides community control. For example, in the case of B.C., the government passed Bill 30 in 2006, rescinding municipalities' right to vote on power developments in their communities. In Ontario, the Green Energy and Economy Act has likewise limited municipal oversight of projects by streamlining approvals (Pirnia, Nathwani and Fuller, 2011).

Table 5-10 Installed Wind Capacity by Province and Ownership 2010

	Total Capacity (MW)	% of Canadian total	Public Share %	Private Share %	Industry Share %
ON	1,457	37	17	83	0
AB	806	20	0	92	8
QC	658	17	15	85	0
SK	171	4	93	7	0
NB	249	6	40	60	0
NS	218	5	0	100	0
PE	152	4	27	73	0
MB	104	3	0	100	0
BC	104	3	0	100	0
NL	54	1	0	100	0
YT	0.8	0	100	0	0

Source: Statistics Canada CANSIM table 127-0009

Wind is not the only new renewable being developed, but it is the fastest growing. With the opening of Bear Mountain Wind Park in Dawson Creek, B.C., in 2009 every province now has some installed capacity. In fact, using the Canadian Wind Energy Association (CanWEA) numbers, installed capacity from 2000 to 2009 grew at an average of 40 per cent every year (CanWEA, 2009). According to a CanWEA online press release "current provincial targets and policy objectives would result in a further quadrupling of installed wind energy capacity in the next six years" (CanWEA, 2009)[51]. Table 5-11 shows the rate of growth of wind capacity from 1995 when there was only 25 MW, to 2010 with 4,022 MW. In 2010 this

[51] It is important to keep in mind that despite this growth, Canada still has one of the most underdeveloped wind resources in the world. Germany, for example, which is 28 times smaller than Canada has 10 times more installed wind capacity (Valentine, 2010). Only 0.6 per cent of Canada's total electricity production in 2008 was from wind and tidal sources (NEB, 2009).

represented approximately 3 per cent of installed capacity and 2 per cent of actual generation in Canada (Statistics Canada CANSIM tables 127-0009, 127-0007). As of February 2012, CanWEA reports that installed wind capacity now sits at 5,265 MW.

Table 5-11 Total Installed Wind Capacity in Canada 1995–2010

Year	MW (total installed)
1995	25
2000	139
2005	686
2010	4,022

Sources: CanWEA, WWEA 2010 report

Solar, tidal and biomass sources also provide important new avenues to diversify generation, as does co-generation from waste-heat derived from industrial processes. None of these technologies have made a significant impact (in terms of share of MWh) in the generation of electricity in Canada so far, but all may—and should—play a key role in coming decades. Whether and where they do depends on public energy and environmental policies, and changing market structures.

5.3.1 Ontario's Green Energy Act

In Ontario, recent changes to the power sector through the Green Energy and Economy Act have been both successful and contentious. They illustrate clearly some of the issues with using the private sector as a vehicle for new renewables development. Other provinces, like Nova Scotia and New Brunswick, are looking to Ontario as a model for greening their power (Personal Interview, Nova Scotia Power, May 19, 2010). Ontario has been experimenting with renewable incentives since 2006, when it initiated its Renewable Energy Standard Offer Program (RESOP). The province needed to fund new renewables following the failure of restructuring to lead to significant new renewable generation on its own. Ontario took on a bold legislative commitment in 2007 to phase out its 18 per cent installed capacity share of coal-fired generation (see table 5-5 earlier in this chapter) by 2014. Part of this phase-out involves bringing on line more renewable generation,

incentivized by long-term fixed-price Power Purchase Agreements (PPA) with the public Ontario Power Authority (OPA). Unfortunately, the RESOP did not result in the targeted level of new renewables, either from communities or from the private sector.

In 2009, in order to spur new renewables development, Ontario introduced a feed-in tariff (FIT) (the first of its kind in North America) for wind, solar, small hydro and biomass. FITs are statutory arrangements that set prices for renewable sources. The price set for FITs is political, and is generally described as the price of generation plus a reasonable return. If a project meets the criteria specified by the power authority, it is granted a contract. FITs are increasingly being applied around the world. They were the key policy choice in place in California, Ontario and Michigan, as well as in Germany, Denmark, Spain and 18 other EU countries (Barclay, 2009; Gipe, 2007a; Lipp, 2008a). The relative successes in the development of wind power in these jurisdictions has led others to look to the FIT model as a best practice for new renewables, particularly community renewables (see chapters 6 and 7). FITs are also seen as more effective at actually getting new projects built, and are, based on experiences in Germany and Denmark, more favourable than other market-based procurement mechanisms to small (co-operative and community) IPPs (Gipe, April 7, 2010). The Ontario FIT also includes a 1 cent per kilowatt hour adder (extra payment) for community-based power, and 1.5 cents for aboriginal and First Nations power.

While IPP supporters justify these moves on the basis that private investments help shelter governments and ratepayers from financial risk, they neglect to point out that system co-ordination, infrastructural upgrading and profit-based rates (not to mention long-term, 20–30 year contracts to offset project risk) are all costs borne by the public (Calvert, 2007). The Ontario FIT in particular has been criticized for being excessively expensive and having a negative impact on social welfare in the province (Pirnia et al., 2011). IPP agreements with integrated utilities are guaranteed purchase contracts at high prices (10–80 cents per kWh) paid by households, many times the cost of conventional (older) power generation.

Opening up markets while providing subsidies and long-term contracts is a useful way to increase profits for generation and industry and a small minority of communities; however, this has little to do with deeper sustainability as overall generation and material throughput (as the deep greens call it) continues to increase.

One of the key arguments made by advocates of the Green Energy Act is that it will stimulate a green energy economy in Ontario (Ontario Power Authority, 2009, 2010). In particular, the act includes local (Ontario) content requirements for wind and solar project components in order to qualify for the FIT. In 2010, in response to this requirement, however, Japan has launched a complaint against Canada (Ontario) at the World Trade Organization, alleging that "…under these measures, technologically advanced and highly competitive and sophisticated solar panels or other renewable energy generation equipment produced in Japan are discriminated against in the market of the Canadian province of Ontario simply because of their origin" (Agence France-Presse, 2011). This case is now set to become a test case for the types of policies that would indeed increase the multiplier of local benefits from renewable projects, and is being watched carefully by other provinces now hesitant to enact similar requirements (Lord, 2011; Wilke, 2011).

5.3.2 Greenwashing Power and Profit

In the case of electricity, claims about the virtues and consumer benefits of privatization and deregulation are overstated. The real work of infrastructural upgrading, of providing incentives for new renewables and public education, is borne by the state and consumers. For high GHG intensity provinces, improving the environmental record of the power system means taking on the issue of source of generation. For the provinces with higher hydro capacity, the challenge is to work much harder on demand management, and where necessary diversify to include new renewable technologies. Canada, as an electricity system dominated by relatively low GHG hydroelectric power, is in some provinces, doing quite well in comparison to other states around the world. In the United States, for example,

almost half (44 per cent) of all power generation in 2009 came from coal. This is not to say that diversification through the introduction of wind, solar and biomass is not useful or important, merely that for provinces with very low GHG intensity, the benefits of demand management and reducing power consumption are a bigger part of the puzzle than shifting electric power away from existing hydro facilities to other (new) sources of generation.

As it stands today, generation from new renewables like tidal, solar and wind account for a very small share of total generation (less than 2 per cent in 2009). Almost all new growth in this sector is private generation. The pairing of green power with private power raises serious concerns. If the goal of the utility is not low stable rates but profit, the utility has little incentive to reduce consumer demand, or to invest over the long term. Indeed, electricity rates across the country have been rising steadily over the past 10 years. Some of these costs are necessary. For example, upgrading aging infrastructure. However, some are intimately tied to the push for private accumulation and expanded continental grids. This has led to double-digit electricity rate increases in Nova Scotia and New Brunswick (National Energy Board, 2010), as provincial actors provide incentives for new generation sources and to tackle aging infrastructure.

In Ontario, the liberal government admitted that rates are set to rise 46 per cent over the next five years (2010) in part to address the costs of nuclear and transmission systems as well as the phase out of coal by 2014. New higher rates are not just going toward upgrading, improving and bringing greener generation sources into the system, but also toward enriching investors at home and abroad. These increased costs in different provinces need to be weighed against not only the benefits of a shift in generation source, but also against the alternative modes of development (in this case public renewables) oriented more strongly around public needs rather than profit.

Table 5-12 shows the changes in average residential utility rates between 2006 and 2010. In British Columbia, rates are set to rise 32 per cent over three years and up to 50 per cent over the next five years (Province of British Columbia,

2011: 4). This is due to the increasing costs of IPP generation together with infrastructural upgrades like smart meters and subsidizing transmission lines to support mine development (in the case of the Northwest Transmission Line project). These price increases in B.C. are wildly out of step with fluctuations in the economy more broadly and are problematic given the centrality of the power sector to the economy (Statistics Canada, 2010: 20). Fuel poverty for low-income Canadians is a very real risk in coming years.

Table 5-12 Residential Electricity Rates in Canadian Cities (c/kWh)

City	2006	2010	% change
Charlottetown	12.15	16.15	25
Regina	10.43	13.15	21
Halifax	11.21	12.89	13
Toronto	11.14	11.82	6
Moncton	10.14	11.66	13
Ottawa	10.09	11.00	8
St. John's	9.88	10.73	8
Edmonton	10.22	9.27	-10
Vancouver	6.41	7.79	18
Winnipeg	6.3	7.08	11
Montreal	6.6	6.88	4

Source: Hydro Québec, 2010, 2006

A confluence of pressures is thus leading to rate increases across Canada: a shift to power for profit and exchange rather than local consumption, to upgrade and shift generation to greener sources, and to upgrade and build new transmission for system reliability and export. Each of these issues raises problems of democratic control and scale. The expanding continental market undeniably generates revenue for some communities, provinces and corporations. What is sacrificed is local and public control over how and where this energy is produced, not to mention how much it will cost. In this vein, Marjorie Griffin Cohen (2004: 6) argues that:

> …powerful trade agreements that support an export-centered energy strategy can compel markets to open in ways that will jeopardize the stability of both supply and pricing that Canadians take for granted…The major risk for Canadians in a deregulated market is that the new private producers, who will have access to the transmission

> grid, will focus on exporting to the more lucrative market in the US. Since public utilities would no longer plan for future supply, but rely on the private sector's investments, and since prices would no longer be regulated to reflect the cost of production, Canadians would be forced to compete with customers in the US for access to their own domestically generated electricity.

International export orientation and continentalism also impacts sustainability in the electricity sector. For Cohen, "this [orientation] 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 British Columbia or Manitoba" (2004: 4). These tradeoffs and trends are important for the prospects of co-operative and community based electricity in Canada. The power sector is scaling *up* not down and orienting grids to distribute power less efficiently across greater distances.

The way in which the shift to renewables is taking place across Canada ultimately undermines our power (in both senses of the word). On the one hand, access to electric power for the average Canadian, and on the other, the power to properly manage the transition to a greener future in a meaningfully democratic way. Energy is not just a commodity for sale. Access to electricity and control over its sources (e.g., for environmental reasons) is a matter of citizenship (Doern and Gattinger, 2003; Hampton, 2003). Neoliberal power sector reforms are eliminating a critical tool for states and provinces to protect the environment, create new technologies, help manage demand, and provide jobs and low-cost access to power for poor families (Byrne et al., 2006; Hampton, 2003). In other words, these reforms are undermining the security *and* sustainability of the power sector in Canada.

5.4 Summary

In contradiction and change there is opportunity. These reforms open up space for private (and more local) actors like co-operatives, and decentralization of generation. In practice, however, this is not leading to local or truly green power

systems. These forces of change lead to contradictions between public expectations and desires for greener and more secure power, and the neoliberal practice of electricity production and regulation that favours privatization and continentalization. Environmental forces for change in the electricity sector have political economy implications but biophysical causes. Neoliberal forces, on the other hand, have political economy causes but biophysical implications. If we are to tackle the environmental implications of power, we need to address political economy issues of ownership and distribution.

Neoliberal restructuring of the power sector is not necessary for technical or financial reasons, but political; it is not inevitable, but contingent on currently popular rhetoric about the virtues of private markets. The direction of power sector reforms taking place in Canada today is contradictory and problematic. The implication of the emerging continental market is that Canadian communities and localities in exporting provinces may soon be paying the costs of supporting private sector expansion. Moreover, the profits from sale and production are not necessarily circulated back into the communities bearing the environmental costs of generation and transmission (for generations). Transmission systems come with environmental and monetary costs borne by communities in spatial proximity, while the benefits accrue to power traders and energy investors. If sustainability and the mitigation of climate change is a serious goal—as it should be—these developments need to reverse.

The open access to transmission grids, and contracted support for new renewables that neoliberals call for, facilitates, in theory, a range of new actors, including community actors. This has happened in Ontario, as co-operative and community groups in that province organize to develop projects, impossible only 15 years ago (see chapter 6). New generation technologies (small scale, hydro, wind and solar) are environmentally desirable and economically possible. What is problematic is that these community projects are often the "trojan horse" for much larger and hardly greener energy companies to transform and effectively gut public utilities (Interview, May 2010, Montreal, Québec). Moreover, Cohen (2006) and

Calvert (2007) both argue that there is no reason that public utilities could not generate more environmentally sustainable outcomes.

6 ELECTRICITY CO-OPERATIVES 1940-2011: THE POWER OF PUBLIC POLICY

Electricity co-operatives are not new in Canada. In fact, in the 1940s and 1950s hundreds were incorporated in Alberta and Québec. Provincial public policy has been and continues to be a central driver of electricity co-operative development. I show, through analysis of historical data, that co-ops in the power sector first developed originally mainly in Alberta and Quebec as a result of provincial governments being unwilling, for ideological reasons, to use public funds to electrify rural areas. That is, provincial politics together with some public policy support for co-ops and rural mobilization contributed to their development. Likewise, electricity co-operatives today are emerging as a result of neoliberal policy shifts that encourage private participation in the power sector.

In Canada, co-operatives in the electricity sector have taken different forms during different time periods. In this chapter I illustrate how important differences exist in the forms, locations and motivations for contemporary Canadian power co-operatives. This understanding of organizational diversity and change over time is necessary for a nuanced analysis of contemporary co-operative development occurring today. In order to accomplish this, I compare data on incorporation rates and co-operative profiles from two time periods: 1940 to 1980 (development) and 1980 to 2010 (restructuring)[52]. I find that electricity co-operatives today are: less numerous, just as likely to be urban as rural, and spread more evenly across the country's regions. Unlike the distribution co-operatives in the mid-twentieth century, today's power co-operatives are in a profitable niche (renewable energy) of the power sector, and this has consequences (see chapter 7 and 8) for the kinds of contributions that co-operatives can make going forward.

[52] While power sector restructuring didn't take place until the 1990s, this latter period coincides with the Thatcher/Reagan/Mulroney neoliberal policy era, the genesis of power sector restructuring.

The history of electrification, and the way provinces used community actors as alternative service providers in the 1930s and 40s, suggests important lessons for the future of new co-operatives in the electricity sector in this country. One challenge in studying the role and potential for power sector co-operatives today, however, is that very little is written about their development and emergence in the past. I attempt to remedy this gap in the sections that follow and present an account of how, where and why power sector co-operatives first emerged in this country. This account is not only useful for its novelty, but is essential insofar as data from earlier years provides invaluable comparative background for today's new co-operatives. Since 1980, 89 electricity co-operatives have incorporated in Canada, and 635 since 1940. These organizations can produce forms of energy (either renewable or not), distribute it, or be formed by groups of consumers to secure better rates or particular services. Incorporation has not led to developed projects in most cases, however and the many challenges co-operatives face in reaching their goals are addressed throughout the rest of this thesis.

In what follows below, Canadian electricity co-operatives over the past 70 years are profiled, as are specific provincial policy initiatives that have guided co-operative development. Section 1 presents an overview of the different types of power co-operatives that have existed in this country and the overall statistical picture. Section 2 presents the data on the 1940–1980 period, on where, why and how power co-operatives were developed in Alberta and Québec. In the development phase, co-operatives focused their efforts on building access to electricity, and services for rural underserved communities. This, for the most part, meant co-op distribution (power lines). Section 3 moves on to the 1980–2010 period and illustrates how co-operative development has changed in form because today the challenge is based on rising prices and community concerns with environmentally damaging generation sources, rather than providing rural access.

This profile and statistical overview sets the stage for the subsequent analysis of new co-operative development in the latter half of this chapter (as well as in chapters 7 and 8). The final section then looks in more detail at the policy

initiatives that have arisen in the past two years to facilitate co-operative electricity generation. I compare these, to assess the likelihood that they will facilitate significant numbers of new electricity co-operatives. I contrast and analyze the mechanisms that these policies use to facilitate community power development and note the lack of success (or even expectation for success) that is present in project developments in all provinces but Ontario. Even there, the purchase in the larger power sector remains small to date. The subsequent two chapters of this thesis look more closely at contemporary power co-ops and their attendant opportunities and challenges.

6.1 Types and concentration of electricity co-operatives

I have identified four main types of co-operative activity in the electricity sector. These are, in order of prevalence: 1) Electricity *distribution* co-operatives where members pool assets to build (or buy) sections of the distribution grid. 2) *Generation* co-operatives that own generation assets and sell power to public utilities or private retailers[53]. 3) *Consumer retail* co-operatives that purchase bulk electricity to members at a lower cost—possible in deregulated retail markets like Ontario and Alberta. Consumer co-operatives can also provide services to members to conduct energy audits and install residential electricity efficiency equipment. 4) *Networking* co-operatives work more as a community associations to provide members with an avenue to promote renewable electricity and policy change[54]. In addition to these four main activity groupings, there are a variety of co-operative ownership structures within each—including worker co-operatives—and these are

[53] Co-operatives also exist that generate small amounts of power for use in a building, or small collection of buildings (Argenta Power Co-op in British Columbia, for example). Tracing and cataloguing all of these falls outside the scope of this thesis. Generation co-operatives also include many co-operatives that act for many years as networking co-operatives while they work on developing a generation project.

[54] In practice, categorizing the activities of co-operatives is complex, so I have assigned them to categories by their major/primary business area. There is often overlap between different types of co-operatives. For example, distribution co-operatives also provide retail functions for their customers. Furthermore, educational co-operatives also include those, like the Community Power Fund, that provide financing and policy advocacy functions.

examined in chapter 7. Table 6-1 provides a numerical summary of co-operative development in the power sector in Canada from 1940 to 2010.

Table 6-1 Electricity Co-operatives by Type Incorporated 1940–2010

	1940–1980	1980–2011	Total (type)
Distribution	543	19	562
Generation	0	56	56
Consumer	3	9	12
Networking	0	5	5
Total (time period)	546	89	635

Sources: Doiron, 2008, Co-operatives Secretariat Survey, 2010, CCA, 2011, personal interviews.

Note the significant difference in number of new incorporated co-operatives between these two time periods: 546 in period 1 (development) and 89 in period 2 (restructuring). When compared to the 1940s–1960s, the latter decades of the twentieth century were quiet for electricity co-operative incorporation. More rural utility co-operatives were started between 1947 and 1957 in the province of Alberta than have been incorporated in any area of the electricity sector in all provinces put together since. It may, however, be too early to make these comparisons, as a new cycle of co-operative development has just begun (provincial initiatives in 2009, 2010 and 2011 driving this are outlined in section 6-3). It may, therefore, be useful in the future to revisit and compare the data above with the 1980–2020 period. That said, what is presented in this chapter is the most comprehensive account to date comparing electricity co-operative development across the country.

Electricity co-operatives are geographically concentrated within each time period. Between 1940 and 1980 development of electricity co-operatives was geographically concentrated in Alberta (70 per cent) and Québec (29.5 per cent). Between 1980 and 2011, Alberta's share of new incorporated co-ops dropped to 21 per cent, and provinces that didn't have any—B.C., Manitoba, New Brunswick, Nova Scotia and PEI—started developing them. Two forces have played a role in shifting concentration of new power co-ops from Alberta to provinces such as Ontario: 1)

supportive policies for community power[55] generation, and 2) public frustration, particularly among environmentalists in more coal-reliant provinces (Nova Scotia, Ontario, New Brunswick, Alberta) with progress towards developing renewables. Table 6-2 illustrates this geographic shift.

Table 6-2 Electricity Co-ops by Province and Period Incorporated 1940-2011

Type (total #)	BC	AB	SK	MB	ON	QC	NB	NS	PE	Canada
1940–1980	-	381	1	-	2	162	-	-	-	546
1980–2011	3	19	1	3	25	20	8	4	1	89

Sources: Doiron, 2008; Co-operatives Secretariat Survey, 2010; CCA, 2011; personal interviews

6.2 Early Development: Distribution Co-operatives 1940–1980

Ninety-nine per cent of electricity co-operatives in Canada prior to 1980 distributed power to rural residents. These co-operatives emerged following the depression during the inter-war period. They played an important role in rural electrification. The failure of private sector rural electrification and consequent rural mobilization are what drove them. These factors were, ultimately, instrumental to co-op incorporation. Provincial choices to support co-operatives reflected both policy spillover from the United States, and the ideological leanings of provincial governments at the time. In the United States, President Roosevelt's New Deal policies—the establishment of the Rural Electric Administration in 1935 in particular—promoted co-operative development for rural utilities through grant funding and legislation granting franchise areas[56]. Private companies were opposed to these programs, arguing that public competition was unfair, as were subsidies and supports for co-operative rural electrification (Battle, 1935). Without these

[55] Community power is a term used to recognize a significant (usually more than 50% per cent) ownership in a power project by, for example, co-operatives, First Nations, local landowners, and municipalities. Some of the controversies over this term are addressed in chapter 8.

[56] Franchise areas—granted to REAs in the U.S. and gas co-operatives in Alberta—give the co-operative exclusive rights to service provision in a given geographic area.

programs and facing an industry that would only provide access with a profit, rural people were left without electricity.

In Canada between 1940 and 1980, co-operatives incorporated in the electricity sector to build distribution grids in Alberta (381) and Quebec (162)[57]. Not all of these succeeded due to a combination of financial and technological issues (Doiron, 2008; Dolphin and Dolphin, 1993). In other provinces, by contrast, a combination of public, private and municipal utilities developed the electricity distribution systems and, in the 1960s, provincial public utilities bought out private and smaller local and municipal utilities (Dupré et al., 1996; Netherton, 2007). By 1967 provinces ranged widely in degree of public control of electricity assets, from 99 per cent in Manitoba to 4 per cent in PEI (Dolphin and Dolphin, 1993: 6).

6.2.1 Policy supports in Québec and Alberta

Québec and Alberta diverged from other provinces because conservative governments were in power at the time when farmers and rural communities mobilized to gain electricity access. Both provincial governments looked to the U.S. experience of rural electrification in deciding how to bring power to rural areas and avoid the public sector ownership that had emerged in other provinces (notably Ontario and British Columbia). The ideological opposition of both Duplessis' Union Nationale (1944–1959) and Manning's Social Credit (1943–1967) to public ownership of power systems, combined with popular—albeit fragmented—pressure for action led to the support for the co-operative "third-way"(Doiron, 2008; Dolphin and Dolphin, 1993). This approach allowed for some service provision with minimal outlay of public funds. A key difference lay in the fact that the ideological winds changed in Québec, and did not in Alberta. As a result, Québec bought out the co-operatives and brought them into Hydro Québec during Lesage's liberal government and the Quiet Revolution in the 1960s.

[57] Co-operatives during this early period also played a small role in (off-grid) power generation. The Argenta Water Power Co-op in British Columbia's Kootanay region, for example, was established in 1954 by a group of American Quakers to supply 17 residences in their community.

Rural electrification co-operatives were most active in Québec between 1945 and 1963 (less than 20 years). One hundred and sixty two rural electric co-operatives incorporated (Doiron, 2008: 135)[58], served more than 80,000 people and covered more than 9,400 square miles. The earliest electric distribution co-operative in Canada was established in Compton, Québec, in 1939 (Saint-Pierre, 1997). It borrowed money from a local credit union to build a power line to connect to Southern Canada Power's network and electrify a small agricultural area. It lasted until 1961 (Doiron, 2008). Just a few years later, in 1944, the Co-opérative régionale d'électricité de St-Jean-Baptiste de Rouville incorporated in Québec, and is the only electricity distribution co-op on record in Québec that still operates today. The co-operative developed as part of the 1945 Rural Electrification Act in Québec established by the government of Duplessis, who was concerned with minimizing state ownership of electricity(Doiron, 2008; Dupré et al., 1996).

According to Hydro Québec, the Rural Electrification Act contributed to the modernization of Québec farming in the post-war period (Hydro Québec, 2011b). It created a $12 million fund and the Office for Rural Electrification (OER) to help rural electric co-operatives develop via the provision of technical, legal and financial assistance. Two hundred and sixteen municipalities requested OER funds to start rural electric co-ops, the bulk of which were formed in 1945. Between 1945 and 1948, $2.1 million (in 2008 dollars) in funds were advanced to co-operatives (Doiron, 2008: 184). Among other things, the Act mandated that distribution co-ops build and manage power lines, with the supervision of the OER. In 1963–1964, all but one of the 45 remaining rural electric co-operatives in Québec were bought by Hydro Québec and integrated into the public distribution system. The Co-opérative régionale d'électricité de St-Jean-Baptiste de Rouville, was the sole stand-out, and now distributes electricity to 16 municipalities in the Montérégie.

In Alberta, local need and provincial policy also spurred distribution co-operatives. In 1941, rural Albertans only had a 5 per cent electricity connection rate, as opposed to 33 per cent in British Columbia and Ontario (S. Meyer, 2009). The

[58] Only about 40 per cent of these were active, according to Doiron (2008).

Alberta government's reluctance to build a public power system, despite the push from rural farmers, played a key role in co-operative development. According to premier Ernest Manning in the 1940s, public power was socialism (Dolphin and Dolphin, 1993: 26). As one of the last provinces to enact rural electrification policy, rural Albertans were largely left to their own devices, which is to say, largely lived without power access. Private gas and electric utilities were unwilling to extend access to underserved areas, as profit margins were far lower per kilometre of line or pipe, leaving these populations to fend for themselves. In 1948 Albertans had a plebiscite on whether the province should take over the power sector or the private companies should continue with business as usual. The private option won, but by less than 151 votes (Dolphin and Dolphin, 1993). That left farmers with only the Co-operative Marketing Associations Guarantee Act of 1946, allowing for government guarantees of up to half the construction costs: up front money the farmers had to secure themselves.

Following the establishment of Alberta's rural electrification program (1947), over 90 per cent of Alberta farms were connected to power within a decade (Ibid. vi). These co-operatives involved buy-in shares of $100 for rural farmers, with the balance of funds to build the system to be borrowed from banks, with the loan subject to a provincial guarantee. Unlike Québec, Alberta's rural communities bore most of the cost themselves. According to Pat Bourne, CEO of the Central Alberta Rural Electric Association (CAREA), in devising the co-op policy,

> The large investor owned utilities were involved [in the system development] which was unfortunate because we didn't get franchise areas because of that. We got what's termed a service area. We share the service area with an investor owned utility. (Personal Interview, December 1, 2009)

This lack of franchise area plays a key role in the constant decline in Alberta's power distribution co-operatives in subsequent years (see section 6.3.1).

The relative success of co-operatives in meeting rural electrification and community development needs, as measured by longevity and penetration of co-operatives in the energy sector in Alberta, provides an historical basis for future co-

op development. It also brings with it warnings. These co-operatives scaled up specifically because public policies facilitated—and in some senses forced—their growth. Certainly, local mobilization, time and entrepreneurial effort played a role (Dolphin and Dolphin, 1993; Yadoo and Cruikshank, 2010). But these efforts were financially supported by provincial policies that used public funds to develop private power. One lesson that may be taken from this history is that both political mobilization and supportive public policy are essential for broad co-operative development. In the electricity sector, this may be especially important, given the significant competition, infrastructural investments required, and the importance of balancing the playing field with the investor-owned utilities.

A spillover effect of earlier co-operative development also led to the development of other energy sector co-operatives. First in the United States, and then in Québec and Alberta, co-operative supportive policy provided a solution for service provision in a (then) unprofitable part of the power sector. In addition to this international policy modelling, the success in one co-operative network (electricity, for example) had spill-over effects to others (natural gas). Rural gas co-operatives started moving towards constructing distribution networks in the 1950s (prior to the policy that allowed them to scale up) as a result of the electric co-operatives' development across the province. This happened through specific acts like the 1973 Rural Gas Act, providing grant assistance for co-operatives to construct rural gas distribution systems, setting up Gas Alberta to procure gas and franchise areas to secure customers. Prior to the act (in 1970) there were 25 small rural gas co-operatives in Alberta. After 1973, this number grew rapidly through the 1970s and by 1979 59 new gas co-operatives were incorporated in Alberta. What differed was that the gas co-operatives learned from the experience of earlier electricity co-ops and pushed for franchise areas.

6.3 Restructuring: Generation and Renewable Energy Co-operatives 1980–2011

New electricity co-operatives since 1980 differ in both function and geographic distribution from those of the earlier era. Over the past 31 years electricity co-operatives have shifted mandates, and are increasingly forming in order to provide other services: generation of renewables, networking, and retail of renewable energy products like solar panels. In some cases, they are also forming consumer electricity purchase co-ops. These new co-operatives in the power sector are, as of 2011, less networked, less geographically concentrated and do not have guaranteed rights to either government funds or designated franchise/service areas. At the same time as new types of electricity co-operatives are emerging, the remaining rural distribution co-operatives in Alberta are under pressure to sell to investor-owned utilities (IOUs). These changes in the form and number of co-operatives are driven by a restructuring of the power sector in provinces across Canada as outlined in chapter 5, including opening up the grid to new private generation retail opportunities. Fluctuating power prices and community desire for new renewables also play important roles in motivating community mobilization. The data on these trends is presented below.

6.3.1 Declining Distribution Co-operatives

Distribution co-ops represent a declining share of the electricity co-operatives in Canada; generation retail and education co-operatives are growing in number. Table 6-3 illustrates the diversity of electricity co-operatives across Canadian provinces. Note that distribution co-operatives in this period are heavily concentrated in Alberta (89 per cent); generation co-operatives exist in all provinces but are concentrated in Ontario and Québec (34 per cent and 36 per cent respectively); consumer and networking co-operatives are also concentrated in Ontario.

Table 6-3 Electricity Co-ops by Province and Type Incorporated 1980–2011

Type (total #)	BC	AB	SK	MB	ON	QC	NB	NS	PE	Canada
Distribution	-	17	-	-	1	-	-	1	-	19
Generation	2	1	1	3	19	20	6	3	1	56
Consumer	1	1	-	-	5	-	2	-	-	9
Networking	-	-	-	-	5	-	-	-	-	5

Sources: Co-operatives Secretariat Survey, 2010; CCA, 2011; personal interviews.

The distribution co-operatives remaining in Alberta are divided between 7 that own *and* maintain the grid (self-operating distribution co-ops), and 54 that own the lines but contract out to IOUs like Fortis and ATCO Electric to manage their assets. In 2011, approximately 20,000 (or 50 per cent of Rural Electrification Association members in Alberta) are served by one of the seven self-operating REAs, and the remainder are members of the more than 54 small ones operated by IOUs (Bourne Personal Interview, December 1, 2009). These co-operatives are diminishing in number as assets are sold to the province's private utilities and some are amalgamated with other co-operatives. According to the Alberta Federation of Rural Electric Co-operatives (AFREA), 143 amalgamations and mergers, and 255 sales have occurred in the province out of the original 398 incorporations since 1940 (Nagel Personal Communication, January 2011). These changes are due to a variety of reasons explored below, chief of which is pressure from private utilities in the province's deregulated energy market.

According to a February 2012 press release from the Central Alberta Rural Electric Association (CAREA), Lakeland REA and South Alta REA, "The rules in Alberta are working against the REAs because of the increased investment levels and the profit-maximizing investment of the multinational utilities…the ability of the multinational utility companies to raise their investment levels in the past couple of years now effectively allows them to also utilize these levels to purchase REAs and rewards them for doing so." (CAREA 2012) This pressure has resulted in sales of co-operative distribution infrastructure to either ATCO Electric or Fortis

Alberta, the two private power distribution companies in the province (Bourne Personal Interview, December 1, 2009). According to an interviewee from the Rural Utilities Section of Alberta Agriculture, deregulation has also played a role:

> The electricity market since 1995 has been in a state of turmoil under deregulation and this has a significant impact on REAs and how they're dealt with. They have to live with the rules of deregulation…The issue that's facing the REAs is there is still a desire by ATCO and Fortis to acquire the REAs and they'll snap them up as soon as there's any interest in doing this, to the detriment of other REAs, like CAREA who wants to have one REA in the whole province. They are trying to minimize the obstacles to their amalgamation with others and to increase obstacles to prevent sale to other utility companies. (Personal Interview, Alberta Rural Utilties Division Employee, Alberta Agriculture, November 27, 2009)

The director of AFREA, Al Nagel, pointed out that sales also occur due to a lack of co-operative awareness and short-term economic interests of a membership pressed for cash on other fronts:

> The whole age thing is important for someone who has been on board for 100 years. They're tired, and deregulation has made things twice as complicated with all these new forms to fill out and now you've got to have a computer. If you just look at it from a financial point of view, we're in the co-op and we farm for 15 or 20 years and someone offers you $20,000 and your rates will remain the same, what do you say? Especially in today's economy where crops aren't good, cattle prices aren't good. Even though I'm going to have to pay it back through my rates eventually, and my predecessors will forever. (Nagel Personal Interview, November 27, 2009)

The result of the less hands-on (and more common) model of REA is that many co-op members are unaware of the co-op functions, benefits or purpose. So, when an offer to buy the local lines arises, with a one-time payment to each member of $5,000 to $10,000, members sell. In order to combat this trend, some REAs have elected to amalgamate with each other. The ones that have not folded have had to spend large sums of money. According to Joe Bowhay, a board member of both CAREA and an Albertan gas co-operative:

> The REAs don't have controlled franchise areas. So we're constantly under attack and have spent huge resources defending ourselves against them…they just keep picking at you and picking at you and picking at you and one day they might find a crack and they'll game it. But the resources, when I talk about saving our members $750 each a year that could have been $1,750 had we not been spending all this money defending ourselves…We go to arbitration with them constantly, never a time that we don't have one going on, sometimes two or three at a time If we were able to turn the clock back the REAs would die to have a controlled franchise area where they owned all the distribution rights like the gas co-ops. The difference is staggering. I was shocked to sit on both boards. The government didn't necessarily set up the REAs properly; there was more vision with gas co-ops, [and they] made corrections for mistakes in REAs. (Bowhay Personal Interview, December 1, 2009)

Québec and Alberta are not the only provinces with power distribution co-operatives in 2011. Ontario (Embrun) and Nova Scotia (Municipal Electric Utilities Co-operative) also have just one distribution co-operative each, both incorporated after 1980. In each of these cases, earlier municipal power systems were the precursor to forming the co-operative, unlike the broader development of co-operatives in Québec and Alberta. Embrun, for example, was a local distribution company prior to the restructuring of Ontario Hydro, and chose to go the co-operative route unlike other Local Distribution Companies (LDCs) in the province.

6.3.2 The Rise of Renewable Generation Co-operatives

Inspired by the success of German and Danish co-operative and community power development, co-operative electricity generation projects are starting to develop more broadly across Canada (Gipe Telephone Interview, April 7, 2010; Lipp Personal Interview, July 23, 2009; McLean Personal Interview, July 23, 2009). Generation co-operatives are facilitated by electricity sector restructuring that relies on private Independent Power Producers (IPPs) for new generation. For example, in British Columbia, government-mandated IPP development has tripled the share of private generation from 3 per cent in 1999 to almost 10 per cent in 2009 (BC Hydro, 2000, 2010). As private corporate actors like Canadian Utilities, AltaGas, and Spain's Acconia Energy develop projects from B.C. to Nova Scotia, some communities,

particularly those with a successful co-op model to point to, are keen to participate. Presented below is a brief overview of generation projects that involve co-operatives across Canada. Chapter 7 of this thesis examines their project structures and potential in more detail.

Fifty-six of the eighty-nine (63 per cent) electricity co-operatives incorporated in the 1980–2011 period are focused on power generation. These include co-operatives (Windshare), or co-operative initiated projects (Bear Mountain). The vast majority (96 per cent) of these co-operatives incorporated since 1998. Unlike earlier developments of electricity co-operatives in Canada, 88% are in central and eastern Canada. The vast majority of these co-operatives are not actually generating electricity as yet. As of 2011, 48 of the 56 are involved in developing generation projects (wind, solar, biomass, hydro), but only eight are actually generating electricity. Two of these have initiated generation projects, but do not own assets. The dynamics and challenges of generation co-operative development are the focus of chapter 7.

The relatively small number of co-ops actually generating or involved in the generation of power is set to change, however, as nearly 59 MW of installed capacity from co-operatives in Ontario and Québec have been awarded power purchase agreements for wind generation projects in 2010, and are starting construction (total wind installed capacity in Canada, by comparison, was 4,008 MW in February 2011). While this is still a very small change in terms of the contribution to power generation in Canada, it represents a significant shift from the complete lack of co-operative power generation just 30 years ago.

6.3.3 Consumer and Networking Power Co-operatives

Consumer and networking co-operatives in the electricity sector represent a minority (17) of the new and existing co-ops. In fact, many of the generation co-operatives that have started act as networking and advocacy organizations while they are mired in the project development stage (and many fail to move out of this). In 2011, there were 5 networking power co-operatives on record, all in the province

of Ontario, and 12 consumer co-operatives spread across the country. Non-profit community renewable co-operatives focus on conducting educational campaigns for sustainable and renewable energy, and sometimes, as in the case of the Toronto Renewable Energy Co-operative, act as an incubator for generation co-operative project spinoffs. These co-operatives also play an important role in networking and outreach for the broader community power sector (see chapter 8).

Consumer co-operatives in the electricity sector bulk purchase power in restructured power markets. Co-operative members can ensure that they pay closer to the wholesale price for power and, through member control of the co-op, can contract for power generated by renewables. Currently, these consumer electricity retail co-operatives only exist in Alberta and Ontario. These two provinces have had the wildest price fluctuations for electricity and are the only two provinces in Canada with retail markets for electricity at the household level. In Ontario, Canada's largest farm energy co-operative runs Firefly Energy, which acts as an electricity retailer to co-op members. Ag Energy has also recently expanded into farm-based co-operative power generation through the Ag Solar Co-operative.

Alberta's Spark Energy Co-operative is also a power retailer. Members buy shares and purchase their power through the co-op. It then uses the funds to buy wind, solar and biomass electricity from the Alberta Powerpool. Renewable energy certificate systems like this are plentiful in Alberta. They facilitate wind development in the province by paying higher than the market price for green power sources. This creates a market for green power in that province that makes new projects (there are no electricity generation co-operative projects in Alberta yet) more financially viable. Self-operating REAs in Alberta can also act as power retailers. As of 2011 the largest REA, Central Alberta Rural Electrification Association (CAREA), has also started a green-tags initiative so member-owners can, for a supplementary fee, purchase renewable electricity. For 20 dollars a month, members of the REA can purchase 1 MWh of renewable energy that is "physically metered and verified in Alberta" (CAREA, 2011).

Finally, co-operatives also exhibit potential to more affordably retail goods for energy efficiency and conservation. While most observers concur that voluntary and individualistic measures towards conservation are not nearly sufficient to reduce demand, co-operative home audits, installation, and consumer initiatives can play a role in making these actions more affordable for a wider swath of the Canadian population. Furthermore, a number of these (six so far) are incorporated as worker co-operatives. For example, the Vancouver Renewable Energy Co-operative sells, installs and provides consulting services for building owners looking to improve their energy efficiency. The Sustainability Solutions Worker Co-op and Fourth Pig Worker Co-op also are structured so that meaningful employment is provided, as is a service (consulting for Sustainability Solutions and solar panel installation for Fourth Pig) that contributes to energy sustainability. Despite the small number of these consumer, worker and retail co-operatives to date, it is reasonable to expect these types to play a larger role in the co-operative electricity sector in years going forward, as both conservation and power trading gain importance.

6.4 Policy Supports for Renewable Generation Co-operatives

Public policy and politics mattered for electricity co-operative development in the past, just as it does today. The popular idea that co-operatives are organic, apolitical, bottom-up institutions (chapter 3) is simplistic and not based on evidence. Electricity generation co-operatives began to develop in Canadian provinces *after* the private sector began developing new renewables. However, in most cases, a small number of pioneering co-operatives developed before policy supports were put in place for them and were, in fact, instrumental in pushing for policy changes (Chapter 8). This was the case for Toronto Renewable Energy Co-op's (TREC) Windshare project. What the policy supports do, however, is raise the number and the profile of these actors, allowing them, in some cases, to scale up.

Provincial government support for community power[59] increases acceptance of new renewables development and also of neoliberal policies directing public funding to private actors.

The majority of new generation co-operatives are not emerging in provinces with the most developed co-op sectors (Saskatchewan, Québec, Nova Scotia), but in provinces with the most open electricity sectors and those with community power policies (for example, Ontario). All of these policies include co-operatives in the definition of community, but are not focused solely on co-operatives. This differs from the rural electric policy supports in Alberta and Québec, which targeted co-operatives as *the* model for development. These policy initiatives are in Ontario (2009), Québec (2009, 2010), Nova Scotia (2010) and New Brunswick (2010) (see table 6-4). There are three mechanisms being used by the provinces: Community Feed-in Tariffs (COMFITs), set-asides and start-up funds. A COMFIT guarantees generators that meet the definition of community set out in the policy regulations a fixed price for power. This price is based on the cost of generation, plus a "reasonable return". If a project qualifies for the COMFIT, it is awarded a long-term contract with the power authority. A set-aside is a mechanism whereby a portion of new power coming onto the grid is reserved for community actors. For example, if the central power authority is set to increase generation by 15 per cent, they might only sign contracts for 10 per cent of that, leaving the final 5 per cent for community groups. Finally, some of these policies are also providing start-up funds for community based projects to help with the costs of feasibility studies, contract and project design, and in some cases construction.

[59] The definition of community power is somewhat contested and these debates are explored in some detail in chapters 7 and 8.

Table 6-4 Provincial Community Power Policies

Province	Year	Policy	Prices	Limit/set-aside	Notes
ON	2009	FIT with community and First Nations adder Funding support (CP Fund, CEPP)	+1cent/kWh (=14.5) for community wind and +1.5cents/kWh (=15) for First Nations wind	None	FIT prices differ for all generators based on project size and source FIT for projects > 10 MW MicroFIT for <10 MW
QC	2009	Community Windpower Call	Call for tender (bid) 2010 call average, 13.3 cents/kWh	500 MW (250 First Nations and 250 community)	projects < 25 MW
NB	2010	Modified COMFIT	10 cents/kWh for community renewable energy projects	75 MW in total (50 community, 25 First Nations)	Projects < 15 MW
NS	2010	COMFIT	13.1 cents/kWh wind > 50kW 49.9 cents/kWh wind < 50kW	100 MW in total	FIT prices differ for all generators based on project size and source (Does not include solar, but includes tidal)

Sources: Nova Scotia Department of Energy, 2012; New Brunswick, 2011; Ontario Power Authority, 2011; Québec MRNF, 2011.

6.4.1 Ontario: Pioneering FIT Adders and Funds

The province of Ontario has gone the furthest in North America to support the development of community and co-operative generation projects. The Ontario Power Authority's December 2011 FIT program update shows that since 2009, 10,109 applications to date representing 20,973 MW of power were received. Of the 4,752 MW of contracted power offered, 329 MW (7 per cent) went to communities and 479 MW (10 per cent) to First Nations. Of these, only 3 MW of community projects are in commercial operation, and 0 aboriginal and First Nations projects

(Ontario Power Authority, December 23, 2011). According to Paul Gipe, "Within a few years, Ontario will have the largest installation of community-owned renewable resources outside Denmark and Germany." (Gipe, 2010) Within the community sector, however, co-operative projects again represent a small share of these contracts: less than 32 MW (see chapter 7).

The Ontario Government's 2009 Green Energy Act provided two things that have stimulated more co-operative generation development in that province: 1) a feed-in tariff, a renewable energy procurement policy that some argue (Gipe, 2007a, 2007b; Lipp, 2008a) favours community-based projects and, 2) an adder for community (co-operative) and First Nations generation projects[60]. Of particular note was the initially very high (80 cents per kWh, subsequently reduced to 72c/kWh) feed-in tariff for solar projects. Specifically targeted modifications to provincial co-operative legislation also made it easier for renewable energy co-ops to incorporate in Ontario.[61]

The community power policy element of the Green Energy Act, as with the act itself, was the result of years of policy pressure and lobbying by community actors in that province and is now spilling over into other jurisdictions.

> For Ontario, we had a perfect storm that was created in terms of the right policy, and a broad coalition that was created, groups coming together that consisted of agricultural groups, the biggest unions (steelworkers), church organizations and environmental organizations and business leaders came together, turned into perfect storm with a change in ministers in the energy department. All of the sudden we had an engaged minister who saw an opportunity. (Kopperson, 2010)

As we saw in chapter 5, however, FITs are not without controversy as ratepayers and taxpayers fund the financial incentives for private investors. Ontario's FIT

[60] The community and First Nations adders are based on a 'community participation level'. The maximum adder for community (1cent/kWh) is allocated to projects with 50 per cent or more community ownership. A project with only 10 per cent ownership is eligible for 20 per cent of the community adder, and so on.

[61] Prior to these modifications, co-operatives were required to do at least 50 per cent of their business with members, and since renewable generation co-ops sell to the grid, they had difficulty incorporating until the changes passed.

program is now in the process of a rate and regulation review (FIT 2.0) and community actors have suggested a number of improvements, including a set-aside for community projects and priority connection when there are grid constraints (Green Energy Act Alliance, 2011).

In addition to the financial incentive that the FIT adders provide for community power, Ontario also finances the Community Power Fund, a non-profit co-operative which administers three programs: the Community Power Fund grant program, the Community Energy Partnerships Program, and Community Power Capital. The CP Fund was founded by the Ontario Sustainable Energy Association (OSEA) in 2007 with $3 million in seed money from the Province of Ontario. The Community Energy Partnerships Program (CEPP) was launched in May 2010 and is co-managed by the CP Fund and Deloitte. It provides grant support of between $200,000 and $500,000 (for co-op projects over 10 MW), as well as $500,000 in education funding. The program receives on average 31 applications per month, and has received 308 since its inception. Co-operatives represent 8 per cent of these applications, while farmers represent 40.6 per cent. More than $8 million in funding has been granted through the program to solar, wind, hydro, biomass and biogas project development (Green Energy Act Alliance, 2011).[62] No other province in Canada has this range or amount of financial support for community power development.

6.4.2 Québec: Community Power Call

In Québec, community power policy supports arose after Hydro Québec started issuing power calls for private wind development, and their community policy specifically targets wind generation. The first wind power call was in 2005 and the second in 2008. Together they total 3000MW of electricity (Québec, 2011a). In 2007, after these private wind power calls, co-op developers worked to create about a dozen electricity co-ops in the Bas St. Laurent region, but weren't awarded

[62] The Government of the Northwest Territories also has a fund to help community and aboriginal groups build renewable generation: the Community Renewable Energy Fund. It provides up to half the project cost, up to $50,000 per year.

contracts in the competitive bidding system. In 2009, Hydro Québec made a third call for power for an additional 500 MW to be split between community (250 MW) and First Nations (250 MW) projects. Partnerships with private developers were allowed as long as there was 50 per cent community ownership. While in Ontario projects can have 10 per cent community investment (with a reduced adder), in Québec, Nova Scotia and New Brunswick, they need at least 50 per cent to qualify.

The procurement mechanism for Québec's power calls is lowest bid, and according to Carol Saucier, "this process favours the big companies and multinational corporations. In this context it's very difficult for the development of energy co-ops in Québec. The government decided to reduce social opposition to their power policies. Community power will be residual, 250 MW. It's not big, but it is an overture." (Personal Interview, May 13, 2010) Funding supports for project development are not included in the Québec policy[63].

The results of the community power call were announced in December 2010. In all 291.4 MW of power was allocated in the contracts selected, out of a possible 500 MW, to be constructed between 2013 and 2015. Only 1 of the 12 bids was a co-operative project, Val-éo (24 MW), and only one was an aboriginal or First Nations project (also 24 MW). The other 10 community projects were put forward by municipalities, often in partnership with private companies like Innergex, St. Laurent Energy Inc, Algonquin Power, Boralex, and Northland Power (Hydro Québec, 2010). By contrast, 29 wind farms have contracts with Hydro Québec set to or already generating 3243.6 MW of power. So, the community and First Nations content (with nearly half of this content coming from private partners) represents 9 per cent of Québec's wind power calls to date. Despite the strength of the co-operative sector in Québec (chapter 3), including significant development support networks, only one co-operative has secured a power contract and that is in partnership with Algonquin Power.

[63] Québec has, however, the most developed framework for co-operative development more generally in Canada (see chapter 3).

6.4.3 Nova Scotia: COMFIT, Set-asides and CEDIFS

In 2010, Nova Scotia announced a feed-in tariff specifically for communities (COMFIT) following a range of consultations with NovSEA members and industrial stakeholders. This policy emerged out of the failure of earlier renewables policies to diversify ownership outside Nova Scotia Power (NSP). Prior to 2011 the Nova Scotia government mandated that the private NSP purchase new renewables (wind, solar, tidal) from Independent Power Producers (IPPs). However, because it was through an RFP (lowest-bid) system, projects went bankrupt. This was due to underbidding and to the economic crunch that hit in 2008/2009. "Nearly all the IPPs failed. Because of that the government allowed NS Power to buy them out and finance up to 4 years some of them (and still consider them IPPs), so that rule really wasn't abided by, otherwise NS Power wouldn't have met the 2010 target." (Ashworth Personal Interview, May 21, 2010)

The Nova Scotia COMFIT program started accepting applications in September of 2011 once the FIT rates were set. The COMFIT is part of a larger renewables procurement plan mandated by the province. Six hundred megawatts will be procured through competitive bidding, while community actors can apply for contracts under a COMFIT program. The province has allocated 100 MW under this call for projects coming from municipalities, First Nations, co-operatives, and non-profit groups. Like the FIT in Ontario, the rates vary based on the source of power generated, ranging from 65.2 cents/ kWh for small scale tidal to 13.1 cents/kWh for wind projects greater than 50 kW. Unlike the Ontario's FIT, however, only community groups can access the FIT contracts and these projects are limited to the distribution system (capped at around 2 MW in practice, depending on the local grid capacity). Partnerships are allowed as long as the community partner owns 51 per cent of the project. Municipalities, however, are prevented from partnerships with private developers as per the Nova Scotia Municipal Government Act.

It is too early to tell the results of this policy initiative, but the fact that community projects are differentiated from private projects, and that there is a portion of the call set aside for community development, are both interesting

differences from the situations in Ontario and Québec. The following excerpt from e-mail correspondence with Nova Scotia's Energy Minister, Bill Estabrooks, suggests that funding and development supports are also going to be put into place:

> To support these projects, government will establish a sustainable energy planning group to assist new developers with business plans, technical feasibility studies, grant applications, public outreach, regulatory approvals, and financing guidance. We are also working on developing appropriate finance tools for community-based projects. We have also been involved in a unique pilot project involving wind energy development in municipalities. Funding from the province will allow municipalities to work with residents to identify locations in their communities where wind energy development is encouraged, discouraged or prohibited. The funding is also intended to increase public involvement and educate Nova Scotians about renewable energy and environmental goals. (May 6, 2010)

In Nova Scotia an innovative community investment mechanism, Community Economic Development Investment Funds (CEDIFs), also qualify under the community power definition, and some are already working on developing projects to put forward under the COMFIT. One group in particular, Scotian Windfields, sees itself as going to fill most of the 100 MW (75 per cent) (Zwicker Personal Interview, May 20, 2010). They were also involved in pre-COMFIT IPP development. According the Barry Zwicker,

> We were able to win an RFP for a 30 MW project in Digby, an $84 million project. We had a partner with us at the time, Skypower, and they were basically a Lehman Brothers company. Lehman Brothers went bankrupt so Skypower went bankrupt, which put us in a very difficult position and we ended up selling to Emera [parent company of NS Power] (Personal Interview, May 20, 2010).

6.4.4 New Brunswick: Modified COMFIT

The New Brunswick Community Energy Policy (CEP), announced in 2010, differs significantly from those in Ontario, Québec and Nova Scotia. It was the result of a round of consultations beginning in 2008, and is a modified COMFIT. Unlike Ontario and Nova Scotia there is no differentiation in the price based on generation source. All qualifying projects will receive 10 cents per kilowatt hour (New

Brunswick, 2010). This is seen by many observers as too low to provide sufficient return to get projects constructed. The FIT rate will be frozen for the first five years, then rise with the Consumer Price Index in New Brunswick. One interviewee familiar with the progress of the policy suggested that it was initiated to see what kind of interest there was, and not actually expected to generate projects: a first step test, to balance cost considerations with new renewable development[64].

Round one of the CEP consists of a call for 75 MW, 50 for community and 25 to First Nations projects. These are capped at a maximum project size of 15 MW, and again, partnerships are allowed with private corporations as long as a municipality, co-operative, First Nation, or not-for-profit is the majority shareholder. Twelve communities have responded to a call for interested parties, despite the lower FIT rates for wind than both Nova Scotia and Ontario. Contracts have yet to be assessed and issued. For one co-operative project developer looking at a partnership model, the prospects don't look good:

> [Our private partner doesn't] feel like it's possible to do in terms of financing under the current policy. I think there's some hope that with the run up to election coming in September 2010 or with a potentially new government of any political stripe there may be some appetite to revisit it. It doesn't seem to be viable otherwise. Nothing for the next six months anyway. (Flemming Phone Interview, May 21, 2010)

The Liberal government in New Brunswick lost the 2010 election to the Conservatives, in part due to popular anger to sell the province's power utility (Moore, 2010). As of 2012, the CEP has not been modified.

6.5 Summary

Co-operatives are developing today in response to concrete environmental and economic development challenges with mixed success. They are taking on technologically complex capital projects and attempting to compete for sites and

[64] Interestingly, in 2011 a new electricity policy was announced that reforms NB Power into an integrated utility, reversing the trend in other provinces (but similar to the reversal of BCTC in B.C.).

contracts with some of the largest energy companies in the world. They are also moving from early concentration in distribution in Alberta to a more even regional distribution between eastern and western provinces and between generation, retail, education and distribution. Canadian rural electrification associations have made a very real contribution to the life and development of Albertan communities over the past seven decades. Co-ops emerged when energy resources were prohibitively expensive and communities were forced to innovate to survive. Electricity co-operatives in recent years have developed in various new ways across Canada.

Public policies have played a crucial role in facilitating co-operative developments, both through opting for private sector ownership and being slow to take on climate change and new renewable generation sources. New policy supports include, for example, set-asides and power calls specifically for community power, funding for community projects in the form of seed grants, feed-in tariffs only for community projects, and a range of other initiatives. The historical record demonstrates, however, that these organizations are intimately related to neoliberal politics in this country, used, in fact, *by* governments to ensure provision of services they are ideologically opposed to funding outright. These historical lessons are important for our understanding of how and where co-operatives may contribute in the future.

7 OFF THE GROUND AND ON THE GRID: PROMISES AND PITFALLS OF NEW ELECTRICITY CO-OPERATIVE DEVELOPMENT

Despite newly enacted policy supports in some provinces, significant challenges face electricity co-operatives developing across Canada today, particularly those working towards generation projects. On the one hand, the shift towards private generation of power for new renewables described in chapter 5 and the community power policies examined in chapter 6 create space for them. This is particularly evident in Ontario. On the other hand, the structure and power of actors within the electricity sector place co-operatives at a disadvantage to other developers. Challenges of sectoral competition for sites, financing and grid access have resulted in a range of new generation co-operatives in terms of size, ownership and democratic constitution. New co-operatives are forming accompanied by great enthusiasm over the prospects for local development and community power, but are often unable to move to completion or, if they do, with a minimal portion of project ownership. Despite the promise of their relatively democratic constitutions and a capacity to engage in innovative renewables projects, key issues of financing and co-optation remain. This chapter focuses primarily on new electricity generation co-operatives, as these are where a significant amount of policy and co-operative attention today is directed, and where new ground in Canada is being broken.

I examine specific projects with an eye to both how the co-operative difference plays out in practice for new co-operatives and what kinds of challenges they face. I illustrate how and where electricity co-operatives have contributed to community ownership and control, and how they may set a foundation for building structures of empowered participatory governance. Co-operative generation projects have helped to develop new renewables in solar and wind power in a way that minimizes local opposition to projects and keeps at least a portion of the

project profits in the community. In addition, electricity co-ops on the retail side are well placed to take the co-operative strengths in bulk purchase and installation projects to support more affordable and efficient retrofits and micro-generation, extending these options to a broader segment of the population. Finally, beyond the actual physical ownership of generation and distribution of electricity, co-operatives are playing an important role in new renewables education.

The challenges that have emerged for new electricity generation co-operatives include: site access, regulatory approval, and the most pernicious challenge in the post-2008 economy: financing. When markets are created for private power development, co-operatives secure only a very small portion (if any) of new contracts. According to many interviewees, this is because without prior project development experience, deep pockets, lots of time and energy, or even all three together, securing loans can present an insurmountable challenge (Heneberry Personal Interview, July 20, 2009; Mole Phone Interview, July 20, 2010; Zwicker Personal Interview, May 20, 2010). Community-based actors rarely have any of these, working, as they do, with member financing, government grants and with a significant amount of sweat equity. These challenges result in private partnerships with larger entities: either a municipality (as was the case with Canada's first urban co-operative wind turbine, Windshare), or with a private developer (as with the Bear Mountain project). These partnerships may significantly reduce—depending on actor—the depth of the social economy and sustainability benefits of the project, both in terms of control and the local multiplier effect.

Section 1 of this chapter highlights examples of new co-operatives that are developing in generation of electricity across the country: how they are owned, structured, and what kinds of power they generate. Section 2 moves on to the key challenges that these projects have faced, with a focus on competition for sites, funding and access to the electricity grid. I argue that under these pressures, co-operatives have a hard time winning, and that the result is either failed and/or stalled projects and/or partnerships with private sector actors that ultimately limit the co-operative difference of these projects. This is evidenced in the growing

pressure on co-ops in Alberta, the one province they're the most numerous, to sell and fold, and also in the need to find private sector partners. Section 3 focuses directly on the advantages of partnerships (funding, experience and risk-sharing) as well as the drawbacks associated with leveraging community support for minimal share and project control. Some partnerships, I argue, serve significantly to weaken the contribution of co-operative electricity projects to economic democracy and empowered participatory governance (EPG).

7.1 Promises: Local Ownership, Participation and Education

Electricity co-operatives can differ from other power sector actors on a number of fronts. They can embody local ownership, participatory governance structures, and objectives that transcend profit as a sole motive (referred to in the literature as multiple bottom lines). Because of these difference, electricity co-operatives are accompanied by a range of potential local benefits once they are up and running, including, but not limited to: controlling resource allocation, providing local jobs, ensuring lower prices (in some cases), and delivering more responsive service. According to a 2011 report by the Green Energy Act Alliance:

> The Pembina Institute for the Community Power Fund modeled community job impact for community energy projects. The findings of this study are congruent with existing literature, which suggests that community-owned power projects lead to more local jobs than traditional development of similar projects. A literature review also suggested that additional benefits, such as increases in project participation and project acceptance and a decrease in project resistance, can also result from community power projects (CPPs). (Green Energy Act Alliance, 2011)

My research for this project has found each of these benefits present in both the power and energy sectors (gas co-operatives and biofuel co-operatives, for example). Co-operative power development also plays a role in reducing social opposition to the development of renewables (Musall and Kuik, 2011). This reduced NIMBYism is favoured by environmental advocates looking to move towards cleaner generation sources (Emond, 2010), and also by policy makers looking to legitimize

power sector investments and changes (Personal Interview, Nova Scotia Power, May 19, 2010).

Table 7-1 illustrates the range of co-operatives today based on what stage of development they are in (operational, in progress, and inactive). The many co-operatives in the project development stage are involved in, for example, volunteer board meetings and project planning, developing the financing packages, raising capital and setting up, for example, wind monitoring (MET) towers, while inactive and stalled co-operatives are those that have ceased meetings, sold and/or demutualized the co-operative.

Table 7-1 Stages of Electricity Co-op Development in Canada 2011[65]

	Operational	In Progress	Inactive/Stalled/Sold
New Electricity Co-operatives	2 electricity retail 6 installation 1 hydro generation[66] 1 wind generation 3 solar generation 5 project development 3 education 1 finance	21 wind generation 7 unspecified 3 solar generation 1 hydro generation 4 biomass generation	7 wind generation 1 hydro generation 2 unspecified 2 electricity retail
Subtotal (70)	22	36	12
Existing Distribution	51 distribution REAs 10 self-operating REAs		255 REAs sold to IOUs[67], 40 to Hydro Québec
TOTAL (386)	83	36	307

Source: personal interviews, CCA 2011, Co-operatives Secretariat 2010.

7.1.1 Asset Ownership and Local Investment

Electricity co-operatives today take a wide range of ownership forms. In order for local alternative projects to amount to more than participatory window-dressing they need to move from consultation toward a high degree of

[65] Note that the stalled/inactive section is significantly understated, as information on these (since they are inactive) is less readily available. It is very possible that many co-operatives never make it to the incorporation phase, fail to establish a web presence or register with local co-op associations, and so would be missed in the data collection for this project.

[66] Irrigation Canal, a co-operative or municipal irrigation district in Alberta.

[67] This does not include amalgamations in Alberta.

countervailing power. This, together with participatory collaboration, is what forms empowered participatory governance. Countervailing power requires an organizational network, mobilization, and a resource base. Some electricity co-operatives do indeed own and manage the projects they initiate, while others do not. In this section I highlight co-operative projects that are operational (or very close to) and that demonstrate the range of projects today. In some cases, such as the Windshare Co-operative turbine in Toronto, the level of member participation was high, the ownership was local, and the co-op formed the basis of what is now a growing community power sector in Ontario. This project also included a significant component of co-operative education that reached down to the membership and out to the community at large.

The 750 kW[68] Windshare turbine at Toronto's exhibition place is the first urban 100 per cent community (municipal and co-operative) wind generation project in North America and these "urban wind pioneers" (Windshare, 2010) have made a significant impact on community energy beyond the city of Toronto. The project was initiated by the Toronto Renewable Energy Co-operative (TREC) in 1999 and completed in 2002. The Windshare turbine is a 50-50 joint venture between a municipal power utility—Toronto Hydro (Energy Services Inc)—and the Windshare Co-operative. Windshare has more than 600 co-op members, 99 per cent of whom are from Toronto. Minimum investment was $500 per member, and the average investment in the project was between $1,000 and $2,000. According to the President, Evan Ferrari, new community members wanted to join the project even when they were fully subscribed, so $250,000 is now waiting in a trust account to be put toward future projects. The total cost of construction and installation of the turbine was $1.8 million, with $800,000 of this put up by the co-operative. Today, the project generates enough electricity to power 200 homes (Ferrari Personal Interview, July 23, 2009). The revenues from the project circulate back to members through dividends set by the board and approved by the membership.

[68] The actual capacity is closer to 650 kW, however, since it had to be installed at a slightly lower height than manufacturer recommends due to zoning issues.

Where members in the Windshare co-operative are residents of the city of Toronto, other projects are structured around local landowners. For example, the Val-éo Solidarity Co-operative in Québec is a solidarity co-operative wherein the membership is drawn from 60 farmer-landowners, employees, local residents and two municipalities. The co-operative was launched in 2005 when local farmers started receiving proposals from private wind developers to lease their land. They joined together to form the co-operative, erected the MET towers to study the local wind resource, and from there negotiated a partnership with Algonquin Power to develop a 50 MW wind farm on member lands, enough to power approximately 13,500 homes. One of the innovations of this project was that co-operative landowner members could decide to contribute land instead of cash to the project, still receiving membership shares in return. The project failed to win a bid in Hydro Québec's 2007 call for tender[69], but was ultimately successful in winning a Power Purchase Agreement under HQ's 2010 community power call. Construction on the project is set for 2015.

Projects wholly owned by co-operatives are more common with new solar developments in Ontario than in wind generation (see table 7-2). In fact, with retail, non-profit co-ops and self-operating REAs partnerships for project ownership and control haven't emerged. These differences are likely due to the fact that the higher the capital investments required for wind and hydro generation projects, the more need for private partners. In the case of the solar projects, SolarShare, AgSolar and AgrisSolar, the solar feed-in tariff rates under the Green Energy Act (see chapters 5 and 6 for more detail) are relatively high, ranging from 71.3 cents per kWh to 44.3 (compared to 13.5 cents for wind) for FIT, and 80.2 to 64.2 cents/kWh for small MicroFIT projects. FIT projects are also eligible for a community/First Nations adder of between 1 and 1.5 cents per kilowatt hour (kWh).

[69] Interestingly, this unsuccessful bid scored 16 out of 400 in the sustainable development ranking, better than all winning applications (Biggs, 2009).

Table 7-2 Electricity Generation Co-operatives In or Near Operation by Province and Structure 2011

Structure	Province	Name	Type	Project Description	Progress
100% Co-operative	ON	M'Chigeeng Nodin Co-operative (First Nation)	Wind	10MW wind project	Awarded FIT contract in 2010. Set for completion 2012.
	ON	AgrisSolar	Solar	0.5MW(50X10kw) MicroFIT solar projects	Constructed 2011, more waiting for grid connection 2012.
	ON	Solarshare	Solar	0.608MW solar installed	Power sold under FIT program. Expanding through 2011/12.
	ON	AgSolar Co-op	Solar		
	QC	Co-opérative Forestiére de la Matapédia (worker co-op)	Biomass	0.50MW and 0.80MWw	Completed 2009. 2.16 million biomass facility from wood waste to heat local hospital.
	AB	Irrigation Canal Power Co-op	Hydro	3 hydro plants (38.8 MW total)	Co-operative of three Alberta Irrigation Districts (Raymond, St. Mary and Taber).
Community Partnership	ON	Windshare Co-operative	Wind	0.75 MW (0.6 MW actual installed capacity) wind turbine	Project completed in 2001. Partnership with municipal utility (Toronto Hydro).
	ON	Pukwis	Wind	20 MW project (phase 1)	FIT awarded 2010, set for completion 2012. Partnership with First Nation.
Co-op-Private partnership	QC	Val-Éo	Wind	50 MW	Received PPA from Hydro Québec December 2010. Partnership with Algonquin Power.
Co-op initiated project, owned by	BC	Peace Energy Co-operative	Wind	102 MW windfarm	Completed in 2009. Selling power to BC Hydro.

private partner	BC	Peace Energy Co-operative	Wind	102 MW windfarm	Partnership with Aeolus & Altagas, 25 year PPA with NB Power completed 2011. Initiated project by Acconia.
	NB	Laméque	Wind	45MW project	

Sources: Personal interviews; OSEA, 2011; Individual co-operative websites, 2010, 2011.

SolarShare, another project initiated by the Toronto Renewable Energy Co-operative, is a community investment co-operative wherein members purchase community solar bonds for $1,000 (plus a one-time $40 membership fee) and in return receive a 5 per cent annual return for five years. Members of the co-operative vote to elect members of the board and the co-op also provides resources if they wish to initiate projects in their local community. To date, the co-operative has built two projects: Sunfield (in 2011), a 170 kW array—a connection of a number of individual solar cells—that cost $1.7 million and generates 320 MWh of power and $257,000 in annual revenue per year, and Waterview, the largest community-financed rooftop system in North America. Waterview is a 438 kW rooftop solar system that cost $2.13 million to build and returns $323,000 per year to the community investors (Solarshare Co-operative, 2011).

AgrisSolar, also in Ontario, is a farmer-based solar co-operative that has more than 700 members. The co-operative installs and maintains solar panels on member property, reducing the cost per unit and aggregating other costs (e.g., insurance risk). Members are paid a licence fee for use of their property and receive a share of the co-operative profits. As of April 2011, the co-operative had constructed more than 50 ground-mounted 10 kW solar modules on member farms. The electricity generated is then sold under the Micro-FIT program to the Ontario Power Authority for 80.2 cents per kilowatt hour. These co-operatives contract installation to private companies, but the panels are all member-owned. The co-operative model thus allows farmers to receive a higher return (AgrisSolar Co-operative, 2011) than the more common lease payments from larger private developers.

Finally, for some projects co-operatives are initiators rather than owners. These have, however, played important roles in developing projects, with many hundreds of volunteer hours put into community meetings, project development, sometimes with financial investment as well. In the case of both the Peace Energy Co-operative (PEC) and the Laméque Renewable Energy Co-operative (LREC), co-ops initiated projects but do not own a portion of the project assets. In the case of PEC, the project owner of the 102 MW Bear Mountain Windfarm (in Dawson Creek, B.C.) is AltaGas. With the LREC (in Laméque, New Brunswick) it is the North American subsidiary of Spain's Acconia Energy that owns and developed the 45 MW wind farm. The co-operatives formed to bring new renewable developments to their respective communities and over 10 years of planning and development were successful in that aim. The Peace Co-op received a finder's fee for their work in developing the project and negotiated a small investment piece (less than 1 per cent) of the revenue stream from the project for co-operative members that chose to invest. Even so, the past president of Peace Energy argued that the co-op "pushed very hard when the contracts were awarded from construction and equipment hauling so we'd have local businesses participate. So we could generate as much economic spinoff as possible." (Rison Personal Interview, October 14, 2009)

7.1.2 Participation and Power

The range of ownership stake in projects has implications for the co-operative difference. The higher the ownership share, the more control. Significant ownership shares also come with higher financial returns and greater the spinoff benefits (financial and non) in terms of local procurement and employment. With more ownership comes more control to back the co-operative difference in theory up with investment and purchasing practice. Investment opportunities for residents in new power projects provide access to a revenue stream that is an improvement upon ownership that is highly concentrated in a few (non-local) companies. In one sense this is democratization of ownership. However, many of the benefits of co-operative ownership also have to do with control beyond just investment. They have

to do with democratic governance in making siting choices, and with improved service provision.

The community-based generation projects described above arose from the hard work of volunteers who were looking to create not only local economic development, but also to shift to new electricity and fuel sources. All of these projects involve ownership structures wherein the local membership is engaged in decisions about the organization (often one member, one vote), and any profits are re-circulated back to the community. This makes them different from a typical shareholder-owned energy sector project. In cases like the Windshare co-operative, members have yet to make a financial return. The value in that particular project was simply to do it in order to show that wind power in Canada was feasible and that local members could initiate and own the projects.

For a number of interviewees, the electricity co-op contribution went well beyond investment to direct control over projects:

> The whole customer care concept is different, most utility companies today try to promote the customer as the biggest asset, and they love you, you're their biggest asset. In reality, the shareholder holds the power. They're there to make money for the shareholder. Don't tell me I'm the most important person to Fortis, I'm not. When push comes to shove you'll find out who's the most important. (Nagel Personal Interview, November 27, 2009)

> Members are the owners, the shareholders, and the customers [in co-operatives]. They're everything. (Bourne Personal Interview, December 1, 2009)

> If we can get a big project here what other value can we get out of it for the community?…If it had been strictly private enterprise these questions would have never entered the picture. These are some of the values we can bring as a co-operative because we're not driven just by the co-operative, we're driven by the value we can bring to the community. Conventional corporations are mandated to be profitable for the shareholders, the shareholders who hold the most shares make all the decisions; in a co-operative everyone who holds even one share gets an equal say; it's just more inclusive and what's so wonderful about the co-operative model it allows for the easy

> incorporation of social values, its much more difficult with private corporations. (Rison Personal Interview, October 14, 2009)

Important lessons about the value of project control from the experiences of distribution co-ops in Alberta should not be lost. They demonstrate the value of actually controlling the co-operative assets rather than contracting out, and that once the facilities are built the pressure to sell to private competitors increases (chapter 6). Self-operating REAs are better placed to assess the real costs (and values) within the system when pressure to sell arises. The self-operating REAs had to fight for this control through costly legal battles and arbitration:

> We had it in our mind we were not going back on a contract with TransAlta where they were operating our system. They overbilled us, they misbilled us, we couldn't complain about the service from the linemen but it was what the cost was, and what we were losing was control. You don't like someone else making decisions on your destiny and that's how it felt, we were just rubberstamping everything and our members were paying for that. We got involved and said we would accept no less than being able to operate our own system and we want an expanded membership definition. (Bourne Personal Interview, December 1, 2009)

Self-operating REAs also bring cost savings with control. CAREA, for example, is also part owner of Prairie Power (a wholesale purchasing company) with other co-operatives, and through member ownership saved an estimated $3,000,000 in 2010 for its 8,000 members when compared to investor owned utility rates (CAREA, 2010). Co-operative distributors are not incentivized (by profit) to increase the amount of power sold. Unlike other power retailers, the co-operative needs to provide for the power needs of its customers, and not expand. Finally, the strength and expertise of the self-operating REAs allow them to support and advise co-op boards under pressure to sell assets (Bourne Personal Interview, December 1, 2009).

The close links then, between the management, control, participation and investment in projects are key to the full range of co-operative benefits in this complex sector. For the Alberta Federation of Rural Electrification Associations

(AFREA) president, memberships in co-operatives over the long term create important community links which help to scale up their power: "If you have control of your own destiny, like you do with an REA the money stays within the community because it is part of it, and those same people are on the county boards, the school boards, so once it is sold to the power company you lose all that." (Personal Interview, November 27, 2009) More than this, though, self operating REA rates are lower than investor owned utilities (IOUs) for rural customers (Bourne Personal Interview, December 1, 2009).

7.1.3 Education: Co-operatives and Renewable Electricity

One of the manifestations of the co-operative difference that emerged from my research was the contribution that new electricity co-operatives make to community education. In this section, I outline two ways that electricity co-operatives serve to educate the public, both on the co-operative difference and on renewable electricity. First, because of the level and nature of member involvement, volunteerism and not-for-profit orientation, the co-operative form facilitates member education and empowerment. In 2007, Fiona Duguid at the University of Toronto, OISE, completed her doctoral thesis on the role of education in the Toronto Renewable Energy Co-operative's (TREC) Windshare project. In it, she argues that:

> Members [of Windshare] learnt about green energy strategies (renewable energy generation and conservation), about co-operative development, management and operations, as well as sustainability practices…Windshare has shared its expertise, skills and knowledge with other green energy co-operatives, thus expanding WindShare's community of practice and spanning new communities of practice. (Duguid, 2007: 288)

In addition, for Duguid:

> Co-operative structures are appropriate for advancing green energy and energy literacy. Importantly, green energy co-operatives are a significant addition to the Ontario energy industry because they are organized at the community level, involve situated learning through participation, capture peoples' interest because they have a direct stake in the enterprise, and support green energy strategies. (Duguid, 2007: 289–90)

TREC played a pioneering role in co-operative renewable electricity generation by educating others in Ontario and the rest of Canada about how to (and not to) develop a project. TREC was the first non-profit renewable energy co-op in Canada. While the co-operative has now spun off a number of other co-operatives (Windshare, Solarshare, Lakewind) that are focused on generating power from renewables, TREC itself remains a non-profit co-operative dedicated to promoting and educating around community power in Ontario. TREC and Windshare were also both involved in founding the Ontario Sustainable Energy Association (see chapter 8 for more on this), and have as part of their mandate a goal of public education and raising awareness of possibilities for new renewables in Canada. Many other co-ops in Ontario were spurred by the TREC/Windshare example, where members unfamiliar with co-operatives became interested in the co-op model for community ownership and democratic project governance (Lipp Personal Interview, July 23, 2009; Procter Personal Interview, July 20, 2009).

Co-operatives also make an educational contribution beyond their membership. A number of co-ops explicitly place public and community education front and centre in their mandates and run, for example, school programs, site tours and provide free and/or low-fee consulting services in their communities (Procter Personal Interview, July 20, 2009). When a project is able to balance ownership and financial returns with these public education mandates the co-operative difference in the power sector comes into sharp relief. Whether successful in building projects or not, these initiatives have contributed to developing more informed and aware constituencies. These understandings are important for informed renewables policies going forward (Beder, 2006).

This educational focus is an aspect of most electricity co-operatives: distribution and generation co-operatives, as well as being the singular focus of new non-profit electricity co-operatives (what I call networking co-ops). For example, the focus of the Vancouver Renewable Energy Co-operative, the Toronto Renewable Energy Co-operative and the Sustainable Energy Resource Group is on public education, raising the profile of renewables, community engagement and project

development. The need identified by these non-profit co-operatives is not primarily economic (as with many consumer co-operatives) but social and, in particular, *environmental.* For the Chair of TREC, Judith Lipp, "Two things came together there. Obviously one was environmental awareness of energy habits combined with an opening of the energy markets and for the first time other people can actually produce power. Up until that time it was all public so you couldn't. So it was those two things. Not so much that nobody's doing this…it was about doing it differently." (Lipp Personal Interview, July 23, 2009) In many ways, then, the co-operative is not formed to serve only member needs, but works more like a non-profit community association toward broader changes in electricity policy and public practice.

Co-operative projects often intentionally play a symbolic role in shaping the public perception of the possible. Community projects can be used as demonstration projects, as educative tools to engage broader audiences, and the work of non-profit renewable energy co-operatives can be important on this front. This symbolic value to prove new models are possible is often cited by participants and initiators of these projects. For the head of Peace Energy Co-operative:

> We've had strong support from members of the co-op and other community members who are not members. People feel like they understand wind better, they get a thrill from the towers, and we have class trips for school kids to go up to see them. All of this helps build the idea of renewable energy. On all of those counts community-based wind really did deliver. (Rison Personal Interview, October 14, 2009)

In Windshare, volunteer members, as well as Toronto Hydro employees, are involved in servicing the turbine and leading site visits for school and community tours. Two hundred thousand Torontonians drive past the turbine every day on their commute and 20,000 people visit the site each year on educational tours (Ferrari Personal Interview, July 23, 2009).

This educational and public focus, interestingly, runs contrary to the literature on co-operatives more broadly, which has pointed out the lack of community involvement and investment by many established co-operatives (Coté, 2000). The educational and outreach focus of new electricity co-operatives may be

due to a few factors. First, electricity co-ops outside Alberta are a relatively recent phenomenon. So, in order to develop a membership base, a range of discussions with communities and regulators needs to take place. Second, many of the participants in these co-operatives are new to the co-op sector, and many are new to electricity as well. As a result, participation in the co-operative, through membership meetings, volunteer's work and attendance at conferences lead to significant member-learning. Third, interviewees recognized that the motivation for many new co-operatives went beyond financial returns to changing public understanding of renewables, and to shifting policy. Unlike farm-based consumer co-ops, or financial co-ops, public understanding and public opinion is front and centre for electricity co-ops because the aim is not only benefits for the membership, but also for society more broadly.

7.2 Pitfalls: Grids, Financing and Stalled Projects

Renewable electricity co-operatives clearly vary a great deal, in some cases using the co-operative model to garner community support but with little or no control of the actual project. This is, in part, because roadblocks arise when co-operatives try to initiate projects. The project development phase is full of potholes and many co-operatives never make it to acquiring a power purchase agreement and getting grid-connected. From the Peace Energy Co-operative in B.C., to Laméque Renewable Energy Co-operative in New Brunswick, co-operatives run up against challenges with unclear co-operative legislation, financing, grid access and competition with private corporations for sites. Frustration for community groups and co-operatives has arisen with new development opportunities through liberalized power sectors as well as with competitive pressure from large corporate actors. What in theory is a marketplace open to small generators is, in practice, far more restrictive. For example, communities in Ontario and New Brunswick actively pursued projects for almost 15 years before projects got built, and never in the way they'd originally planned. Generation co-operatives that emerge from this milieu are

often partnerships with private energy corporations where the community content and control is significantly reduced.

7.2.1 Stalled Projects

Co-operative generation projects across Canada have stalled. While the uneven distribution of political and economic power in the electricity sector is the key driver, specific challenges in practice have arisen. These are: site access, lack of power purchase agreement, and lack of grid connection. Certainly, since most co-operative members are new to developing electricity projects they are already at a disadvantage. Beyond this steep industry learning curve, however, these three main points of tension lead to extremely long—in some cases more than 10 years—development phases during which communities lose momentum and burn out as happened with the Positive Power Co-op in southern Ontario.

M'Chigeeng Nodin Co-operative Project Timeline

2001: Wind-energy vision begins
2002: Community Meeting 1
2003: Meteorological testing begins
2004: Community Meeting 2
2005: Co-operative structure established
2006: Feasibility Studies
- Community Meeting 3
- Continued support established

2007: Environmental assessments complete
- Community Meeting 4
- Hydro connection denied
- Connection lobbying campaign begins

2008: Community Meeting 5
- Change in project scope adopted by Council to two turbines on band-owned land

2009: Green Energy and Economy Act
2010: FIT Contract Awarded
- Turbines ordered
- Permitting process begins
- M.E.R.E Corporation formed
- Aboriginal Renewable Energy Fund Applications submitted

2011: Ontario Finance Authority Loan Guarantee
- Pre-construction tenders begin
- Financing Approved
- Notice to Proceed

2012: Projected completion

Source: M.E.R.E. 2011

In some cases, however, when the co-operative is linked to a landowning base (like a municipality or First Nation) there is enough momentum and institutional support to keep the project going through roadblocks, as with the

M'Chigeeng Nodin wind development in Ontario. This First Nation owned co-operative was awarded a FIT contract, and is set for project completion in 2012.

7.2.2 Site Access and Legal Challenges

In the wind industry, there is fierce competition for sites where the wind blows regularly and with force. Those able to move the fastest with the best connections to wind resource data and to policymakers secure the best sites. For co-operatives this presents a real challenge. Windshare's director, Evan Ferrari, points out that:

> Capacity is always a problem with community stuff. Especially on the co-op model, one member one vote. Democracy is difficult, it takes time. You have a sole shareholder in a company with a big bag of dough. They can move quickly making decisions and moving on, working through committees. From our perspective we want the oversight, want members to be supportive all along. If our board moves too quickly without the support of our members we'll get kicked in the head. (Ferrari Personal Interview, July 23, 2009)

What happens is that co-operatives form, but can't secure the more lucrative sites, or that they partner in order to get access to these sites (as well as financing) and dilute the community content of the project. For example, when the Peace Energy Co-operative (PEC) formed in 2002 to promote renewable energy in the Peace region, they found that a Scottish developer had already secured the local site investigation permits. After a series of inquiries the co-operative subsequently managed to secure the permit when they argued that B.C. regulators had not followed their own rules on granting Investigative Use Permits (IUPs) (Rison Personal Interview, October 14, 2009). In Ontario, for Bala Energy Co-operative's Jeff Mole:

> The real challenge is getting access to the resource, getting applicant of record status. You've got the co-operative registered and incorporated, you've now got access to the resource, can do feasibility and create designs, and once you have a technically feasible design you can create a business plan and once you have that you can go to the OPA and get an offer to purchase the power. (Mole Phone Interview, July 20, 2010)

Co-operatives then have to spend a great deal of up-front time on legal fees, on articles of incorporation, on articulating the co-operative difference, before they can even get to project development. It is in this sense that the co-operative difference is actually a liability financially, particularly in provinces unaccustomed to co-ops in the mainstream (like B.C.). For Steve Rison, former president of the Peace Energy Co-op:

> We were reinventing the wheel here…It seems that most co-ops in B.C. are either consumer or producer co-ops. They don't seem to do the same thing that we're doing. Seemed like the law firm was telling us like we had to be treated like private company selling investment shares, that there is no difference between a co-operative and a private company selling investment shares and we had to jump through the same hoops…We will have spent $20,000 just in legal fees. (Rison Personal Interview, October 14, 2009)

In Ontario, one co-op association employee argued that "you go into a small business enterprise centre and the co-operative option is not even listed. It is either (if you're lucky) the option to start a not-for-profit. It is either 'do I want to start a limited partnership' or 'a sole proprietor?' A lot is a fundamental lack of knowledge of the model." (Heneberry Personal Interview, July 20, 2009)

7.2.3 Financing Challenges

Co-operatives are also at a disadvantage in meeting competitive calls for new renewables at the lowest cost, the electricity procurement mechanism most popular across the provinces. This is because groups are rarely able to raise the capital for large wind farms, and that is where the lowest kWh prices are (due to economies of scale). This does not, of course, mean that 100 per cent community-owned projects are impossible, even for relatively large projects—Pukwis Co-operative in Ontario, for example, is 24 MW in Phase one, 54 in total—just that private actors, particularly large ones, have key advantages in the marketplace, community FIT adder or no. With the deepest pockets, they can build the largest and most lucrative projects, which, in turn, help with financing. Furthermore, prior experience with project

development, as well as cash equity and capital assets, all play a role in structuring loan terms in such a way that disadvantages community projects.

According to a number of community renewable energy consultants and developers, the result is that private energy companies are able to see projects to fruition where smaller, community-based projects run out of time, money, volunteers and energy in dealing with the electricity sector.

> I don't think it's realistic that communities will build anything significant in this neck of the woods [Nova Scotia]. I don't think they can raise the funds. There's no bank that will loan them the money, the government hasn't set up a fund for this, they've talked about it but haven't done anything yet, that might be a different story. They'll have a limit of four to six million dollars, which you might get two turbines out of. Nobody knows who will be eligible, what kind of rate they'll charge. The real issue is not the cost of the equipment anymore; it is the cost to borrow money. If you get 75 per cent of your capital costs at 8 per cent maybe it doesn't go, at 7 per cent it barely goes and that's all it takes is a 1 per cent shift in the cost of money to turn these projects down. A community group with no track record will pay the highest interest rate, not the lowest one. That's what is happening to us, that's why we're looking for a funding partner who has a track record and can get money at a lower rate. They have access to money that is a full 2.5 per cent less than what we pay. When NS Power goes to borrow money they get it at 4.5 per cent, when that goes up against a private producer they'll win every time. (Zwicker Personal Interview, May 20, 2010)

> Having the CP Fund [in Ontario] help support soft costs that's really hard for communities to come up with like $300,000 to do a feasibility study and a Anemometer tower is great, but what about the capital? Once they get past that stage and they've got a project and have an agreement to connect to the grid. Let's say it's a 25 or 30 million dollar project, let's say the debt equity ratio is 20 equity and 80 debt, where are they going to get the 6 million bucks? That's not easy. Whereas food co-ops, $25,000, $50,000 to start up, no problem. And then you grow your equity. This is the reality in all businesses, co-op or not. They're self financing through retained earnings. It's hard to raise the capital if the ROI is say 3 to 5 per cent. Especially if that's what inflation is. (Christianson Personal Interview, July 23, 2009)

> We just can't pay 3.3 million per MW [in rural Québec]. How can we find that? I didn't agree to put $100,000 only to have a ticket to the

> lottery [to bid into Hydro Québec's power calls]. In a little village like we have here…it is just not the best way to spend our money. I was negotiating with companies who had won, and then ones who hadn't. Here only the Royal Bank was willing, but they needed an agreement with Northland Power from us and a HQ contract…Out of eight community projects in Québec just one won. At the financial level they threw us out. (Gagnon Personal Interview, May 16, 2010)

The persistent challenges of financing have implications for whether or not community power remains a marginal piece of the broader electricity sector. Connected to the issue of raising sufficient capital is that of lengthening the member-user link. One of the key virtues of the co-operative form is that it connects service users to production, with the attendant governance and educative and financial benefits this entails. Due to the nature of the good and the grid, new generation co-operative members are essentially investing in a business that sells to the public at large. In return, they reap financial rewards and, in some provinces, help to reduce reliance on coal or nuclear generation. However, the direct co-operative link where members either produce the good or use the good (or both) is severed. The wider the circle the co-operative expands into to find project funding, the more diffuse the benefits, the connection to the physical assets, the ability to attend meetings and participate and so on.

7.2.4 Grid Access Challenges

Another significant challenge for these projects across the provinces is connection to the distribution grid so that the power from projects can be sold back to the provincial power authority. For Brent Kopperson of Pukwis: "The problem remains that a lot of community projects are not going forward because there are grid access issues. This is the case for First Nations projects; there are two where First Nation communities have not been able to get access to grids. That is one of the things that we weren't able to protect and would have liked to" (Kopperson, 2010). So, even if a project secures a site and funding, and navigates the legal and contractual maze that is power sector development, they sometimes are faced with being unable to connect. This is sometimes due to the fact that there is already too

much generation in their region. Sometimes the transmission and distribution infrastructure is old and needs replacing. The wait times for the queues kill the volunteerism of the community sector, and they often do not have the money to keep things going. The exception is where the project partner is already self-sustaining financially, as with a First Nation or municipality.

Connection issues affected TREC's second wind development project, Lakewind. Lakewind is a 20 MW—ten 2 MW turbines—project near Kinkardine, Ontario, that is a partnership between two co-ops: Lakewind Power Co-operative and Countryside Energy. The project has been stalled for a number of years despite having the wind data, feasibility studies completed and secured land, because the Ontario Power Authority reserved a section of the grid for power coming from the Bruce nuclear plants. This area, called the Orange Zone, also happens to be in some of the windiest territory in the province. The community groups have received assurances the Orange Zone will be lifted soon, but this raises the issue of connectivity and transmission capacity (real or perceived) for community groups wanting to sell to the grid.

> The emails in our network are flying saying, "We need to be ready in the event that the Orange Zone goes down." My initial response to that is, "I'm going to have a lot more grey hair by the time that happens." I understand that we need to be ready; I'm just not convinced that we can hit the ground running because the regulations haven't been finalized yet [in July 2009]. (Ferrari Personal Interview, July 23, 2009)

What emerges then—out of a very real need for system administrators to control and distribute new generation within capacity limits—is a set of connection waitlists that projects sometimes wait for years on. These lists are prioritized differently across the country, in some cases first come, first served, and in others whichever projects are "shovel ready". In these tests, as with the capacity assessments in the first place, the processes are not particularly transparent, and co-operative actors are at an informational disadvantage. In the case of Nova Scotia, for example, the private power company (with its own projects) is also providing the information about where the capacity exists in the system. In Alberta, according

to one co-op developer, the rush for wind meant that REAs and municipal groups were looking at "wind and forecasting…but still at end of the day when you could connect to the grid in Alberta when they finally lifted the caps, it was flooded by the guys with all the money and the little guy got bumped out." (Phone Interview, April 13, 2010)

7.3 Partnerships: Both Promise and Pitfall?

The challenges confronting co-operative generation projects have resulted, across Canadian provinces, in a number of co-op projects that are either partially or wholly owned by conventional private sector actors. There is a range of project ownership models, from ones a) wholly owned by co-operative and community groups, to b) joint partnerships with municipalities or First Nations, to c) minority stakes in projects with large shareholder-owned developers. Partnerships with organizations that have experience and funding access allow for the development of larger, more lucrative projects, and often a more streamlined process since private partners tend to have development experience. Attempts to form electricity generation co-operatives thus provoke a dilemma for members: partnerships help smooth the project development process, but they also (in most cases) water down the community control and return. Many are left hoping that "angel" development companies interested in their public profile will develop the projects and allow for increasing levels of community investment over the life of the project (Loring, 2007; N. Meyer, 2007).

There is a trade-off between the efficiency of expert developers and economic democracy and control. There is a danger in minority partnership models of eroding any real difference that co-ops may bring to the power sector. Gordon Walker, commenting on the U.K. experience with co-operative electricity projects, argues that private sector domination of community partnerships is ultimately damaging to sustainability in the power sector (Walker et al., 2007: 78). What emerges is a system where private developers "game" communities and the co-operative difference for financial gain. For one co-operative employee:

> Developers thought community projects were cute. I got the sense that they didn't need to drive us out of business because they never took us seriously in the first place. Several co-operatives tried to partner with multinationals in their area…You know, let's use their resources, the community will get additional dollars in it'll make it easier for them to develop because there will be community ownership and when the co-operative went down this road the multinationals said, "You're talking about social capital stuff and that's not real dollars. Unless you can hand us the community on a plate, we'll give you a kickback to shut you up," but there was never any sense of real partnership in those. There were a number of those "we could carve off a spot for you, we'll develop 99 turbines and you can have one to community finance." (Heneberry Personal Interview, July 20, 2009)

Both the AltaGas's Bear Mountain wind farm and Acconia's Laméque wind farm are examples of arrangements where co-operatives played a key role in bringing the project to the community, but ultimately own small (PEC) or no (LREC) shares in it. In both of these, local co-operative partners initially set out to develop their own generation project but the roadblocks (financing in particular) proved too significant to overcome.

> AltaGas makes most of the money. But we will get some money locally and I think that's a key difference between, as I said, ours and the one in Chetwynd [Dokie] where the locals don't get a dime, all of the negatives and none of the positives…I negotiated with Aeolus [the other private partner] that if you get a developer fee we get a piece of that, in recognition of the value of the community support we brought to the project, we'd already done that work. They recognized the value because they were trying to develop another wind project in the very early stages off an island near Vancouver and there was a lot of resistance in the community. When they came to Dawson Creek there wasn't any resistance because we'd already built the groundwork for support, had support from city council, had support within the community. So it was a very different situation for them. (Rison Personal Interview, October 14, 2009)

This cautionary argument about partnership needs to be qualified, however, because not all partnerships are the same, nor are all partners. The need to partner varies depending on the range of challenges (funding, expertise, sites) the new co-operative faces. In cases like that of Val-éo, local landowners already had the site

secured and they were able to leverage their considerable assets (including years of wind data) to negotiate a majority partnership with a 75 per cent stake. Significant community ownership also exists in projects where the partner is a municipality and/or First Nation. The local roots are retained, the revenues recirculated back into public projects, and elected agencies have control over both project design and revenue disbursement. While most municipalities and First Nations are not expert electricity project developers, partnering with these organizations also helps to balance the need for institutional support over the long term (outside a volunteer base) with a desire to preserve community control.

In Ontario, a range of these community–community (co-op with First Nation or municipality) projects exist. One is the Pukwis Community Wind Park, a partnership between the Chippewas of Georgina Island and the Pukwis Energy Co-operative. This $55 million 20 MW project 80 kilometres from Toronto was awarded a FIT in 2010 that secures both the First Nations and the community feeders, meaning 15 cents/kilowatt hour instead of the regular FIT rate of 13.5. Once operational, this will be the first joint community and aboriginal project in Canada. The First Nation owns a 51 per cent share in the project, and the co-operative a 49 per cent share. The first 10 turbines are just phase one of what will eventually be a 54 MW project, with all the revenues, projected to be $159 million over 20 years, going back into the First Nation and the co-operative members in the Toronto area (Pukwis Energy Co-op, 2011). Construction on the project is set for spring 2012[70].

Partnerships with municipalities are another way to ensure that revenues and control stays local. Indeed, the pioneering work of the Toronto Renewable Energy Co-operative in developing Windshare was going together as a 50-50 partnership with Toronto Hydro. The municipal utility brought sector experience, funding and a range of other strengths to the project. These projects, municipal or otherwise, also need not be small. Looking outside Canada, to Copenhagen, the

[70] Originally construction was set for 2011, but a late impact assessment report from the OPA delayed the construction window until spring 2012.

Middlegrunden wind farm is a 50-50 partnership between the municipality and the Middlegrunden Wind Turbine Co-operative (with 10,000 members). When it was built in 2000 it was the largest offshore wind farm in the world, with a capacity of 40 MW, generating 4 per cent of Copenhagen's power (Larsen et al., 2003).

The pressures to partner are most significant for new generation co-operatives. Electricity retail co-operatives do not face the same challenges, nor do those working on community education and at the volunteer project development stages. Distribution co-operatives in Alberta (other than the seven self-operating ones) have, for the past three to four decades, had their assets managed by private companies and faced the consequences to co-operative financial strength and control that come with this. Partnership becomes a crucial issue when co-operatives attempt to generate power for sale on the grid. The alternative partnership models outlined in this section suggest that for co-operative power generation to succeed on a broad scale, a range of other local and public actors (municipalities, First Nations) also need to become engaged.

7.4 Summary

Electricity generation co-operatives arising across Canada today are spurred on by new policy developments, but motivated by community actors keen to own a share of emerging private renewables sectors. These are not in unprofitable areas, like rural electrification. Indeed, power generation in Canada is big business and power sector restructuring, together with new renewable generation incentives, are encouraging foreign and domestic investors to compete for sites, contracts and grid access. There are significant benefits that co-operatives bring to projects, including: local employment, project control, cost savings and education. However, the challenges are significant.

There are real differences facing already established (distribution) co-operatives and newly developing renewable generation co-operatives. Both, however, are under pressure from other independent power producers (IPPs) and investor owned utilities in their respective areas. In the case of distribution co-

operatives, this manifests as pressure to sell co-op assets in Alberta to ATCO and Fortis. In generation, the pressure is to partner, or, at the far end of the spectrum, for community and co-operative actors to facilitate but not own the project. In order to get generation projects built and connected to the grid with a contract to sell power, the community ownership and control of projects is often watered down. What is in principle an open market for IPPs to sell electricity, in practice favours companies with prior experience, deep pockets and industry connections.

8 POWER NETWORKS: CO-OPERATIVES AND THE POLITICS OF COMMUNITY POWER

Electricity co-operatives, as with the co-operative sector more broadly, find strength and power in their networks and associations. These networks facilitate project learning between a range of provincial and sectoral actors and, in Canada, are helping new electricity co-operatives today scale-up and move across the country. In this chapter I examine the structure and penetration of co-operative electricity networks. I argue that in Ontario in particular, the community power movement that emerged out of the Toronto Renewable Energy Co-operative (TREC) project is strong, growing, and spilling over into other jurisdictions across the country. Mobilization by electricity co-operatives has then led to provincial community power policies in Ontario, Québec, New Brunswick and Nova Scotia. Mendell and Vaillancourt, writing about the co-operative sector in Québec more generally, have argued that co-operative associations can, and indeed have, been involved in "co-construction of public policy"(Laville et al., 2007; Vaillancourt, 2008) where social economy and co-operative actors play important roles in developing as well as responding to state policy. These developments are important because they support the contention that a co-operative power movement is growing, and is powerful enough to drive new policies. That is, electricity co-operatives today are far from ad-hoc one-off projects. They are part of a *movement.*

This movement is accompanied by significant challenges including but not limited to the fact that new policies are in some provinces far from effective in ensuring community control of projects. In addition, the breadth of the definition of community power, together with the tendency towards project partnerships with private developers, weakens the ultimate contribution to economic democracy and empowered participatory governance that this movement can make. A crucial challenge going forward is thus defining community at setting policy so that the

local and public participation aspects are retained. The degree of political mobilization and strength of co-operative electricity networks is important for countervailing power. The depth and strength of a political movement forms an important part of countervailing power and, together with participatory governance structures, empowered participatory governance (EPG) (Fung and Wright, 2003; Wright, 2010a). That is, organizations are part of a broader intervention seeking to re-shape the direction of social and economic progress. It is important that these networked movements not only attempt to make changes, but that they have the organizational strength and rhetorical force to be successful in their attempts.

This chapter is divided into three sections. In section 1 I highlight the important motivations given by co-operative members for entering the power sector. Section 2 outlines the policy and development networks that electricity co-operatives belong to. There are key differences between established distribution co-operatives in Alberta and the emerging renewable energy co-operatives in generation, education and retail, with the latter more deeply connected to environmental networks across the country. Renewable generation co-operatives straddle membership in both co-operative tertiary organizations and in private sector networks like Canadian Wind Energy Association (CanWEA) and Canadian Renewable Energy Association (CanREA). I then trace the development of the strongest community power network— Ontario's—and illustrate how electricity co-operatives were central to policy change in that province. Section 3 examines the politics of community power in Canada, problematizing issues of communitywashing and NIMBYism. Using interview sources, I demonstrate that within the community power sector, key tensions exist between co-operative organizations and expansive political projects driven by those that are more comfortable with private partnerships and political pragmatism.

8.1 Motivating Community Mobilization

One clear question that arises from these new developments is why people have formed co-operatives to develop new power generation in the past 10 years.

Why would communities *want* to mobilize and volunteer to build new generation when most households have access to power? There are three primary bottom-up drivers for co-operators, according to those interviewed for this research. First, people starting these co-operatives are motivated by a desire to change their provincial electricity mix toward more renewable fuel sources, like wind and solar power. Today's generation co-operatives want to promote wind, shift from coal and nuclear, and prove that community ownership in electricity can be done. George Alkalay, a co-operative advisor and consultant, put the motivation for AgrisSolar Co-operative (solar generation) members this way:

> One of the things that people were talking about very openly and publically was rather than having all these farm and European consortiums coming in making those profits and taking them out of Canada, why don't we the farmers own the electrical generation capacity and keep those profits back in Ontario…Is that transformative, is it restorative? Is it reactionary? It is more than just a business model…there's something about that democratic control that is really critical. (Alkalay Personal Interview, April 15, 2010)

A second major motivator for co-operative energy projects is community development. When public policy allows for private ownership of generation resources, some communities have opted to compete in order to control what they consider local and public resources. In the absence of public control, co-operatives form to provide an alternative. In Québec's Gaspesie, for example, renewable energy and electricity co-operatives have been emerging in poor rural areas where local co-operative development agencies (RDCs) are facilitating them. Corporate wind developers have built hundreds of turbines in local areas, and local people are devising ways to use, develop and control their own resources. There is pressure to move quickly, before large private companies secure resources and lands. Martin Gagnon, the director general of co-op development in Bas-Saint-Laurent/Côte Nord, described the process as follows in 2010:

> The co-ops are usually created when the economy is down and when people are exploited. We're in a region where we lost the fisheries 25 years ago, and we were losing agriculture here and passing through the worst crisis in the forest industry. Our region was and is the

> poorest region in Canada. The people are beginning to understand that their lands and the resources can be developed by themselves, not by any private group from anywhere in the world. That's the problem, the people are always thinking that it is God, the government, or foreign private {companies} that will come and develop our community. So little by little this wind-power development in lower St. Laurent is one of the lights, the flash that is going to open the door. The wind turbine is big, creates an impression and to put that on the land of a guy who is dying because he doesn't have anything to live on is too much. The people are looking at that and they receive only $500 per year and wonder if developers from Toronto or Edmonton can do this on my land, why can't I? So the people are [becoming aware] of that. We've done more than 100 public assemblies with people to explain this kind of economy and to understand what is the place that they can take into that. So it begins to work…After more than 300 years of history in this region we had only two multinationals. In the last six or seven years, we've had more than 22 private multinationals here to do business. I think it is going to wake people up. (Gagnon Personal Interview, May 16, 2010)

This is also the case with the Bala energy co-operative in Ontario, which was formed to develop resources the private sector was about to take over. One of the founders put the motivation this way:

> Water is a public resource, the land used in this case is public land and the public is going to suffer the impacts [of development]. The public has to buy the energy at incentivized prices because of the feed-in tariff program. For those reasons I thought the public had a lot of skin in this game and wasn't getting a lot. So how can you still develop the energy resource but also provide a vehicle for developing it for the community? Municipal ownership was an option as well. I spoke with the municipality. The previous mayor gave me a lot of reasons why they couldn't and wouldn't do it…so we set up a co-operative. (Mole Phone Interview, July 20, 2010)

For provincial policy makers the reasons differ. There are two important benefits to supporting co-operative and particularly *community* power: service provision and legitimation. In the period of rural electric co-operative development, the policy supports allowed provincial governments to address public concerns and to meet public needs without the appearance of state interference in the market. That is, co-operative development was ideologically compatible with free-market

policies and could be used to fill unprofitable, albeit necessary, state functions. This service provision function of co-operative-state relations remains current today in other sectors, for example, housing, health care and food. Using co-operatives in this way entails an appearance of democratizing decision making to meet local needs, without long-term direct public investment.

More recently, community-based (including co-operative) power policies in Canada have been justified with reference to the legitimizing role they play in other government goals. In Nova Scotia, for example, a public servant at the Department of Energy pointed out that their community power policy was put in place in response to lack of renewables support for other projects: "[community power policy] is one of the vehicles for getting more community acceptance for renewable energy development projects…Before we lost momentum in our renewable energy policy we wanted to get something that was seen to maintain community acceptance…it'll be an opportunity and not a guarantee." (Personal Interview, Nova Scotia Energy, May 19, 2010) This use of community by other public and private actors for their own purposes raises a challenge of co-optation for co-operative proponents.

8.2 Networks: Co-operatives and Community Power

As a result of these diverse motivations, today's electricity co-operatives are networked with diverse groups: co-operative associations (for example, the Canadian Co-operative Association), new renewables associations (CanWEA, CanREA) and more recently community power associations (OSEA). First, many (but not all) are connected to provincial co-operative networks. Co-operative umbrella federations exist at the provincial level to facilitate, among other things, co-operation among co-operatives, then federate up to the Canadian Co-operative Association (CCA) and the Conseil Canadien de la Co-opération et de la Mutualité (CCCM). For example, Battle River Rural Electric Association is a member of the Alberta Federation of Rural Electric Associations (AFREA) and the Alberta Community and Co-operative Association (ACCA), which then federates up to the Canadian Co-operative Association.

Co-operative associations, whether provincial, federal or sectoral, affect the degree of penetration and resilience of organizations in the movement. They also contribute to resilience when sectoral threats emerge. The federations of rural electric associations and gas co-operatives in Alberta have lobbied successfully for policy changes that allow them to continue operation and expand beyond serving only farmers. Larger REAs have also helped smaller ones withstand pressure to sell their assets (Bourne Personal Interview, December 1, 2009) and are now lobbying the government of Alberta to change the rules so that REAs are not forced to sell to private investor owned utilities (IOUs) rather than other REAs when they demutualize. Co-operative electricity associations and networks also serve to provide the framework for "co-operation among co-operatives" one of the seven international principles of the co-operative movement. While institutionalized networks do not erase the many challenges co-ops face, they do ameliorate some of the effects of being a relatively small player in the power sector.

Outside Alberta, co-operative associations have not had much to say about electricity co-operatives until very recently (CCA, 2011). In Ontario, the Ontario Co-operative Association (OCA) started to aid their development, with feasibility studies and with co-operative education (Heneberry Personal Interview, July 20, 2009), but in the Canadian co-operative sector as a whole the lack of new co-op development in this area until the late 1990s resulted in scant attention. As environmental sustainability issues have become more popular the profile of electricity and energy co-operatives in the co-operative sector has started to change. The CCA now includes a sustainability committee, and research has started to emerge on the co-operative contributions in the areas of biofuels, sustainable food, electricity, and heat cogeneration. As you'll see below, however, community power networks are far more active at this point.

Some electricity co-operatives are also part of U.S. and European, as well as domestic, co-operative and renewables networks. CAREA members, for example, attended REA conferences in the United States, and at one point CAREA owned a power wholesale purchaser, Prairie Power, together with a western Montana

generation and transmission co-operative (Bourne Personal Interview, December 1, 2009). These links have helped co-operatives under pressure to sell their assets; the power wholesaler helped to keep electricity prices lower for REA members, and the associations serve as useful lobbying mechanisms. Co-operatives in the power sector are also networked within a broader community power sector comprised of First Nations, farmers, co-operatives, municipalities and non-profits. It is this broader sector, rather than co-operatives specifically, that new provincial policies are targeting and it is this broader sector that has some degree of policy influence (particularly in Ontario).

Community power networks in Canada are tied to the renewable electricity associations such as the Ontario Sustainable Energy Association (OSEA) and the B.C. Sustainable Energy Association (BCSEA). OSEA, for example, together with other community and environmental groups—the Community Power Fund, TREC, the David Suzuki Foundation, Environmental Defence and the Pembina Institute—is part of the Green Energy Act Alliance in Ontario. The community networks have emerged in order to meet a multiple bottom line framework of increasing renewable generation, facilitating community economic development and increasing local participation in power projects, particularly in provinces where private power generation is facilitated. In fact, for TREC's Judith Lipp,

> It wasn't the co-op sector that was driving [the Green Energy Act] at all. It was the environmental community and the community power sector, which goes beyond co-ops…There were a few individuals that represent co-ops, but for the most part, there aren't really co-ops other than TREC and perhaps five others, only one of which has actually built a project. This is much more about an environmental community coming together. (Lipp Personal Interview, July 23, 2009)

8.2.1 Tracing Canadian Community Power Networks

The development of the community power sector in Ontario illustrates the power of policy networks and supportive institutions, as well as inter-jurisdictional policy learning and organizational practice. That province has become the hub and model for Canadian community and renewable power advocates across the country.

Key initiatives include annual community power conferences, start-up funding for projects (via, for example, the Community Energy Partnerships Program), webinars on best practices, and the creation of a network of domestic and international legal and policy experts. Below, I identify the actors within growing community power networks, tracing their development from Denmark and Germany, through Ontario, Québec and now to provinces like Nova Scotia. The final section of this chapter raises important political challenges for these networks and the co-operatives within them based on the diversity of partner/ally goals in the community power sector.

TREC had its genesis in the Ontario Green Communities Initiative in 1994, insofar as that program helped to bring together a group of environmentally conscious residents. Evan Ferrari, chair of the Windshare Co-operative in 2009, managed the Guelph pilot of this program. He says that "they were instigated in 1992 or 1993, under Pederson Liberals, then the NDP came in and thought it was great, so they continued it. They were essentially a community project that looked at energy water and waste issues…we looked at energy audits. This sounds very matter of fact, but at the time it was groundbreaking." (Ferrari Personal Interview, July 23, 2009) TREC founders were inspired by the Danish experiences with community wind power development and set about to develop a generation project of their own. Ontario's heavy reliance on coal and nuclear power sources spurred some members to action, as did the Harris government's restructuring of the Ontario electricity sector in the mid- to late 1990s.

As with distribution co-operatives before, Canadians looked abroad, but this time to Germany and Denmark for electricity co-operative models. For the founding members of TREC, the Danish experience of developing wind power using co-operative organizations served as an inspiration and aspirational model. In Denmark, as in Ontario, there was a shift away from nuclear and a search for alternatives. In Denmark—a country with the highest concentration of wind power in the world—the majority of its 20 per cent share of wind generation was established by communities through co-operatives and farmer associations

encouraged by state tax incentives (Government of Denmark, 2008; Loring, 2007; Pahl, 2007). These co-operatives developed following the 1970s energy crisis when Denmark rejected nuclear fuels (post-Chernobyl) and wanted to reduce coal dependence. In 2001 over 100,000 Danish families belonged to wind turbine co-operatives (Larsen et al., 2003).

The Danish case is often cited as an example of how electricity co-operatives help to overcome the Not In My Back Yardism (or NIMBYism) commonly associated with power (and industrial) development (Gipe, 2007a; Mitchell, 2008; Toke et al., 2008). By giving locals a stake in the profits, and a say in the development, the co-operative form significantly reduced opposition to the look or noise of turbines. The resulting relative concentrations of wind power ownership in select countries are illustrated in the table below.

Table 8-1 International Comparison of Wind-generation Ownership Structures

	Farmer %	Co-op %	Corporate %
Netherlands	60	5	35
Germany	10	40	50
Denmark	64	24	12
Spain	0	0	100
Great Britain	1	1	98
Minnesota	0	31	69
Ontario	0	<1	99

Source: Gipe, 2010

Significant actors within Canadian community power networks have met with Danish (Preben Maegaard, Folkecentre) and German (Henning Holst, Schlessig-Holstein) experts and some have trained at and visited the Danish Nordic Folkecentre as well as Schlessig-Holstein in Germany, including: Patrick Coté of Val-Éo co-operative, Janice Ashworth of the Ecology Action Centre, Kristopher Stevens of OSEA, and Paul Gipe of TREC and Windworks. One result of this training was an understanding of the many ways, whether through formal co-operative incorporation or not, that communities can secure significant negotiating and development power in new generation. According to Stevens,

> [Val-Éo's Coté] created a really cool hybrid where the co-op structure isn't so much about owning the project, it's about forming a land monopoly. Bringing everyone together and saying, "We all agree that we will work together in creating a social contract, this contract then binds us so when we go to the stage of share offering, or partner with other corporations to form an LLP." So the co-operative is the 51 per cent shareholder of the LLP with the private developer. Then the local citizens get to invest into the LLP. (Stevens Personal Interview, July 24, 2009)

Another result of these policy networks was the Green Energy Act in Ontario. In 2008, OSEA hosted the World Wind Energy Association conference in Kingston, Ontario, where community power was a major focus. The new Ontario Energy Minister, George Smitherman attended, as did David Suzuki, Herman Sheer and a range of actors from the community power sector in Ontario. Suzuki and others organized for Smitherman and key staff to go to Germany, Denmark and Spain to see what kinds of renewables were possible for Ontario (Lipp Personal Interview, July 23, 2009). What emerged from that interaction was a move away from the OPA's conservative 20-year plans, and a clear rejection of coal-based generation.

8.2.1.1 From TREC to OSEA, NSEA and BCSEA

TREC and the Windshare Co-operative are anchor projects in the Canadian community power sector. From there a significant amount of bootstrapping has taken place, where referring to and building on this project model has led to many new co-operative projects (though, not necessarily successful ones). TREC and Windshare members have been instrumental in educating and providing an operating model for community power in Canada. For example, a 2011 initiative of the co-operative, the Community Power Investment Platform, provides a library of legal and financial templates for communities seeking to form power co-ops. Their hope in developing this tool was to prevent these new co-ops from costly and lengthy start-up processes. TREC members have played roles in developing the Ontario Community Power Fund (CPF), the Ontario Sustainable Energy Association (OSEA), and out of that the recent Green Energy Act. For example, Deb Doncaster,

the executive director of the CPF,[71] was a founding member of TREC. According to Judith Lipp,

> The campaign was started by, brainchild of Deb Doncaster, who was one of the first employees of TREC and then was the executive director of OSEA…[She then] formed the CP Fund, which is the funding body for community energy projects. When the RESOP was cancelled there was recognition from a number of groups that said "we need to get to 100 per cent renewable, we need an act to facilitate that". A number of people got together, the CP Fund, OSEA, Environmental Defense, WWF and then they brought in others like the Ontario Farmer Association, and the First Nations Energy Alliance. (Lipp Personal Interview, July 23, 2009)

Indeed, most of the core players of the Ontario community energy sector have ties back to TREC and the Windshare project. Joyce MacLean, for example, who works for Toronto Hydro (the Windshare partner) was once on the board of TREC. Brent Kopperson, founder of Pukwis Co-op, is on the board of the Ontario Sustainable Energy Association. Ryan Manachee, of OSEA, is also on the board of the Bala Energy Co-operative. Paul Gipe is a community and windpower expert based in California and OSEA policy advisor. These networks have strengthened supports, incentives and awareness of community and co-operative power across the country. Ontario now has one of the most supportive policy environments for these projects in North America. There are also links between OSEA and the larger renewables associations in the country. For Stevens:

> …CanWEA or CanSEA…they're not members, they may be members of the alliance, but not with any say. We consult them to say how we're going to comment…Ultimately we want the same goals except that we want a whole lot of community power whereas I don't think they really care, it's all about getting power into the ground and making money. Hey, that's fine, there's a lot of money to be made from power. We understand that if you don't want the community backlash you need the community to own it. We take a lot of our direction from community power groups. (Stevens Personal Interview, July 24, 2009)

[71] The Community Power Fund has provided start-up for a range of co-operatives including: the Local Initiative for Future Energy (LIFE) Co-op, TREC OurPower, Windfall Ecology Centre (Pukwis Project), Windy Hills Caledon, Barrie Windcatchers, Windshare, and M'Chigeeng First Nation (M.E.R.E. Project).

This was in some ways problematic as the OSEA position, while it helped to facilitate community power, has failed to secure significant space in a crowded private power market.

> I think OSEA made a strategic decision at one point that they couldn't just limit it to co-ops. They had to be open…the standard offer contract had to be open to any kind of business structure. You know what happened: private investors speculated and they didn't necessarily sign Standard Offer Contracts, they tied up all the interconnection. They were just speculating, said, "Hey, we've got the interconnection point at this place, we're going to sell that to the highest bidder." (Christianson Personal Interview, July 23, 2009)

Other provinces are now borrowing from the TREC/ Windshare and OSEA expertise. In British Columbia, the Peace Energy Co-operative consulted with TREC in its development. And their private partner also had connections, both to the German renewables sector and to TREC:

> Jeurgen Peuter, the founder of [Aeolus, a project partner] had hired T. J. Shurr who had worked for TREC. She had just finished working for them, got her masters degree and just gone to work for Jeurgen and Aeolus. She was keen on the co-operative approach, knew what it was like to work with a co-op, she was keen. They were a small start-up with three employees at the time. He was German, had been in Canada for some years and started up two other previous companies. (Rison Personal Interview, October 14, 2009)

In Nova Scotia, a Nova Scotia Sustainable Energy Association *(*NovSEA) Alliance was heavily involved in pushing for the 2010 Community Energy Policy (see section 8.3). David Wheeler and Michelle Adams from Dalhousie University developed convening materials for community input. According to Janice Ashworth, of the Ecology Action Centre, the alliance included a range of actors (including her): "Tim Weis at Pembina, Sierra Club Atlantic, Mike Layton at Environmental Defence, the United Steelworkers Union, First Nations groups with engineering services for FN, Nova Scotia woodlot operators, Scotian Windfields [a CEDIF] company and Seacorp" (Ashworth Personal Interview, May 21, 2010). Both Tim Weis and Mike Layton (and their organizations) are also part of the Ontario Green Energy Alliance.

These provincial sustainable energy associations (BCSEA, OSEA, NovSEA) provide education, advocacy and networking between community and co-operative electricity advocates. Often run by volunteers and members, and, through donations, they play a key role in popularizing and helping communities mobilize. Each year the Ontario Sustainable Energy Association sponsors the Community Power Conference, which draws hundreds of community leaders, utility and government representatives, farmers, and sustainable energy entrepreneurs. Now OSEA is talking with BCSEA and looking toward "massive rollouts" of community energy policy (Stevens, 2009) across the country.

8.3 Politics: Communitywashing Power

There are deeper challenges within the community power movement and the role it is playing in particular provinces. As illustrated in chapter 5, the development of renewables has become tied to private sector expansion across Canada. The question remains, will co-operatives continue to play a legitimating role in this, and what kind of role will this be? Two important political challenges have emerged within community and co-operative power networks: communitywash and NIMBYism. There is a great deal of enthusiasm about community ownership and community power from community development and environmental groups (CCA, 2011; Community Power Fund, 2010; Elliott, 1997; Gipe, 2010; Lipp, 2005). Without a clear idea and definition, however, "community" can mean just about anything and, as we've seen in previous chapters, can sometimes amount to very little actual project control. The definition, then, is political and important.

The porous boundaries that exist between the community power sector and private power developers are problematic. Given the trend in provincial power sectors toward more private renewables, community power advocates are looking for a way for some Canadians to get at least a piece of that. While some are still aiming for wholly owned community power, others are more conservative about what is politically possible, whilst doing their best to lobby and educate about the community alternative. For Judith Lipp, Chair of TREC, "Even if you have companies

that are gaming the system you'd get more recirculation into communities than you would normally get." (Lipp Personal Interview, July 23, 2009)

Within Ontario a number of interviewees raised the challenge of the distribution of benefits between new renewables actors. Evan Ferrari, then of the Windshare Co-op, illustrates the experience of being at the Canadian Wind Energy Association Conference and interacting with the 'windustry' for the first time:

> I was at the CanWEA conference, and it surprised me because I hadn't been at an industry thing before, hadn't been involved with the industry side of it to any extent. I was astounded by how Bay Street it was. This is not the tofu-sucking, sandalista-wearing folks that normally do this stuff. That blew me away. You're walking around looking at people's nametags…I was embarrassed by the number of people who came up to me and said, "You don't know what impact you've had on this industry"…The downside [for Windshare] is that we haven't been able to turn that into money. The rest of the industry has had a huge benefit. Our members, in spite of the huge obstacles that we've had, I have to give them really bad financial news. (Ferrari Personal Interview, July 23, 2009)

There is also the challenge of private sector actors gaming community power financing supports and policies to support their own bottom line. This includes the concern, for example of a "co-operative of five guys" (which is possible and emerged in Québec), or a co-operative of corporations, or co-operatives and community power organizations from urban centres that are developing rural lands without local community buy-in. Initially, some renewable energy developers were interested in the co-op model because of differential rules around raising funds:

> Some of the Bay Street financiers who thought they could get in with "Hey, no $300,000 prospectus, let's take another look at this co-op thing," then they would find out that the CCA allowance wouldn't work for capital cost flowthroughs and you won't get a 15 per cent return on investment…so they said, "We're out." So you had all these people trying to turn the co-op in to something it wasn't. There's not a shared idea…the word 'movement' makes people really uncomfortable. (Personal Interview, July 20, 2009)

Another way this happens is that:

> You get a differential definition of community. The more you get these developing you get groups trying to game the system. One thing brought up, which has not happened with wind so far that I know of is a…private corporation often from somewhere else lending money to local people with no interest and then reinvest in the project so that they get the adders and access to grant funding. That happened with a big agricultural grant with the Feds. The co-op movement was up in arms about this. Some agriculture company just lent the money to the farmers with no interest and they used that to buy part of the company. [So there are] suspicions about community power. (Personal Interview, July 20, 2009)

Community power is, therefore, defined in different ways by different agencies. Careful attention needs to be paid to where the lines of community are delimited and how much of an ownership stake is required. A significant number of interviewees also raised the important challenge of negotiating between differing interests within and between communities. This recognizes the fact that not all communities are equally well resourced, equally powerful. OSEA tried to set minimum levels of community involvement as a recommendation in the Green Energy Act. This discussion about what constituted community power had OSEA members "tearing their hair out" in 2009. According to OSEA Chair Kristopher Stevens:

> One of our points was, before we agreed to have a minimum of 10 per cent equity held by the local community, before we got to that point it was "Well, let's say that TREC (just for example) finds an awesome wind regime somewhere." We go in, say to the local citizen, "Hey, you have the opportunity to invest in this project," and they say, "Screw you, we don't want that in our backyard." The discussion was, right now you get an adder for community power, just imagine that this external group goes in and says the community doesn't want to buy any shares, but we still have the money to secure the project, site control, good to go, they apply to the OPA and claim to be a community power project, and the community says no. Meanwhile, you get the adder for this group claiming to be community. So we decided that it means at least 10 per cent local equity, for at least a stake in the game. The other 41 per cent to get the adder could come from a non-local community power. (Stevens Personal Interview, July 24, 2009)

Sometimes the definition includes independent power producers and financial institutions (World Wind Energy Association), sometime farmers (Ontario) and sometimes not (Nova Scotia). In Nova Scotia, CEDIFs (community investment companies) are included as well. For example, according to the World Wind Energy Association Community Power Working Group:

> A project can be defined as Community Power if at least two of the following three criteria are fulfilled:
>
> Local stakeholders own the majority or all of a project: A local individual or a group of local stakeholders, whether they are farmers, co-operatives, independent power producers, financial institutions, municipalities, schools, etc., own, immediately or eventually, the majority or all of a project.
>
> Voting control rests with the community-based organization: The community-based organization made up of local stakeholders has the majority of the voting rights concerning the decisions taken on the project.
>
> The majority of social and economic benefits are distributed locally: The major part or all of the social and economic benefits are returned to the local community. (WWEA, 2011)

This inclusion of financial institutions and independent power producers (IPPs) differs somewhat from that of the Ontario Power Authority in its rules for awarding Community Feed-in Tariff adders:

> "Community Investment Members means,
>
> one or more individuals Resident in Ontario;
>
> a Registered Charity with its head office in Ontario;
>
> a Not-For-Profit Organization with its head office in Ontario; or
>
> a "co-operative corporation", as defined in the Co-operative Corporations Act (Ontario), all of whose members are Resident in Ontario." (OPA FIT rules v. 1.5)

The actors included in the definition of community *matter.* This is because co-operative projects play a key role in legitimating renewable energy projects,

helping to overcome local opposition to development sites. This local involvement is particularly important in jurisdictions where there is a strong suspicion of the mechanisms through which renewable sources are being developed. This is, in fact, one of the reasons that community power policies are heralded as an important policy mechanism for developing new renewables. Some actors argue that electricity co-operatives are central and necessary, whereas others argue that they are a tool, and part of a mixed community power sector where (for-profit) private actors need to play a role, at least initially (Personal Interview, July 24, 2009).

8.3.1 NIMBYism and Development Opposition

Another political challenge arising for co-operatives in the community power sector is the relationship between community projects and local project opposition. Electricity generation projects have environmental consequences. They have resource impacts, they have livelihood impacts, and a whole host of implications for local communities. As wind power, particularly large industrial wind farms, form a more significant part of the electricity generation mix in Canada, it is logical to foresee some variation in a community power model raised in order to move faster through project approval processes. Caution needs to be exercised here.

What is unclear in debates around new renewables development is whether and when the NIMBY pejorative is appropriate. Sometimes this pits co-op developers against other locals. The benefit of community power therefore turns into a shaming of local project opponents. The power seems to be with pro-project and pro-development forces while those opposing are cast as obstructionist NIMBYs. Community power needs to include the local control to say no: there needs to be real consideration of whether the opposition is to the new source, or to the lack of democratic/public siting and ownership of renewables. Community power sector actors wishing to remain anonymous have and continue to be approached by larger power developers to come in and "talk to the community" in order to secure local confidence in a project even though very little actual interest exists in

transferring ownership or power to local groups (Telephone Interview, April 7, 2010; Personal Interview, July 24, 2009).

What has emerged is a split between renewables enthusiasts, de-growth deep greens, and NIMBYs in the sense of landowners who are opposed to noise and the aesthetic impacts. As I've argued throughout this thesis, one of the key advantages of community investment in renewable projects cited in the literature is that a stake in the project—where those bearing the physical costs of the project and the lines benefit in jobs, money and control—decreases project opposition. In addition to these attempts by private developers to co-opt community power experts to advance their projects, within community rifts are emerging.

In Nova Scotia, for example, tension between a CEDIF (community investment) wind developer, Scotian Windfields, and some residents of Digby emerged when they proposed to site a 20-turbine wind farm in the coastal community. While some residents were supportive and interested in investing, others were very vocal against it. According to Janice Ashworth, "it was mostly opposition from one family…they are back to the land and happy with wind turbines for their own consumption or community, but they're against industrialization of anything. So, 'put us and our community off the grid we'd be fine with wind and solar, we just don't want to support pulp plants and industrialization'" (Ashworth Personal Interview, May 21, 2010). While on the one hand it is unrealistic to expect new developments to be unanimously supported, these issues do point to clear political tensions in decisions over who has control, who speaks for communities, and how community power is both understood and used going forward. This particular project is going ahead.

The discussion over the importance of overcoming NIMBYism and moving projects forward raises a number of issues. Barry, Ellis and Robinson explored the role of community opposition with particular attention paid to the rhetorical constructions surrounding the term 'NIMBYism' in the U.K. They found that while an element of climate change denial and conventional NIMBYism exists in local opposition movements to wind farms, there is also a strong suspicion of the

mechanisms through which renewable sources are being developed. One concern, for example, is that utility companies are making money at the community's (and public's) expense. They find that the real basis for scepticism over renewables was, in fact, a lack of trust in government, regulatory processes and wind farm developers. For Barry: "Those presenting the anti-wind energy position are keen not to be regarded as motivated by self-interest, but are skeptical of 'non-local forces' (state and business) coming in and trying to pull the wool over their eyes with what they see as 'PR stunts' portrayed as consultations." (2008: 82) These arguments based on the U.K. case suggest that overcoming opposition to renewables development is not just a matter of more information for a misguided populace (Barry et al., 2008).

The key in developing renewables democratically is in actually engaging local people in the development of and profits from projects: i.e. real community power. It also requires a strengthened public policy intervention to restrain the overwhelming dominance of other private actors in developing renewables for profit rather than community use. In Canada then, overcoming community resistance to project development needs to be considered in light of these findings, and the actual reasons for opposition examined. There is awareness within the community power and co-operative sector of the issues with development. Indeed, the recommendations for a round two of the Ontario FIT involve clearer set-asides just for communities, and more supports to ensure that the partnership shares that communities get are maximized.

8.4 Summary

In this, the final substantive chapter of this thesis, I have argued that clear networks built around and including electricity co-operatives have emerged. This is particularly so in Ontario's community power sector. The value of new co-operative developments thus goes beyond monetary gain, to a transformative role for projects in shaping public opinions, experiences, and, through that, policy. The interactive role between the constituencies created by community groups and policy change is

well documented in the Danish case, but it is also evident in Canada. For example, the Windshare co-operative in Toronto started a coalition and created momentum toward what is now the Green Energy Act.

Alliances are forming, not always easily, between co-operatives, some private developers, municipalities and First Nations to advocate for renewables policies that (to differing degrees) support local participation in generation projects. However, significant political and political economy challenges remain. The empirical reality remains that despite all of these networks, co-operatives (and communities more broadly) represent an almost nonexistent share of the larger privatizing renewables sector. Clear and important tensions have emerged over the definition of community power, and the use of community power as a legitimating tool for private sector renewable development.

9 EMPOWERING POWER? CRISIS, CO-OPERATIVES AND NEOLIBERAL ELECTRICITY IN CANADA

It is an exciting time to be investigating electricity co-operatives in Canada. As I complete this thesis in spring 2012, the United Nation's International Year of the Co-operative has just begun. Five years of electricity co-operative research has yielded more depth and diversity in these organizations than I could have imagined. When I started my research, no Canadian provinces had policy supports for electricity co-operative development. Windshare's one turbine was the only co-operative wind generation project in the country, and it seemed as if the task of tracking and assessing their progress would be relatively simple. How times have changed. Six wind generation projects are now completed or near completion, with 21 more in earlier stages of project development. More than 119 electricity co-operatives are operating or near operation across Canada today. These electricity co-operatives function across multiple areas: generation, distribution, retail and education. The decisions being made to start new electricity co-operatives centre overwhelmingly on helping communities address coming challenges in the electricity sector: rising prices, concern over non-renewable fuel sources, and lack of participatory control. Their focus is on re-embedding the power sector in local ownership and local networks, albeit with success currently limited to small pockets of the country and requiring significant public policy support.

9.1 Power Policy Gaps, Crises and the Double Movement

One core question that animated this research from the outset was whether, where and how electricity co-operatives formed part of a Polanyian double movement against the "dangerous fiction" of free-market neoliberalism. Electricity co-operatives are driven, in part, by the fact that Canadian public policies underpin and are driving the triple crisis. This manifests in the power sector due to a

disjuncture between public opinion, needs, and public policies at the federal and provincial levels. At municipal and community levels there is impetus for collective action, particularly in provincial electricity regimes with significant private power ownership and heavy reliance on coal as a source of generation. While electricity regimes are provincial, federal retreats both from environmental policies and public ownership impact communities in important ways. The partial and uneven progress of power sector restructuring across the country creates a different policy context and contribution of electricity co-operatives in each province.

The oil price spikes in both 2008 and 2010, as well as the contribution of fossil fuel based electricity generation to global warming, have made reforms supporting new renewables generation more acceptable politically to the Canadian population. According to a recent Environics research poll, "over 70 per cent of Canadians agreed that money spent on wars and the military would all be better spent on efforts that reduce greenhouse gas emissions and the impacts of climate change. The poll also found that over 80 per cent of Canadians believe the Canadian government should invest in 'green jobs' and transition programs for workers and communities negatively affected by a shift off of fossil fuels." (Penner 2011) This public support for sustainability initiatives in principle has failed to translate into meaningful political action and public policy in support of deep sustainability. For example, in December 2011, after years of inaction and support for the oil and gas industries in Canada, the Conservative government formally withdrew from the Kyoto Protocol (Curry and McCarthy 2011). Canada has, for five years running now received the Fossil of the Year award from international environmental groups (Climate Action Network, 2011) and is growing increasingly isolated at the international level. In addition, the downsizing of environmental ministries (Campion-Smith, 2011) and the silencing of federal environmental researchers have sent the signal that federal policy makers are unlikely to take significant action to curb greenhouse gas emissions and invest heavily in re-orienting Canadian infrastructure towards a post-carbon future.

These policy failures at the federal level result in pressure on sub-national levels to drive change. Certainly in places like Ontario, the Green Energy and Economy Act with the community adder has gone furthest to support both community power and shift away from coal generation. This was enacted subsequent to private power restructuring in that province and the failure of those policies to generate new renewables developments (see chapter 5). The challenge is not that Canadians need to want greener power; it is that the neoliberal rhetoric surrounding free choice and positive-sum outcomes makes greening about increasing profitability rather than ecological necessity. The drawback of the market-based environmental approach is that, according to John Robinson, "it effectively rules out confronting the issues of how energy is produced, on the one hand, and consumed, on the other. It is easy to understand why we have witnessed two decades of climate change policies that were in effect predestined to fail" (2007: 15). Neoliberal green policy is driving policies supporting green consumption, green business, and undermining the fundamental point of social ecologists: that deep sustainability requires systemic change and a shift away from ever-increasing material consumption and the prioritization of profit as a central feature of economic systems.

The specific policy mechanisms through which greening the power sector takes place have long-term political economy impacts. Moves to account for environmental degradation have become highly politicized, as they are intimately connected with the relative economic power of different industries and business versus citizens (Johnston et al., 2006b). As prices for power rise, which indeed they will with the new investments required, private ownership of these projects shifts resources (power) and rents to private investors, rather than public agencies—a process of greenshifting. This has distributive consequences for the types of and allocation of jobs, of who can—and does—pay specific actors various rates for usage. When private investment plays a central role in the process, public agencies cede the rents from projects, and thus the financial tools to facilitate deeper greening projects (such as demand management and incentives for efficiency-

building). For community actors then, the Faustian choice was to leave renewables to the private sector, or push for a share, however small, of that emergent market. When markets are created for private power development, co-operatives secure only a tiny portion (if any) of new contracts.

New electricity co-operatives are a response to a lack of local project control in the power sector. Co-operatives emerging today, particularly non-profit, solidarity and worker ones, are part of the broader global justice move represented in alterna-globalization movements. For example, the move-your-money initiative to shift funds to credit unions and recent occupy protests both featured co-operative and collective associations prominently as part of a range of existing alternatives. They reflect a desire for social and local control over human and natural resources. The interviewees for this thesis overwhelmingly argued that the motivation driving new co-operative formation was to "retake" and "reform" electricity systems and to "re-embed" resource control locally after private actors have entered the sector. They are, often explicitly, mobilizing people, often with no experience or prior interest in co-operatives, to engage and change what they feel are problematic ownership and policy choices. For co-operative members, the argument to re-take, reclaim and own their own generation, rather than cede opportunities to private developers comes with an implicit critique of private power. There is also a critique of public power embodied in this narrative, where elite technocrats in urban centres appear wedded to technologies and systems that impose disproportionate costs on (often rural) communities.

There are logical reasons to desire a shift toward co-operative and community power that have little to do with neoliberal orthodoxy or continental aspirations. As illustrated in chapters 1 and 2, close institutional connections between owners, users and producers are increasingly important across many sectors (Pateman, 1970; Ostrom, 1990; Wright, 2010). Disembedded private actors have no internal incentive to conserve or to reduce demand. Indeed, they face the opposite pressure because once a resource is exhausted they can relocate to another site. When private and non-local actors are introduced as resource managers, and

are regulated by public entities ideologically committed to market-based and industry-led regulation, the worst of both worlds for environmentally sustainable governance results. There are benefits to having local people trained, to having siting directly decided by people that live in and use the community, but persistent issues of equity and who gets to be in the community are crucial. One longstanding critique of the energy sector has been that it is techno-centric, dominated by engineers and financiers and, until recently in Canada, bureaucrats. This leads to charges that policy is hierarchical, technocentric and lacks effective democratic processes (Durant, 2009; Johnson, 2008).

Local participation in resource development and management can, for example, facilitate economic development and capacity building, and deepen important knowledge bases. While state agencies and firms may have access to resource data, the public is often in the dark about the real value of these resources. This basic ignorance is problematic since communities are often "asleep" when valuable land is leased, and resources are sold off or exploited (Walker, 2008). Local share in profits is thus left to securing a job at the mine or plant, or via indirect benefits from property and municipal royalties and taxes. This is increasingly an issue for new renewables such as wind, just as it has always been with fossil-fuel resources, and is directly affecting communities in Canada that are trying to start electricity co-operatives (Phone Interview, April 13, 2010; Ferrari Personal Interview, July 23, 2009; Gagnon Personal Interview, May 16, 2010). These social and political failures, when set in a global context of austerity and economic contraction and a continental context of tightening energy co-operation, mean that revolutionary change, rather than piecemeal and partial sectoral reform, is essential. For that to take place, we need to take advantage of the many theorists urging multi-scalar collective action (Johnston et al., 2006), and warning against overly fetishizing the local (Albo, 2006).

9.2 The 'Electricity Co-operative Difference' and EPG

The electricity sector is clearly just one of a wide range of places where a shift in governance from concentrated and hierarchical to more diffuse, democratic and empowered needs to take place. Co-operative electricity initiatives can indeed develop capacity for provoking and deepening sustainable transitions (chapters 7 and 8), particularly if they are scaled up to become a central rather than a marginal part of otherwise private power sectors. Significant scale-up is not yet taking place. Hence, in 2012, there is potential for, but little practice of, empowered participatory governance (EPG) in Canadian electricity. Electricity co-operatives are, however, 1) impacting policy, 2) scaling up to larger networks and systems, 3) extending into highly competitive and technical sectors and 4) raising significant capital. Deepening the co-operative role in EPG rests on co-op support for public electricity regimes *and* broader social movements across the country.

Earlier in this thesis, Table 2-2 set out the evaluative criteria for the strength of co-operative electricity's contribution to EPG. The section below outlines the results of how Canadian electricity co-operative developments, in general, fit within this structure. The five factors developed in my conceptual framework to assess the contribution of electricity co-operatives to empowered participatory governance are: policy impact, education, asset ownership and control, networks and, finally, participatory and anti-capitalist norms.

The Toronto Renewable Energy Co-operative/Windshare co-operative, for example, embodied a number of these various contributions to EPG. The first comes from securing local control of resources so that their development is managed in sustainable ways and can be used for local economic development. The second is the role social economy actors play in modelling the possible and in pushing new technologies, management methods, or institutional forms. Third, social economy resource initiatives play a key role in combating NIMBYism, by engaging community members and giving them a stake in resource projects. Finally, these initiatives contribute, whether successful in operationalizing projects or not, to developing more informed, aware and mobilized constituencies. These constituencies

potentially mobilize and agitate for broader transformative policy and political change. Of course, the difference between the practice of one particular project and the potential of the broader organizational form and sector is dependent in a very significant way on the broader political economic context both across sectors and internationally.

9.2.1 Policy Impacts

As with co-operative rural electrification in Alberta and Québec (chapter 6), specific policy drivers are playing an important role in both facilitating and constraining current co-operative development. In Alberta, for example, Rural Electric Associations (REAs) were initially limited to only serve farms, were not granted franchise areas—as REAs in the U.S. have, or gas co-ops in Alberta have—and are prohibited from selling the REA to other co-ops. In both Alberta and Québec, governments keen to avoid the public option of electricity development taking place in Ontario facilitated co-operatives. This was despite the fact that rural areas were underserved. Today, while new distribution co-operatives are not developing, generation co-operatives are. New co-ops are facilitated by provinces looking outside the public sector (where there is a public utility) for new renewables development. Co-operative and community actors, however, are constrained by regulations to particular sizes and grid connections (for example).

Electricity co-operatives are both driven by and driving policy. In chapter 8 I illustrated the policy networks that have arisen out of electricity co-operative development and outlined where, when and how this has spurred specific policy initiatives. In Nova Scotia (2010), New Brunswick (2010), Ontario (2009) and Québec (2010), a range of policy supports for co-operative and community power generation were implemented. These arose out of pressure from community groups after private generation and contracting for new renewables development was already underway. In all provinces, the general understanding from policy and community interviewees is that the co-operative and community contribution to power generation will be small. This is despite the fact that some actors in the

community power sectors advocate for 100 per cent community ownership (Ontario Sustainable Energy Association). In some cases these expectations of minimal development have arisen out of the very real constraints communities face when developing expensive projects in competition with other private developers: financing, grid access, site access and legal recognition.

Despite the challenges with particular policies, the fact remains that co-operatives have been somewhat successful, via their political mobilization and lobbying, in advancing their interests. For example, in Alberta, REAs were able to modify legislation in order to serve non-farm customers, and to self-operate retail and distribution without incorporating each business area separately (as other private actors have to). In Ontario, co-operatives, as part of a community power network, were successful in pushing changes to the co-operatives act that allowed for the incorporation of renewable energy co-operatives that sell electricity to the grid, rather than their members. These and other examples given in chapters 6–8 illustrate that while co-operatives are by no means in a position to dictate terms to policymakers, they are able to mobilize and push for policy change.

9.2.2 Education and Public Engagement

A second aspect of the contribution co-operatives make to EPG is in increasing both public awareness about renewables and participation in resource ownership and management. Governance mechanisms matter a great deal for the acceptability of new technologies and new developments. Some electricity co-operatives (see chapters 6 and 7) incorporated solely for the purpose of supporting and facilitating public education and policy change away from fossil fuel based power and towards conservation and local accountability. Other co-operatives, the Toronto Renewable Energy Co-operative and Peace Energy Co-operative, for example, work both on developing then spinning off generation co-operatives, as well as on public education, lobbying and networking. In order to build EPG broad engagement from the public with these in-practice alternatives (electricity co-operatives, in this case) is vital. While participation and education varies between

types of electricity co-operatives, all co-operatives studied in this research evidenced at least a minimal commitment to the co-operative difference, community education and local development.

Participation in the development of new renewables is crucial for project success and broader development. One significant issue with development and siting of large-scale projects is lack of engagement (not to be confused with consultation). The displacement effects of dams and power plants can be mitigated, in part, by allowing affected publics—particularly local ones—to play a greater part in the design, scale and siting of projects. In Copenhagen, for example, the Middlegrunden wind farm was, through extensive public participation, modified to fit with the natural curve of the bay (Pahl, 2007). This move made the project not just more aesthetically appealing and a tourist attraction, but—in contrast to many Canadian wind projects—locally supported rather than opposed. There are significant impacts with all viable power options, and multi-level governance mechanisms that go well beyond thin consultation are essential to environmental sustainability (Andersson and Ostrom, 2008; Turnbull, 2007).

9.2.3 Ownership and Control

As with the co-operative sector more broadly, there is a significant variation in co-operative structures between specific projects and communities (see chapter 7), and between consumer retail, generation, distribution and educational forms. Some electricity co-operatives are more participatory and more movement based, while others are used as community investment vehicles rather than for actual project employment or management. Some own a more significant percentage of the project than others (Pukwis compared to Bear Mountain, for example). The diversity in projects is a function of the range of challenges facing communities interested in co-operative development. These challenges include, for example: difficulty raising the significant funds required for generation projects, grid connection lines tied up by other private developers, challenges with legal

incorporation, and pressure to sell distribution co-operative assets to private utilities.

These challenges arise from lack of familiarity and support for community owned and co-operative models coupled with significant asymmetries in power, resources and information between community developers and other private companies. What has emerged from my research on these challenges is the fact that sectoral competition pushes co-operatives to form partnerships with private developers. Where community power development becomes little more than consultation and communitywash, a problem emerges. This waters down the co-operative difference, the ultimate economic benefit and local control, while also legitimating the new private development because there is a portion of community buy-in. While the process of communitywashing is complex, it does not lead to the development of empowered participatory governance in the electricity sector. For that, community and public ownership needs to become much more than a small segment of a broader privatizing power market.

If communities are going to be able to scale up in the power sector, they need to have first access to local development sites. Co-operatives often have a longer learning curve and, being volunteer-based, are less able to dedicate the time and resources that private power companies have to sites. In addition, many of the financial challenges could be overcome with policy and program supports. Some of those suggested include government loan guarantees, RRSP eligibility for community power, and infrastructure investments. Financial incentives are not enough, however, to ensure that co-operative electricity projects succeed in deepening EPG, if the broader neoliberal developments continue.

9.2.4 Networks

Co-operative networks are a strength of the movement, both in Canada and internationally (chapter 3). In the electricity sector, co-operatives are also deeply networked not only within provincial co-operative associations, but also with renewable energy associations, the social economy, and with international

renewables and community power movements. This has implications for EPG insofar as this signifies great potential to leverage not only the positive experiences of different actors and jurisdictions, but also learn from their challenges and failures. For example, research (chapter 8) from the United Kingdom suggests that community electricity can be, and in fact is being, hollowed out of its promise by the larger progress towards partnerships and power for profit. On the other hand, drawing from the experience within Nord Friesling in Germany (Gipe Telephone Interview, April 7, 2010; Hoppe-Klipper and Setinhauser, 2002), one model that could serve to deepen the prospects for EPG project development is to tier power calls, so that the first access for sites go to those in a local community, then to the larger region, province, and then finally beyond. This means that those more directly affected by the development have a chance to participate through investment and help guide decisions about the project through, for example, co-operative member meetings.

Within the community power networks developing in Canada, co-operatives are but one of a number of municipal, First Nations, non-profit and private actors, with a range of ideas about what the movement's ultimate goals are. These identities are still being negotiated in different provincial jurisdictions and many actors within the co-operative movement are aware of the complexities and challenges of co-optation, which may bode well for future developments. That said, the very fact that multiple networks across multiple boundaries are developing and strengthening suggests that a long-term movement with scale-up potential is being built. This networking activity strengthens claims that electricity co-operatives are part of a broader movement with some strength, rather than simply a small niche with little power.

9.2.5 Anti-capitalism and Participatory Democracy

Finally, the norms animating emergent co-operative and community power movements matter. They shape the direction of ultimate goals as well as set the boundaries for the kind of compromises and coalitions that actors are willing to

engage in (Podnar et al., 2009). Anti-capitalist and participatory democratic norms were identified as representing a significant divergence from those underpinning mainstream neoliberal governance. While it is the case that nearly all co-operative members interviewed for this research outlined the co-operative difference with reference to participatory democracy, one member, one vote principles, and the need for economic democracy, explicitly anti-capitalist sentiments were rare. This is, perhaps, unsurprising given the history of the co-operative sector as a "third way", and social enterprises as capitalism with a human face (chapter 3).

In chapter 2, I hypothesized that newer co-operatives may—given recent historical developments towards solidarity economies and anti-globalization movements—have evidenced more explicitly political orientations. This I did not find. What emerged from the research, however, was a frustration with a mainstream political economy wherein newly created markets were far from free, where large companies dominate the power sector, and where both rural economies and urban centres were heading in unsustainable directions. In fact, within new electricity co-operatives, one of the major drivers for new members was an environmental shift towards the development of new renewables as well as energy efficiency. This has interesting political implications: it made the members interviewed for this study far less likely to support Conservative policies, compared, for example to co-operative members in other areas of the energy sector (gas, petroleum refining, and retail).

Ultimately, while the normative commitments within electricity co-operatives emphasized participation and democratic decision making, the practice did not necessarily follow. Members across the range of electricity co-operatives reported initially high turnouts for general meetings, and as projects progressed turnout diminished. This is unsurprising, given the time constraints on many Canadians today. Many co-operatives, however, worked to produce newsletters (mail and online) in addition to holding formal meetings. They did this to encourage active participation, meeting attendance and, at a minimum, to keep members informed. It is thus important to recognize that while the co-operative form

provides the space and the promise of project participation, it does not always translate into significant participatory democratic decision-making.

9.3 Electricity Co-operatives, Sustainability and Public Power

The intersections between the development of new co-operatives, the minimization of community ownership via partnership, and the actual role co-operatives play in legitimating private power in provincial electricity regimes are problematic. Empowered participatory governance requires local control, democratic decision-making structures and networked countervailing power. Environmental sustainability in the power sector requires public control: a strong state capable of hard emissions caps, redistribution of costs and intervention in powerful polluting industries. Taken together this means that sustainable EPG requires a strong public sector and significant local control: public green power. Unfortunately, these political economy arrangements are radically different from contemporary neoliberal shifts taking place in Canada (section 1.2, chapters 5 and 7) wherein the power and prevalence of private renewables development drives Canadian electricity sectors in a very different direction.

Renewables policies, rather than the breakup of public utilities, leads to new renewable electricity generation, it is. This is vitally important because public backlash against environmental reforms is one consequence of divorcing environmental policies from the economic realities of a given population. In Québec, for example, many communities are firmly opposed to wind-power developments (Personal Interview, May 2010). In British Columbia, a carbon tax—seen as a key element in greening the power sector by most environmentalists—was hugely unpopular, as were some aspects of Ontario's Green Energy Act. Conceptualizing climate change and environmental degradation as a fundamentally human problem of distribution and justice requires an active and interventionist state. Current incentives and targets are ineffective (Jaccard and Simpson, 2007; Lipp, 2008b; Speth, 2008). A committed change starts with modifying prices so that they take into account externalities (Perkins, 1998; Princen, 2001), but also means significant co-

ordination across provinces, states, and issue areas. These environmental challenges, particularly those around scale and governance, make co-operatives and community power look like an important and potentially powerful direction, or at the very least one that needs more attention.

Public power, however, is the real elephant in the room in the community power sector. In Canada, unlike the United States, the U.K. or Australia, public ownership still characterizes the generation of electricity in most provinces (Alberta, Ontario and Nova Scotia excepted). While public sector governance of electricity structured around public utilities has been criticized for problematic relationships with large industry and centralization of power, as well as lack of local involvement in siting and approvals decisions, these challenges do not disappear when markets take over (see Enron in chapter 4). I have no illusions about the environmental consequences of large dam developments, but it is crucial to point out at this turning point in Canadian power sector history that the public option has, in many provinces, been relatively green. If we accept, as many seem to today, that green power means private power then the choice to increase the community and local content seems simple. However, the definitional fiat equating private power with innovation and renewables is, in Canada, ahistorical, inaccurate and ultimately dangerous for eco-social sustainability.

A significant challenge is thus raised by new co-operative generation projects over the ultimate impact of provincial electricity regimes. Not all provinces' electricity systems are coal based, nor are private actors the incumbent generator; most are public and hydro based. In provinces like Manitoba, Québec and British Columbia, co-operatives become part of a roll-back of public ownership for new renewables. That means a shift to power generation for shareholder profit and in some provinces for export, rather than domestic and local needs. Canadian provinces are at a crucial juncture wherein the continental and international pressures to reduce the debt loads of public agencies place significant pressure on public ownership (chapter 5). In times of global and national austerity, power assets are often among the first on the auction block (see, for example, Ireland, Greece in

2011). Where policy attention and the co-operative difference are employed in the public-private power debate matters in a more significant way in Canada than in countries with already restructured power systems. In this, I argue, co-operative actors need to be clear about the kind of new alternative they can form, given that in restructured power markets without significant public regulatory and financial support they are outbid and outmanoeuvred by other private actors.

These broader issues of political economy certainly affect the ultimate aggregate contribution co-ops can make toward sustainability in the electricity sector. Electricity co-operatives are not driving the breakdown of public power. They are, however, putting a human face on the private power sector, by redirecting some of the profits back into places that would have far less investment/control without them. People formed co-operatives after public policies opened space for private power and scaled back or abandoned public power, first in distribution and now in generation. If the goal is democratization and greening of the power sector, recognition of existing provincial systems is vital, and these differ across the country. We need to be cognizant of whether new generation projects are actually needed. Real greening involves minimizing throughput of materials, minimizing the power we collectively use and generate.

Thus, prospects for a net positive electricity co-operative contribution to sustainable empowered participatory governance are maximized in provinces that are coal reliant and already have a majority of private sector ownership of power generation, like Alberta and Nova Scotia. In public fossil-fuel based provinces like Saskatchewan and New Brunswick, new co-operatives could best play a role in partnerships with public agencies, in order to maximize the local benefits of co-operativism *together* with the fundraising supports and community connections of the co-operative. In provinces like Québec, Manitoba and British Columbia, where already-built large-scale hydropower forms the major generation source, real contradictions emerge with co-operatives as independent power producers opening the door to profit-based power development.

Without broader intervention and ownership by the public sector, there is a danger to sustainable community development. The libertarian and strong communitarian instincts that encourage "self-help" result in some communities (or members within particular communities) being left behind. Communities and citizens that have the money to invest in electricity generation benefit from lower rates and, in some provinces, greener' power. For the rest of the people in the province, electricity rates are climbing and social transfers are not offsetting these costs. For those who don't have $1,000 for the solar investment, or money for a share purchase in the turbine, their role in private power markets is reduced to that of a disempowered consumer. Private generation is not the only alternative to coal-fired or nuclear power. On the one hand, the more co-operative organizations are developed and running, the more resilience communities will have to keep themselves going should macro-economic shocks hit. On the other hand, a problem arises if co-operative actors are participating (actively or tacitly) in the breakdown of public ownership. While co-operatives differ in important ways from other private actors, they are not public. Members, rather than the whole community, own resources in these new projects and redistributive links between different actors are not always developed.

Fuel poverty is an increasing reality for poorer Canadians as prices rise, forcing them to choose between heating and food. If innovations bringing decisions closer to users need to take place (as I would argue they do), why not undertake reforms that devolve power and responsibility for distributed generation closer to municipal levels, perhaps in co-operation with co-operative community investment projects? A model we should examine more closely is one that melds public and community, to draw on the benefits of both through, for example, co-operative-municipal partnerships. In that way, the participatory governance benefits are harnessed, as are the institutional supports and redistributive benefits of comprehensive (rather than solely member-based) public control. This has the advantage of retaining the public institutional experience and financing leverage, together with the participatory movement-based mobilization of the co-operative.

9.4 Directions for Future Research

The conclusions drawn from this research suggest a number of fruitful avenues for future study of the role of electricity co-operatives in Canadian political economy. As these organizations continue to develop, as new electricity policies are implemented, and as the processes of environmental degradation and climate change continue, the importance of this research grows. For many reasons the work presented in this thesis was constrained by my choice of such a broad—both geographically and conceptually—and understudied area. As a result a range of valuable projects have emerged that I have not had the time yet to pursue. These break down along four main lines: international comparisons, case-based generation comparisons with within-province private power generators, case-based studies of public (municipal or provincial)-co-operative electricity partnerships and, finally, studies assessing the prospects for public policy interventions that support co-operatives within the context of international trade rules and regimes (NAFTA, WTO).

The first line of inquiry would involve comparative studies that draw on the experiences and policy contexts that supported American, Danish and German electricity co-operatives. Comparisons between electricity generation regimes in Denmark or Germany with one or two Canadian provinces would result in important data on how replicable Danish and German models are in Canada. Some work has begun down this line already, both by actors in the community power sector and by academics working in England and the United States (Christianson; B. K. Sovacool, 2008; Warren and McFadyen, 2010). A deeper focus on Canada, and particularly the political economy issues in specific provincial power sectors, is necessary, however, in order to use the German and Danish examples in a way that is actually meaningful in a Canadian context. This would include analysis of specific policies, together with the political coalitions required to see them to fruition, and where and how opposition was overcome (if it was). For example, few acknowledge that Denmark, which generates 20 per cent of its electricity from wind power, can do so because it is connected to firm hydro resources in Norway and Sweden

(National Energy Board, 2010a: 35). Understanding and acknowledging the enabling conditions beyond the new renewable and co-operative development is important.

The second avenue of future research would involve case-based comparisons of electricity generation co-operatives with similar (in source and provincial electricity regime) private power developers. For example, one study widely cited in the community power literature (Galuzzo, 2005) compared the local economic multiplier between local, in-state, and out of state ownership of wind generation projects. Similar empirical work in different Canadian provinces comparing local ownership and outside ownership would be a useful supplement. A comparison between a range of ownership types: private non-local, municipal, and co-operative would be similarly useful. This could, for example, compare the local economic benefits of private run-of-river, wind or solar developments with similar co-operative projects. As more projects develop across the country this comparative research becomes both necessary and feasible.

A third research area would investigate models, constraints and prospects for co-operative-public sector partnerships. As this thesis research progressed the co-op municipal partnership model emerged as one possible way to draw on the institutional strengths of both actors. The TREC-Windshare model is but one example of this and it is important to understand whether these types of partnerships are feasible across a number of jurisdictions and what their limitations might be. For example, I found that in Nova Scotia the Municipal Governments Act prohibits municipalities from partnership with private companies (including co-operatives). Identifying these kinds of limitations, as well as the specific results of partnerships that emerged from projects, would contribute much to our understanding of the possibility for scale-up and co-operative-public sector co-operation.

The fourth area of extended research would probe more deeply into the ramifications of co-operative supportive policies raised through this thesis given the international trade regimes Canada is a part of (WTO, NAFTA). Upcoming trade rulings, together with a federal government committed to deepening trade

liberalization, may forestall the kinds of policies required to promote co-operative success. Unlike Germany and Denmark, where co-operative electricity generation has developed with some strength, the trade rules governing federal and provincial government procurement are subject to NAFTA. Since co-operatives are private sector actors incentives like loan guarantees and privileged siting could conceivably be construed as a form of subsidy to Canadian corporations. In 2011, the Mesa Corporation launched a Chapter 11 NAFTA complaint contending that the Ontario Power Authority granted grid connections to private Canadian generators and is seeking $775 million in compensation (Lord, 2011). Beyond NAFTA, issues have also arisen at the WTO: the local content requirement in the Ontario FIT was challenged by Japan and is supported by the United States. While provincial procurement favouring Canadian suppliers is protected under NAFTA Chapter 10 and the GATT at this point, these protections are being rolled back. The February 2010 Agreement on Government Procurement (AGP) between Canada and the U.S. extended national treatment to the provincial level. In December 2011, Canada signed the WTO AGP, extending national treatment for provincial and territorial procurement (Annex 2) to other countries, with some important exemptions[72] (WTO, 2011). What is important here is that the window of exempted goods, services, and actors under liberalized trade laws seems to be narrowing (Lord, 2011; Wilke, 2011). More work is needed in order to understand how feasible co-operative supportive policy is as trade rules change, particularly with reference to electricity investments and services. I suspect that going forward, policies privileging local co-operative development, should they result in any great success, would be subject to challenge.

9.5 Summary

Throughout this thesis, I have attempted to analyze the development of electricity co-operatives in a way that is sensitive to the motivations, the volunteer

[72] Public electric utilities continue to be exempted under these arrangements, but private utilities and direct subsidies are not.

efforts, and the long and often exciting history of co-operativism. I have great respect for the practitioners on the ground in communities across the country who are frustrated with what they consider a fundamental erosion of control over the most important resources and levers of power—in both senses—in Canadian society. Both the organizational and policy experiments outlined throughout this thesis illustrate that there is political support for prioritization of community power. They also illustrate that there are a range of Canadians seeking more democratic alternative structures in the economy, even to the point that they are willing to forgo economic returns on their investments in order to prove that projects can be built and help to educate their neighbours and their children.

The rising profile of co-operatives and the social economy in many countries around the world suggests that we may be seeing many more of these organizations in the future. Co-operative ownership structures, even in technologically complex and financially challenging sectors like electricity, are both possible and desirable, despite their challenges. My research illustrates that when contradictions arise between the direction of public policy and the values and opinions of members of the public, the co-operative model is one mechanism through which collective action and mobilization can be pursued. However, there are significant challenges politically and economically confronting the community power sector. Scaling up into a real, empowering and sustainable power alternative, I have argued, is unlikely without a strong public power movement that includes provincial, municipal and co-operative ownership. I've presented in this thesis an analysis of where they sit at this particular historical juncture, with an eye to their current development and potential to address the triple crisis.

Contemporary forms of greenwashing that generate temporary affluence as part of a new business opportunity—and do not address root causes of instability, environmental degradation and exploitation—are problematic. Ultimately, without a systemic movement, even if some communities carve a niche out in this broader system of exploitation, the pipelines will still be built, the tarsands developed, and while small pockets of resilience survive the broader battle will be lost. Co-operative

actors need to pursue their projects with an understanding of whether they are legitimating a broader project of state restructuring, one that ultimately undercuts the very public agencies we will need going forward. This deep movement towards empowered participatory governance requires new, multilevel and varied models: polycultures of dissent, as Vandana Shiva refers to them (Shiva, 1993). These cannot be based on profit, ever-expanding growth and business as usual. These transitions will take time and ultimately may not be successful given the array of challenges they face. If they are, however, electricity co-operatives are well placed to play a role in this transition. In order for this to happen it is crucial to strategically link these local movements to projects for systemic change and for public power.

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APPENDICES

Appendix 1: Interview Questions

Interview Questions – Co-operators

1. How long have you been involved in the co-op?
2. Why did your organization choose a co-operative form?
3. Who are the members/stakeholders and how is it structured?
4. Why the energy sector?
5. What are the main regulatory challenges (or support) for your organization?
6. What other challenges do you face?
7. What (if anything) makes an energy co-operative different from a shareholder-owned firm?
8. Where do you see your main competitors?
9. Where do you see co-operative energy fitting, on a scale between public and private ownership?
10. To what degree does your organization network with other groups? Which would you be most closely linked with? (co-operative/NGO/industry)
11. How do you interact with local or provincial regulatory bodies?
12. Do you think co-operatives are more likely to be green? Why or why not?
13. Do you intend your product/service for local use or export?
14. What kind of government support do you receive?
15. What kind of support would you need to be competitive with shareholder-owned firms?
16. Would you consider your organization economically viable?

Interview Questions – Researchers/Co-op Associations

1. Are you familiar with energy co-op development in Canada? To what extent?
2. Why do you think they are developing?
3. What is the biggest challenge for you in studying co-ops?
4. Which ones are you aware of?
5. Do you think there is a co-operative difference? If so, what is it?
6. Do you think co-operatives are more likely to be green? Why or why not?
7. What do you think their potential is (if any) in either democratizing or 'greening' the economy?
8. Are you aware of any policy initiatives that focus on co-operative energy?
9. What do you see the major opportunities and challenges of co-operatives being?

10. Where do you see co-operative energy fitting, on a scale between public and private ownership?
11. To what extent is co-operative development community driven versus state driven?

Interview Questions – Public servant/politician

1. What, if any, are your experiences of co-operative energy firms?
2. Are there specific departments responsible for co-operatives in your province? If so, which?
3. What would you say are the main players in the energy sector in your province?
4. To your knowledge is there any effort to distinguish co-operative energy firms from investor-owned firms?
5. (For Saskatchewan only) Why do you think the government went the co-op route rather than that of a public utility or privatization to an investor-owned company?
6. (For Saskatchewan only) Why did the government divest Newgrade?
7. Where do you see co-operative energy fitting, on a scale between public and private ownership?
8. Are there specific renewable energy programs in your province that may affect energy co-operative development?
9. Are you aware of efforts made by co-operatives to enter the energy sector or influence policy?
10. What are the main obstacles to the development of community generated/distributed energy?
11. To your knowledge, is there a formal relationship between the co-op movement and the government? If, so, how is it structured?
12. Do you see co-operatives as different from investor-owned firms? If so, how? If not, why?

Appendix 2: Co-operative Policies and Programs across Canada

	Co-op Specific Agencies/Programs	*Key Legislation*	*Organizations*
Federal	Co-operatives Secretariat (Agriculture) Co-operative Development Initiative (CDI)	1999 *Canadian Co-operatives Act*	Canadian Co-operative Association Conseil canadien de la co-opération et de la mutualité Canadian Worker Co-op Federation Canadian Housing Co-op Federation Credit Union Central
BC	No specific co-op agency	*B.C. Co-operative Associations Act* 1999 Amended in 2007 to allow for non-profit and community service co-ops.	B.C. Co-op Association
AB	No specific co-op agency[73]	*Alberta Co-operatives Act* 2001. Includes specific provisions for new generation, multistakeholder, employment and housing co-ops.	Alberta Community and Co-operative Association (ACCA)
SK	No specific co-op agency[74]	*Saskatchewan Co-operatives Act* 1996 *New Generation Co-operatives Act* 1999.	Saskatchewan Co-operative Association
MB	Housing and Community Development-Co-operative Development Services	*Manitoba Co-operatives Act* 1998 (updated June 17, 2010)	Manitoba Co-operative Association Conseil de Développement des Municipalités Bilingues de Manitoba (CDEM) Conseil de la Co-opération du Manitoba.

[73] The Alberta Rural Utilities Division in the Department of Agriculture and Rural Development Regulates the Electricity and Gas co-operatives in the province and has specific co-op expertise/links.

[74] Prior to 2008, when the government formed Enterprise Saskatchewan, there was a Department of Regional Economic and Co-operative Development.

ON	No specific co-op agency	Ontario Co-operative Corporations Act 1990 (amended 2010) to allow for renewable energy co-operatives to sell to non-members (the grid)	Ontario Co-operative Association le Conseil de la co-operation de l'Ontario (CCO) Ontario Worker Co-op Federation
QC	Direction des Co-operatives Investissement Québec (administers the Co-operative Development Program)	*Québec Co-operatives Act* 1982. Nine updates, most recent in June 2011.	Conseil Québécois de la co-operatives et de la mutualité Fédération des co-opératives de development regional du Québec (with 12 regional CDRs) Co-operative federations by area: (forestry, worker, solidarity, etc).
NS	Co-operatives Branch, Access Nova Scotia	*Nova Scotia Co-operative Associations Act* 1998 (amended 2001)	Nova Scotia Co-operative Council Conseil Co-ooperation Acadien Nouvelle-Écosse.
NB	No specific co-op agency	*New Brunswick Co-operative Associations Act* 1978	Co-operative Enterprise Council of New Brunswick (CECNB)
NL	Newfoundland and Labrador Registry of Co-operatives Department of Innovation, Trade & Rural Development – Co-op Zone project and regional co-op developers network	*Newfoundland Co-operatives Act* 1998 (amended 2001)	Newfoundland and Labrador Federation of Co-ops (partner in Co-op Zone)
PE	Registry of Co-operatives	*PEI Co-operative Associations Act* 1988 (updated 2009)	PEI Co-op Council
NT	No specific co-op agency	*NWT Co-operative Associations Act* 1988 (last amended 2006)	Arctic Co-operatives Limited
YT	No specific co-op agency	*Yukon Co-operative Associations Act* 2002	n/a
NU	No specific co-op agency	*Nunavut Co-operative*	Arctic Co-operatives

		Associations Act (consolidation from NT, updated 2005)	Limited

Sources: Federal and Provincial co-operative association websites in 2011: CCA, 2011.

Appendix 3: Top 10 Non-Financial Co-ops 2009

Co-op	Total Revenues (thousand $)	Members	Employees (full/part-time)	Activities
Federated Co-operatives Limited (SK)	6,570,595	264	3,125	Wholesale, petroleum refining, consumer goods, building materials
La Co-op féderée (QC)	3,922,955	106	11,336	Pork and poultry, petroleum, farm supply
Agropur Co-opérative (QC)	3,053,000	3,522	3,670/392	Dairy products
United Farmers of Alberta Co-operative Limited (AB)	1,616,774	222,494	353/959	Petroleum, farm supplies, building materials
Calgary Co-op Association (AB)	1,042,515	434,466	1,310/2,690	Supermarket, petroleum, travel agency, pharmacy
Co-op Atlantic (NB)	613,794	124	518/115	Wholesale, food, petroleum, farm supply
Gay Lea Foods Co-op (ON)	394,463	3,364	490/20	Dairy products
Red River Co-operative (MB)	390,784	191,418	19	Petroleum retail
Exceldor co-operative avicole (QC)	378,026	242	835	Meat processing & marketing, slaughtering
Hensall District Co-op Inc. (ON)	308,208	4,475	262/55	Grain marketing, petroleum, farm supply

Source: Co-operatives Secretariat, 2011

Appendix 4: International Co-operative Principles

1. Voluntary and open membership

   Co-operatives are voluntary organisations, open to all persons able to use their services and willing to accept the responsibilities of membership, without gender, social, racial, political or religious discrimination.

2. Democratic member control

   Co-operatives are democratic organisations controlled by their members, who actively participate in setting their policies and making decisions. Men and women serving as elected representatives are accountable to the membership. In primary co-operatives members have equal voting rights (one member, one vote) and co-operatives at other levels are also organised in a democratic manner.

3. Member economic participation

   Members contribute equitably to, and democratically control, the capital of their co-operative. At least part of that capital is usually the common property of the co-operative. Members usually receive limited compensation, if any, on capital subscribed as a condition of membership. Members allocate surpluses for any or all of the following purposes: developing their co-operative, possibly by setting up reserves, part of which at least would be indivisible; benefiting members in proportion to their transactions with the co-operative; and supporting other activities approved by the membership.

4. Autonomy and independence

   Co-operatives are autonomous, self-help organisations controlled by their members. If they enter to agreements with other organisations, including governments, or raise capital from external sources, they do so on terms that ensure democratic control by their members and maintain their co-operative autonomy.

5. Education, training, and information

   Co-operatives provide education and training for their members, elected representatives, managers, and employees so they can contribute effectively to the development of their co-operatives. They inform the general public—particularly young people and opinion leaders—about the nature and benefits of co-operation.

6. Co-operation among co-operatives

   Co-operatives serve their members most effectively and strengthen the co-operative movement by working together through local, national, regional and international structures.

7. Concern for community

   Co-operatives work for the sustainable development of their communities through policies approved by their members.

Source: ICA, 2011

Appendix 5: Major Proposed IPL Transmission Lines 2011

Province	*Project*	*Proponent*	*Timeline*	*IPL Information*
B.C.	Juan de Fuca Cable Project	Sea Breeze Power Corp.	Operational by 2013	Underwater 550 MW HVDC transmission line from Vancouver Island near Victoria to Washington State near Port Angeles.
Saskatchewan and Alberta	Wind Spirit Project	Rocky Mountain Power & Grasslands Renewable Energy	Estimated completion by 2018	3000 MW of nameplate capacity wind energy from four quadrants: Alberta Montana, Saskatchewan and North Dakota.
Alberta	Montana Alberta Tie Line	Enbridge Power Inc.	Construction in progress for 2013 completion	230kV, 300 MW and 345 kilometre transmission line connecting southern Alberta and northern Montana.
Alberta	Northern Lights/Alberta Electric System Operator's 10 year plan	TransCanada Alberta Electric System Operator	Early stages of development and planning	500 kV, 3000 MW HVDC line from northern Oregon to Edmonton with a possible extension to Fort McMurray.
Manitoba	Bipole III	Manitoba Hydro	Estimated completion by 2017	Modification of the existing 500 kV line from Dorsey Converter Station to Minnesota.
Québec	Northern Pass Transmission Project	Northeast Utilities	Estimated construction to start 2013	Québec to New England. 330 km 1,200 MW capacity project.
Québec	Champlain Hudson Power Express	Transmission Developers, Hydro Québec	Estimated construction to start 2015	539 km 1,000MW HVDC submarine line linking Montreal to Yonkers
Newfoundland	Lower	Newfoundland	Operational	Series of new lines

and Labrador and Québec	Churchill development	and Labrador Hydro (With Emera)	by 2015	linking Churchill Falls to Maine including one 1,100km HVDC 900MW Labrador-Island Transmission link, and another 180km, 500MW sub-sea line from Bottom Brook to Lingan.
New Brunswick	Maritimes to Northeastern United States	New Brunswick System Operator	Operational by 2017	1,200- 1,500 MW capacity; HVDC IPL.

Sources: National Energy Board 2009, 2010c, 2011; Grasslands Renewable Energy, 2012; Manitoba Hydro, 2012; Nalcor 2012.