

Powershifts: a framework for assessing the growing impact of decentralized ownership of energy transitions on political decision-making

Article (Accepted Version)

Brisbois, Marie Claire (2018) Powershifts: a framework for assessing the growing impact of decentralized ownership of energy transitions on political decision-making. *Energy Research & Social Science*, 50. pp. 151-161. ISSN 2214-6296

This version is available from Sussex Research Online: <http://sro.sussex.ac.uk/id/eprint/81809/>

This document is made available in accordance with publisher policies and may differ from the published version or from the version of record. If you wish to cite this item you are advised to consult the publisher's version. Please see the URL above for details on accessing the published version.

Copyright and reuse:

Sussex Research Online is a digital repository of the research output of the University.

Copyright and all moral rights to the version of the paper presented here belong to the individual author(s) and/or other copyright owners. To the extent reasonable and practicable, the material made available in SRO has been checked for eligibility before being made available.

Copies of full text items generally can be reproduced, displayed or performed and given to third parties in any format or medium for personal research or study, educational, or not-for-profit purposes without prior permission or charge, provided that the authors, title and full bibliographic details are credited, a hyperlink and/or URL is given for the original metadata page and the content is not changed in any way.

Powershifts: A framework for assessing the growing impact of decentralized ownership of energy transitions on political decision-making

Marie Claire Brisbois

Science Policy Research Unit, University of Sussex

Jubilee 368, Brighton, BN1 9SL, United Kingdom

(research conducted at the Copernicus Institute of Sustainable Development, Utrecht University, NL)

m.c.brisbois@sussex.ac.uk

Acknowledgements:

The author would like to thank Rob Raven and Agni Kalfagianni for comments during conceptual development, and Jeori Wesseling for feedback on early drafts. Funding was provided through a Marie Skłodowska-Curie Individual Postdoctoral Fellowship, grant no. 751843.

1 Introduction

The ongoing energy transition is upending social, economic and political relationships (Raven et al., 2016; Stirling, 2014). Historically dominated by politically powerful centralized energy interests, western energy systems are increasingly integrating new, decentralized actors (Burke and Stephens, 2017a; Koirala et al., 2016). The majority of these new actors are commercial renewable energy (RE) producers who operate according to profit maximizing business models (Kelsey and Meckling, 2018). However, there is a growing market segment controlled by city, municipal, community and co-operative groups (Creamer et al., 2018; REN21, 2017). Community energy (CE) groups are interested in financial returns, but also pursue place-based community development, local energy security, and democratization of energy systems (Bauwens et al., 2016; Becker and Kunze, 2014; Burke and Stephens, 2017a; Soutar and Mitchell, 2018). Significantly, these groups are not legally bound to generate profits for shareholders as are conventional and commercial RE producers (Becker et al., 2017). As CE actors capture greater market share, these fundamental differences in distribution of resource ownership and business motivation have the potential to transform entrenched socioeconomic and political regimes (Meadowcroft, 2009; Nevens et al., 2013; Stirling, 2014).

This paper provides a framework to examine a) if traditional political power structures are shifting to give more voice to CE interests; b) exactly what these political power shifts look like (e.g., different policy outputs, changing political discourse); and c) what the outcomes of these shifts will be for both policy and energy systems (e.g., more democratic policy processes, more progressive action on climate). These questions have been the subject of intense academic and industry speculation (e.g., Burke and Stephens, 2017a; Geels, 2014; International Energy Agency, 2015; Royal Dutch Shell, 2013; Stirling, 2014). However, there has been little empirical testing (Kelsey and Meckling, 2018; Raven et al., 2016). The framework developed in this paper is intended to generate empirical evidence on the consequences of shifting energy ownership and policy dynamics through the larger Powershifts project. Powershifts is

an OECD-wide study investigating trends and dynamics related to the above research questions. In addition to the conceptual framework, this paper presents evidence from one of the case studies, political conflict over the use of the electricity grid in Ontario, Canada, as proof of concept.

Energy producers have historically exercised significant political influence (Moe, 2010; Unruh, 2000). This influence is enabled and entrenched through, for example, close regulatory relationships with governments, and production of the technical and economic knowledge that is used to ground policy decisions (Fuchs, 2007). This has resulted in what Johnstone et al. (2017) have termed “deep incumbency”, where state interests become so enmeshed with those of incumbent firms that it becomes difficult to conceptualize a functional regime in the absence of those companies. However, as CE captures increasing market share, these diffuse niche interests are increasingly developing political connections and lobbying capacity (Hess, 2014; Rutherford and Coutard, 2014). Many CE actors now actively attempt to influence government decisions, with varying degrees of success, on energy policy development and implementation (e.g., RE subsidies, grid reforms). This takes place either individually, or through formal or informal lobby groups (Huybrechts and Haugh, 2017; Proka et al., 2018; Stirling, 2014).

Incumbent producers – those who have dominated energy production over the past decades – increasingly recognize the threat that CE poses to their interests. This has created significant political struggle (Reusswig et al., 2018). Conflict between incumbent and emerging CE actors is playing out through, for example, courtroom battles (Hess, 2016), policy contests (Burke and Stephens, 2017b), and public debate over the nature of energy futures (e.g., Royal Dutch Shell, 2013). These struggles attest to the potential that changes in the ownership of energy systems have to transform entrenched political power relations, policy outputs, and consequent policy outcomes (Meadowcroft, 2009; Nevens et al., 2013; Raven et al., 2016; Stirling, 2014).

The potential for shifts in policy outcomes reflects the underlying importance of power in the study of transitions (Avelino, 2017; Geels et al., 2016). The Powershifts framework is grounded in theories of power and draws additional insights from policy studies, institutional theory, and transitions. Power theorists suggest that shifts in political power occur as multiple forms of power interact and shape political arenas (Clegg and Haugaard, 2009; Lukes, 2005). Policy studies examine political power as a function of the ways actors build coalitions in pursuit of mutual goals (Hess, 2014; Sabatier and Weible, 2016). Institutional theory argues that political power shifts as the beliefs and practices that “regula[te] behaviour and provide opportunity for agency” transform over time (Fuenfschilling and Truffer, 2014; Lockwood et al., 2016; Thornton and Ocasio, 2008:102). For transitions scholars, political power shifts can occur as actors interact and successfully move social and technological innovations from the niche level (protected spaces for innovation) to the regime level (collections of institutions developed around particular social and technological practices) amid shifting pressures from the landscape level (the entrenched cultural, geographic and demographic variables within which regimes operate) (Avelino, 2017; Geels et al., 2016; Raven et al., 2016). The Powershifts framework, presented in the next section, combines relevant insights from the above theoretical perspectives to provide novel insight into if and in what ways power shifts are occurring, and the expected consequences of any shifts.

The next section develops the Powershifts framework. The framework is then tested through application to an electricity policy arena in Ontario, Canada. In this example, application of the framework reveals that political power shifts have largely stalled in Ontario. This is largely due to successful decarbonization of the electricity system in a manner that has re-entrenched incumbent nuclear producers as dominant regime actors. However, analysis also revealed nascent transition pathways with the potential to significantly transform the provincial electricity system.

2 A framework for the study of political power in renewable energy transitions

This framework guides analysis in the pursuit of three objectives: to a) explore if traditional political power structures are shifting as CE transitions progress; b) explain the ways, or mechanisms through which this is occurring, and; c) explore the consequences of potential shifts for political systems and outcomes. Theories on power, institutions and transitions are used to describe potential patterns of political influence. These patterns are then used to develop specific, tangible queries for analyzing how power is operating within political arenas that are negotiating CE transitions (Objectives 1 and 2). Integrating analysis across the mechanisms provides insight into potential consequences (Objective 3).

Transitions scholarship has drawn upon different perspectives to examine power. For example, researchers have developed frameworks drawing from the works of Mann (2012) (e.g., Avelino, 2017), Giddens (e.g., Grin et al., 2010) and Foucault (e.g., Tyfield, 2014). Different perspectives highlight important power dynamics using different definitions and approaches. For example, Avelino (2017) emphasizes different power ‘sources’ that can be operationalized to exercise power in her Power in Transitions (POINT) framework. Hoffman (2013) highlights the agency of transitions actors, with a specific focus on their capacity for creative experimentation. In Tyfield’s (2014) work on mobility transitions, he focuses on power as productive capacity that is shaped by, and shapes, the nature of the dominant regime. This plurality is characteristic of Clegg and Haugaard’s (2009) “family resemblance” approach to power. The family resemblance perspective acknowledges that there are different interpretations of power that offer overlapping insights into its form (e.g., as structural, military, economic) and nature (e.g., as power “to”, “over”, “with”). Different conceptual approaches emphasize different aspects of power.

For this study, power is defined as the ability of one entity to make another do something they would not otherwise do (Lukes, 2005). This view, frequently used in the study of political power, is a view of power as domination (i.e., power over). However, transition studies require that analysts consider the existence and reproduction of current power structures, as well as how power is changing and new actors are being empowered as transitions progress (Avelino, 2017; Tyfield, 2014). To capture these dynamics, I use the perspective of power as domination to also highlight spaces for empowerment and change. This is consistent with arguments from Hayward and Lukes (2008) that this perspective on power can reveal relationships of both domination and empowerment depending upon the way in which it is operationalized.

In this paper, analysis of power is organized across three dimensions, based upon the work of Lukes (2005). The three dimensions are heavily interdependent. This will be highlighted in presentation of the dimensions and in application to the test case. Despite inherent overlap, the three dimensions provide meaningful categories that allow power to be broken down for analysis (Lukes, 2005).

The approach presented here focuses on manifestations of the exercise of power (i.e. power “queries”), rather than sources or potentials. This approach is suitable for empirical application to investigations of political power. In particular, the discrete queries developed in this approach are helpful in structuring power analysis across comparative cases.

The first dimension, often called ‘instrumental’ power, highlights who wins in policy contests. Analysis focuses on the visible, overt exercise of power. This includes instances of coercion, manipulation, and obvious differences in the resources that different policy actors are able to use (e.g., financial, institutional) (Lukes, 2005). For example, Geels (2014) highlights the ability of entrenched and well-resourced energy incumbents to “win” in policy contests using tools such as lobbying. Much of the visible lobbying that occurs in policy settings is captured by this dimension. However, the ability to lobby effectively is a result of dynamics associated with the second and third dimensions, discussed below.

The second dimension, referred to as ‘structural’ power, is associated with the structures and institutions that directly shape the exercise of political power (e.g., electoral systems, formal and informal rules, market structures) (Lukes, 2005). These structures are reproduced, deconstructed or transformed through the action, or lack of action, of actors over time (Fuenfschilling and Truffer, 2016; Haugaard, 2012). There are a wide range of dynamics relevant for policy arenas that manifest mainly through the second dimension. To study situations such as energy transitions where sociotechnical change is intertwined with economic systems, it is critical to examine this web of structural roots of the established system (Johnstone et al., 2017; Moe, 2010; Roberts et al., 2018).

The second dimension shapes energy policy through institutionalized interdependencies between businesses and governments. Firms depend upon governments to provide the infrastructure required to operate (e.g., maintenance of social order). In return, firms provide governments with critical services upon which modern socioeconomic and political systems are built. For example, governments depend upon firms to provide jobs, growth, taxes and royalties (Lockwood et al., 2016; Moe, 2010). Many corporations are also active in social services and infrastructures (e.g., schools built through public-private partnerships), knowledge and innovation (e.g., corporate funding of universities), and self-policing of their own behaviour (e.g., voluntary reporting, private certification schemes) (Clapp and Meckling, 2013; Fuchs, 2007; Wesseling et al., 2014). These interdependencies make it more difficult for governments to prioritize decisions that affect the primary interests – or profitability – of well-established industries. Decisions that negatively affect industry can also negatively impact the services that industry provides to governments, or can elicit sanctions from industry. For example, industries can threaten to relocate if they are unhappy with a proposed carbon tax (Spash and Lo, 2012).

Examining specific policy system dynamics can also help reveal expressions of structural power. For example, the close regulatory relationships between incumbents and governments means that these business interests have a degree of access to decision-makers that is not necessarily available to others

(e.g., interpersonal relationships with senior government agency staff). There is also often movement of personnel through a “revolving door” between government and industry (Fuchs, 2007). This facilitates influence and lobbying. Well-resourced actors are also well positioned to influence the activities of rival bodies. For example, Hass (2019) found that incumbent carbon intensive industries occupy positions on renewable industry lobby boards. This allows influence on policy conversations by shaping the actions and goals of target interest groups.

Well-resourced actors can produce knowledge and information resources to inform policy processes (e.g., environmental contaminant statistics, policy white papers, public information documents) (Lockwood et al., 2016; Wesseling et al., 2014). Multi-national actors also often hold sufficient, although contested, legitimacy to work with their peers to set rules governing their own behavior (e.g., the International Organization for Standardization – ISO) (Auld et al., 2015; Fuenfschilling and Binz, 2018). Influence on the knowledge and rules used in policy and regulatory arenas translates into influence on the policy problem definition and range of solutions. For example, emissions due to personal vehicles can be defined as a problem with combustion engines (a simple substitution), or as a sociotechnical systems problem related to car-based lifestyles (a significant landscape-regime shift).

The tumultuous nature of current energy markets makes clear that the structural power of established energy industries is not absolute. Firms often co-operate but will also compete against each other in policy arenas if it will afford a competitive advantage (Betsill and Stevis, 2016; Wesseling et al., 2014). When coalitions of actors (e.g., industry associations) approach governments with coherent policy requests they are much more likely to realize policy success than when they request different outcomes (Sabatier and Weible, 2016). The same is true for CE actors who can consolidate their capacity to influence by cooperating with others (Hess, 2014, 2016).

Existing structural power relationships are also not always used to maintain the status quo. Evidence from the energy transition reveals that cooperation amongst incumbent actors (e.g., utilities, suppliers), and CE actors can result in complex political coalitions. Theoretical transitions scholarship has long acknowledged that relationships between actors are complex and fluid (Meadowcroft, 2011; Stirling, 2014). Articulating specific ways these dynamics are expressed – as this framework does – makes it easier to identify them.

Finally, analysis of structural power should also consider the specific political and economic characteristics that help to establish who has power in a given context. In transitions studies, these variables are often considered exogenous “landscape” variables that are relatively static. However, the substance of power shifts resulting from the decentralization of energy ownership is both impacted by, and will impact, these characteristics (Tyfield, 2014). They are therefore included within the analytical frame, rather than included as case context.

Indicators for political and economic characteristics include the proportion of jobs and market share directly controlled by different sectors, and the number of firms that control the majority of the sector. Those firms controlling market share, jobs and growth are usually able to realize their policy interests more easily (Fuchs, 2007). Decision making is shaped by the political system in question (e.g., pluralism, corporatism) (Christiansen et al., 2010); the degree of cooperation across divergent interests required by

the electoral system (e.g., proportional representation vs. first-past-the-post) (Farrell, 2011), and the specific “variety” of capitalism enacted in a given context (e.g., the extent to which market liberalization has been applied to the public sector) (Johnstone and Newell, 2017; Lockwood et al., 2016; Roberts et al., 2018). These dynamics straddle the second and third dimension because they are representative of broad values. However, they also define structures and so are included as queries in the second dimension.

In addition to first and second dimension dynamics, the formation and content of policy decisions also depend upon the broad social institutions, norms and values that define the policy landscape. These norms and values are akin to institutional logics that “regula[te] behavior and provide opportunity for agency” (Thornton and Ocasio, 2008:102). They inform how a given regime passively and actively reproduces socioeconomic and political conditions (Kuzemko et al., 2016). Lukes’ third dimension, often called ‘discursive’ power, is concerned with the substance of these logics – the dominant values, norms and ideals that define a given context, and the ways they are constructed, expressed, contested and manipulated.

The third dimension is notoriously difficult to study empirically because it often occurs ‘inside our heads’. Important information on the norms and values that dominate a given context can be gathered by examining the words, actions and decisions of individuals and institutions (Fuenfschilling and Truffer, 2014). For example, Rosenbloom et al. (2016) examine the discourses of energy actors in building legitimacy, or delegitimizing other actors, in pursuit of their individual policy goals. Wagner (2018) highlights that groups with economic resources can disproportionately shape energy frames through the media. More broadly, Geels et al (2016) argue that shifts in landscape level values and norms can put pressure on regimes in ways that allow niche actors to exercise greater policy influence, potentially reconfiguring or realigning the dominant regime.

Even amongst countries with similar political and electoral systems, driving logics can take vastly different forms (Roberts et al., 2018). Examining the ways that decision makers justify their energy policy choices can give a sense of the logics and themes that dominate a context (Fuenfschilling and Truffer, 2014). Likewise, identifying similar discourses amongst actors can reveal opportunities for coalition development and consolidation of political power (Bosman et al., 2014; Markard et al., 2016)

Table 1 organizes the above power dynamics into a conceptual model to guide empirical analysis. Lukes’ (2005) three dimensions (column 1) are used to organize the mechanisms through which power can operate in policy processes (column 2). The queries in column 2 were developed using dynamics identified in literature on transitions, or dynamics from other fields that can reasonably be expected to be relevant for energy policy processes (e.g., policy studies, political science). These broad categories were iteratively refined throughout empirical work (Bloor and Wood, 2006). Sample citations are provided. Column 3 is populated by sample indicators for each of the queries. This column does not represent a comprehensive list of all the ways that power can be operationalized across the queries; rather, it is intended to help make the queries more concrete.

Table 1 Powershifts conceptual framework

Power dimension	Queries relevant to CE-related policy contests sourced from power, political, transitions, and institutional theory – sample references provided	Sample indicators
1 “Instrumental”	<ol style="list-style-type: none"> 1. Who “wins” or has visible influence over outcomes? (Fuchs, 2007; Kelsey and Meckling, 2018; Lukes, 2005) 2. Is there overt coercion or manipulation? (Avelino, 2017; Geels et al., 2016; Kern and Smith, 2008; Lukes, 2005; Proka et al., 2018) 3. Are there overt resource imbalances? (Fuchs, 2007; Geels et al., 2016; Lukes, 2005; Patterson et al., 2016; Smink et al., 2015) 4. Who lobbies, and in what ways? (Hess, 2014; Markard et al., 2016; Rutherford and Coutard, 2014) 	<ul style="list-style-type: none"> - Success in achieving stated policy goals - Misinformation or withholding of information - Threats or intimidation - Financial capacity - Technical capacity - Institutional capacity - Submissions to formal policy processes - Closed door meetings with decision makers - Attempts to meet with decision makers through public events - Public or external lobbying through mailouts, op-eds, media, appeals to the public, etc.
2 “Structural”	<ol style="list-style-type: none"> 5. What is the structural justification for political decisions? (e.g., market structure, political and electoral system) (Christiansen et al., 2010; Farrell, 2011; Fuenfschilling and Truffer, 2014; Geels et al., 2016; Johnstone and Newell, 2017; Lukes, 2005; Meadowcroft, 2009; Smink et al., 2015) 6. How are actor groups positioned? (inclusion, exclusion, cooperation through coalitions) (Avelino and Wittmayer, 2016; Hess, 2014; Markard et al., 2016; Meadowcroft, 2009; Wesseling et al., 2014) 7. Who has access to, and influence on, relevant information and knowledge? (Berlo et al., 2016; Geels et al., 2016; Lockwood et al., 2016; Smink et al., 2015; Wesseling et al., 2014) 8. Who has influence on rule and agenda setting/problem framing? (Auld et al., 2015; Clapp and Meckling, 2013; Kern and Smith, 2008; Shove and Walker, 2007; Smink et al., 2015) 9. Who has elite access to policy makers? (Berlo et al., 2016; Geels et al., 2016; Hess, 2016; Lockwood et al., 2016; Smink et al., 2015) 	<ul style="list-style-type: none"> - Proportion of market share controlled by a given interest or sector - Proportion of jobs controlled by a given interest or sector - Degree of cooperation required by political system (e.g., coalition vs. winner-takes-all governing systems) - Nature of the political system (e.g., pluralism, corporatism) - Relevant actors that are excluded from conversations - Alliances or coalitions between actor groups for political purposes - Actors that create or control knowledge essential to the policy process - Relevant knowledge that is not available to all - Actors who set the rules for, or monitor, their own behaviour - Actors who contribute to defining what policies or positions are on the table and will be debated or advanced - Relevant issues excluded from the policy debate as a result of problem framing - Secondment or movement of personnel between government and actor groups (current or through past employment) - Existence of regulatory, working or social relationships

3 “Discursive”	10. Who can influence policy processes through discursive tools such as the media (Berlo et al., 2016; Geels et al., 2016; Smink et al., 2015)	- Op-eds, newspaper, television, radio or internet ads, social media campaigns, etc.
	11. What are the competing socioeconomic and political discourses, and how do these align with those of decision-makers and other influential actors (Avelino, 2017; Bosman et al., 2014; Christiansen et al., 2010; Fuchs, 2007; Fuenfschilling and Truffer, 2014; Geels et al., 2016; Hajer and Wagenaar, 2003; Hayward and Lukes, 2008; Hess, 2016; Johnstone and Newell, 2017; Lockwood et al., 2016; Lukes, 2005; Raven et al., 2016; Sabatier and Weible, 2016; Smink et al., 2015; Thornton and Ocasio, 2008)	<ul style="list-style-type: none"> - The substance of actor group logics used to define their interests, actions and decisions - Discursive alignment of logics between actor groups - Discursive alignment of logics between decision-makers and interest groups

3 Political Contestation Over Grid Access and Use in Ontario, Canada

The purpose of this article is to develop and test the conceptual framework presented above. The following empirical application, a case examining political conflict over electrical grid access and use in Ontario, Canada, is drawn from data collected for a larger 35 country comparative study. While framework application generates valuable insights related to the Ontario case, the main purpose of the exercise is to establish the utility of the Powershifts framework in drawing out insights related to shifting political power.

The electricity political arena was chosen because it is a key battleground where incumbents and commercial RE actors often have interests that diverge from those of CE actors (Burke and Stephens, 2017a). The analytical lens encompasses dynamics occurring over approximately the past 10 years. This time frame was selected because there has been a significant increase in CE diffusion in the past 10 years (REN21, 2017). Two policy events are used to bookend the time frame to focus data collection and return a reasonable amount of information for analysis: the development of the (2009) *Green Energy Act (GEA)*, and the (2017) Long Term Energy Plan (LTEP).

3.1 Case

Energy in Canada is under provincial jurisdiction. In Ontario, this responsibility is administered by the Ministry of Energy. The electricity system was under public ownership until 1998 when the government introduced privatization measures. The various tasks of the former central electricity entity, Ontario Hydro, were unbundled to create Ontario Power Generation (OPG) (responsible for provincially owned generation), the Independent Electricity System Operator (IESO) (the electricity market coordinator), the Ontario Energy Board (OEB) (the system regulator), Hydro One (a transmission and distribution utility), and other entities responsible for debt financing and safety (IESO, 2018a). Many utilities (also known as distributors or network operators), were under municipal ownership and regulated by the former Ontario Hydro until 1998 when the province liberalized markets. There are now 70 provincial utility

corporations. However, many municipalities retain either all, or a majority of, shares of their local utility (EDA, 2018a).

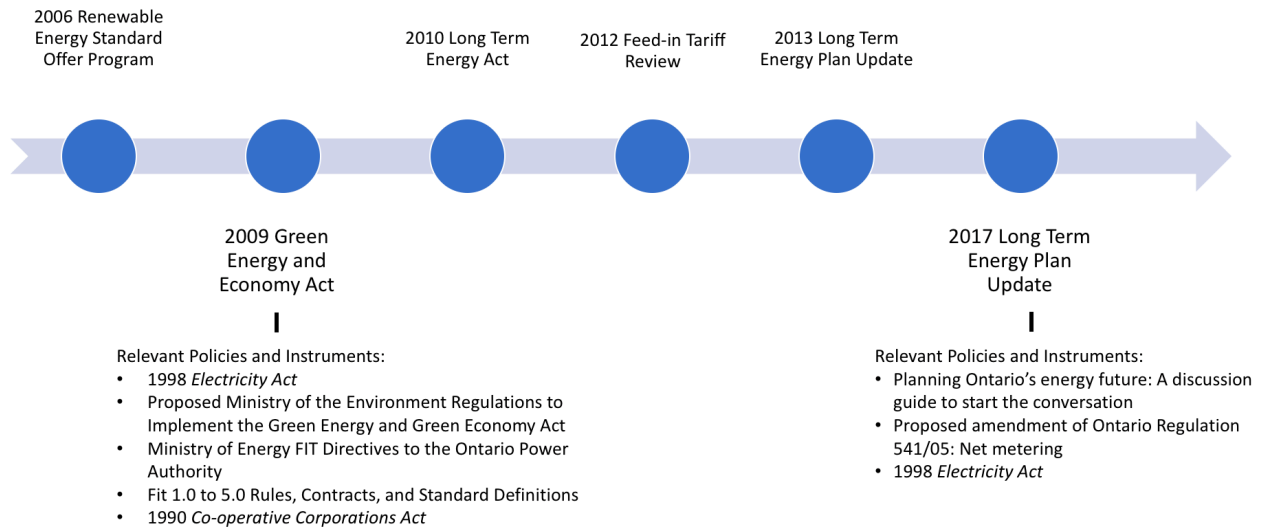
Ontario's electricity supply was largely decarbonized through the phase out of coal plants by 2014. Large scale nuclear and hydro provide the bulk of supply (63.0% and 25.8% respectively). Gas (including biogas), wind, and solar provide the balance (4.4%, 6.4%, 0.3% respectively) (IESO, 2018b). Much of the legacy electricity-associated labour force in Ontario is organized under the Power Workers' Union (PWU). This union represents over 15,000 workers, about 70% of the unionized electricity workforce, at about 50 different utility, generation, and system operation companies (PWU, 2018a). The Society of United Professionals, formerly the Ontario Society of Professional Engineers, represents 8,000 engineers, scientists, supervisors and lawyers. Membership is primarily composed of people working in the energy sector (Society of United Professionals, 2018). Both of these unions are important policy actors.

The 2009 *GEA* focused on feed-in tariffs (FIT) for RE, energy conservation, and the creation of green manufacturing jobs. It built upon the 2006 Renewable Energy Standard Offer Program (RESOP), a FIT program targeted at increasing overall renewables development. The *GEA* was selected as a focus for this study because it represents a turning point in terms of significant CE actor organization and coalition building for participation in policy processes in Ontario. The *Act* was controversial because of its high FIT rates, public opposition to the siting of industrial wind farms, and a "made in Ontario" clause that eventually ran afoul of WTO regulations. *The GEA* has been intensively studied (e.g., Rosenbloom and Meadowcroft, 2014; Stokes, 2013). These analyses are used to supplement findings from this study.

The Long Term Energy Plan (LTEP) is an iterative planning and forecasting document. The first LTEP was completed in 2010 and was updated in 2013. Figure 1 presents a timeline of relevant policy events taking place in Ontario from the 2006 RESOP through the 2009 *GEA*, to the 2017 LTEP. This study focuses on the 2017 LTEP as its second policy event because it was the most recent major policy event of relevance at the time of data collection. Dynamics and developments in earlier policy events were reflected in the data collected (sources outlined below).

Released in October 2017, the latest LTEP incorporates perspectives gathered through formal submissions, an online survey, and in-person stakeholder engagement sessions. Through this process, public and CE interests expressed a desire for government to enable decentralized generation, including through virtual net metering (VNM) (Ministry of Energy, 2018). VNM allows actors to receive credit for energy fed back into the grid from a project that is not located on-site. VNM can also include projects that have a number of investors who share the credit received for energy fed back to the grid (e.g., a community owned windmill located on land owned by someone else).

Figure 1 Timeline of electricity policy events relevant to CE in Ontario to April 2018 (focus on events studied in this test case)



Net metering regulation has existed in Ontario since 2005. At the end of the study period, relevant regulation required that utilities connect net metered projects that are generated from renewable sources to the grid, where the energy generated is consumed primarily on-site (Government of Ontario, 1998). This regulation did not allow VNM.

3.2 Data Collection and Analysis

Data was collected over a 4 month period from January to April 2018. Sources included 17 interviewees and 55 documents. Interviewees included representatives from organizations that were involved in the *GEA* and *LTEP* processes from co-operative renewable organizations (4); utilities (2); renewable, CE and incumbent industry lobbies (6); hydro, gas, nuclear and renewable producers (3); and key political advisors (2). Document evidence was sourced from government records of interventions in the *GEA* and *LTEP* processes, key informants and groups, and internet searches for media and policy documents relevant to these processes. The final document list included official lobbying records; invited formal submissions to policy processes; provincial laws and regulations, ministerial directives to energy agencies, commissioned reports and press releases; media articles and opinion pieces; paid advertising; reports from the Ontario Auditor General; and interest group reports or white papers on electricity policy. In order to provide focused data, interviewees were asked to reflect specifically on the 2009 *GEA* and 2017 *LTEP* processes. Policy dynamics from the intervening time period were reflected in the substance of interview and document data.

The inherently politicized nature of electricity in Ontario, itself a research finding that will be discussed below, meant that limitations were encountered in securing participation of two key actor groups. The provincial bureaucracy declined to participate in interviews but compiled and contributed significant document evidence. Unions also declined to participate. Data on union policy ambitions and institutional logics were gathered through their policy submissions and comments, and their media content. Data on government decision making was gathered through examination of official policy documents, press releases, and official statements.

Interviews were recorded, transcribed, and returned to interviewees for review. Finalized transcripts were coded in NVIVO11. Table 1 presents themes predicted by theory and refined using analytic induction through the coding process (Hammersley, 2004). Results were synthesized into key findings and are discussed below.

4 Answering the Power Queries

4.1 Who won?

An assessment of who “won” the policy contest was determined by comparing the outcomes sought by different actors against actual policy decisions. The Green Energy Act Alliance (GEA Alliance) – a broad coalition of environmental, farmer, labour, Indigenous, and RE groups – were successful in achieving the FIT and domestic content rules in the *GEA* (Stokes, 2013). However, those “wins” have since been reversed. The domestic content rules were deemed to have violated free trade agreements and were rescinded (Winfield and Dolter, 2014). The FIT program ended after 7 years in the face of significant opposition from the incumbent system, and public pushback against wind. The GEA Alliance had lobbied for, but was unsuccessful in securing, resources to allow communities to take advantage of the opportunities provided by the FIT. This had significant consequences for implementation and the current capacity of CE actors – discussed below.

The 2017 LTEP supports ongoing refurbishment of nuclear reactors, consistent with LTEP submissions and lobbying requests from incumbent producers and unions (e.g., OPG, Bruce Power, Canadian Nuclear Association, PWU, Society of United Professionals). Incumbent actors (e.g., Society of United Professionals, Canadian Nuclear Association) recommended maximizing the use of existing nuclear and hydro assets and, in the case of the PWU, omitting renewables completely from future supply options.

CE groups (4 LTEP submissions, 4 CE interviews) requested a long-term net metering strategy to support virtual net metering, and highlighted the need for a dedicated amount of generation to be reserved for CE to allow the sector to develop. RE lobbies also requested a robust net metering strategy. The Electricity Distributors Association (EDA) – the lobby group for utilities – voiced support for distributed generation and requested a guarantee that new infrastructure costs would be accounted for. The final 2017 LTEP committed to three, three-year virtual net metering ‘demonstration’ projects, and recommended further study. This delays further decisions until at least 2020 – an outcome highlighted by 4 CE actors as a tactic to provide token support while delaying meaningful action. There is no robust net metering strategy, no generation set-asides, and no provisions for utility recovery of grid costs. The goals of these actors were therefore not realized.

To summarize, CE aligned groups initially “won” the policy contest for the *GEA*. However, implementation – discussed below – limited the impact of these wins. The 2017 LTEP reinforces the incumbent-dominated status quo and delays decisions on any transition to more distributed or CE electricity.

4.2 Overt Coercion and Manipulation

Examples of overt exercise of power in this case were limited using the methods employed. One example will be discussed with reference to knowledge control below, as these queries overlap.

4.3 Resource Differences

There were, and remain, significant differences in the technical, institutional, and financial capacities between actors in the Ontario electricity policy arena. Six CE and political advisor interviewees made clear that the GEA Alliance was able to secure sufficient resources to advance its policy interests through coalitions and grants (see also Nishimura, 2012). However, at the time the *GEA* was passed, there was very little technical capacity amongst CE actors. This impacted implementation. For example, FIT contracts were awarded on a first come – first served basis. This meant that actors with existing capacity were able to quickly submit applications and secure contracts. Established interests secured 73% of available contracts in initial FIT offerings (MacArthur, 2016). The government began to reserve a proportion of FIT offerings for CE after the 2012 Feed-in Tariff Review when it became clear that these actors did not have the resources to compete with incumbents.

The *GEA* did support the development of a successful commercial renewable sector, and a small but robust CE sector. However, financial and institutional resource imbalances remained visible in the process to develop the 2017 LTEP. For example, the CE lobby, Federation of Community Power Cooperatives (FCPC), remains volunteer-run. RE lobbies are able to employ limited staff (5-10 people) but referred to resource constraints relative to incumbent actors during interviews. Incumbent producers and unions have significant resources and are accordingly well-staffed. For example, the Power Workers Union, Ontario Power Generation, and Canadian Nuclear Association all have the resources to purchase advertising in major provincial and national newspapers to defend their interests (e.g., Pepper Media, 2018) at significant cost (e.g., \$13,000 and \$1,250,000 CAD for a single page ad (Globe and Mail, 2017)). These findings overlap with the capacity of different actors to pursue their interests, generate knowledge and shape policy – all discussed below.

4.4 Lobbying Activities and Strategies

For the *GEA*, lobbying activity was pursued through formal interventions to a provincial Standing Committee by all actor groups. The GEA Alliance actively built a coalition and conducted significant external lobbying through community meetings to mobilize public support. Incumbent lobbying on the *GEA* was done largely by individual interests and through elite-level channels. There was no broad incumbent coalition (Nishimura, 2012; Stokes, 2013).

In the 2017 LTEP, all the sectors interviewed actively lobbied and participated in policy processes through formal submissions. Incumbent lobbies such as the Canadian Nuclear Association, Association of Power Producers of Ontario (APPRO), and Electricity Distributors Association (EDA) were active in external lobbying through media campaigns or public education platforms (e.g., EDA, 2018b; Pepper Media, 2018). Incumbents referenced invitations to participate in high level regulatory and policy discussions, and invitations to present to the Premier, Ministers, and regulatory agency staff. Commercial renewable lobbies such as the Canadian Wind Energy Association (CanWEA) and the Canadian Solar Industry Association (CanSIA) were also invited to participate in policy conversations.

These actors sometimes also employ more grassroots strategies. CanSIA has, for example, organized political letter writing campaigns amongst their members to reinforce specific positions. Unions lobby extensively through formal processes and meetings with politicians. They also conduct significant external lobbying through radio and newspaper ads, educational online content, and newspaper opinion pieces (PWU, 2018b). CE actors have limited resources for lobbying. Four CE interviews discussed pursuing meetings, rather than being invited. They also use external lobbying in the form of newspaper opinion pieces to generate awareness of CE. Linking to the above query into resources, the FCPC relies on member volunteer time to draft submissions to policy processes.

4.5 Institutionalized Political and Market Structures

Ontario is a liberal market economy that operates under a first-past-the-post electoral model. In Canada, this has generated a strongly adversarial form of politics (Cody, 2008). Eight interviewees observed that energy policies are often shaped by partisan politicking rather than by the issues themselves.

Table 2 provides a percentage breakdown of ownership, resource type, and employment for generation, distribution, and transmission (as available) for the most significant entities only. This information identifies which actors are structurally embedded in the electricity regime, and are therefore able to more easily access decision-makers and regulators (discussed below), and shape essential system knowledge (also discussed below). The information presented is relevant for the 2017 LTEP process. Data from 2009 is similar excepting a larger fraction of coal – since replaced by renewables and gas. There is also now a very small fraction of CE (0.01% of generation capacity).

Almost 50% of electricity generation is publicly owned and managed through OPG. The remainder is owned by private shareholders or entities. On the utility side, HydroOne controls 26.5% of distribution and 98% of transmission. Of the 70 utilities, most are wholly or partially owned by municipalities linked to their local service areas (IESO, 2018a).

Table 2 Ownership, resource type and employment numbers for electricity generation capacity, distribution and transmission in Ontario (as available)

Total Installed Capacity – approximately 36,900 MW¹			
Major Entity	Ownership	Market Share	Employees (total energy sector employees – 37,290)²
Ontario Power Generation (OPG) – nuclear, hydro, gas, biogas, wind ³	Crown Corporation wholly owned by Province of Ontario	43.9% (16,210MW)	10,000

¹ IESO. Ontario’s Supply Mix. <http://www.ieso.ca/learn/ontario-supply-mix/ontario-energy-capacity>. Accessed 28-5-2018

² Natural Resources Canada. 2017. Energy Fact Book 2016-2017.

https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/pdf/EnergyFactBook_2016_17_En.pdf

³ OPG. About OPG. www.opg.com/about/Pages/about.aspx. Accessed 10-5-2018.

Bruce Power – nuclear	Site and assets are owned by OPG and leased to a private company owned by TransCanada Corporation (48.5%), OMERS Infrastructure Management (48.5%), Employee Unions (e.g., PWU) (2.6%) and Employee Trusts (e.g., The Society of Energy Professionals) (0.4%) (2016 data)	17.1% (6,300 MW)	4,200
TransCanada ⁴ – natural gas, wind	Private	11.2% (4,138 MW)	-
Greenfield Energy Centre – natural gas ⁵	Private	2.7% (1,005 MW)	-
Goreway Station – natural gas ⁶	Private	1.0% (874 MW)	-
All CE – wind, solar, and biogas ⁷	(co-operatives, municipalities, and First Nations)	0.01% (210 MW)	-

Distribution

		Percentage of customers (of 4.9 million total customers) ⁸	
Hydro One ⁹	49% Public, 51% private	26.5%	5,500
Alectra ¹⁰	Municipal	19.6%	1,600
Toronto Hydro Electric ¹¹	Municipal	15.5%	1,480

Transmission

		Percentage of provincial capacity	
Hydro One	49% Public, 51% private	98%	5,500

4.6 Coalitions

The political value of broad coalitions that can pool resources and advance a common agenda was apparent in the development of the *GEA*. The *GEA* Alliance of environmentalists, Indigenous groups, municipalities, farmers, and manufacturing unions represented an unlikely but effective coalition. However, the Alliance fell apart following the passage of the *GEA*, having achieved their policy goal (Stokes, 2013).

In the 2017 LTEP process, there was little formal alignment between actor groups with an interest in more progressive grid access or use policies. In particular, the CE industry noted that their interests don't necessary align with commercial renewables on net metering policy: "as far as [commercial

⁴TransCanada. Ontario Power Market. <http://gorewaypowerstation.com/> Accessed 10-5-2018.

⁵ Calpine. Greenfield Energy Centre. <http://www.calpine.com/greenfield-energy-centre>. Accessed 10-5-2018.

⁶ Goreway Power Station. About. <http://gorewaypowerstation.com/>. Accessed 10-5-2018

⁷Toronto Renewable Energy Co-op. 2015. "The Power of Community." Toronto.

⁸ IESO. 2016 Annual Report: Reliability in a Changing Sector.

⁹ HydroOne. Quick Facts. www.hydroone.com/about. Accessed 10-5-2018.

¹⁰ Werner, Kevin (January 16, 2017). "Horizon Utilities becomes Alectra creating second largest municipally-owned utility in North America". Hamilton Community News. Metroland Media Group. Retrieved 10-5-2018.

¹¹ Toronto Hydro. 2015 Annual Report.

renewables] are concerned, it doesn't matter who owns it as long as they get the business to sell a solar system" (ON25).

The prominent role of nuclear power in the Ontario energy system (60% of generation) strongly affected cooperation amongst environmental groups. Commercial renewable, CE, and nuclear industry interviewees all noted that Ontario's nuclear capacity means there is little room on the grid for CE expansion. Three interviewees noted that environmental groups have been unwilling to form coalitions that oppose nuclear because of its role in decarbonization, and its entrenched position in the electricity system.

4.7 Knowledge Production and Control

For the *GEA*, the methods used revealed little about knowledge in the policy making process. However, interviews and other studies (e.g., Nishimura, 2012; Stokes, 2013; Winfield and Dolter, 2014) did demonstrate that the *GEA* Alliance was able to shape the content of the *GEA* by exposing senior politicians to knowledge on CE and FITs from European jurisdictions. Three interviewees also noted that the provincially-owned utility refused to connect approved FIT projects citing technical reasons that could not be independently verified because utilities control the relevant data (IESO, 2018a; Spears, 2011). This coercive use of control over the system relates to first dimension dynamics highlighted above.

For the 2017 LTEP, interviewees highlighted the role of information asymmetries. According to interviewees from utilities, CE and commercial renewables, utility control of distribution and grid information provides them with the capacity to shape the information used in policy, and policy implementation. The government depends on utilities to provide information on the ability of the grid to accept new decentralized or intermittent generation. According to one interviewee, "...in order to challenge utilities, you need to have the original information. Utilities do not share that information" (ON13). Moreover, the OEB, IESO, OPG and HydroOne also hold technical information that is required for informed policy making. As one political insider noted, "...if information is wrong or dated or one-sided the [government] won't push back on it because if they push back on it, the agencies will just close off. Then they can't do their job." (ON44).

Some actors produce reports or policy white papers that are used to inform government policy processes. For example, the EDA was invited to prepare reports for the provincial government on integration of distributed generation into the grid (EDA, 2018c, 2017). Other groups also produce uninvited reports that they then use to try to inform the public and policy makers. For example, the Society of United Professionals produced a detailed report arguing that intermittent renewables are only valuable in displacing GHG intensive energy – and therefore have a limited role in the decarbonized Ontario system (Ontario Society of Professional Engineers, 2016). Toronto Renewable Energy Co-op produced a report outlining the benefits of community power which they use to support their lobbying efforts (Toronto Renewable Energy Co-op, 2015). The capacity to produce and distribute high quality reports can therefore help shape policy.

4.8 Elite Access

Actors with elite access have more opportunities to advance their policy preferences. The movement of personnel between incumbent industries (i.e., OPG, HydroOne), political or bureaucratic offices, and the energy agencies (i.e., OEB, IESO) was referenced by five interviewees from industry, political insiders, and CE. The logics that dominate this group of actors, discussed with regard to discourse power queries below, favour the traditional centralized energy system. According to one CE interviewee, “it's an old boys' club who understand power in a certain [centralized] way” (ON3). These relationships make it more difficult to advance perspectives that favour increased decentralization.

Three incumbent, two political insider, and two CE interviewees acknowledged that close relationships between incumbent actors and the provincial government are a legacy of the former public monopoly control of the electricity supply and distribution system (linked to analysis of lobbying and resources). These relationships are layered on top of the access inherent in the structural positions of incumbent generators and utilities, discussed in relation to market structures above. This results in inevitable elite-level relationships that can facilitate insider lobbying.

CE actor access to policy makers was quite high leading up to the passage of the *GEA*. At this time, politicians themselves were advocating for CE interests (e.g., Legislative Assembly of Ontario, 2009). This influence has since decreased. However, four CE interviewees noted that the participatory, grassroots nature of CE does facilitate political connections. As one explained, “because we're doing business in a way that is more grassroots, that's more community involvement, [and] around issues that have political ramifications, I think we get heard a lot more than we would have otherwise” (ON3). However, the much smaller market share of CE limits the degree to which they are consistently consulted on electricity policy or regulatory affairs. While CE interviewees highlighted the access they do have, this access is extremely limited compared with that of incumbent actors.

4.9 Agenda Setting

Details on agenda setting for both the *GEA* and 2017 LTEP were limited in the data collected. However, five interviewees argued that the government commitment to nuclear refurbishment in the 2017 LTEP excludes CE actors as electricity system participants. With this commitment to nuclear, there is no need for additional provincial electricity capacity. The tacit acceptance of nuclear by CE groups in their formal 2017 LTEP submissions, noted in relation to the query on coalitions, is reflected in the 2017 LTEP agenda. This also overlaps with queries related to market dominance and dominant logics.

There are also agenda setting implications to personnel overlap between incumbent energy producers and the boards of the solar and wind lobbies. According to one interviewee, “their boards are populated by some of the legacy energy players in Canada... so their ability to actually do any hard-edged advocacy or to defend the sector has basically not been there” (ON27). The boards of both CanSIA and CanWEA contain personnel who have either current or past positions with incumbent energy companies.

4.10 Media Influence Efforts

All actors engaged, and engage, in public influence strategies of some type, as dictated by their goals and the resources available to them. For CE actors, this includes websites, the Community Power report

(Toronto Renewable Energy Co-op, 2015), outreach through interviews or opinion pieces with local media, and hosting of public events (e.g., invited speakers).

These efforts contrast with those of comparatively better resourced incumbent industry actors and lobbies. The PWU in particular devotes significant resources toward advertising to reinforce the position of nuclear and hydro resources in provincial electricity and employment schemes. This is conducted through radio, online video and newspaper advertisements, as well as opinion pieces published in major media outlets (PWU, 2018b). For example, an editorial published on the PWU website argues that, “The costs of nuclear are well known but the same cannot be said for solar, wind and [distributed energy resources]” (Hyatt, 2018).

4.11 Actor Group Logics and Discursive Alignment

The *GEA* was developed and passed during a period of recession following the 2008 economic crash. The policy was framed in terms of job creation, economic development, and clean energy – all consistent with government priorities at that time. There was little organized opposition from incumbents (Nishimura, 2012; Rosenbloom and Meadowcroft, 2014; Stokes, 2013). Opposition instead materialized after the passage of the *GEA* and shaped the discursive themes that have since emerged – outlined below.

The most prominent logics that emerged in data related to the 2017 LTEP related to economic value, clean energy, and reliability. These logics were dominant across all interviewee perspectives. A discursive theme regarding the inevitability of decentralization also emerged.

Electricity prices were not prominent in conversations about the *GEA* but dominated all LTEP submissions. Ten interviewees from across sectors highlighted that increasing electricity prices, and the politicized nature thereof, were a major determinant of current grid policy decisions. However, arguments about the cost of electricity are strongly contested. Depending on the perspective, rising electricity prices are due to fixed contracts with a) nuclear and gas producers, or b) renewables producers.

Clean, GHG-free energy was used as a policy frame by 11 interviewees from across perspectives, and also in all LTEP submissions. However, as interviewees from across sectors noted, the Ontario system has been largely decarbonized. Arguing for lower emissions no longer has the same political weight as it did during the 2009 *GEA* process prior to the 2014 phase out of coal.

Perspectives on reliability represented a much more dynamic discourse and fell into two groups. The first group of incumbent interests, utilities, and some political insiders (six interviewees), argued that the current system is stable and that distributed generation will be undesirably disruptive. The PWU extended this to explicitly argue against all renewables in their 2017 LTEP submission: “Cease planning for more wind and solar resources. These resources are unreliable...”. The second group of eight CE and political insider interviewees argued that, while distributed renewables introduce challenges, the incumbent system exploits the concepts of stability and reliability as a tool to prevent expansion of decentralized generation. This positioning has developed substantially since the 2009 *GEA* where utilities and other incumbents were largely absent from the policy conversation (Stokes, 2013)

Finally, the inevitability of increased decentralized generation emerged as a theme. This is notable because it was acknowledged not only by CE interviewees, but also in interviews and documents representing utility perspectives (e.g., *The Power to Connect*), municipalities (e.g., Association of Municipalities of Ontario LTEP submission), and in a (2017) market assessment commissioned by the provincial government. According to a high level utility system interviewee “we’re going to have customer-owned decentralized generation everywhere and I fully acknowledge that.” (ON36). Other legacy actors did not explicitly express this view.

5 Political Power Shifts in Ontario

The Powershifts framework seeks to a) reveal if traditional political power structures are shifting as CE transitions expand; b) explain the mechanisms through which this is occurring, and; c) explore the consequences of potential shifts for political systems and outcomes. In the case of grid policies in Ontario, Canada, findings reveal that the political influence of CE actors remains constrained by a stable incumbent electricity production system that aligns well with dominant decision maker logics of economic value, reliability and clean energy. In general, incumbent interests in Ontario are well resourced and politically connected (Rosenbloom and Meadowcroft, 2014; Winfield and Dolter, 2014). Consistent with Johnstone et al.’s (2017) discussion of deep incumbency, the historical structural role of nuclear, hydro and gas interests in system operations means that, in Ontario, these interests are able to perpetuate their own central role. While the CE sector has matured and developed capacity, it appears to exercise less influence over political decision making than it did 10 years ago. At that time, the Minister of Energy was actively advocating for CE through the *GEA*. Comparing CE lobbying goals with the outcomes of the 2017 LTEP suggests that CE interests are not strongly impacting electricity policy decisions at this time.

The second research question was “to explain the mechanisms through which political power structures are shifting”. There are several key mechanisms through which political power has shifted in Ontario, despite a lack of significant regime shifts. CE interests have increased their political influence. However, this is largely through increased lobbying and technical capacity, rather than through increased control of markets. While they are now established niche actors, they are currently unable to realize their political goals or shift the incumbent regime in any meaningful way. Decarbonization of the Ontario electricity system has limited opportunities for the expansion of CE relative to other jurisdictions (e.g., Morris and Jungjohann, 2016; Späth and Rohrer, 2010). The decarbonization pathway taken has increased structural reliance on incumbents, rather than destabilizing the existing regime. Governments in jurisdictions with high CE penetration have exhibited strong discursive support of decentralization and community development (Mignon and Rüdinger, 2016; Morris and Jungjohann, 2016; Späth and Rohrer, 2010). While the provincial government has expressed interest in CE in Ontario – including in the outcomes of this study – this interest has not yet manifested in support beyond the 2009 *GEA*.

Evidence of the increased local economic development, distribution of profits, and strengthening of democracy anticipated by energy democracy scholars remain limited in Ontario. However, the framework revealed three main interconnected dynamics that reflect both domination and empowerment perspectives, and that could together shift political power moving forward. First,

incumbents in Ontario are grounding their opposition to distributed renewables in issues of reliability. This reveals a potential opportunity (Proka et al., 2018). CE and aligned interests can build a case for increased market penetration by proactively addressing issues of reliability using evidence from other jurisdictions that successfully incorporate a larger fraction of distributed generation on the grid (e.g., Koirala et al., 2016). Conversely, until electricity storage technologies and infrastructure reforms advance to a point where the reliability argument is no longer persuasive, this discursive strategy will likely remain effective for centralized incumbents.

Second, nuclear power dominates the Ontario energy supply, leaving little room for CE generation. Nuclear is noted as a significant barrier to CE diffusion around the world (Geels, 2014; Kuzemko et al., 2016). In Ontario, the jobs, market share, and entrenched political power associated with nuclear make it unlikely that direct challenges will succeed. There is flexibility in the 2017 LTEP to cancel nuclear refurbishment plans if appropriate. However, results reveal that there is little will amongst the interests examined in this study to develop the type of broad coalitions – built upon collective capacities and common discourses – that would be needed to destabilize the Ontario nuclear industry.

This leads directly to the third dynamic. Examining the capacities and discourses of different actors through the framework reveals the potential to develop a working alternative model under the current regime. Interest alignments between CE, utilities and municipalities have been explored elsewhere (e.g., Becker and Kunze, 2014; Berlo et al., 2016; Hess, 2014). However, they remain largely unexploited in Ontario. Even absent enabling provincial legislation, utilities and municipalities have sufficient political and institutional capacity to effectively test the feasibility of an affordable, reliable and clean alternative energy system. These lower jurisdictional levels have not historically been targeted by energy system lobbying. They are therefore not affected by the same level of regulatory capture and elite-level incumbent relationships that were visible at the provincial level (Rutherford and Coutard, 2014). By taking action within the current system and building upon logics of community and local empowerment, coalitions of this type can subvert many of the arguments currently being used to justify maintenance of the current system.

The third research question sought to determine what the consequences of shifting political dynamics may be for energy policy systems and outcomes. The locked-in power dynamics in Ontario make significant regime shifts appear unlikely in the near term. However, combining insights from the shifting political mechanisms discussed above, it is quite possible that multilevel niche-regime-landscape pressures resulting from increased technological progress on storage and rising capacity needs due to electrification of heat and transport will exert pressure on the regime and make CE more technically and economically feasible. If strong coalitions of CE, municipal and utility groups are able to develop the capacity to provide reliable and cost competitive electricity, it's likely that they will be able to stake a legitimate claim in policy discussions related to energy issues (Burke and Stephens, 2017a). Since energy issues are increasingly intertwined with climate, transportation and heat policies (Meadowcroft, 2011), it is quite possible that these coalitions will also find their voices in related policy venues. Finally, if coalitions of actors favouring decentralized ownership articulate policy preferences that are not driven mainly by profit maximization, as predicted by work on energy democracy (e.g., Burke and Stephens, 2017b), it is possible that future energy and related policies may also reflect a greater focus on equal

access to energy, justice, and local economic development. This has the potential to lead to larger regime transformation (Geels et al., 2016; Smith and Raven, 2012).

Finally, following the end of data collection in April 2018, a right-leaning government was elected in Ontario. These developments are not included in the analysis presented here. However, the anti-RE stance taken by the Ford government does not change the substantive findings revealed in this test case. Actions taken by the provincial government that further limit the already small amount of CE on the provincial grid (Province of Ontario, 2018), are likely to stimulate a more rapid move toward direct partnerships between CE, municipal, and utility groups, uncoordinated by the province.

6 Reflections on the Analytic Approach

The framework presented is useful for examining whether political power is shifting, the mechanisms through which this is occurring, and what the consequences of this might be. These questions address urgent and high-consequence theoretical gaps that have emerged as energy transitions progress. Power and politics are critical for analysis of energy transitions (e.g., Avelino and Wittmayer, 2016; Geels, 2014; Meadowcroft, 2009). However, scholars and practitioners continue to struggle to adequately account for the many ways that power can manifest in, and impact, ongoing transition processes (Kelsey and Meckling, 2018). In the case examined, the framework revealed that political power remains in a fairly stable configuration, but that the building blocks are in place for a potentially significant system transformation. However, this transformation is far from inevitable and will depend upon niche development, political support, social mobilization, and, potentially, a rescaling of electricity system operation from provincial to lower jurisdictional levels. In addition to contributing to theoretical advancement, this portrait of the Ontario electricity landscape provides all actors in this specific policy arena with a clearer picture of opportunities and barriers for navigating the energy transition.

A power-based analysis is particularly useful for examining dynamics with the potential to fundamentally shift existing political regimes. This is because incumbency tends to be “deep” and shapes both structures and agency (Johnstone et al., 2017). The power lens used here reveals the many ways that such deep power is expressed, constructed and reinforced – and highlights ways these power configurations can change. In doing so, it incorporates useful insights on power, political coalitions, historical institutionalism, institutional logics, and transitions. Despite theoretical breadth, this approach is inherently limited by challenges in obtaining information on political power and influence. However, by triangulating amongst sources and conceptual approaches, it is possible to present a coherent and useful picture of the evolving energy transition policy landscape.

In this paper, a set of power queries were developed in order to present a comprehensive conceptual approach. However, each query represents a potentially rich story on its own. For example, deep attention to discourses (e.g., Bosman et al., 2014), inclusion (e.g., Avelino and Wittmayer, 2016), and coalitions (e.g., Hess, 2014), is both useful and necessary. The framework presented here is valuable as an organizing tool to help ensure that important dynamics are not missed, even when scholars are examining specific power dynamics within transition contexts.

Finally, the power queries of relevance that manifest in other energy transition contexts will depend on case specific characteristics. For example, the current case revealed little about control over agenda setting even though this is something that has emerged as highly relevant in other contexts (e.g., Betsill and Stevis, 2016). For this reason, further investigation using this framework – currently underway through the Powershifts project (www.power-shifts.com) – will utilize a more complete set of power queries. Eventual results from 3 additional case studies, and a survey of policy makers in 35 countries, will produce findings that present a broad picture of the extent to which CE is shifting political power structures with consequences for broad social, political and economic systems.

7 References

- Auld, G., Renckens, S., Cashore, B., 2015. Transnational private governance between the logics of empowerment and control. *Regul. Gov.* 9, 108–124.
- Avelino, F., 2017. Power in Sustainability Transitions: Analysing power and (dis) empowerment in transformative change towards sustainability. *Environ. Policy Gov.*
- Avelino, F., Wittmayer, J.M., 2016. Shifting power relations in sustainability transitions: a multi-actor perspective. *J. Environ. Policy Plan.* 18, 628–649.
- Bauwens, T., Gotchev, B., Holstenkamp, L., 2016. What drives the development of community energy in Europe? The case of wind power cooperatives. *Energy Res. Soc. Sci.* 13, 136–147.
- Becker, S., Kunze, C., 2014. Transcending community energy: collective and politically motivated projects in renewable energy (CPE) across Europe. *People, Place & Policy Online* 8.
- Becker, S., Kunze, C., Vancea, M., 2017. Community energy and social entrepreneurship: Addressing purpose, organisation and embeddedness of renewable energy projects. *J. Clean. Prod.* 147, 25–36. <https://doi.org/10.1016/j.jclepro.2017.01.048>
- Berlo, K., Wagner, O., Heenen, M., 2016. The Incumbents’ Conservation Strategies in the German Energy Regime as an Impediment to Re-Municipalization—An Analysis Guided by the Multi-Level Perspective. *Sustainability* 9, 53.
- Betsill, M., Stevis, D., 2016. The politics and dynamics of energy transitions: lessons from Colorado’s (USA) “New Energy Economy.” *Environ. Plan. C Gov. Policy* 34, 381–396.
- Bloor, M., Wood, F., 2006. *Keywords in qualitative methods: A vocabulary of research concepts.* Sage.
- Bosman, R., Loorbach, D., Frantzeskaki, N., Pistorius, T., 2014. Discursive regime dynamics in the Dutch energy transition. *Environ. Innov. Soc. Transitions* 13, 45–59.
- Burke, M.J., Stephens, J.C., 2017a. Political power and renewable energy futures: A critical review. *Energy Res. Soc. Sci.* <https://doi.org/10.1016/j.erss.2017.10.018>
- Burke, M.J., Stephens, J.C., 2017b. Energy democracy: goals and policy instruments for sociotechnical transitions. *Energy Res. Soc. Sci.* 33, 35–48.
- Christiansen, P.M., Nørgaard, A.S., Rommetvedt, H., Svensson, T., Thesen, G., Öberg, P., 2010. Varieties of democracy: Interest groups and corporatist committees in Scandinavian policy making. *Volunt.*

- Int. J. Volunt. Nonprofit Organ. 21, 22–40.
- Clapp, J., Meckling, J., 2013. Business as a global actor. *Handb. Glob. Clim. Environ. Policy* 286–303.
- Clegg, S.R., Haugaard, M., 2009. *The Sage Handbook of Power*. Sage.
- Cody, H., 2008. Minority Government in Canada: The Stephen Harper Experience. *Am. Rev. Can. Stud.* 38, 27–42.
- Creamer, E., Eadson, W., van Veelen, B., Pinker, A., Tingey, M., Brauholtz-Speight, T., Markantoni, M., Foden, M., Lacey-Barnacle, M., 2018. Community energy: Entanglements of community, state, and private sector. *Geogr. compass* 12.
- EDA, 2018a. LDC Map of Ontario [WWW Document]. URL https://secure2.eda-on.ca/imis15/EDA/Info_Centre/LDC_Map_of_Ontario/EDA/Info_Centre/LDC_Map_of_Ontario.aspx?hkey=28dd97a1-a2f0-4958-869f-c7101710282c (accessed 5.3.18).
- EDA, 2018b. Power of Local Hydro [WWW Document]. URL <https://poweroflocalhydro.ca/> (accessed 5.8.18).
- EDA, 2018c. *The Power to Connect: A Roadmap to a Brighter Ontario*.
- EDA, 2017. *The Power to Connect*.
- Farrell, D.M., 2011. *Electoral systems: A comparative introduction*. Palgrave macmillan.
- Fuchs, D.A., 2007. *Business Power in Global Governance*. Lynne Rienner Boulder, CO.
- Fuenfschilling, L., Binz, C., 2018. Global socio-technical regimes. *Res. Policy* 47, 735–749.
- Fuenfschilling, L., Truffer, B., 2016. The interplay of institutions, actors and technologies in socio-technical systems — An analysis of transformations in the Australian urban water sector. *Technol. Forecast. Soc. Change* 103, 298–312. <https://doi.org/10.1016/j.techfore.2015.11.023>
- Fuenfschilling, L., Truffer, B., 2014. The structuration of socio-technical regimes—Conceptual foundations from institutional theory. *Res. Policy* 43, 772–791.
- Geels, F.W., 2014. Regime resistance against low-carbon transitions: Introducing politics and power into the multi-level perspective. *Theory, Cult. Soc.* 31, 21–40.
- Geels, F.W., Kern, F., Fuchs, G., Hinderer, N., Kungl, G., Mylan, J., Neukirch, M., Wassermann, S., 2016. The enactment of socio-technical transition pathways: A reformulated typology and a comparative multi-level analysis of the German and UK low-carbon electricity transitions (1990–2014). *Res. Policy* 45, 896–913. <https://doi.org/10.1016/j.respol.2016.01.015>
- Globe and Mail, 2017. *Newspaper Media Kit*. Toronto.
- Government of Ontario, 2009. *Green Energy Act*. Canada.
- Government of Ontario, 1998. *Net Metering*. Canada.
- Grin, J., Rotmans, J., Schot, J., 2010. *Transitions to sustainable development: new directions in the study of long term transformative change*. Routledge.

- Haas, T., 2019. Struggles in European Union energy politics: A gramscian perspective on power in energy transitions. *Energy Res. Soc. Sci.* 48, 66–74.
- Hajer, M.A., Wagenaar, H., 2003. *Deliberative policy analysis: understanding governance in the network society*. Cambridge University Press.
- Hammersley, M., 2004. Analytic induction, in: Lewis-Beck, M., Bryman, A., Futing Liao, T. (Eds.), *The SAGE Encyclopedia of Social Science Research Methods*. Sage Publications, Thousand Oaks, California. <https://doi.org/10.4135/9781412950589>
- Haugaard, M., 2012. Rethinking the four dimensions of power: domination and empowerment. *J. Polit. Power* 5, 33–54.
- Hayward, C., Lukes, S., 2008. Nobody to shoot? Power, structure, and agency: A dialogue. *J. Power* 1, 5–20.
- Hess, D.J., 2016. The politics of niche-regime conflicts: Distributed solar energy in the United States. *Environ. Innov. Soc. Transitions* 19, 42–50. <https://doi.org/10.1016/j.eist.2015.09.002>
- Hess, D.J., 2014. Sustainability transitions: A political coalition perspective. *Res. Policy* 43, 278–283. <https://doi.org/10.1016/j.respol.2013.10.008>
- Hoffman, J., 2013. Theorizing power in transition studies: the role of creativity and novel practices in structural change. *Policy Sci.* 46, 257–275.
- Huybrechts, B., Haugh, H., 2017. The roles of networks in institutionalizing new hybrid organizational forms: insights from the European Renewable Energy Cooperative Network. *Organ. Stud.* 0170840617717097.
- Hyatt, M., 2018. *Canada's Nuclear Technology Delivers Clean Energy and More*. Toronto.
- IESO, 2018a. Ontario's Power System [WWW Document]. URL <http://www.ieso.ca/en/learn/ontario-power-system/overview-of-sector-roles> (accessed 5.3.18).
- IESO, 2018b. Ontario's Supply Mix [WWW Document]. URL <http://www.ieso.ca/en/learn/ontario-supply-mix/ontario-energy-capacity> (accessed 5.3.18).
- International Energy Agency, 2015. *World Energy Outlook* [WWW Document]. URL <http://www.worldenergyoutlook.org/weo2015/>
- Johnstone, P., Newell, P., 2017. Sustainability transitions and the state. *Environ. Innov. Soc. Transitions* online. <https://doi.org/10.1016/j.eist.2017.10.006>
- Johnstone, P., Stirling, A., Sovacool, B., 2017. Policy mixes for incumbency: Exploring the destructive recreation of renewable energy, shale gas 'fracking,' and nuclear power in the United Kingdom. *Energy Res. Soc. Sci.* 33, 147–162.
- Kelsey, N., Meckling, J., 2018. Who wins in renewable energy? Evidence from Europe and the United States. *Energy Res. Soc. Sci.* 37, 65–73.
- Kern, F., Smith, A., 2008. Restructuring energy systems for sustainability? Energy transition policy in the Netherlands. *Energy Policy* 36, 4093–4103.

- Koirala, B.P., Koliou, E., Friege, J., Hakvoort, R.A., Herder, P.M., 2016. Energetic communities for community energy: A review of key issues and trends shaping integrated community energy systems. *Renew. Sustain. Energy Rev.* 56, 722–744.
- Kuzemko, C., Lockwood, M., Mitchell, C., Hoggett, R., 2016. Governing for sustainable energy system change: Politics, contexts and contingency. *Energy Res. Soc. Sci.* 12, 96–105.
- Legislative Assembly of Ontario, 2009. Official Report of Debates - April 8th. Toronto.
- Lockwood, M., Kuzemko, C., Mitchell, C., Hoggett, R., 2016. Historical institutionalism and the politics of sustainable energy transitions: A research agenda. *Environ. Plan. C Polit. Sp.* 35, 312–333. <https://doi.org/10.1177/0263774X16660561>
- Lukes, S., 2005. *Power: A Radical View*. Hampsh. New York, Palgrave Macmillan.
- MacArthur, J.L., 2016. *Empowering Electricity: Co-operatives, Sustainability, and Power Sector Reform in Canada*. UBC Press.
- Mann, M., 2012. *The sources of social power: Volume 3, global empires and revolution, 1890-1945*. Cambridge University Press.
- Markard, J., Suter, M., Ingold, K., 2016. Socio-technical transitions and policy change – Advocacy coalitions in Swiss energy policy. *Environ. Innov. Soc. Transitions* 18, 215–237. <https://doi.org/10.1016/j.eist.2015.05.003>
- Meadowcroft, J., 2011. Engaging with the politics of sustainability transitions. *Environ. Innov. Soc. Transitions* 1, 70–75. <https://doi.org/10.1016/j.eist.2011.02.003>
- Meadowcroft, J., 2009. What about the politics? Sustainable development, transition management, and long term energy transitions. *Policy Sci.* 42, 323–340.
- Mignon, I., Rüdinger, A., 2016. The impact of systemic factors on the deployment of cooperative projects within renewable electricity production – An international comparison. *Renew. Sustain. Energy Rev.* 65, 478–488. <https://doi.org/10.1016/j.rser.2016.07.026>
- Ministry of Energy, 2018. 2017 Long-Term Energy Plan Public Engagement Sessions [WWW Document]. URL <https://www.ontario.ca/page/2017-long-term-energy-plan-public-engagement-sessions> (accessed 5.3.18).
- Ministry of Energy, 2017. Ontario’s Long Term Energy Plan. Canada.
- Moe, E., 2010. Energy, industry and politics: Energy, vested interests, and long-term economic growth and development. *Energy* 35, 1730–1740.
- Morris, C., Jungjohann, A., 2016. *Energy democracy*. Springer.
- Nevens, F., Frantzeskaki, N., Gorissen, L., Loorbach, D., 2013. Urban Transition Labs: co-creating transformative action for sustainable cities. *J. Clean. Prod.* 50, 111–122.
- Nishimura, K., 2012. Grassroots action for renewable energy: how did Ontario succeed in the implementation of a feed-in tariff system? *Energy. Sustain. Soc.* 2, 6.

- Ontario Society of Professional Engineers, 2016. Ontario's Energy Dilemma: Reducing Emissions at an Affordable Cost.
- Patterson, J., Schulz, K., Vervoort, J., van der Hel, S., Widerberg, O., Adler, C., Hurlbert, M., Anderton, K., Sethi, M., Barau, A., 2016. Exploring the governance and politics of transformations towards sustainability. *Environ. Innov. Soc. Transitions* in press.
- Pepper Media, 2018. Electric Mobility. *Tor. Star* 1–8.
- Proka, A., Hisschemöller, M., Loorbach, D., 2018. Transition without Conflict? Renewable Energy Initiatives in the Dutch Energy Transition. *Sustainability* 10.
- Province of Ontario, 2018. Proposed amendment of Ontario Regulation 541/05.
- PWU, 2018a. About PWU [WWW Document]. URL <https://www.pwu.ca/about-pwu/> (accessed 5.3.18).
- PWU, 2018b. PWU Connects [WWW Document]. URL <https://www.pwu.ca/pwu-connects/> (accessed 5.4.18).
- Raven, R., Kern, F., Smith, A., Jacobsson, S., Verhees, B., 2016. The politics of innovation spaces for low-carbon energy: Introduction to the special issue. *Environ. Innov. Soc. Transitions* 18, 101–110.
- REN21, 2017. Renewables 2016: Global Status Report.
- Reuswig, F., Komendantova, N., Battaglini, A., 2018. New Governance Challenges and Conflicts of the Energy Transition: Renewable Electricity Generation and Transmission as Contested Socio-technical Options, in: *The Geopolitics of Renewables*. Springer, pp. 231–256.
- Roberts, C., Geels, F.W., Lockwood, M., Newell, P., Schmitz, H., Turnheim, B., Jordan, A., 2018. The politics of accelerating low-carbon transitions: towards a new research agenda. *Energy Res. Soc. Sci.* 44, 304–311.
- Rosenbloom, D., Berton, H., Meadowcroft, J., 2016. Framing the sun: A discursive approach to understanding multi-dimensional interactions within socio-technical transitions through the case of solar electricity in Ontario, Canada. *Res. Policy* 45, 1275–1290.
- Rosenbloom, D., Meadowcroft, J., 2014. The journey towards decarbonization: Exploring socio-technical transitions in the electricity sector in the province of Ontario (1885–2013) and potential low-carbon pathways. *Energy Policy* 65, 670–679.
- Royal Dutch Shell, 2013. *New Lens Scenarios*. The Hague.
- Rutherford, J., Coutard, O., 2014. Urban energy transitions: places, processes and politics of socio-technical change. *Urban Stud.* 51, 1353–1377.
- Sabatier, P.A., Weible, C.M., 2016. The advocacy coalition framework: Innovations and clarifications. Sabatier, PA (ed.). *Theor. Policy Process*. Second Ed. 189-217.
- Shove, E., Walker, G., 2007. CAUTION! Transitions ahead: politics, practice, and sustainable transition management. *Environ. Plan. A* 39, 763–770.
- Smink, M., Hekkert, M., Negro, S., 2015. Keeping sustainable innovation on a leash? Exploring

- incumbents' institutional strategies. *Bus. Strateg. Environ.* 24, 86–101.
- Smith, A., Raven, R., 2012. What is protective space? Reconsidering niches in transitions to sustainability. *Res. Policy* 41, 1025–1036.
- Society of United Professionals, 2018. About [WWW Document]. URL <https://www.thesociety.ca/get-informed/about/> (accessed 5.3.18).
- Soutar, I., Mitchell, C., 2018. Towards pragmatic narratives of societal engagement in the UK energy system. *Energy Res. Soc. Sci.* 35, 132–139. <https://doi.org/10.1016/j.erss.2017.10.041>
- Spash, C.L., Lo, A.Y., 2012. Australia's carbon tax: a sheep in wolf's clothing?
- Späth, P., Rohracher, H., 2010. 'Energy regions': The transformative power of regional discourses on socio-technical futures. *Res. Policy* 39, 449–458.
- Spears, J., 2011. Ontario solar projects put on hold. *Tor. Star*.
- Stirling, A., 2014. Transforming power: Social science and the politics of energy choices. *Energy Res. Soc. Sci.* 1, 83–95.
- Stokes, L.C., 2013. The politics of renewable energy policies: The case of feed-in tariffs in Ontario, Canada. *Energy Policy* 56, 490–500.
- Thornton, P.H., Ocasio, W., 2008. Institutional logics. *Sage Handb. Organ. Institutionalism* 840, 99–128.
- Toronto Renewable Energy Co-op, 2015. *The Power of Community*. Toronto.
- Tyfield, D., 2014. Putting the power in 'socio-technical regimes'—E-mobility transition in China as political process. *Mobilities* 9, 585–603.
- Unruh, G.C., 2000. Understanding carbon lock-in. *Energy Policy* 28, 817–830. [https://doi.org/10.1016/S0301-4215\(00\)00070-7](https://doi.org/10.1016/S0301-4215(00)00070-7)
- Wagner, A., 2018. The Role of Media Influence in Shaping Public Energy Dialogues, in: Davidson, D.J., Gross, M. (Eds.), *The Oxford Handbook of Energy and Society*. Oxford University Press, New York, pp. 381–403.
- Wesseling, J.H., Farla, J.C.M., Sperling, D., Hekkert, M.P., 2014. Car manufacturers' changing political strategies on the ZEV mandate. *Transp. Res. Part D Transp. Environ.* 33, 196–209. <https://doi.org/10.1016/j.trd.2014.06.006>
- Winfield, M., Dolter, B., 2014. Energy, economic and environmental discourses and their policy impact: The case of Ontario's Green Energy and Green Economy Act. *Energy Policy* 68, 423–435.