NEW ENGLAND CLEAN ENERGY CONNECT:
Electric Power Transmission Conflict in Maine

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ABSTRACT

This study examines conflicts surrounding a proposed 145-mile corridor and transmission line through economically stressed west central Maine to transport Canadian hydro-produced power to markets on the New England grid. Massachusetts represents nearly half that market and in 2016 the state enacted legislation to reduce its dependency on fossil-fuel produced electrical energy. Central Maine Power Company, a Spanish-owned firm, was awarded a contract to build the line. The proposed project, New England Clean Energy Connect, is facing substantial opposition from the fossil fuel industry, selected environmental groups, second homeowners and some recreational interests. Proponents are government leaders who seek expanded property tax sources, labor unions because of construction jobs, electric rate payers, potential broadband users, and those that think the project will reduce fossil fuel use and slow climate change. Maine Governor Janet Mills expressed support and much public debate surrounded the proposal. The project has obtained all the required state and federal permits. Opposition calling for a statewide referendum on the issue submitted the required number of petition signatures to force a vote. The Maine Supreme Court declared the referendum question unconstitutional, thus, preventing it from appearing on a 2020 ballot. A second referendum drive is underway for the November 2021 ballot. Project opponents filed a lawsuit to overturn a permit associated with the new right-of way section of the line. A federal injunction is currently prohibiting construction in that new section and the case is in court. In February 2021 construction on the corridor began. Much remains unresolved, and it is likely the courts will continue to play a major role in the battle. This study illustrates the struggle to balance local and regional needs in a New England context and illuminates the broader global dynamics of a changing energy geography.

Keywords: energy policy, conflict resolution, globalization, environmental justice.

"Despite, the sometimes enormous, costs and long delays caused by strong opposition to transmission line siting and construction, both utilities and governmental regulators seem baffled at why the public objects so vehemently. At the same time, opponents are equally baffled at why their objections go unheeded." (Furby et al.1988,19).

Introduction

In Maine, the proposal to build a large transmission line to bring Hydro-Québec power to Massachusetts has raised a major public debate. In this article, I frame this dispute as in many ways representative of infrastructure conflicts that will be increasingly common as society transitions to non-fossil fuel energy. As authors in the growing field of energy geography have argued (Jones 2016; Solomon and Calvert 2017; Bridge el al 2018; Baka and Vaishnava 2020) this energy transition will require vast new infrastructure that will inevitably raise questions and conflicts of spatial justice, environmental justice, rural-vs-urban equity, expert-vs-public, and cultural conflicts. Huber and McCarthy (2017) highlight that this transformation involves repurposing much of the earth's surface to accommodate energy production and transmission, solar farms, wind towers, hydropower reservoirs and distribution lines. Landscape values play a central role in how society manages this change. This study examines the values and perspectives at the heart of the transmission corridor controversy in Maine.

The need to meet growing global demand for electrical energy has produced many kinds of conflicts, in a range of interconnecting locations. A complex system of generation, distribution and consumption encompasses both urban and rural regions. The now largely market-driven (in New England at least—see Vogel this issue) process of getting electricity from generation sources to end users has been accompanied by environmental protection concerns and public policy debates about types of fuels (Tomain 2017; Bezdek et al 2019), transmission modes (Bakke 2016), energy use and related impacts (Lambert 2015), and especially climate change (Hoffman 2015). The scale of discussions and decision-making ranges from worldwide (Romm 2016) to regional (Thiebault and Young 2017; U.S. Department of Agriculture 2018), to local communities (Ford et al 2013; Turkel 2020a) to individual households (Irland 2019). Each region, community, business enterprise, and person should consider benefits and costs of different options. Every choice produces winners and losers. Sometimes it is you and your neighbors and in other situations people who live far away are most impacted.

As conflicts arise, differing sides must choose how to frame and leverage their interests and arguments. Leaders of large urban centers argue that power supply is critical to economic growth and quality of life while those living in remote places may feel that they suffer from negative effects of generating and transporting power (Furby et al 1988; Hongoltz-Hetling 2020a; Hongoltz-Hetling 2020b). Balancing power supply, energy use and conservation, and environmental impacts shape energy policy arguments. The struggle to reduce climate change causing fossil fuel consumption by developing and maintaining renewable energy sources results in urban places seeking cleaner supplies from distance realms. Also, trends to transition away from fossil fuels toward renewables tend to stabilize or deduce energy costs over time compared to rising or fluctuating costs of fossil fuels (Commission for Environmental Cooperation 2008,17). Tomain (2017) notes that energy advocates and environmental scientists talk past each other making resolutions challenging, if not impossible. Hoffman (2015) argues that cultural conditioning has a major influence on how people process knowledge about climate change. This explains much about why it is difficult to change minds by exchanging information.

Infrastructure development often generates complex arguments about social and environmental justice. The nature of these debates has been examined by a variety of scholars and the following observations summarize several of their major findings.

David Harvey (1996), a leading voice regarding the question of spatial justice, is convinced that environmental justice is driven, in part, by issues of spatial equality. Schlosberg (2007) frames environmental justice to include a just distribution of benefits (resources, opportunities, and freedoms) and burdens (costs, risks, and unfreedoms) within society. Historically much work in the field of environmental justice has focused on racial, income and social inequities (Rhodes 2003). Redd, Jacobs, and Halliday (2020) argue that environmental justice is a constantly shifting framework for addressing questions about the interface of society and environment.

Conflicts between urban and rural places concerning waste disposal, power generation and transmission, and pipeline construction are common flashpoints. Not-in-my-back-yard (NIMBY-ism) is a dimension of these discussions and negotiations surrounding features that do not make popular neighbors (see Kroot, this issue). Rural-vs-urban stress is, in part, a function of the need for cities to rely on rural space. Rural residents often view these metropolitan-driven wants as an invasion of their places. Proposed projects are often promoted, in part, in terms of the amount of money that is to be injected into the impacted area through direct up-front investment (such as construction jobs and purchase of local materials) and incentives (including investment of money for broadband expansion and school programs (Goldberg and Keyser 2013; Wallace and Colgan 2017). These monetary promises do not necessarily move proposed endeavors forward (Simora, Frondel and Vance 2018).

Traditional strategies of local protest and legal action to stop projects are compromised by the rise of an expert class (people with scientific and technical training) and public realization that members of that group manage and render judgements on the need for individual projects and related permitting (Cohen and Ottinger 2011). They suggest that society has reached a point where only science and technology can produce solutions to problems caused by science and technology. How to influence decision makers and who should influence them is contested by some and may be changing the social norm. Environmental justice is a goal within this context; however, justice is a subjective concept.

Power transmissions lines are a frequent cause of clashes (Furby et al 1988; Cain and Nelson 2013; Lienert et al 2015; McCauley and Stephens 2017). Resolving differences in these disputes involves balancing many perspectives in project permitting. Furby et al 1988,38) concluded that, "the prospect of negative health effects carries more weight in regulatory and legal battles than such concerns as aesthetics and property values ". Adversaries bring many arguments to the table, however, not all adversaries and arguments carry the same weight.

Building from this literature, my study of the proposed construction of a northern New England high-voltage transmission line considers the way that regulatory processes work and infrastructural geographies have contributed to an impassionate debate in which both sides make broad claims about sustainability, democratic participation, and equity.

High-energy demand Massachusetts moved to replace fossil fuel power with renewable forms of generation (see Autery and Silverstein, this issue). Central Maine Power Company (CMP), part of Connecticut-based Avangrid, which is owned by the Spanish global energy firm Iberdrola, won a bid to construct a 1,200 megawatts transmission line through western Maine to transport Canadian hydropower to the southern New England market (Central Maine Power Company 2017). An awareness of the project's timeline clarifies the ensuing struggle that CMP faced before constructing the line (Table 1).

I here provide a brief introduction to the proposed transmission line and its regulatory process and range of proponents, opponents, and narrative framing. The Maine route was selected following the rejection of the competing Northern Pass high-voltage line through New Hampshire (see Kroot, this issue, and Nolan and Rinaldi, this issue). The proposed corridor and transmission line, New England Clean Energy Connect (NECEC), generated much debate while working its way through the regulatory permitting process. Proponents and opponents mustered their facts and talking points. Both sides have a support base made up of a broad representation from various business sectors, levels of government, environmental organizations and both major political parties. CMP submitted its proposal to the various state and federal permitting agencies that needed to approve the project, and each has granted a permit to allow construction. In addition, bills to delay or block the project have been defeated in the Maine Legislature and an effort to hold a statewide citizen-initiated referendum was struck down by the Maine Supreme Court. As I write this in spring 2021, a second NECEC opposition attempt is underway to hold a statewide citizen-initiated referendum on the project. Corridor opponents filed an appeal of an approved permit and it is currently under review by a Boston Federal Appellate Court.

Agency hearings were well attended, and public participation was vocal as each side took turns in making its case. Volumes of written comments poured into the agencies. Much information for and against NECEC was disseminated in the press. Position literature and advertisements appeared in newspapers and mailboxes, on television, internet, radio, and roadside posters. Project construction has begun in areas not under appeal. This struggle plays out as CMP strives to meets its contractual obligation of having NECEC operational by May of 2023. The opposition continues to try to stop the project.

My examination of the proposed construction of a Maine power transmission line is intended to contribute to better insight into the kinds of opposing views and how they are leveraged in siting large infrastructure elements in rural places. First, I structure this study in the context of other contested transmission lines through rural America. Next, research methods are discussed. A project overview describes NECEC's origin and character, and some of the concerns it raises. Following the overview, formation of proponent and opposition groups is examined. I then trace the struggle to determine the outcome of the proposed enterprise. To wrap up the study I provide a summary of the project conflict and its implications for future infrastructure investments, especially power lines through rural areas.

Date	Event
Fall 2017	CMP installs new metering system and overbills many ratepayers (unresolved)
*2/15/18-2/28/18	Mass. Dept. of Energy Resources accepts CMP's NECEC bid
5/4/2018	Chairs of Maine Leg. Committees on Env. /Natural Res. and Energy/ Utilities oppose NECEC
5/22/2018	Maine Senate President and some Leg. leaders declare support for NECEC
10/18/2018	CMP amends NECEC plan to bury transmission line at Kennebec Gorge
*02/19/19	Gov. Mills and other parties sign NECEC agreement to move project along
3/25/2019	Farmington native, Gov. Mills makes speech in support of NECEC at the town's annual meeting and residents vote 262-102 to oppose NECEC
*04/11/19	Maine PUC approves NECEC permit
6/8/2019	Bill to require new greenhouse gas study of NECEC fails in Maine Legislature
6/11/2019	Bills to give towns power to block NECEC and to delay permitting pass Legislature
6/12/2019	Gov. Mills vetoes 6/11/19 bills and Legislature sustains vetoes
6/19/2019	Study bill passes Maine Legislature for state to acquire ownership of power companies
09/11/19	LUPC deadlocks on NECEC permit over impact on Beattie Pond
9/18/2019	CMP acquires alternate route around Beattie Pond
*01/08/20	LUPC approves NECEC permit
2/3/2020	Stop the Corridor presents referendum signatures to overturn PUC approval of April 11th, 2019
5/9/2020	Maine Supreme Court allows referendum to go forward
*05/12/20	DEP approves NECEC permit
5/14/2020	CMP Avangrid files suit in court to stop referendum on constitutional grounds
7/10/2020	Governor Mills announces $170 million agreement for Hydro-Quebec to provide discount power to Maine.
*8/13/20	Maine Supreme Court declares referendum question unconstitutional, thus preventing its appearance on the November ballot.
10/27/2020	Opposition groups file lawsuit against U.S. Army Corps of Engineers for not preparing environmental impact statement on NECEC.
*11/4/20	U.S. Army Corps of Engineers grants NECEC an approval.
*1/15/2021	U.S. Dept. of Energy grants NECEC permit.
1/15/2021	U.S. Court of Appeals (First Circuit) imposes temeraroy injunction regarding opposition lawsuit filed on October 27th. 2020, thus preventing construction from starting on the new section of corridor (Canadian border to Moxie Gore).
*2/19/2021	NECEC Construction underway on established portion of corridor, first tower raised.
2/22/2021	NECEC opponents present signatures to Maine Secretary of State calling for second referendum.
Future	Possible referendum lawsuits, court decisions and additional municipal permits.

*Milestone

Table 1. NECEC Timeline.

Background: Some Contested Power Lines in the United States

To understand NECEC and the controversy surrounding its construction a review of several contested U.S. high-voltage transmission lines is helpful. The search for reasonable accommodations to meet the wishes of both opponents and proponents of such projects is often elusive. Actions in these confrontations include official testimony at hearings, rallies,public votes, agency permitting, appeals, lawsuits, gunfire, vandalism, and court decisions.

The following examples highlight this pattern. In the early 1970s a proposed power line from North Dakota coal-fired generators into Minnesota generated an intense backlash by landowners and residents along the prospective route who vigorously opposed its construction (Wellstone and Casper 2003; Anderson, S. 2020). However, the investors obtained all the necessary regulatory approvals to build the line. During its completion there were widespread protests along the corridor, sometimes involving vandalism and shootings. The line is now in place and delivering power to Minnesota consumers.

A 1991 proposal for a transmission line through rural Monroe County in West Virginia, the site of scenic New River Gorge, resulted in a broad grassroot uprising against the proposed route (Towers 2000). In this situation local citizens were able to organize opposition at a community scale to protect New River and its environment. A critical point in the contest occurred when the U.S. Forest Service and the Parks Service were able to convince American Electric Power to reroute the line further south in Virginia, thus, avoiding the contested region altogether. This solution represents a successful strategy in driving an offensive infrastructure component to another location. The completed line now delivers electrical energy from the Wyoming County Station in West Virginia to the Virginia marketplace.

Plans for the Great Northern Transmission Line were initiated in 2008 and permitting began in 2012. The line to deliver Manitoba hydro-electric power to Minnesota was energized on 1 June 2020 (Johnson 2020). This twelve-year period from inception to completion reflects the long timelines needed to bring large infrastructure projects to fruition. The transmission corridor was promoted to blend Canadian hydropower and Minnesota wind generation to ensure stable year-round energy for the Duluth region (Shaffer 2016). The Great Northern project had limited opposition along its length. This included lobbying for rerouting away from environmentally or culturally sensitive areas. The primary investors, Manitoba-Hydro and Minnesota Power, appear to have taken a successful proactive public relations approach in laying the groundwork for their project. Wade Pavleck, Chairman of the Koochiching County (Minnesota) Board of Supervisors expressed his pleasure to representatives of the transmission corridor at a board meeting in 2018 (Jackson 2018):

> "I just want to compliment you. The reason this worked and went smoothly in Koochiching County, and I think on the entire route, is you had people come in and meet with homeowners who are going to be affected and make changes to your original proposal...and avoid those homes or help people out. It made a big difference."

The international component of this project lends it a degree of similarity to the Québec-to-New England proposals, with electric energy surplus Canada providing power to large markets in the United States.

The Northern Pass proposal to deliver Québec hydropower to the Massachusetts market resulted in widespread opposition. Opponents were alienated about the environmental and economic risks to the recreational industry. Of particular concern were negative visual impacts on the White Mountains and rural landscapes to their north. Historically significant viewsheds were highlighted as worthy of protection. A critical point in the resulting turmoil was the decision by the New Hampshire Site Evaluating Committee, a regulatory agency, to reject the Northern Pass application. On appeal, the New Hampshire Supreme Court upheld that decision, killing the New Hampshire endeavor. The Québec to southern New England electric power marketers turned to Maine for a solution (Kroot, this issue; Nolan and Rinaldi, this issue).

These examples suggest that the outcome of large powerline projects is shrouded in uncertainty. Some, such as the North Dakota/Minnesota line, faced violent opposition yet were completed. The West Virginia and Manitoba-Minnesota proposals underwent long but largely peaceful debates. The role of regulatory agencies and the courts were of paramount importance. Environmental justice is illusive but appears to have been largely achieved in West Virginia and New Hampshire with the rejection and then relocation of the line through other routing options.

These past case studies highlight the ways that transmission lines, in particular among energy infrastructures, involve conflict between rural and urban and between different rural landscapes. The outcome of projects may depend in part on regulatory processes in each jurisdiction across which transmission lines travel, as well as how project leaders engage with diverse stakeholders and potential opponents. If lines are to be built, conflict resolution seems to entail moving lines from areas valued for scenery or other environmental values to those that are less so (Furby et al 1988; Cain and Nelson 2013). My study contributes to this mix of case studies and hopefully sheds additional light on how power lines are sited.

Research Methods

This study examines the values and perspectives at the heart of the NECEC transmission corridor debate in Maine. To do this, I reviewed the key stakeholders and their positions. Information was gathered from public hearings, debates and informational meetings, an examination of written records, and telephone interviews with municipal officials from impacted communities. During March and April 2019, I conducted open-ended telephone interviews with a municipal official in each of the fifteen incorporated towns and cities that NECEC passes through to determine their early attitudes toward the project. By this time the project had become contentious, and I agreed to keep the interviews confidential because some were reluctant to express their thoughts publicly, thus, I assigned a number to each respondent. These interviews documented perceived benefits and detriments for their communities and

beyond. What did these officials consider as potential project impacts and why did some support it while others opposed? These findings are discussed in a following section on support and opposition. Additionally, between February 2018 and April 2020, I attended fifteen meetings and hearings related to NECEC conducted by the towns of: Anson, Farmington, New Sharon, and Starks; three state regulatory bodies: Maine Public Utilities Commission, Maine Department on Environmental Protection, and Maine Land Use Planning Commission; one county commission: Somerset County Commissioners; and one federal agency: U.S. Army Corps of Engineers.

NECEC, an emotional and contentious issue, produces a wide range of reaction. I place these local officials and their initial thoughts about the line within the context of the larger public engagement surrounding NECEC.

The Project

This section provides an overview of the project, explaining its basic parameters, its siting challenges, and its positive and negative impacts. The next section will dive into details of supporters and opponents and their views.

NECEC is a 145-mile link through western Maine designed to deliver direct current (DC) power from provincially owned Hydro-Québec generation facilities in norther Québec to Lewiston, Maine where it will be converted into alternating current (AC) and injected into the New England power grid. About 80 percent of the power will flow to Massachusetts with most of the balance available to Maine. The nearly $1 billion cost of construction is to be paid for by Massachusetts consumers (Central Maine Power Company 2017; Maine Public Utilities Commission 2019; Dickinson 2020; Clean Energy Matters 2020; Stop the Corridor 2020; see also Vogel, this issue). Two-thirds of the line will be located within an already existing corridor that CMP has owned and utilized for decades with the remainder occupying a new right-of-way through woodlands in Maine's unincorporated townships (Figure 1). Some segments of the existing transmission network south and east of Lewiston will also undergo major upgrades to accommodate an increased power load. An additional 75 feet of clearing along the existing CMP corridor is required to provide space for the NECEC project. A newly acquired right-of-way through the forest linking Québec to the existing corridor will entail a 54-foot-wide cleared strip its entire length. The narrower cleared width along the new right-of-way is a permit condition imposed on NECEC to limit vegetation removal in this new section. Tower height is approximately 95 feet, taller than much of the forest vegetation. The new portion of the corridor is through a working forest and attempts to avoid protected natural areas and recreational resources. The established corridor section passes through a mix of woods, farmland and built environments.

Siting the Corridor

CMP faced a challenge in selecting a NECEC path through Maine. As suggested by earlier high-voltage power line conflicts, opposition to transmission lines is often resolved by locating

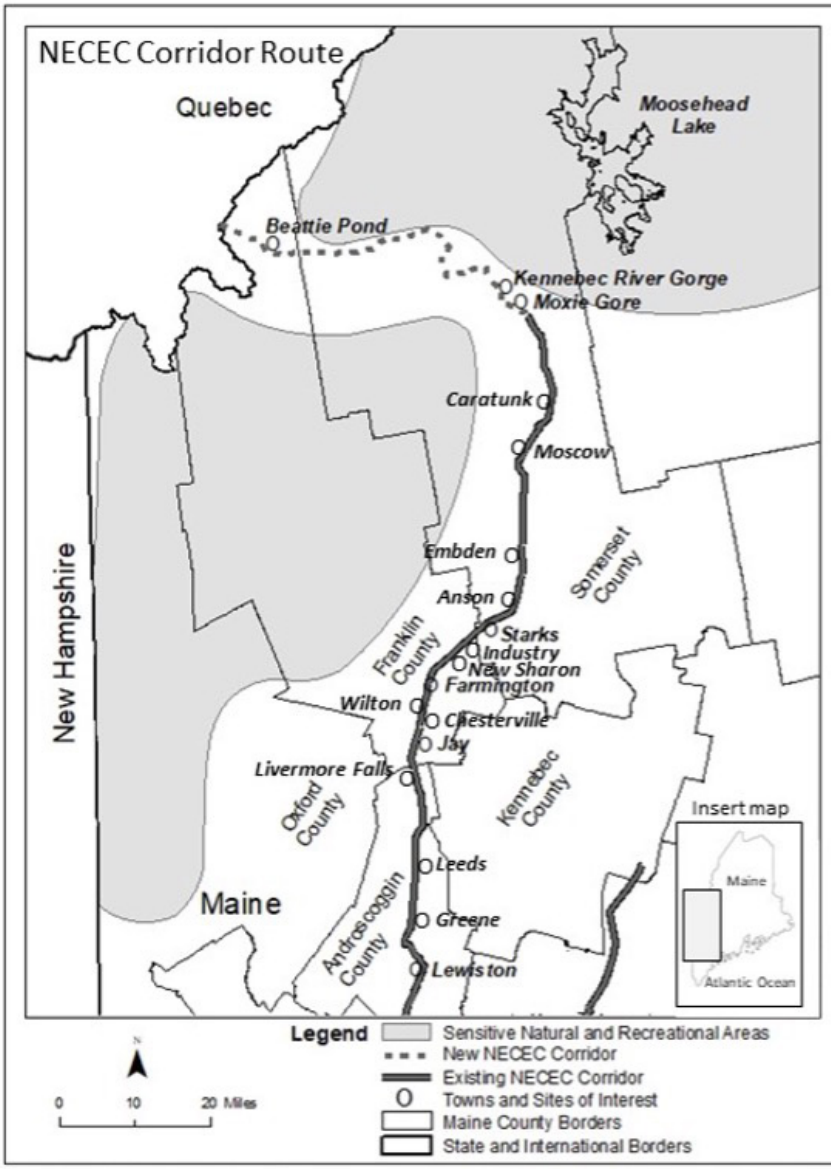

Figure 1. NECEC Corridor Route. (Prepared by Univ. of Maine at Farmington Geography Laboratory.)

these facilities through less valued landscapes.

Western Maine is dominated by vast forests, mountains, and water features. The region's overall economy is under stress with poverty levels above the state average (Maine Center for Workforce Research and Development 2016). Companies wishing to site corridors in rural areas often negotiate by promising economic development opportunities in depressed rural areas, effectively promising an infusion of urban investment and opportunity (Goldberg and Keyser 2013; Wallace and Colgan 2017). The area supports wood product industries, water extraction and bottling, and recreation enterprises such as skiing, whitewater rafting, hiking, hunting, fishing, and boating. There is still a modest amount of agriculture left from its highwater mark of a century ago. Imbedded in this fabric are small towns and the city of Lewiston (pop.36,225). Farmington (pop, 7,762), a college community and Franklin County seat is the corridor's second largest population cluster (Table 2). The northern half of the route is tied together by a few significant paved highways, light duty public roads, camp roads, thousands of miles of logging roads and a rail line. Much of the region has natural resource protection status. Southern sections of NECEC pass through a more developed landscape.

Municipality (north to south)	Pop. 2019 (est)	NECEC property tax value	Initial position	New position
Caratunk	65	$13,956,484	support	oppose/neutral**
Moscow	505	$41,977,105	support	oppose/neutral *
Embden	950	$20,225,104	support	oppose *
Anson	2,384	$21,951,777	support	oppose/neutral *
Starks	636	$18,999,760	support	oppose/neutral *
Industry	931	$10,693,497	support	oppose/neutral **
New Sharon	1,415	$ 4.868,570	neutral	oppose/neutral *
Farmington	7,762	$22,623,614	support	oppose/neutral *
Wilton	3,960	$2,516,720	support	oppose/neutral *
Chesterville	1,350	$2,192,377	support	oppose/neutral *
Jay	4,623	$22,176,922	support	oppose/neutral *
Livermore Falls	3,157	$24,960,290	support	oppose/neutral *
Leeds	2,314	$26,773,087	support	no change **
Greene	4,339	$20,747,724	neutral	no change **
Lewiston	36,225	$304,787,411	support	no change **
* Town vote ** Board vote				

Table 2. NECEC host municipalities, populations, added corridor tax values, initial position of officials, and town and select board votes regarding the corridor. Source; citypopulation.de/en/usa/maine/adim (last accessed 15 November 2020); Dickinson, T. 2020 Letter to board of assessors. Town of Starks 22 July; Interviews by author; Natural Resource Council of Maine. http://www.nrcm/programs/climate/proposed-cmp-transmission-line-bad-deal-maine/ (last accessed 15 November 2020)

NECEC line routing was planned by CMP to avoid sensitive lands and waters as well as protected areas. This new right-of-way will intersect with an existing CMP transmission corridor in the unincorporated township of Moxie Gore and occupy a portion of that strip of land the remaining distance to the project's converter station in Lewiston. Major concerns related to siting were primarily in the new 53 miles from the Canadian border to the existing

corridor. Visual and environmental impacts needed to be minimized to protect nature and reduce project opposition. Protection of the Appalachian Trail viewshed was of great significance to hikers and recreationalists. Two points of contention unrelated to the trail were at the Kennebec River Gorge, a popular whitewater rafting site, and remote Beattie Pond, a noted fly-fishing destination. CMP agreed to bury the line under the river and relocate the corridor away from the pond viewshed, thus, resolving the issues (McGuire 2018; McGuire 2020). Importantly, these decisions were encouraged or requested by the oversight regulatory agencies. Negotiated solutions have been common in government permitting at every level. Siting issues in the existing corridor are largely confined to impacts of widening the cleared section, tower height, avoiding wetlands, and other environmentally fragile places. This siting challenge involves many of the complexities exhibited in previous examples cited: lowest impact routing, mitigation strategies, and stakeholder posturing are particularly noteworthy.

Impacts of NECEC

The potential impacts of NECEC are numerous and have extensive implications (Table 3). Wallace and Colgan (2017) note many positive contributions in their comprehensive evaluation of the economic impact of the project. Delivery of 1,200 megawatts of renewably sourced energy to the New England grid, 20 percent of which is available to Maine, will likely result in energy cost savings and energy price stability (Peaco, Smith and Bower 2017). New NECEC property will add to town and city taxable valuation and generate additional monies to support local government services. Lewiston will gain 7 million new tax dollars per year after construction and the small town of Starks with a population of 636 will receive about $350 thousand in new taxes (Rice 2018, Starks 2019). Construction jobs will increase during the project building phase. This number could be as high as 1,600 and they pay above local wage scale. A settlement agreement valued at $260 million between various stakeholders and CMP in March 2019 added additional benefits (Mills 2019). These include a relief fund for retail electricity customers and low-income ratepayers, dollars for broadband expansion, heat pump installations, electrical vehicle charging stations, and renewable energy development research. In July 2020, Governor Mills announced an agreement for Hydro-Québec to provide $170 million of discounted power to Maine (Andrews and Burns 2020). Projected CO2 reduction is another positive impact of the project and a driving force in the Massachusetts initiative to have the line built (Autery and Silverstein, this issue).

Possible negative impacts are also extensive. Massachusetts will receive the benefits (electric customers in that state pay for the project) while Maine gets the direct biophysical impact. Environmental damage caused by clearing a new swath through the woods will be profound. Wetlands, waterways, ponds, and wildlife habitat are likely to suffer damage. Many opponents are convinced that NECEC will not slow climate change and argue that the greenhouse gas, methane, produced by water management for power generation (large flowages behind big dams) offsets any gain from projected CO2 reduction. Greenhouse gas emissions from hydropower are difficult to measure and there is uncertainty about their impact (Steinhurst, et. al. 2012; Lohan 2020). Creation of these northern Québec power reservoirs disrupt native

peoples and make it difficult for them to live traditional lifestyles (Fortin 2001; Abel 2018; also see Desmeules and Guimond, this issue). In addition to questions about greenhouse gas emissions from impoundments, Lohan (2020,1) agrees that extensive flooding also destroys native cultures and wonders if, "...big hydro with its reservoirs and dams, is green enough to be worth the cost." Visual degradation to much of western Maine is a concern. Some citizens argue that viewsheds of hiking trails, rafting rivers, scenic highways, lakes, and ponds are in peril. Recreation businesses may suffer as tourists turn to other less tarnished regions for outdoor adventures. Owners of recreational second homes may be hurt by a decline in the quality of porch vistas leading to lower property values. Current nonrenewable and biomass electrical power producers may suffer from NECEC bringing less expensive Canadian energy into the marketplace (see also Vogel, this issue).

Positives	Negatives
Energy cost savings	Mass. gets benefits and Maine the burden
Energy price stability	Environmental damage (land clearing, wetland/waterway, wildlife habitat)
Growth in property tax revenues	Will not slow climate change
Deliver 1200 megawatts to New England grid	Visual damage (Kennebec Gorge, Appalachian Trail, porch views)
Create construction jobs	Economic damage (recreation business, decline in property values, competition for other energy producers
Reduce CO_2 emissions by about 0.265 million tons in Maine (3.5 million tons in Mass.)	Impact of large hydro-power impoundments in Canada (greenhouse gas emissions and displacement of traditional cultures).
Rate relief fund for CMP customers	
Broadband expansion	
Heat pump installation fund	
Electric vehicles charging station fund	
Energy research grants	
Technology and economic grants to Franklin and Somerset counties	

Table 3. Potential positive and negative NECEC impacts on Maine.

Support and Opposition

Having provided a broad overview of the project, its siting conflicts, and its potential positive and negative impacts, I now turn to a more detailed accounting of the proponents and opponents and their views. My research focused in particular on the leaders of local (town and county) decision-making bodies.

As the NECEC proposal made its way into the information, debate and permitting arenas, two distinct sides emerged. The division was not along clear lines of environmental, party politics, or economic status (Table 4).

Supporters	Opponents
Governors' energy office	Stop-the-Corridor
Maine Office of Public Advocate	Fossil fuel generators
Conservation Law Foundation	Natural Resources Council of Maine
Acadia Foundation	Patagonia Action Works
Union of Concerned Scientists	Sierra Club
Industrial Energy Consumers Group	Audubon Society
Maine State Chamber of Commerce	Rafting interest (most)
International Brotherhood of Electrical Workers	Sporting groups (many)
Western Mountains and Rivers Corp.	Northwoods second homeowners (most)
Maine Snowmobilers Association	Recreational groups (many)
Municipal leaders (most)	Municipal voters (most)
Labor groups (many)	Solar and wind power interest (most)
Hydro-Quebec	Indigenous people
Central Maine Power	

Table 4. NECEC Supporting and opposing organizations and groups.

Support

Project supporters included most state government leadership, especially Governor Mills and the Maine Office of Public Advocate. The following groups are behind the endeavor. Economic and business interests are represented by the Industrial Energy Consumers Group, Maine State Chamber of Commerce, International Brotherhood of Electrical Workers, and many other labor groups. The Conservation Law Foundation, Acadia Foundation and Union of Concerned Scientists are environmental organizations. Maine Snowmobilers Association is from the recreation sector. The Western Mountains and Rivers Corporation was formed by regional leaders to administer NECEC mitigation money to protect environmental, economic, and recreational interests in the corridor area of northern Somerset County.

When CMP representatives first approached local officials in the fifteen host municipalities, most of them initially supported NECEC (Table 2 and Figure 1). However, under opposition pressure their positions often shifted. Leadership of Lewiston, with a new converter station promised, voiced strong support for the line (Rice 2018). During early 2018 CMP conducted an in-depth informational conference with municipal officials in each host town or city. These first impression events appear to have done much to gain support for the project. Significant local tax benefits were highlighted in these discussions. An overview of new NECEC tax value in each town and city indicates big gains in many places (Table 2). Except for Lewiston, which will have a converter station, these numbers largely reflect taxable value of the new corridor transmission line at approximately $3 million per mile.

In spring 2019 telephone interviews with municipal officers, I asked about their first reaction to the project and what factors their board considered in making an initial decision to support, remain neutral, or oppose NECEC. Individual reactions ranged from strong support to outright rejection (Table 5). Respondents offered thoughts on everything from tax benefits,

dislike of CMP, to no confidence in former State Senator Thomas Saviello, an outspoken opponent of NECEC. Official #7 suggested citizens opposed to the project were ill informed. This great variation in individual thoughts was fuel for discussions as boards took positions on the transmission line (Table 6). Interviewees said their boards considered both local and broader impacts. The most important local benefit was taxes (87 percent) with broadband expansion (20 percent) a distant second. Environmental risk (47 percent), visual degradation and decline in property values (27 percent), and market loss for competing energy businesses (20 percent) were local negatives.

Support
Official # 1. "Our municipality would see a big boost in tax base and local jobs."
Official # 2. "NECEC would hurt local biomass industry but would increase the town's tax base."
Official # 3. "I have little confidence in former State Senator Thomas Saviello, a NECEC opponent."
Official # 4. "The additional tax base would help our community. Many people hate CMP more than they hate the NECEC project."
Oppose
Official # 5. "NECEC would hurt our area biomass business. New Hampshire turned down the Northern Pass proposal. Why would we want a project like that here?"
Official # 6. "NECEC would damage both our environment and property values."
No Position
Official # 7. "Most people who are against NECEC don't know where it passes through our town."

Table 5. Sample quotes from municipal officials along NECEC route.

Boards considered impacts at the state, regional and global scales. Slowing climate change (20 percent), more regional jobs (20 percent) and reduced energy costs (20 percent) were the primary benefits they saw beyond their local communities. Negatives beyond the respective boards' town or city boundaries were a dislike for a place, organization, or person (33 percent). Massachusetts, CMP, Hydro-Québec, Natural Resources Council of Maine, and former Senator Saviello all took hits. This suggests that project support and opposition is a function of

Perceived local benefits	Taxes 13 (87 percent)
	Broadband expansion 3 (20 percent)
	Lower power costs 1 (7 percent)
Perceived local negatives	Environmental risk 7 (47 percent)
	Visual degradation and lower property values 4 (27 percent)
	Damage to competing energy sources 3 (20 percent)
	Public road damage during construction 1 (7 percent)
Perceived positive impacts at state, regional, and global levels	Slow climate change 3 (20 percent)
	More regional jobs 3 (20 percent)
	Lower regional energy costs 3 (20 percent)
Perceived negative impacts at state, regional, and global levels	Dislike for CMP, Hydro-Quebec, Massachusetts, Natural Council of Maine, or former State Senator Thomas Saviello 5 (33 percent)
	Damage to the Maine environment 3 (20 percent)
	Depress the Maine economy 2 (13 percent)

Table 6. Factors municipal officials considered most important in their initial response to the NECEC proposal.

what officials think about the actors who are involved, as well as the enterprise itself. Damage to the Maine environment (20 percent) and economy (13 percent) were additional board considerations. The majority of town and city leaders felt that growth in tax base, jobs, and the move away from fossil fuels outweighed the project's undesirable aspects.

Opposition

As opposition became more organized, activists formed Stop the Corridor, a coalition of many of the opposing voices. It coordinated NECEC resistance at many levels from town meetings and hearings to state legislative proceedings. Notably, Stop the Corridor managed a successful drive to force special town meeting votes in corridor and nearby municipalities to overturn early leadership support (Cover 2020). This activity was most intense during

the spring and summer of 2019 and was exemplified by the Farmington, Maine annual town meeting of March 25 at which Maine Governor, and Farmington resident, Janet Mills spoke to convince townspeople to support the corridor. The previous week she had endorsed NECEC. Farmington voters weighed in 262-102 against the project (Ohm 2019b). This shifting from support to opposition at the municipal level was part of a broader phenomenon, discussed in the "Struggle to Determine the Outcome" section in my paper.

Fossil fuel power generators stand to be to the biggest losers in this battle because their prices may be undercut by inexpensive Canadian hydropower. They have provided much support to oppose the corridor. Also, most solar, wind and biomass generators have concerns about market share. Several environmental organizations are against NECEC because of possible damage to natural resources. The Sierra Club, Audubon Society, Patagonia Action Works and Natural Resources Council of Maine are all outspoken with the latter taking the leadership role among this group. Recreation concerns such as whitewater rafting, hunting, fishing, hiking, and the businesses that they support opposed the transmission line.

Individual citizens have largely opposed the corridor. Their views have been heard through hearings, town meeting votes, editorials in the press, radio shows and opinion polls. Issues of concern are similar to those expressed by the various organizations. There is also a question raised as to why Maine should agree to a project that New Hampshire rejected.

The Struggle to Determine the Outcome

In this section I follow arguments and resolutions in the struggles to reach accommodations at various scales and in many arenas, local, state, and federal. These policy battles played out in town halls, commission chambers, agency hearings, in the judicial system and the court of public opinion. This contest is examined as I chronologically track significant clashes and their outcomes.

The NECEC war involves a classic public policy controversy that requires time to reach a conclusion. Nine significant milestones (Table 1) in this clash have been 1.) CMP wins a bid to construct a transmission line through Maine, 2.) Governor Mills and other parties sign an agreement supporting NECEC that calls for additional benefits for Maine, 3.) Maine PublicUtilities Commission (PUC) approves the line, 4.) Maine Land Use Planning Commission (LUPC) permits project, 5.) Maine Department of Environmental Protection (DEP) issues project permit, 6.) Maine Supreme Court declares referendum question on NECEC unconstitutional, 7.) U.S. Army Corps of Engineers (Army Corps) approves corridor permit, 8.) U.S. Department of Energy grants a permit, and 9.) NECEC construction begins. Incidences large and small play out in the struggle and lesser events contribute to arriving at milestones.

The struggle to determine the project outcome began with what would appear to have little to do with NECEC itself. In fall 2017 CMP installed a new metering system that was not properly vetted, resulting in widespread billing errors that angered ratepayers. This problem is still not fully resolved and continues to be a major public relations nightmare for the power company (Turkle 2020b). That negative image has made it difficult for CMP to gain public trust as a utility company. The winter of 2018 saw the Massachusetts Department of Energy

Resources accept CMP's bid to construct a transmission line to enable Canadian hydropower to reach the Boston area market, thus, birthing NECEC as a Maine public policy issue .

Local Fight

Although they have limited powers to control a project of this scale, levels of government closest to the people found themselves at the forefront of much of the NECEC fight. Maine counties have no authority to regulate development. Unincorporated townships that entail most of the northwestern portion of the state are under the jurisdiction of the Land Use Planning Commission (LUPC), a state agency. Despite their lack of power, county commissioners were lobbied by both corridor proponents and opponents to take positions. Each side saw this as a strategy to influence public support. Hearings and resulting votes favoring the proposal infuriated the opposition which demanded the matter be revisited hoping for more favorable outcomes. Somerset County Commissioners continued to support the NECEC while Franklin County Commissioners withdrew theirs (Ohm 2018; Ohm 2019a). The primary focus of these discussions included growth of the tax base, the status of a modest income areas with forestry, open land, low-impact recreation uses, and widespread economic stress. County hearings and commissioner votes received extensive press coverage and heightened public awareness about the nature of NECEC.

In contrast to counties, Maine municipalities do have development oversight powers through their planning boards. Also, towns and cities may enact ordinances to protect local resources and address community health and safety needs. However, in Maine the regulatory abilities of the local governments do not extend to blocking projects of statewide importance such as NECEC. These planning boards have authority over limited land use issues that could include stream crossing regulations, wetland protection and erosion control. At this time, CMP is moving through the required steps to gain permits from municipal planning boards. On 22 January 2020, a NECEC site plan review was submitted to the Town of Starks Planning Board and the review process began on February 5 (Central Maine Power Company 2020). The town granted a permit on 3 June 2020 (Town of Starks 2020). Some corridor town planning boards have postponed their actions in apparent efforts to delay NECEC. For example, the Town of Jay board voted to table the CMP project application until all state and federal permits had been awarded (Perry 2020a, Perry 2020b).

Early support from local government leaders attracted the ire of Stop the Corridor and its allies. Opposition launched a successful effort to have towns hold official, but non-binding, votes on NECEC. In many cases citizens petitioned the selectmen (the elected administrative board of the town) for such balloting. In those towns that held such votes citizens opposed the corridor. The Farmington meeting falls into this pattern. Residents perceived that benefits to individual towns were outweighed by environmental degradations, economic impacts on local biomass plants, negative feelings about CMP, and the role of Canadian and Spanish energy companies and their profits. Communities nearest to Lewiston, the site of the project's converter station and largest concentrated investment, did not turn against the corridor. Prospects for significant local economic growth were of prime consideration in these places. The municipal political arena also experienced pressure from citizens and opposition groups to

enact moratoriums to delay town permitting of the project (Meanear 2020). The legal status of such a move is uncertain as it represents a possible overreach of municipal powers and a rule change in the middle of permitting. In Maine, planning boards are mandated to base their decisions on scientific information rather than on ideological opinions. Legal challenges are likely to arise when planning boards do not follow objective consideration of evidence. Also, the Maine PUC has the authority to override local decisions that block utility infrastructure projects of statewide significance. Given the limitations of municipal power over a billion-dollar project that is of interest to all New England, it is difficult to understand how small towns can alter the permitting process in a meaningful way. However, these discussions do allow the public to participate, and most of the debate forums were filled. Despite unresolved local permitting questions, CMP moved ahead with corridor activities that do not require permits (Murphy 2020a, Turkle 2020c). These included site inventory and analysis and the installation of wooden matting that allows equipment to cross wet ground. The mats are to be removed after project completion. By early April 2020, $300 million in construction contracts had been awarded by NECEC (Turkel,T 2020d).

State Fight

As expected, the area closest to the proposed corridor was the stage of the most heated confrontations surrounding NECEC. However, the issue has encompassed all of Maine. Both pro and con sides are convinced that this project represents a watershed moment for the State's. economic and environmental future. At the state government level dialogue surrounding the corridor was extensive and contentious. Public, political, business, and environmental interests swiftly reacted to the February 2018 CMP contract with the Massachusetts Department of Energy Resources to build a high-voltage transmission line through Maine.

Maine legislative leadership soon split over the issue. On 4 May 2018, the chairs of the committees on environment/natural resources and energy/utilities wrote a joint statement in opposition (Saviello, et al. 2018). However, these committee positions did not translate into success in stopping the corridor through legislative action as many members of both the House and Senate supported NECEC. Party politics played almost no role in the division. Members of the legislative bodies were subjected to intense lobbying by interest groups and individual citizens representing both sides of the issue.

Following its examiners recommendations of 29 March 2019, the Public Utilities Commission approved a NECEC permit on April 11. (Maine Public Utilities Commission 2019; Turkel 2019a). This action set in motion a series of reactions by corridor opponents in the legislature and in June two bills to block or delay the transmission line passed. Governor Mills vetoed both and her vetoes were sustained (Miller 2019). A few days later the lawmakers passed a measure to provide for the study of state acquisition of all privately owned power companies in Maine (Turkel 2019b). The bill involved broad charges that CMP was an inefficient private company, and that Maine would be better served by a state-owned power utility. The summer of 2019 saw a blizzard of news, spot advertisements and debates about NECEC.

Acquisition of project permits involved three state and two federal agencies, the PUC decision was the first of these regulatory authorizations needed for the project to go forward.

On 11 September 2019, the LUPC deadlocked on permitting NECEC because of its impact on remote Beattie Pond in northern Franklin County. A week later CMP acquired an alternate route around the pond and the LUPC granted a permit 8 January 2020 (McGuire 2020). On 13 March 2020 DEP staff recommended that the department grant a permit to CMP and it did so on May 12th (Anderson, J 2020; Thistle 2020). The Army Corps granted a permit November 4th (Hoey 2020b) and a U.S. Department of Energy permit was approved 15 January 2021 (Collins 2021).

Another political front gained attention on 4 March 2020 as Stop the Corridor and its fellow NECEC opponents presented a referendum petition with enough valid signatures to the Maine Secretary of State to trigger a statewide vote in November to overturn the PUC decision of 11 April 2019 (Murphy 2020b). The following week, March 13, CMP filed court papers charging opponents with violating Maine signature gathering laws (Collins 2020; Hoey 2020a; Andrews 2020a). August 13th was a bad day for NECEC foes as the Maine Supreme Court found that voters do not have a constitutional right to overturn a regulatory decision, thus, closing this line of attack (Andrews 2020b).

As the NECEC war progressed both sides became more organized. Major disagreements arose, often in the context of regulatory standards. For example, in October 2018 CMP amended its plan and agreed to bury the line beneath the Kennebec River Gorge, thus protecting a prime whitewater rafting site from visual damage (McGuire 2018). A second anti-corridor referendum calling for a vote in November 2021 was approved by the Maine Secretary of State (Andrews 2021). Such a public vote may come too late to have any influence on NECEC. Opponents (including Sierra Club Maine) filed a lawsuit against the Army Corps for not doing a more comprehensive environmental impact statement, rather than the less intensive environmental assessment that was produced. In response to this suit, on 15 January 2021 the U.S. Fifth District Court of Appeals granted a temporary injunction preventing construction from beginning on the corridor's most contentious section, the 53 miles of new right-of-way between the Canadian border and Moxie Gore (Collins 2021a).

Construction Begins

With the pressure to meet a contract deadline for project completion, efficiencies in using equipment and crews already brought to the region, and the advantages of working on frozen ground in the Maine woods, NECEC management elected to begin construction on the portion of the transmission line not covered by the injunction. Examples of these pressures are the NECEC's contract with a Wisconsin based company to clear and widen rights-of-way. Under the agreement NECEC is obligated to pay $690 thousand a week to cover the cost of equipment expenses related to any project delays. Also, power purchase obligations with Massachusetts utilities require NECEC to pay financial damages if electricity is not flowing by the contracted completion date of May 2023 (Turkell 2021). Contractors erected the first tower on 19 February 2021 (Valigra 2021). This is a high-stakes gamble as NECEC decision-makers are betting that future court decisions, referenda, and legislative actions will be in the project's favor.

Posturing and Corporate Restructuring

Confrontational posturing hardened on both sides as the corridor contest evolved. In part this is reflected by the ongoing avalanche of legal and political actions of the opponents to stop the line and a reorganization of the corporate structure of the entities building the line. Murphy (2020c) notes two typical reactions that reflect the tone of the NECEC conflict. Sierra Club Maine volunteer leader, Becky Bartovic, protested, "The criteria for requiring an environmental review statement has absolutely been met and the Army is derelict in its duty not to have done so." Jon Breed, Executive Director of Clean Energy Matters, a political action committee formed by CMP and Avangrid remarked. "After two years, millions of dollars and more than a dozen attempts to use legal action to derail the clean energy corridor the Natural Resources Council and its allies have yet to succeed. Their conduct is shameful." Three weeks after the U.S. Army Corps granted its permit Sandra Howard, a leader in Stop the Corridor, commented (Howard 2020), "CMP would like Mainers to think their destructive corridor through an undeveloped region of western Maine is a done deal, but that is simply not the case." How will this ongoing pressure impact regulatory agencies, legislative bodies, courts, and the corridor's prospects?

Companies that encounter barriers to moving projects forward sometimes reorganize their business model and enhance their talent pool. The long power line struggle tarnished CMP's character as a reliable and respected member of the utility community. To rehabilitate their public image and invigorate the corridor project CMP and NECEC have undergone recent changes in leadership, corporate structure, and resource support. David Flanagan, a well-respected former CMP CEO, has been rehired to better address public relations. Flanagan's 1994 to 2000 role in guiding the company to a position of economic success and popular respect was not overlooked when he began his work in the fall of 2020 (Turkle 2020e). During 2020, Avangrid, CMP's parent company, formed a separate entity, NECEC Transmission, LLC, to oversee the corridor's construction (New England Clean Energy Connect 2020). The genesis of this new company dates from a 2019 Maine PUC directive for a separate firm to be created to own NECEC assets and manage construction of the corridor. This order was to insulate CMP and its existing customers from any risks associated with the project (Rich 2019). In addition, it created distance between CMP's tarnished reputation and the transmission line. Spain's Iberdrola renewed its focus on moving NECEC forward with a leadership visit to Maine and by providing more resources (Valigra 2020). Hydro-Québec infused additional money and marketing efforts into the NECEC campaign (Van Allen 2020). Proponents hope these changes will benefit NECEC while opponents are inclined to argue that it is only a matter of moving deck furniture around on a sinking ship.

Update, Analysis, and Implications

In this section I provide an update on NECEC as this article goes to press. Additionally, a discussion focuses on spatial and environment justice in the context of Maine and New England power policies and reflects on ways my study deepens our understanding of questions concerning future energy geographies.

Update

Despite ongoing legal challenges to stop the corridor, in February 2021, construction began. This event highlighted the pressure on both sides to refocus on their respective goals of stopping the corridor or building it.

Communities along the NECEC route continue to discuss the corridor and its impact while local planning boards review project related applications under their jurisdiction. State oversight agencies, legislators, and the governor are engaged in the ongoing corridor dialogue. All state and federal regulatory permits have been awarded. Proponents and opponents promoted their cases on various fronts; regulatory, court, legislative, and public opinion. New large-scale events and small battles continue to appear. In late March 2021, the NECEC contribution to broadband expansion in rural Maine became a significant aspect of the State's effort to improve internet access for its underserved populations (Collins 2021b). This topic exemplifies a new issue that has become front and center as coronavirus pandemic related needs to provide remote learning for children and support for the growing number of adults working from home. Broadband represents a new NECEC related focus and presents a dilemma to those who support its expansion but oppose the corridor. It is uncertain what secondary issues might play a significant role in tipping the transmission line battle in favor of one side or the other.

Legislative committees are receiving bills for additional CMP related studies. Courts and voters are likely to have more to say before the corridor debate is settled.

Analysis

The balancing of needs associated with southern New England energy demands, production sources, and environmental concerns play out on the Maine countryside. A Massachusetts desire to move toward renewable sources of electrical power resulted in a plan to acquire Québec hydropower for use in the Massachusetts market. CMP was awarded a contract to construct the transmission line through rural Maine to deliver Canadian power to the New England electricity grid. This proposed power corridor resulted in heated public policy confrontations about shifting energy strategies at various scales, local, regional, and global.

Environment, spatial, and energy justice in Maine, New England, and Québec are examined by all the authors in this special issue. Furby et al (1988) and Kroot (this issue) address the urban and rural conflict as a factor in framing arguments. Development possibilities and associated economic benefits drive interest in rural communities (Goldberg and Keyser 2013; Wallace and Colgan 2017). Expert vs public confrontations sometimes generate hostile environmental and social policy discourse (Cohen and Ottinger 2011). Relationships among levels of government occasionally produce complicated and confusing regulatory processes (Towers 2000; Cain and Nelson 2013; Kroot this issue). Examples of transmission corridor conflict resolution by rerouting them to protect landscapes and environments (Towers 2000; Lienert et al 2015; Kroot this issue) point the way toward conclusions that all stakeholders may not be happy with. All these dimensions intersect in the NECEC struggle.

Renewable energy demands by Massachusetts, the catalyst for NECEC, called into question the electricity supply and demand nature of New England's power network and its shifting needs (Vogel this issue). These changing power dynamics involve broad impacts on the region. The question of who benefits and who loses in this energy restructuring pitted groups against each other, rural versus urban, native peoples of Québec versus city dwellers in Boston, citizens of western Maine versus southern New Englanders, and corporate profits earned by foreign companies versus economic benefits to remote areas of Maine.

Harvey (1996) and Rhodes (2003) argue that spatial, environmental, and social justice is a shifting interface of society and environment. Public discourse surrounding NECEC brought this to the forefront. Opponents of the project argued that rural Mainers and First Nation Peoples of Québec were asked to pay too high a price in helping meet the southern New England demand for more renewable energy. Western Maine town level discussions and votes highlighted disagreement among neighbors over progress. Rural communities contain wide variations in values about what kind and how much change is acceptable.

The rural/urban dichotomy of society was highlighted in the us-versus-them posturing of rural Maine against urban Massachusetts. Corridor opposition argued that people from away are damaging our place (Howard 2020). Proponents countered with benefits of investments in rural Maine (jobs, tax benefits, etc.) regional infrastructure improvements, (power networks, broadband expansion, etc.), and broad climate change mitigation (Mills 2019). The different perspectives were widely argued on the public stage. The discussions frequently pitted experts, trained scientist, against public participants. Local state and federal permitting agencies listened to and read a mix of scientific facts and emotional opinions in reaching conclusions based on their best judgements.

As the debates and discussions surrounding the corridor moved through the years, results tended to favor the project. However, amendments to the original proposal were adopted to protect environmentally sensitive locations and valued landscapes such as Beattie Pond and the Kennebec River Gorge. This mitigation strategy is often part of the permitting process. To date, the proponent's arguments are moving NECEC forward. My study highlights the confrontational nature of expanding major infrastructure projects into rural places and suggests that long struggles should be expected.

Resolutions resulting in construction hinge on each side negotiating in good faith and this appears to have been the case in successful powerline sittings in the above section on contested powerlines in the U.S. Failed proposals such as Northern Pass in New Hampshire suggest a limited understanding of local cultural dynamics on part of project developers. They appear to have underestimated the value of historic viewsheds.

Globalization and its impacts at micro and macro scales are intricately connected to local and regional environmental justice debates. Urban markets depend on supplies of goods from rural areas and rural transportation networks to deliver them. People located at each source, route, and destination feel a degree of stress when they perceive threats to their respective environments, lifestyles, and values. NECEC drew these feelings to the public arena. Native peoples in Canada, small towns in Maine, city consumers in southern New England, global and regional energy corporations, and many levels of government are engaged in this energy war.

Implications

Future energy geographies are evolving as new energy dynamics drive local, regional, and global power needs. Environmental, spatial, and energy desires of society generate questions of equity. This study builds on the work of Bridge et al (2018), Baka and Valishava (2020), and Huber and McCarthy (2017) in calling for the examination of new spatial patterns of energy (especially electricity) production, transportation, and consumption. The siting of transmission lines will be a critical point of conflict in shaping these new energy geographies (Cain and Nelson 2013; Lienet et al 2015) My investigation of NECEC is intended to contribute toward an improved understanding of some of the dynamics of creating new energy geographies.

The second decade of the 21st century begins with an atmosphere of political contention in which opposing groups often talk past each other. Solutions seem elusive as entrenched adversaries battle to arrive at their own version of environmental and spatial justice. How should decisions about siting transmission lines and other big infrastructure investments be made? As the continuing struggle over the NECEC transmission line illustrates, environmental justice is a journey, not a destination.

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Acknowledgements

The author wishes to thank the three anonymous reviewers and this issue's guest editor Dr. Eve Vogel for their constructive comments and encouragement. The author also thanks Erin Norton and Betty Austin for their clerical and technical support and the geography laboratory at the University of Maine at Farmington for cartographic services.

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