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Two methodological perspectives on the Energy East Pipeline conflict

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HIGHLIGHTS

- Application of generalised metarationalities to the Energy East Pipeline conflict.
- Comparison and contrasting of generalised metarationalities and the graph model.
- Generalised metarationalities are useful for conflicts' spanning long periods of time.
- Generalised metarationalities use policies which may circumvent player preferences.

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ABSTRACT

Two complementary approaches for identifying potential resolutions to a conflict are applied to a pipeline dispute in Canada to gain a range of valuable strategic insights as to how it can be resolved. More specifically, the controversy over the Energy East Pipeline for shipping bitumen from the Alberta oil sands for refining in Central and Eastern Canada as well as shipping overseas is investigated using the usual definitions for stability as well as the metarational tree methodology in which policies can be taken into account. As demonstrated by the case study, enhanced strategic insights can be garnered when the metarational tree approach is utilised for exploring conflict resolution within the confines of existing policy. The metarational tree procedure constitutes a useful expansion of the overall Graph Model for Conflict Resolution set of techniques for formally investigating real world disputes.

1. Introduction

As the country with the third largest oil reserves in the world and as the world's sixth largest producer, Canada depends on oil extraction and refining processes for its economic development (National Energy Board, 2015b). Oil sands make up 90% of Canada's reserves, with conventional oil accounting for the remaining 10% (National Energy Board, 2015c). The most important crude oil reserves in Canada are located in the Western Canada Sedimentary Basin, which traverses parts of Yukon, Northwest Territories, British Columbia, Alberta, and Saskatchewan, as well as in the Pacific Morgan Sedimentary Basin located offshore from the Eastern coast. The oil is mainly produced in Alberta, which produced 77% of the country's production in 2013 (National Energy Board, 2014). The Alberta oil sands alone have an estimated 1.8 trillion barrels of oil in place, of which an estimated 315 billion (17.5%) are ultimately recoverable (Natural Resources Canada, 2013).

Canada is a net oil exporter; approximately two-thirds of domestic crude oil is exported after refinement (Natural Resources Canada, 2014). It is estimated that crude oil and crude bitumen exports accounted for over 50% of Canada's net energy export revenues in 2013 (National Energy Board, 2014). Until 2013, Canadian crude oil exports were mainly sent to the United States; recently, Canada has begun to look for new markets overseas in Europe, South America, and Asia (National Energy Board, 2015b). Canadian crude oil exports to Europe have been shipped to Italy, Spain, and Switzerland (National Energy Board, 2015b).

The transportation of crude oil is primarily done using Canada's pipeline system which has over 35,000 km of lines transporting domestic crude oil to refineries and to the United States, and transporting imported crude oil to refineries (Natural Resources Canada, 2014). In 2014, pipelines transported more than seven times the crude oil exports than marine, rail, and trucks combined (National Energy Board, 2015c). Due to their scope, which often crosses provincial or international boundaries, Canadian pipeline construction and expansion projects have been surrounded by controversy. Pipeline conflicts are thus by nature complex both in the number of involved parties and in their interactions with one another. This characteristic of pipeline conflicts will be used to

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compare and contrast the Graph Model methodology with the metarational tree methodology, both of which can be used to analyse conflicts. By way of example, this paper will demonstrate some shortcomings present in the Graph Model which can be remedied by metarational trees.

The motivations of this paper are twofold. First, to highlight the importance of addressing energy and pipeline conflicts in Canada which, as will be discussed, are complex and involve high stakes for the involved parties. Second, to employ a conflict analysis methodology which takes into account the policies that decision-makers follow, and how these policies help determine the best course of action. The paper is organised as follows: Section 2 gives an overview of the project and of the involved parties. Section 3 presents the Graph Model for Conflict Resolution (Kilgour et al., 1987; Fang et al., 1993), which is succinctly referred to as the Graph Model, and its relevant stability concepts. Section 4 details the Graph Model analysis of the Energy East conflict. Section 5 presents generalised metarationalities and metarational trees originally proposed by Zeng et al. (2005, 2006, 2007). Section 6 analyses the Energy East conflict using the newly introduced methodology. Section 7 discusses how the Graph Model and the new methodology compare to and complement one another; this comparison is the first of its kind in the Graph Model and generalised metarationalities literature. Section 8 provides conclusions and future avenues of research.

2. Background

2.1. Project description

The Energy East Pipeline, managed by TransCanada Corporation (TC), consists of the construction and operation of a 4500 km oil transporting pipeline system from Hardisty, Alberta to Saint John, New Brunswick (TransCanada, 2014a, 2015) (Fig. 1). The project is planned to transport up to 1.1 million barrels of crude oil per day to refineries and port terminals in Quebec and New Brunswick, which would allow for exportation to international markets and processing by local refineries (TransCanada, 2014a, 2015).

The project would require the conversion of approximately 3000 km of existing natural gas pipelines to crude oil pipelines as well as the construction of approximately 1500 km of new pipeline (TransCanada, 2014a). The conversion of natural gas pipelines to crude oil pipelines will require an assessment of the condition of the pipeline, realignment and replacement where necessary, isolation of the pipeline from gas facilities, the construction of new facilities for oil service, three watercourse crossings, and mainline valve installation (TransCanada, 2014a). A variety of components would also be required for the purposes of storing, metering, pumping, delivery, and distribution, as well as facilities for marine tanker loading (TransCanada, 2014a). These components include, among others, 71 pump stations dispersed from Hardisty to Saint John; a pressure control station located in Burstall, Saskatchewan; two delivery meter stations in Montréal and Lévis, Quebec; four tank terminals located in Hardisty, Moosomin (Saskatchewan), Cacouna, and Saint John; and two marine terminals located in Cacouna and Saint John, each of which includes two loading berths, storage, and maintenance facilities (TransCanada, 2014a).

2.2. Canadian regulatory approval process

The National Energy Board (NEB), in conjunction with the federal cabinet, decides whether or not to approve pipeline projects (Becklumb, 2012). Companies must apply for and receive a Certificate of Public Convenience and Necessity as well as an Environmental Assessment Decision Statement, in accordance with the *National Energy Board Act* (Becklumb, 2012; Government of Canada, 2014a). Both of these documents are issued by the NEB, which considers the economic, social, and environmental impacts of the project (Becklumb, 2012). The NEB reports, which include assessments and recommendations, are submitted to the Governor in Council, who directs the NEB to either issue the certificates or reject the project proposal.

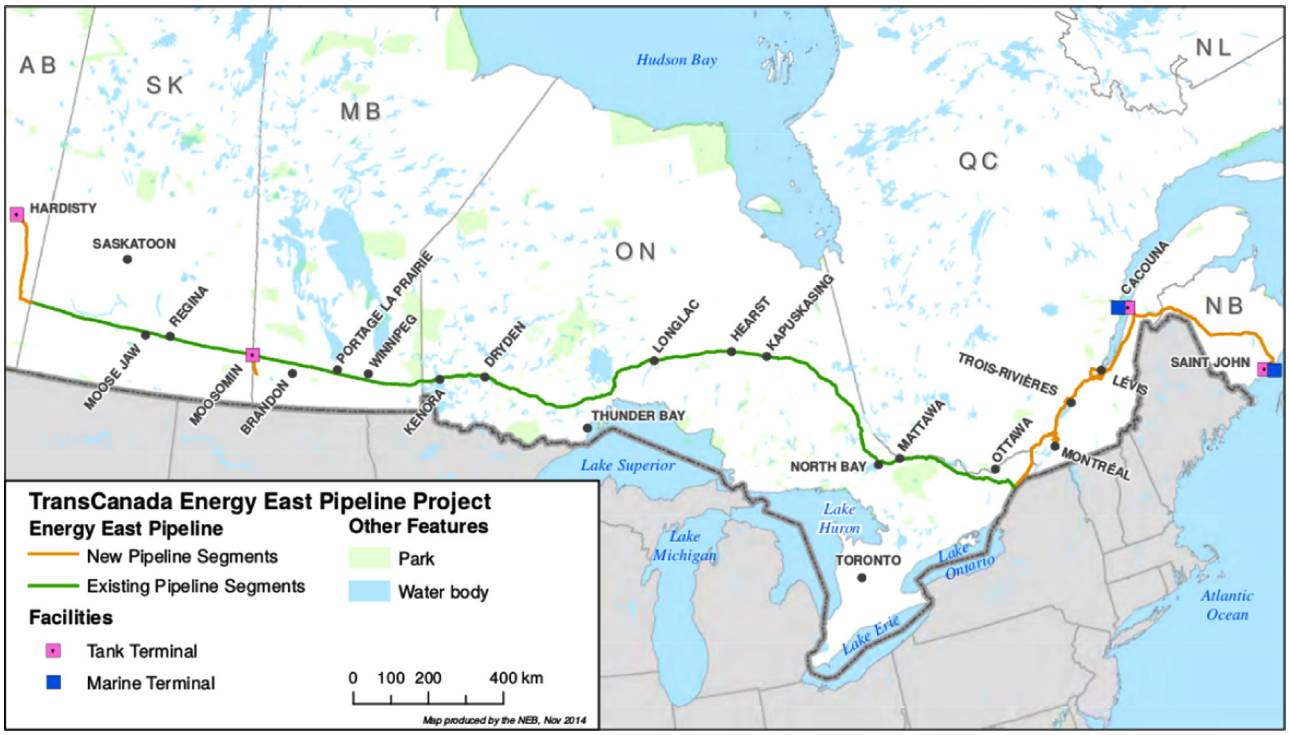

Fig. 1. Energy east pipeline route. Source: http://www.neb-one.gc.ca/pplctnflng/mjrpp/nrgyst/mp-eng.pdf.