Energy Strategy Reviews 4 (2014) 43–51

Contents lists available at ScienceDirect

Energy Strategy Reviews

journal homepage: www.ees.elsevier.com/esr

CASE STUDY

Strategic analysis of the Great Canadian Hydroelectric Power Conflict

Yasser T. Matbouli [a,b,*], Keith W. Hipel [a,c], D. Marc Kilgour [d]

[a] Department of Systems Design Engineering, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1
[b] Department of Industrial Engineering, King Abdulaziz University, Rabigh, Saudi Arabia
[c] Centre for International Governance Innovation (CIGI), Waterloo, Ontario, Canada N2L 6C2
[d] Department of Mathematics, Wilfrid Laurier University, Waterloo, Ontario, Canada N2L 3C5

ARTICLE INFO

Article history:
Received 26 May 2014
Received in revised form
8 August 2014
Accepted 15 August 2014
Available online

Keywords:
Hydroelectric power
Energy
Conflict
Negotiations
Equilibrium analysis
The Graph Model for Conflict Resolution

ABSTRACT

The contract negotiation that led to the 1969 agreement between Newfoundland and Labrador, and Quebec, is systemically analyzed within the framework of Graph Model for Conflict Resolution. The Great Canadian Hydroelectric Power Conflict has been ongoing since 1963 and shows no signs of ending. In this dispute, the Province of Quebec has the right to buy almost all of the power generated from the Upper Churchill Falls, which is located in the Labrador territory in Newfoundland and Labrador, at a very low price. Originally, the contract was signed by Churchill Falls Labrador Corporation to secure finances for the Upper Churchill Falls development. The unpopularity of the contract led to several unsuccessful attempts by the Newfoundland and Labrador Government to escape its provisions. Newfoundland and Labrador is currently negotiating to develop the Lower Churchill Project and seeking to avoid the mistakes of the first contract. Furthermore, the automatic renewal clause of the original contract is expected to cause another round of conflict in 2016. The analysis shows that, given the circumstances in which the agreement was signed, the outcome was almost inevitable. A third party intervener rule could have remediated the damage caused by the conflict.

1. Introduction and background

1.1. Introduction

Canada has a great and diverse energy potential, including oil, nuclear, wind and hydropower energy sources [1]. However, provincial conflicts could hinder the development of Canada's energy sector. Churchill Falls hydroelectric power is the subject of a prolonged controversy among politicians of two Canadian provinces: Newfoundland and Labrador, and Québec [2–6]. Although the long-term of the contract encouraged investment, it may have weakened the development of the hydroelectric energy sector. A well-functioning national energy sector requires a cross-provincial regulator to insure proper integration of resources and to avoid monopolies [7]. The conflict concerns the exploitation of an enormous source of hydroelectric power, the Churchill Falls Hydro site, one of the world largest hydroelectric generation stations with a current capacity of more than 5400 MW [8]. An additional project, the Lower Churchill Falls, will add over 3000 MW [9]. The current Churchill Falls power exceeds twice the output of the Canadian side of Niagara Falls, and exceeds the total output of Niagara Falls power generation, see Refs. [8–10]. The Churchill Falls site is located in the Labrador territory of Newfoundland and Labrador, far from the populated areas in the province. However, Churchill Falls is located close to the Québec border, at a distance of about 180 km [2] (see Fig. 1).

The Churchill Falls Hydroelectric power generation station is operated by Churchill Falls Labrador Corporation (CFLCo) [2], of which Newfoundland and Labrador owns 65.8% and Québec the remaining 34.2%. Most of the power has been sold to Québec at a low price [2,5,6,11]. The Newfoundland and Labrador government (NL) views the contract as unfair and unethical [2,4]. Moreover, many Newfoundlanders and Labradorians think of this contract as another instance where their resources are being "exploited by outsiders" [2], as the Newfoundland and Labrador government cannot increase the price to reflect the current market, nor can it reclaim any of the power for its own use. Finally, NL cannot cancel the contract until it expires. Québec

* Corresponding author. 200 University Avenue West, Department of Systems Design Engineering, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1.
E-mail addresses: ymatbouli@uwaterloo.ca, yassirs@gmail.com (Y.T. Matbouli).

http://dx.doi.org/10.1016/j.esr.2014.08.002
2211-467X/

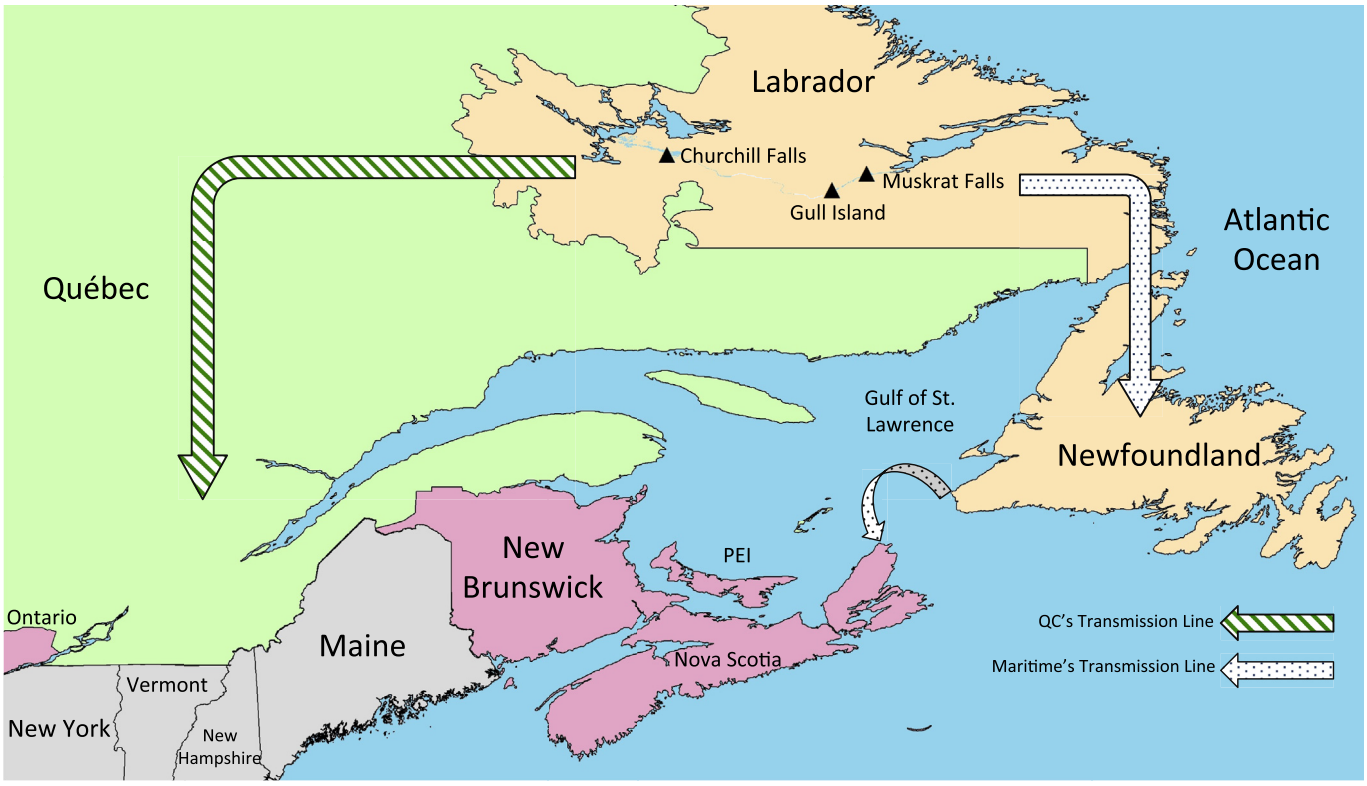

Fig. 1. Churchill Falls, Gull Island, Muskrat Falls, and the two transmission lines.

(QC), on the other hand, views this contract as a legitimate deal, agreed upon by both sides and appropriate, given the uncertainty in the market when it was signed.

Various Newfoundland and Labrador governments challenged the agreement in many ways. NL appealed twice to the Supreme Court of Canada [12,13], which affirmed in both cases that the contract was valid. In addition, other aspects of the conflict originate from the initial contract and the desire of Newfoundland and Labrador to develop an adjacent hydroelectric power source, Lower Churchill Falls.

The conflict over the Churchill Falls power generation station has seen many rounds since the 1960s. The length of this conflict reflects its very long duration-44 years, with an additional automatic renewal for 25 more years.

There are three main issues in the original conflict:

1. The very low price at which NL must sell energy to QC, a price that falls after the renewal.
2. The duration of the contract, including the renewal clause.
3. The inability of NL to reclaim energy for its own use.

The conflict is analyzed using the Graph Model for Conflict Resolution (GMCR) [14–16]. GMCR has been applied in the analysis of various conflicts [17,18] and negotiations [19] and proven to provide insights on the stability of conflicts, and the movement of each decision maker (DM) involved. The systematic approach of GMCR has been applied to the Great Canadian Hydroelectric Conflict in order to understand how it affected the development of the Churchill Falls project and its impact on the further development of the remaining hydropower potentials of the Churchill River.

The study of this conflict has important lessons for policy making. It provides insights into the problems associated with long-term contracts and how their effect on the public interest. The lengthy duration of the contract even exceeds what is suggested for long-term take-or-pay contracts [20].

1.2. History and background

Newfoundland and Labrador is Canada's newest province. Soon after joining Canada in 1949, the government of NL aimed to boost its economy up to the level of other provinces. In 1953 [2], with the help of British industrialists and bankers, the NL government established the British Newfoundland Development Corporation (Brinco) [21], in order to develop industrial opportunities in the province. The land and water rights leased by the NL government to Brinco for a 99 year term included the hydroelectric potential of the waterfalls on the upper reaches of the Churchill River, formerly known as the Hamilton River and renamed in 1965 [2].

In 1958, in order to develop and operate the Upper Churchill Falls hydroelectric project [5,6], Brinco established a federally incorporated subsidiary called the Hamilton Falls Power Company and later renamed Churchill Falls (Labrador) Corporation (CFLCo) [2,21]. Shawinigan Engineering, a private engineering firm based in Québec, purchased a 20% stake in CFLCo. Referencing CFLCo and Brinco is interchangeable, and some executives held positions in both companies [3].

The purpose of the development of the Upper Churchill Falls project was to sell energy in the adjacent province of QC and beyond, more specifically, to Ontario-Hydro and Consolidated Edison Company of New York [3]; Fig. 1 shows potential buyers and routes in Canada and the United States. In order for CFLCo to undertake the development and secure finances, it had to transmit electricity from the generation site to buyers. It had two alternatives: either transmit power through Québec using a relatively short and economical transmission line (see Fig. 1), or undertake a challenging and financially unattractive transmission line on what is known as the Maritime route [3] or the Anglo-Saxon route [2], transmitting power through two