



Analysis

Opening a policy window for organisational change and full-cost accounting: The creation of BC Hydro's water use planning program

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ABSTRACT

British Columbia's Water Use Planning (WUP) program is a multi-stakeholder process that revises the operating plans of BC Hydro's hydroelectric facilities in order to consider water values beyond hydropower. Using a model of policy change, this paper analyses the circumstances that enabled the emergence of WUP and prompted BC Hydro to change its decision-making processes to better consider environmental and social concerns.

External factors, including dam operations' ecological impacts, an imprecise regulatory environment, and worsening relationships with regulators, highlighted the need for a change in operating BC Hydro facilities. Factors internal to BC Hydro included the development of a business case, concerns regarding the utility's reputation and public expectations. While different approaches were explored for solving BC Hydro's problems, a policy window for change opened within a shifting context provided by the election of a more progressive government, the growth of the environmental movement, and new approaches to taking complex multi-stakeholder, multiple resource decisions. Following a successful pilot process and government direction to expand WUP, factors that enabled its institutionalisation included financial resources to compensate for the foregone power, the presence of visionary individuals, the background preparation that facilitated a successful pilot WUP, and the urgent need of a solution.

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1. Introduction

Environmental specialists are well aware that the paradigm within which we operate, dominated by economic growth and widespread consumerism, is leading to ecological collapse and threatening our own and other species' survival. While scientists, and increasingly politicians and the public at large are ever more aware of the problems we face, our response is proving to be largely inadequate, with too little being done, too slowly and often too late. To reverse current trends in environmental degradation we need to shift from the dominant paradigm to an ecological one that considers resource constraints, keeping within the earth's carrying capacity. An exploration of the factors and circumstances that converged to enable change in the past, such as in the history of civil rights, the perceptions around smoking, or the abolition of slavery could all provide clues to address the question of how a paradigm shifts. On a much smaller scale, recognizing environmental flows¹ can be considered a paradigm shift in the water resources management field: a transformation from the business as usual scenario where water is fully allocated to economic uses, to a situation where

minimum flows are set to maintain ecological functions. Although it could be argued that environmental flows are not a radical shift, when they are compared to the status quo, which still prevails in most river systems around the world, they are a substantial step in the right direction.

Worldwide, the allocation of water challenges decision-makers and interested users alike. While a few decades ago economic development was the primary consideration in water allocation and use, meeting social and environmental goals has more recently started to gain prominence too. In the history of dam-building, up to the 1970s, the decade that saw the peak in dam commissioning and construction, dams symbolised economic progress, modernisation and man's ability to harness nature (WCD, 2000). With mounting awareness and information about dam impacts, local opposition to specific facilities began to grow, to soon merge into a global debate regarding the full costs of dam projects. Despite increasing calls to hydropower operators to shift from a sole focus on electricity generation, to providing water for environmental, recreational or cultural uses, such calls have in most cases tended to be brushed aside or responded to only insofar as to comply with existing legislation. Consequently, the operation of dam facilities has significantly impacted downstream ecosystems and the people who rely on them (WCD, 2000).

In British Columbia (BC), Canada, a province endowed with abundant water resources, numerous dams were built in the 20th century by BC Hydro (the third largest electric utility in Canada today) and its predecessors. The highest period of growth was between the

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¹ These have been defined as "the quality, quantity, and timing of water flows required to maintain the components, functions, processes, and resilience of aquatic ecosystems that provide goods and services to people" (Hirji and Davis, 2009, p. xiii).

mid-1940s and the early 1960s, when the number of facilities grew from 10 to 28, fuelling the mining and forestry industries, the mainstays of the economy (BC Hydro, 2003). While some impacts on the productive BC salmon fisheries were recognised early on, requests for water releases by local fish and game clubs in the 1950s were largely ignored, as were those coming from environmentalists in the 1970s and 80s (Vanderwal, 1999). Although minimal mitigation works were undertaken, and some minimum flow agreements were reached with the federal Department of Fisheries and Oceans, these often consisted of a trivial fraction of the original river flow and were furthermore often not respected (Vanderwal, 1999; DFO3, pers. comm.).

Today BC Hydro is considered one of the most progressive hydropower producers internationally. Up to the early 1990s, however, the company operated in a heavily conflicted environment, a not unusual situation for hydropower producers at the time or even today. Conflicts among dam operators, environmentalists, local communities and governments are extremely common across the world, and can remain unaddressed and unresolved for years. Nonetheless, in the mid-1990s, the BC provincial hydropower operator adopted a much more proactive stance, embarking on a multi-stakeholder process, known as Water Use Planning (WUP), which reviewed the management of all BC Hydro dam facilities. This program, which used the concepts of adaptive management, value-focused thinking and structured decision-making (Gregory et al., 2001, 2006; McDaniels et al., 1999), is recognised internationally as a very progressive initiative aimed at including environmental flows in dam operations (Hirji and Davis, 2009).

Water Use Planning, a partnership between BC Hydro, different government agencies and First Nations, consists in a series of guidelines which define how the operating plans of BC Hydro's dam facilities should be revised according to the input of an inclusive range of stakeholders and relevant up-to-date scientific information, in order to meet social and environmental goals alongside economic ones (Matthews and Hill, 2004). The WUP program, which officially started in 1999, resulted in the development of 23 WUPs which revised the operating plans of 30 BC Hydro dam facilities, over a six-year period, at a cost of CAD\$26 million (Matthews and Hill, 2004). In addition to resulting in significant improvements in fishery resources across the province, the program has revolutionised the relationships among stakeholders from what used to be antagonistic interactions to cooperative dialogue with much higher levels of trust (ASC et al., 1996; Matthews, 2004).

This paper analyses the particular circumstances and factors that led to the emergence of WUP and prompted BC Hydro to open up its decision-making processes and better respond to environmental and social concerns through full-cost accounting. The research seeks to inform the broader literature around the processes influencing policy change, aimed towards the adoption of more sustainable behaviours.

2. Materials and Methods

The Collaboration Forming Model (Lober, 1997), an adaptation of the Multiple Streams Framework (MSF; Kingdon, 1984), is a model of policy change that provides the analytical framework to address the research question. To briefly summarise, Lober (1997), building on Kingdon (1984), viewed the policy process as comprising of four streams:

- A problem stream – issues that policy-makers and citizens perceive as problems and want addressed.
- A policy stream – the build-up of knowledge and perspectives among a group of specialists in the policy domain, and their proposal of alternative solutions to policy problems.
- A social/political/economic stream – swings in the “national mood” or political climate of a country, including general societal trends such as public opinion and consumer demand, attitudes towards government, and government events.

- An organisational process stream – the role of the business sector in producing change, through for instance corporate behaviour that considers environmental concerns, or industry-specific trends and changes, such as the development of new technologies.

According to Kingdon (1984), these generally independent streams can intersect at specific times known as policy windows, which are defined as fleeting opportunities that are opened by compelling problems that capture decision-makers' attention, or events in the political stream that allow the shift of items onto formal government agendas, thus resulting in policy change. Lober's (1997) contribution was to broaden the MSF in order to better suit cases where the policy process does not occur within the political and government system, and where voluntary collaborations between different stakeholders occur. The models together thus claim that when problems are linked to policy solutions, within a particular social/political/economic context by an organisation seeking to improve its corporate behaviour, the momentum for change can be created.

Lober created the Collaboration Forming Model to explain the emergence of the Paper Task Force in the US, which consisted in a collaboration between the Environmental Defence Fund, five large industrial paper consumers and a university to develop environmentally-sound guidelines for paper procurement. The model has since been used by Takahashi & Smutny (2002) to analyse the formation of a wellness collaborative among three community-based organisations aimed at providing services for HIV and AIDS patients in Los Angeles.

This paper identifies the main factors in each of the four streams (problem, policy solutions, socio-political events and organisational change) and the events that led to the window of opportunity which allowed WUP's emergence. Open-ended interviews were undertaken between February and August 2009 with 16 key individuals (from BC Hydro, relevant government departments and NGOs) that were involved in the original WUP process and/or that were knowledgeable about the role of the different factors, actors and circumstances that led to WUP. The interviews were transcribed and analysed for general patterns, concepts and themes, and their results compared with key literature and secondary data on the case, in order to triangulate the information. Interviewees' views in this paper are identified with codes which are explained in the Appendix A.

3. Results

3.1. Socio-Economic and Political Context

In the Pacific Northwest of North America hydropower has been the engine behind the economy's growth and has played a central role in shaping people's culture, recreation and identity (Mullen-Dalmer, 2009). In British Columbia, over 90% of the electricity is derived from hydropower (Johns et al., 2008). BC Hydro (the provincial electric utility created in 1962) and its predecessors led the production, control and planning of the province's electricity, and, as all provincial crown corporations, was subject to minimal government control and regulation for most of the 20th century (Smith, 1988). Its mandate was to produce abundant, inexpensive power that would contribute to industrial development in BC, in line with the economic and engineering values which dominated electricity production. The provincial Water Act's beneficial use of water prioritised power generation (aimed at post-war industrial development), flood control and water supply for agriculture (Mullen-Dalmer, 2009).

The last mega-projects to be built in BC were the dams on the Peace and Columbia rivers in the 1960s and 70s, under the government of W.A.C. Bennett, who saw these facilities as further engines of economic growth (Howlett and Brownsey, 1996). The aggressive development of these schemes (see Skene 1997; Smith, 1988; Wilson, 1973), and the corporation's limited care in the compensation, expropriation and land acquisition process testified

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