

VIDEO REVIEW

A QUESTION OF POWER: HYDRO-QUEBEC AND THE GREAT WHALE CONTROVERSY A 35 MINUTE VIDEO FOR IN-CLASS USE

ABSTRACT. A very large hydroelectric generating project has been proposed for the northern regions of Quebec. Numerous benefits will be derived from this project: inexpensive power, reduced pollution, and improved quality of life. The native peoples living in the region object strongly, however, and claim that the project will destroy their culture. A 35-minute video describes this conflict and challenges students to make the “build/don’t build” decision.

KEY WORDS: business ethics, global warming, hydroelectric power, market forces, native peoples

Let me at the start apologize for using a videotape produced at my own institution – the University of Michigan – as the topic for the first of what I hope will soon become a series of reviews of audio-visual and multi-media materials to be described in *Teaching Business Ethics*. Motion pictures and videotapes of actual business situations can be very useful resources in conveying the inherent complexities of Business Ethics to business school students. Good audio-visual materials permit an instructor to show the people involved on both sides of a difficult moral problem expressing their views as to the proper outcome in their own words, sensitively yet forcefully. Good audio-visual materials also permit the instructor to depict the benefits and harms inherent in the moral problem concisely yet dramatically. Good audio-visual materials, in short, almost guarantee good class discussions.

I think that the videotape under review here – “A Question of Power: Hydro-Quebec and the Great Whale Controversy” – is clearly one of the good ones. The problem described in the video is both exceedingly complex and deeply moral; it is a decision whether or not to use some of the land inhabited by indigenous people over hundreds of years for the modern generation of hydroelectric power. The persons who express their views in the video, both executives of the public utility and leaders of the native people, are not cast as either villains or heroes; instead they are shown as quiet yet concerned individuals, and their words are both thoughtful and – on the Indian side – heartfelt. All of this comes through – together with some compelling scenes of environmental conditions in

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northern Quebec before and after the development of an earlier project – in the final videotape.

There is one further advantage to this particular videotape. It is free. The University of Michigan has received a small donation so that the tapes produced here can be distributed without charge to all those teaching Business Ethics at any college or university. Ordering information will be given at the end of this review. First, however, I should like to discuss the content of the tape and, later, the teaching plan for the class.

CONTENT OF THE VIDEOTAPE

Hydro-Quebec is the government owned public utility in the Canadian province of Quebec. It supplies 98% of the electric energy used in that province. Most of the energy is produced in the northern reaches of the province, by means of hydro-electric dams and generators. Hydroelectric power, of course, is an almost ideal form of energy: there are no fuel costs, no toxic residues, and no harmful emissions. It is, in essence, an indirect form of solar power.

Northern Quebec is also an almost ideal location for the generation of hydro-electric power. The province contains nearly 10% of all fresh water on earth. Climatic conditions bring large amounts of rainfall, snowfall, and thick, dense fog. Geological conditions feature a rocky substructure that keeps most of this water on the surface, and low mountains with a constant slope towards the sea funnel it into rapidly flowing streams and rivers. The rivers, many in valleys with steep rock sides, can easily be dammed.

Dams, and the impounded bodies of water behind each dam, take a lot of land, and the land of Northern Quebec, while ideal for the hydroelectric generation of power, is not vacant. It has been inhabited for centuries by Cree Indians and Inuit Eskimos, both of whom live by fishing, hunting, and trapping along the streams, rivers, and lakes of the region. Both tribal groups have historically objected to any attempt to utilize the natural resources of the region, including the electric power potential.

By the mid-1970s, however, the traditional patterns of tribal life had changed for both peoples, and the Cree and the Inuit were caught halfway between the old and the new. They were increasingly dependent upon modern equipment such as snowmobiles, outboard motors, hunting rifles, and the manufactured clothing and housing that have been found to be much warmer and more convenient than the traditional materials and methods, yet their hunting, fishing, and trapping lifestyle did not generate the cash income necessary to pay for these new products. Trapping, which long had been the economic mainstay of Cree and Inuit communities, declined

rapidly in importance in the years following 1960 as a result of the refusal by many Western European and North American women to wear fur coats, part of a growing environmental protection and animal rights movement. The price received by native hunters for a beaver pelt, trapped along the rivers and streams of Northern Quebec, fell from \$70.00 in 1960 to \$12.00 in 1975.

In 1975 an agreement was reached with the leaders of the Cree and Inuit people to build dams and construct power stations upon a limited portion of the northern land mass of Quebec. This agreement, known formally as the James Bay and Northern Quebec Territorial Agreement, was signed by representatives of the Federal Government (Ottawa), the Provincial Government (Quebec), the utility company (Hydro-Quebec) and the native people (both Cree and Inuit).

The agreement included a one-time payment of \$550,000,000 that was to be used for improved education, housing, health care, and local development. The effects of this payment can be seen today – and are shown in the video – in such villages as Whapmagoostui on the southern edge of the Northern Quebec Territory. Two new schools were constructed and staffed, along with a new community center, a new airport, a new hockey rink, a new medical clinic, a new supermarket and department store, and new housing. The improved facilities were acknowledged as a definite improvement by the leaders of this Cree Community:

There's no doubt we are living a lot better now (Statement of Robbie Dick, Chief of the Whapmagoostui Cree, quoted in the videotape).

The same results could be seen throughout the entire northern region by 1990. Improved housing and health care brought a substantial increase in the native population. Infant mortality decreased by 50%. The average life span increased by 30%. The total number of Cree Indians went from 6,300 in 1975 to 11,500 in 1990. The base population of the Inuit Eskimos had never been accurately counted, but it was felt that the same percentage increase occurred there also.

The Cree communities were collections of shacks and tents around trading stores. My people lived on the land six to eight months of the year, and came together only during the summers. The summer shacks were crowded, tuberculosis was common, and increasingly the sick and the invalid had to stay at the trading posts throughout the year, living off welfare. All that has changed. (Statement of Matthew Coon-Come, Grand Chief of the Cree, quoted in the videotape)

It's for the better, only for the better. (Statement of Anthony Ittoshak, Chief of the Kuujjarapik Inuit, quoted in the videotape. Note: "Kuujjarapik", translated into English, means "Great Whale".)

Construction of the hydroelectric generating facilities had started in 1975 in the southern portions of the region covered by the James Bay and Northern Quebec Territorial Agreement. This construction was to be in four phases, and by 1992 the situation for each phase was as follows:

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|--------------|-----------------------------|------------------|
| LaGrande I | Fully completed in 1985 | 10,400 MW |
| La Grande II | Expected completion in 1995 | 4,500 MW |
| Great Whale | Planning started in 1991 | 3,100 MW |
| Nottaway | Planning to start in 1998 | 8,400 MW |
| Far North | Not under consideration | <u>23,000 MW</u> |
| | | 49,400 MW |

“MW” stands for megawatts. Each megawatt equals one million watts of electric power. A more understandable translation is that 1,000 MW is the output of a single modern coal-fired or nuclear generating plant. The total potential of the region, then, was the equivalent of nearly 50 modern generating plants.

Planning for the Great Whale project (named for the principle river in that region) had started in 1991, but had been held up by important legal questions throughout 1992 and 1993. Representatives of the Cree Indians and Inuit Eskimos said that they had given permission for the two LaGrande river projects, which emptied into James Bay, but not for the Great Whale and Nottaway river projects, which emptied into Hudson’s Bay much further to the north. They also said that they had not realized the scale of the development nor the impact of the development upon the native culture when they signed the James Bay and Northern Quebec Territorial Agreement in 1975.

Flooding 5,000 square kilometers does not sound like much, but when you see it, and what once was a river is now a sea, it rally hits you. (Statement of Albert Diamond, Member of the Grand Council of the Cree, quoted in the videotape)

The James Bay and Northern Quebec Territorial Agreement is a 31 chapter, 450 page legal document; it is certainly understandable that different interpretations of some of the provisions in so lengthy and detailed a pact could easily occur. The Cree Indians and Inuit Eskimos were represented by attorneys sympathetic to their cause, but it is also understandable that many of the native people did not fully recognize the huge size of the dams, reservoirs, and power stations that were to be built upon their lands and impact upon their lives. And, the leaders now say with some anger, neither the attorneys nor themselves were forewarned at all about one of the major environmental impacts of the project: the release of methyl mercury into the food chain.

Reservoirs flooding low scrub forests such as those in northern Quebec have been found to leach mercury from the decaying vegetation, and transform it into methyl mercury which enters the food chain and is concentrated in certain species of fish. The mercury levels in non-predatory fish such as whitefish which live by eating small organisms and insects stay within the U.S. Environmental Protection Agency's safe guidelines. Mercury levels in predatory fish such as trout, pike and walleye which live by eating other fish rise considerably above those guidelines. Engineers at Hydro-Quebec say that they could not have anticipated these results, which apparently occur only in northern reservoirs under very specific conditions. Representatives of the Cree and Inuit say that whether or not the mercury contamination could have been anticipated is beside the point; they say that they should not now have the major fish species in their area further contaminated. They want the development stopped.

It's outrageous that you plan to contaminate us. (Statement of resident of Kuujjarapik addressing an engineer from Hydro-Quebec, and quoted in the video)

The situation at the date of the video is that, as a result of a suit brought by the Cree Indians and Inuit Eskimos questioning Hydro-Quebec's interpretation of specific clauses in the James Bay and Northern Quebec Territorial Agreement and alleging unforeseen mercury contamination along with other adverse impacts upon the native peoples, a Dominion Court in Ottawa has ordered the Quebec Government to do a binding review of the social, economic, and environmental impacts of the Great Whale project.

These impacts extend far beyond northern Quebec. About 20% of the power had been planned to be sold to public utilities in New Hampshire, Vermont, and New York. The purchase of hydroelectric power from Northern Quebec had appealed to both utility executives and public officials in those states because the power was "clean" with few air pollution or water pollution problems, and because it eliminated any disputes over "sitting" new plants within their own region. No one wants a large conventional power plant, with the heavy rail traffic required for input fuel and the unsightly high tension towers needed for output distribution, in the backyards of their own homes or businesses.

The sale of the power from the project also appealed to public officials in Quebec. Prices for power are almost twice as high in New England and New York as in Canada, due to the need to import foreign oil for thermal generation in those states. The profit from the sale of the power at such high prices was expected to come to well over a billion dollars a year which – as Hydro-Quebec was owed by the province rather than by private

investors – could be used to improve primary and secondary education and other social programs throughout Quebec.

Some of the Cree Indians, in a public relations coup, paddled down the Hudson River in native boats and dress, appearing on the television news each evening, asking viewers not to buy the power that would destroy their land and their culture. Governor Cuomo of New York canceled his state's contract to purchase power, saying additional electricity was not needed for the foreseeable future. Public utility executives in Vermont and New Hampshire wavered also, but the approaching de-regulation of electrical utilities in the U.S. opened up many other markets for the Canadian power. Under deregulation, utilities will no longer enjoy exclusive service territories with rates set by the state government. Instead, utilities will be permitted to serve customers regardless of their location, and will be forced to compete for those customers based upon price. Low cost hydroelectric power from Quebec obviously becomes extremely attractive under those conditions.

There is no question but that hydroelectric power is cheaper to produce than other forms of electrical energy. The comparisons are \$0.042 per kilowatt hour for hydroelectric; \$0.062 for nuclear (assuming public disposal of toxic wastes), and \$0.078 for thermal (coal, oil, or natural gas). Co-generation, which involves use of the remaining heat from a coal, oil, or natural gas fired plant for industrial purposes after the energy for electric generation has been extracted, provides additional income that can cut the cost of thermal energy by about \$0.005 down to \$0.073 per kilowatt hour, but that figure is still far above the non-fuel costs of hydroelectric generation.

The province of Quebec has used their supply of low cost electrical energy from the north as a comparative advantage in their effort to spur economic development in the south, much as many of the countries in Southeast Asia have used their supply of low cost labour for the same purpose. Quebec until recently was a rural province, dependent upon agriculture and forestry, with high unemployment and extensive poverty. Most visitors to the province see only the cosmopolitan areas surrounding Montreal and Quebec City; they do not encounter the much poorer conditions in other sections. As a counter to those poorer conditions, energy dependent industries such as aluminium and magnesium smelting and iron and steel recycling have been encouraged to start along the banks of the St. Lawrence river which, of course, provides sea access to global markets.

The province of Quebec has also used their supply of low cost electrical energy for such domestic purposes as home heating, which has lessened

their dependence upon foreign oil and their need to make foreign payments. Further, the province is attempting to encourage the development of electric cars, for exactly the same twin purposes.

Lastly, the province of Quebec has stressed the pollution-free nature of their low cost electrical energy. A coal fired 1,000 MW generating plant, even with all of the modern pollution control technology installed and operating, will still produce 1,600,000 tons of carbon dioxide per year (the cause of global warming) and 30,000 tons of sulfur dioxide (the cause of acid rain). Hydroelectric generation produces none of these gases and, unlike nuclear energy, has no toxic wastes that need disposal.

The leaders of the Cree and Inuit peoples say that they recognize the many economic, social, and environmental advantages of the Great Whale hydroelectric power project, both for others and for themselves, but they believe strongly that it is wrong to force the dams, reservoirs, and generating plants onto their land, to the detriment of their culture:

It's very hard to explain to white people what we mean when we say our land is part of our life. We're like rocks and trees, beaver and caribou. We belong here. We will not leave. (Statement of Robbie Dick, Chief of the Whapmagoostui Cree, quoted in the video)

It's always us who are asked to pay. We're the ones who are asked to give up our water to give up our trees. We're the ones who are told, "Move over children" (Statement of Matthew Coon Come, Grand Chief of the Cree, quoted in the videotape)

STRUCTURE OF THE CLASS

I start the class, before showing the videotape, by explaining that this is a classic moral problem in which a great many people are benefited and only a limited number are harmed, but that those harms can only be described as severe. I ask the students, while they are watching the video, to make notes on both the benefits and the harms so that we can begin the discussion with some degree of consensus on those two issues.

After the 35-minute video is finished, I put space for two columns on the blackboard, label one "benefits" and the other "harms" and ask for volunteers to complete the listings:

Benefits

- Economic improvement of native people
- Health care and education of native people
- Longer life span & reduced infant mortality
- Inexpensive electric power for southern Quebec
- Industrial development for southern Quebec

Educational improvement for southern Quebec
 Surplus power sales to NE and NY
 Better air quality for global environment

Harms

Land expropriation from all of the native people
 Cultural change for some (particularly older) native people.
 Mercury poisoning of some fish in the food chain

There would not appear to be many alternatives. It would seem that you either build the Great Whale project or you don't build it; you might be able to build it in a slightly smaller scale, but that would only lessen, not eliminate, the land expropriation and mercury poisoning while decreasing the benefits by a similar amount. The impasse would seem to remain exactly the same.

One unclear issue is the future demand for electric power, which will be influenced by the pace of economic development in Canada. Some students always cite what I feel is an extravagant claim made by an environmental advocate in the video – that conservation can cut in half the use of electric power – and I try to counter that argument by asking how many members of the class have used an electric clothes washer and dryer over the past week, and how many would be willing to give up those conveniences to save electricity. Almost everyone has used those very convenient appliances, and very few would be willing to give them up.

Another unclear issue is the probability of a breakthrough in the development of solar, wind, or ocean (wave or tidal) power. All are technically possible, but none are commercially feasible at the present time, and all have potentially very adverse impacts upon the environment. Large scale solar power systems, for example, can change weather patterns within a given region, and the rotating blades of big wind turbines do kill migratory birds who like to ride the air currents through the mountain passes where those fields of turbines frequently are located. The video shows these alternative energy sources, but reaches no definite conclusion relative to their economic and environmental feasibility.

A third unclear issue is the eventual impact of the increasing amounts of carbon dioxide and sulfur dioxide upon the global environment. Both, of course, come from burning fossil fuels for power generation, and the concentrations of both gases are increasing rapidly within that global environment as the less industrialized nations begin to try to “catch up”. An important figure given in the video is the 1.6 million tons of carbon dioxide produced by just one 1,000 MW power plant. I try to get that awesome

figure on the blackboard to show that, while the eventual impact upon global warming may not be clear, the potential for some impact at some time in the future is obvious.

After you have listed the benefits and harms, and discussed the alternatives (not many) and uncertainties (too many), I would suggest that you write “Build the Great Whale Project” and “Don’t Build the Great Whale Project” on the board, and ask members of your class to say what they would do, *and why*.

I suggest that you emphasize the “why”, and force members of your class to support their opinions with specific ethical principles or points of view. From a microeconomic point of view, the hydroelectric generation of electrical power is clearly more efficient (fewer inputs per unit of output) than any other means, though advocates of this approach will frequently forget about adding an “external cost” for the probable destruction of the Indian culture and the possible loss of Indian life (through food-chain poisoning). From a legal point of view the Great Whale project is clearly lawful (if it passes the proposed environmental review), though advocates of this approach will often forget that laws can be established by a majority to the detriment of a minority, and thus not represent the minimal moral standards of the complete society.

Utilitarianism would seem to clearly favor the construction of the project for the social benefits as listed earlier in this paper far outweigh the social harms, though this allegedly positive balance illustrates the major drawbacks of utilitarian reasoning in that the harms are concentrated upon a very small group of people and the damage to their culture and their land is impossible to measure in any quantitative sense. Universal duties and distributive justice, on the other hand, would both seem to be clearly on the side of “do not build”. It would be difficult to will that every group, faced with an opportunity to create great social benefits for others, should be forced to sacrifice their land and their culture in the classic test devised by Kant. And, there is no question but that the Cree and the Inuit are the “least among us”, and should not be harmed according to the definitive rule proposed by Rawls.

After all of the relevant ethical principles have been mentioned my suggestion is that you take a vote, and record that vote on the blackboard. Then, ask one person voting “yes” to summarize the rationale for the construction of the project, and one person voting “no” to summarize the arguments against. I usually end by saying what I hope the students have learned from the class, and quit. Students often are talking about the issues as they leave the room which, to me, indicates that it has been a successful class.

If you would like to receive a copy of the video free of any charge, please contact me.

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