

GUEST OPINION

Comprehensive Review On Dams Urges Consultation

The World Commission on Dams released its final report in London last week, at a ceremony chaired by Nelson Mandela, in what is undoubtedly the most comprehensive, global and independent review of dams ever undertaken.

Born out of a 1997 workshop jointly sponsored by the World Bank and the International Union for the Conservation of Nature, the 11-member WCD spanned the full range of perspectives on the dam debate, from the hydro industry to regulators, academics and activists. Its mandate was to conduct a rigorous and independent review of costs and benefits of large dams and to propose practical guidelines for future decision-making.

The 300-page report builds on a 30-month process, including: public consultations on four continents; nearly 1,000 written submissions; eight independent in-depth case studies; 17 thematic reviews (building on over 100 peer-reviewed expert papers); and a global survey of 125 dams.

While recognizing that dams have made an important and significant contribution to human development, the WCD concluded that in many cases the social and environmental costs have been unacceptable and often unnecessary. It proposes a new framework for decision-making, including strategic priorities and practical guidelines, issuing a challenge to governments and other interested parties to change the way they view energy and water resources development.

The WCD report is thus of particular relevance to Canada and its hydro industry. Indeed, Hydro-Québec took a very active role in the WCD proceedings, participating in its Stakeholder Forum and contributing \$100,000 to the commission's budget. Nevertheless, the WCD report creates a

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profound challenge for Hydro-Québec and for other Canadian utilities and governments.

Findings

The WCD's recommendations are based on detailed findings on the impacts on ecosystems and human societies as well as on the technical, financial and economic performance of large-scale dams.

The WCD found that large dams have led to significant losses of wildlife habitat and aquatic biodiversity, especially when they involve considerable storage, peaking capability or interbasin transfers. It further emphasized that these problems can be exacerbated when multiple dams are built on a single river system, especially when they affect the main stem of the river.

One of its more striking findings is that almost 60% of the major ecosystem impacts of the dams studied were not anticipated prior to construction. Even for dams built in the last decade, more than a third of the impacts were unanticipated.

Furthermore, the WCD concluded that only a small percentage of ecosystem impacts have actually been mitigated effectively. It noted, however, that sophisticated environmental flow requirements with seasonal and inter-annual variability can be effective in reducing the inevitable environmental harm.

On a human scale, the WCD found that there has been a pervasive and systematic failure to assess and account for the range of potential negative impacts on displaced and resettled people and on downstream communities and that these impacts tend to be borne

disproportionately by indigenous peoples and other vulnerable groups. This has led to the impoverishment and suffering of millions and given rise to growing opposition by affected communities worldwide.

Perhaps most important, the WCD found that most problems associated with dams result from faulty decision-making processes, often incapable of assessing the full breadth of energy and dam design options. It concluded with a call for making such choices based on a broader set of inputs and criteria as well as for significant steps to ensure transparent and inclusive stakeholder involvement.

Recommendations

The WCD saw five essential steps leading to a new hydro project. *Needs assessment* and *selecting alternatives* require broad public involvement and multi-criteria assessment to determine whether or not the project should proceed at all. If a dam emerges as the preferred option, additional criteria must apply to project design, construction and operation.

Finding that "business as usual" is neither feasible nor desirable, the WCD proposed a new approach to decision-making about dams based on five core values: equity, sustainability, efficiency, participatory decision-making and accountability.

It proposed strategic priorities based on recognizing rights and assessing risks as well as a series of detailed guidelines for good practice. The first strategic priority is public acceptance, based on a fair, informed and transparent decision-making process in which all stakeholders can participate fully and actively. Those who will be directly affected by the project are major rights holders and core stakeholders. Non-governmental

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Pièces n°:

Régie de l'énergie
DOSSIER: R-3525-2004
PRÉSENTÉE EN AUDIENCE
le 1er sept. 2004
RNCREQ-DOC.10/
RRSE-DOC.11

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organizations and other independent groups should also be included to ensure that environmental risks, for which there may be no champion, are adequately discussed and considered.

In order to ensure real public acceptance, transparency, access to information and financial support for stakeholders are needed. The WCD also set out detailed guidelines for obtaining the free, prior and informed consent of indigenous peoples at each step of the process, an essential precondition.

The second strategic priority is comprehensive options assessment, in which development needs and objectives are formulated through an open and participatory process in which all options are examined. Guidelines call for using a range of tools, such as strategic impact assessment and participatory multi-criteria analysis, to ensure social and environmental aspects are given the same importance as the technical and economic and that demand-side options can compete on a level playing field with new supply, whatever its origin.

The report also pays considerable attention to existing dams and those "in the pipeline." The WCD deplores the paucity of post-project evaluation and monitoring, without which ongoing impact assessment is impossible. It proposed evaluations every five-10 years and formalized, time-limited licensing and operating agreements (common in the United States) in order to allow periodic reconsideration of operating regimes – or even of decommissioning – as new information comes to light.

The report also calls for:

- a national policy for protecting selected rivers from development;
- recognizing the entitlements of affected peoples, and sharing project benefits with them; and
- the payment of reparations for peoples affected by past projects, financed either from government budgets or from project revenues.



Canadian Challenge

In Canada, where natural resources are a provincial responsibility, it is primarily to provincial governments and their Crown utilities that these recommendations apply. The largest hydro utilities are of course those of British Columbia, Manitoba and Quebec, though the provisions concerning existing dams also affect other provinces with substantial hydro facilities, including Ontario and Newfoundland/Labrador.

It is safe to say that no Canadian hydro utility comes close to meeting the WCD's recommendations for needs assessment and selecting alternatives or for reviewing existing dams. B.C. and Quebec have both taken some steps in the right direction, only to later back away.

In B.C., the integrated resource planning process that used to develop the Integrated Electricity Plan in 1995 and the Electrical Systems Operations Review resemble in many ways the process proposed by the WCD. However, B.C. Hydro went to court and successfully blocked the consultation process required by the B.C. Utilities Commission. The recent update to the plan was done without stakeholder participation.

Québec is undoubtedly the province most affected by the report, thanks to Hydro-Québec's aggressive plans to develop new hydro for export. In adopting legislation in 1996 subjecting HQ's projects to independent regulation, Quebec appeared to move to the forefront of the type of participatory planning processes called for by the WCD.

Under this legislation:

- the Quebec Energy Board would authorize all new generation based on integrated resource planning;
- energy needs were to be met

through sustainable development, taking environmental and social concerns into account; and

■ demand- and supply-side options were to be addressed on an equal footing.

This June, however, Quebec adopted Bill 116, which removed generation entirely from the QEB's jurisdiction. Project planning and approval is now even more secretive than it was in the early 1990s, when HQ carried out extensive consultations on its development plan. Now, the Crown corporation proposes and its sole shareholder – the government – disposes, with no public involvement at all in assessing needs, options or alternatives. Public involvement is limited to a brief and purely advisory environmental assessment process, undertaken long after the key decisions have been made.

The one area in which HQ is ahead of the curve is in benefit sharing with affected native populations. As announced in its strategic plan, HQ now seeks negotiated agreements with such groups, guaranteeing them future revenue streams from new projects. While this approach is strongly supported by the WCD, it is no substitute for an open and transparent planning process involving all stakeholders – which is the commission's central recommendation.

The WCD set out to defuse the seemingly irreconcilable conflicts surrounding hydro development the world over. In the process, it has now established a set of standards of acceptable practice by which future – and existing – projects will be judged.

In order to ensure that its recommendations are realized, the WCD recommended that governments and international organizations establish consultative processes to review the report and propose how it can be implemented.

Specifically, it urges governments to:

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Greenhouse Gas Emissions In U.S. Show Increase

A hot economy and more cars on American roads in the United States contributed to a 0.8% increase in greenhouse gas emissions for 1999, according to the latest data from the Energy Information Administration.

The increase was slightly lower than the 1.1-% growth rate that has characterized total U.S. GHG emissions during the 1990s, but significantly higher than the 0.1-% growth between 1997 and 1998, when lower oil production and the Asian economic crisis had an impact, said the report.

Estimated GHG emissions rose to 1.83 billion metric tons of carbon equivalent (mtce) in 1999 from 1.82 billion mtce the previous year. However compared to the 4.1% growth in U.S. real gross domestic product for 1999, the rise in emissions is relatively moderate, said the EIA, attributing warmer-than-normal weather patterns and increased output from nuclear power plants with dampening the increase.

After falling slightly in 1998, carbon dioxide emissions – which account for more than 80% of total GHGs in the U.S. – climbed 1.3% on the back of vehicles pulling freight and people on the highway.

The EIA estimated carbon dioxide emissions in the U.S. increased to 1.53 billion mtce compared to 1.51 billion



mtce in 1998. The increase was more typical of the average 1.4% annual growth rate experienced in the 1990s than the 0.1% increase logged for 1998, according to the Emissions of Greenhouse Gases 1999 study.

Transportation-related levels accounting for about a third of all carbon dioxide emissions from energy consumption, increased three per cent in 1999 to 496 million mtce as a healthy economy encouraged travel and the delivery of goods, said the energy department.

The U.S. electric power sector contributed an estimated 614 million mtce to the GHG brew, about one per cent higher than 1998. An eight-per cent increase of electricity generation from nuclear plants relative to 1998 output contributed to the relatively small increase in carbon dioxide emissions, said the report, adding last year's increase was less than half the average 2.1% increase experienced by the sector over the decade.

Industry-related emissions increased by 0.2% over the year to 481 million mtce, despite the growth in the U.S. economy, possibly due to slower growth in energy-intensive industries, structural changes towards non-energy-intensive

industries and possible efficiency improvements, said the report.

Methane emissions, the second largest contributor to GHG emissions at nine per cent, fell 1.8% to 165 million mtce from 168 million mtce in 1998. Since the beginning of the decade, U.S. methane emissions have declined by about 9.4%.

The report pointed out that methane emissions estimates are more uncertain than carbon dioxide estimates and don't necessarily increase along side of the economy or energy consumption. Energy-related methane emissions are strongly influenced by coal production from certain mines, levels of consumer demand for agricultural products and husbandry and waste management practices.

Even harder to estimate are nitrous oxide emissions, six per cent of global warming potential-weighted GHG emission in the U.S. The emissions aren't systematically measured and many sources, like soil fertilizers and motor vehicles, require many assumptions to arrive at estimated emissions, said the EIA.

In 1999, nitrous oxide emissions remained flat at 103 million mtce. Agricultural sources like nitrogen fertilizers account for about 71% of nitrogen oxide emissions in the U.S., which have grown by 4.8% since 1990.

Emissions of human-made gases – such as hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride – representing about two per cent of GHG emissions, dropped five per cent to 38 million mtce from 40 million mtce between 1998 and 1999. It was the first drop since 1990 to 1991.

EIA data indicated that the decrease in emissions may also be attributable in part to maturing markets for chlorofluorocarbon substitutes, stagnant markets for key high global warming potential gases and increasing awareness of the potential for recycling these gases.

- Dina O'Meara

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- establish an independent, multi-stakeholder committee to address the unresolved legacy of past dams;

- require a review of procedures and regulations concerning large dams;

- develop policies governing stakeholder participation in options assessment and planning; and

- review legal, policy and institutional frameworks to remove any bias against conservation, efficiency and decentralized alternatives and any hindrance to open participatory

processes.

Given the conflict we have seen over hydro development and the renewed interest in it due to the opening of the U.S. market, one can only hope that our governments will take the lead in meeting the WCD's challenge.

Courageous steps are necessary to implement the new standards of practice that the world will increasingly demand.

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