

New Reports Link Private Firms to Energy-System Meltdowns

by Lori Pottinger

Two new major reports by Public Services International Research Unit (PSIRU) reveal how the deregulation of California's energy supply has led to the state's current crisis, and how similar changes to the energy markets of developing countries around the world could lead to similar problems.

Independent Power Producers: a Review of the Issues shows how energy sector reforms in developing countries allow multinational corporations to build private generating plants to sell power to the national power systems. These independent power producers (IPPs) are touted as the market's answer to weak public energy services.

The report reveals how multinational power companies such as Enron and AES won't build a power plant unless they get long-term preferential government guarantees in the form of power purchase agreements (PPAs). These deals usually force the utility to buy all of the company's power and to pay in foreign currency. The rates under PPAs often exceed what utilities can charge domestic consumers. Public utilities are effec-

tively bankrupted in order to pay these firms. PPAs transfer the investors' risk onto the shoulders of the taxpayers. The report notes that, although the World Bank admits that the use of PPAs can "hamper efficiency" and lead to unfair pricing, the Bank actively supported the takeover of public utilities by private companies around the world.

The group's second new report, *California Electricity Crisis: Overview and International Lessons*, reveals how the restructuring of the state's energy system to favor the private sector has led to the current crisis in California. The research analyzes how the imposed market dynamics weakened the democratic mechanisms of regulation and oversight. It also reveals the obscene profits being made by the California's new energy kings – from doubling of revenues for Enron to the recent 600% increase in earnings for Reliant Energy (which owns 17% of California's generation).

California Governor Gray Davis said earlier this year, "We have lost control over our own power. We have surrendered the decisions about where electricity is sold – and for how much – to private companies

with only one objective: maximizing unheard-of profits."

PSI President Bill Lucy said, "The only islands of sanity in California energy are the publically owned municipal utilities which remain committed to providing reasonably priced services to all users. This crisis serves as a warning to the rest of the world of what can happen when electricity is liberalised instead of being treated as a public service."

Said PSI General Secretary Hans Engelberts, "The public sector is still more accountable than private companies. Let us put more efforts into strengthening public institutions so that communities can take part in the decisions that affect their lives."

PSIRU is the research arm of the Public Services International, which represents utility workers around the world. PSIRU monitors privatization and restructuring of public services around the world. The reports are available at www.psiru.org. ■

For more information, contact: David Boys (david.boys@world-psi.org) or David Hall (psiru@psiru.org)

SPECIAL FOCUS: US ENERGY CRISIS
The US energy scene is a wreck. The "California crisis" is spreading, and some lawmakers are proposing short-sighted solutions that could create shockwaves for decades to come. In an effort to shed light on this remarkable situation, this issue contains a variety of perspectives on the crisis by energy experts whose analysis explains how we got here, and how we can get out of it without creating future environmental disasters.

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Berkeley, CA 94703, U.S.A.



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Dams Worsen Zambezi Flooding

by Ryan Hoover

One year after massive flooding on the Limpopo River left 700 dead, floods are again surging through Mozambique, and dams on the Zambezi River are exacerbating the problem. The new floods have already resulted in more than 75 deaths and left 81,300 homeless to date. Meanwhile, rescue workers are feverishly trying to evacuate 105,000 people before water released from upstream dams inundates the lower Zambezi basin. Many are refusing to leave because, after 25 years of infrequent and “controlled” flooding from upstream dams, they have little notion of the danger they are in.

The situation has the potential to become much worse. Bryan Davies, a river ecologist and Zambezi expert at the University of Cape Town, describes the regulated flow of the Zambezi as “a climatic and ecological time bomb.” Two large dams – Kariba in Zambia and Cahora Bassa in Mozambique – are locked in an alarming balancing act of river regulation, a system now teetering on the brink of catastrophe.

After weeks of heavy seasonal rains, the swollen Zambezi and its tributaries have caused the dams’ already full reservoirs to overflow. Engineers at both dams have been forced to open floodgates to avoid damage to the dam walls. Releases from Kariba caused extensive flooding and put even greater strain on Cahora Bassa.

Throughout the flooding, Mozambican government officials pleaded with Zambia to limit Kariba releases as the Cahora Bassa wall was under severe stress. In response, Zambia’s Deputy Minister of Energy warned ominously, “We sympathize with our Mozambican counterpart, but the danger is that if the water is not discharged from (Kariba), we fear that the damage to the dam might result in lots of disasters.”

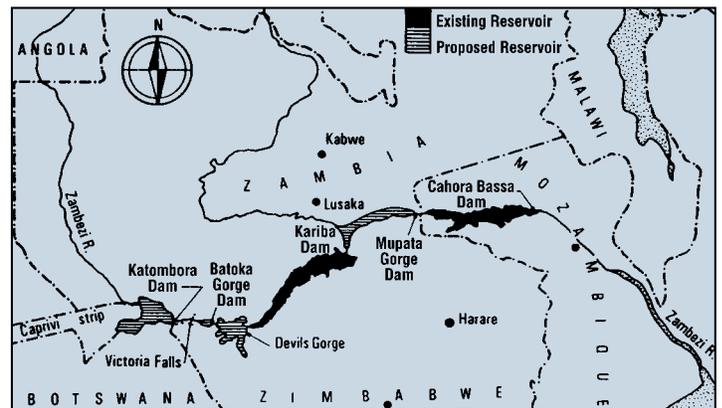
According to news reports, the level of Cahora Bassa’s reservoir was at press time continuing to rise despite four of the dam’s

eight floodgates being opened. Dam operators described the situation as “critical.”

The Zambezi typically floods twice each rainy season – a cycle that was interrupted by the dams. Engineers try to keep high water levels behind both dams, which translates into greater electricity production during the dry season. When the first flood hits the Zambezi (usually in December), the dams trap the flow to replenish dam levels. The dams are then too full to absorb the larger February flood. “I hate to say ‘I told you so,’ but this flooding of the Lower Zambezi was predicted and predictable,” said Prof. Davies.

The dams have so altered the hydrological regime as to change settlement patterns. The now infrequent and highly regulated flooding in the basin has created a false sense of security for the people living downstream. Before the dams’ construction, they annually migrated onto the floodplain to farm and then moved back to safety before floods arrived. In recent times, decreased flows forced communities to farm the flood zone. Formerly productive farmland is now marginal without the floods’ regular deposits of silt. Thriving fisheries have disappeared. “People have moved into the floodplain to feed themselves,” said Davies.

These new settlement patterns mean that hundreds of thousands of people are literally in harm’s way when the big floods inevitably spill over upstream dams. Rich Beilfuss, a wetland hydrologist working on the Zambezi for the International Crane Foundation, notes, “People’s livelihoods were once intimately linked to the annual floods. Because



of the way Cahora Bassa has been managed, however, younger people now have a very negative attitude about even relatively small floods.” Releases from the dam occur unpredictably at any time of year, and have wiped out crops along the river banks.

Climate change could increase the frequency of major floods on the Zambezi – and could further imperil those at risk from dam failures. Climate scientists predict more frequent and intense storms. This year’s flood was only a one-in-ten year event. Experts shudder at the possibility of this watershed being hit with a cyclone similar to the one in the Limpopo last year.

Mozambican scientists and outside experts are working on a solution to the problem, which rests on the restoration of the Zambezi’s normal flood regime through a basin-wide strategy that would coordinate flood releases from the more than 30 dams in the system. Under such a plan, “dams would release medium-sized floods for use by floodplain farmers and fishers, and establish an adequate flood warning policy for larger floods,” said Beilfuss. The plan would involve persuading downstream communities to move out of the flood zone. In fact, the Mozambican government has already proposed legislation to curb floodplain development. ■

California in the Dark on Hydro

by Juliette Majot

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hen California Governor Gray Davis switched on the lights of the official state Christmas tree last year, he knew that a few twinkles later, he'd switch them right back off again. The holiday lighting was the least of his worries. Without their own generators, Californians could very well be hit by rolling blackouts. California's electricity supply simply was no longer reliable. In the state that led the way in energy sector restructuring, the promise of less expensive electricity hadn't just fallen through, it had become a black comedy. Not only had the cost of electricity in some parts of the state doubled, there was a real possibility that no matter how much you paid, there just wasn't enough electricity to go around. At the time of this writing, two large utilities were on the verge of insolvency. No one, it seems, can agree on what, precisely, had gone wrong or what needs to be done. One thing is clear, however: Gov. Davis's recent decision regarding hydropower is definitely not part of the solution.

Just weeks before the on-again, off-again Christmas tree spectacle, in London, Nelson Mandela had delivered his keynote address at the launch of the first independent assessment of the performance of large dams worldwide. The report, by the World Commission on Dams, contained sobering news for dam proponents. Whether for irrigation, water supply, flood control or hydropower, big dams have underperformed against the targets originally established for them; have displaced an estimated 40 to 80 million people; have caused profound environmental impacts, and run dramatically over budget. To make matters worse, it turns out that reservoirs – particularly those in tropical regions where the greatest percentage of new dams are “in the pipeline” – emit significant amounts of greenhouse gases.

Greenhouse gases, were, during the very same moon, the subject of intense discussion among world leaders at the Hague as they attempted (and failed mightily) to establish the rules that the world must follow if we are to limit greenhouse gases. Negotiators spent a good deal of time considering what types of energy projects should be encouraged through subsidies of many kinds, including trading carbon credits. Among the negotiators, large dams appeared to maintain an unearned and erroneous reputation as providing “clean and green” electricity. Insiders suggested that the desire to build big dams was very much alive in the hearts and minds of leaders at the Hague.

The US is not in the market to build more dams, either to offset its extensive fossil fuel bill or to prevent rolling blackouts in the West. This is because the US experience with dams has basically borne out the WCD findings. The full environmental costs associated with dams have not only effectively ended attempts to build new projects here, but have also fed a growing movement to decommission them to restore the rivers whose devastation they brought about in the first place.

But if Gov. Davis isn't putting up new dam plans to keep the lights on in California, he is beginning to tinker with plans to “re-operate” existing ones in ways that will further harm fisheries and ecosystems. In January, Gov. Davis issued an executive order that, among other things, directed the water resources board to disregard previous dam-management regulations devised by the Dept. of Fish and Game to help keep fish runs healthy. The order will last till the end of the year, but could in fact affect the operation of dams for decades to come.

The effect of changing hydroelectric operations to accommodate California's power needs will likely be felt beyond the state's borders. Fisheries in Oregon and Washington – states that provide hydroelectricity to California – could also be affected. An ongoing drought in the Northwest combined with the energy crunch “could result in a massacre for the [salmon] migration as water behind the Snake's dams is reserved for power to send to California,” said Bill Arthur, the northwest regional director for the Sierra Club in a recent article in the San Francisco Chronicle. “There may not be enough cold water to release for the smolts when they need it in the spring to flush them to the ocean.”

The lack of thought exhibited by the Governor's decision to lower environmental standards to increase hydropower production is not unlike the lack of thought given to hydropower in the entire California energy sector restructuring process. It is no exaggeration to state that this lack of foresight could have dire consequences for rivers worldwide. How we care for our rivers in the US often affects – directly or indirectly – what happens throughout the world.

By deciding to optimize power output at the cost of increased environmental harm, Governor Davis has issued a warning to those who believe that the answer to protecting rivers lies primarily in improving operating regimes of existing dams. Beware the vulnerability of re-operation agreements in the face of energy demand and poorly restructured energy sectors. In the long term, decommissioning dams – taking them down or opening them up – is what is required to restore rivers and watersheds, not changes in dam operation. This is not a secret. Hundreds of small dams across the country have already come down, hundreds more will follow. It will take a long time, good science, and strong public and

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Editor: Lori Pottinger

Design/Production:
Janette Madden

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International Rivers Network

Executive Director:
Juliette Majot

Staff:
Monti Aguirre, Paul Allison,
Elizabeth Brink, Selma
Barros de Oliveira, Yvonne
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Smith, Francesca Vietor

Contact Information:
IRN
1847 Berkeley Way
Berkeley, CA 94703 USA
Tel: (510) 848-1155
Fax: (510) 848-1008
E-mail: irn@irn.org
World Wide Web:
<http://www.irn.org>

IRN is an affiliate
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World Bank Attempts to Weaken Resettlement Policy

by Dana Clark

The World Bank finances many projects such as dams which involuntarily displace people in the name of “poverty alleviation” and “development.” The World Bank and the borrowing country’s government decide who must make way for the “greater good” of the country. In practice, involuntary resettlement has resulted in the massive transfer of the economic, social, environmental and cultural costs of development onto some of the poorest people in the world.

While the Bank does not bother to keep accurate statistics on the number of people displaced, a 1999 World Bank inventory of projects involving resettlement indicated that 2.6 million people are being involuntarily displaced by projects currently under implementation, and Bank staff have indicated that an additional 500,000 are being “voluntarily” resettled (90 percent of this is in China). These numbers, extrapolated over more than 50 years, would indicate that perhaps hundreds of millions of people have been resettled for World Bank projects.

What has been the fate of those who suffer from development-induced displacement? Overwhelming numbers have faced impoverishment and anguish, witnessing the destruction of their economic, social and cultural support networks. Anthropologists and sociologists both inside and outside the Bank have documented the grim reality faced by those who are involuntarily resettled. People whose lives are completely disrupted do not easily recover.

Although the objective of the Bank’s resettlement policy is that people who are physically or economically displaced by projects should benefit from the project, and should have their standard of living improved or at least restored, this objective has almost never been accomplished. A 1994 Bank-wide review of 192 projects involving resettlement found only one case where the “improvement” objective had been met, and even that conclusion has been disputed by the affected community. This review stated that “unsatisfactory performance in reestablishing resettlers still persists on a wide and unacceptable scale.”

A 1998 study of resettlement on selected dam projects, conducted by the Bank’s Operations Evaluation Department, criticized the Bank for failing to promote development in the context of involuntary resettlement. Problems with the resettlement policy have also been documented in other World Bank studies, by the Morse Commission inquiry into the Sardar Sarovar Dam, the findings of

the World Bank Inspection Panel on various projects, the new report of the World Commission on Dams, and in critiques by anthropologists, academics, and NGOs. Consistently, for years, the evidence has demonstrated a marked gap between rhetoric and reality, between policy and practice. The costs of these failures are borne by the local people, who are often among the world’s poorest and most politically marginalized.

Lowering the Bar

The widespread failure to successfully rehabilitate displaced communities is particularly significant given the Bank’s guiding mandate of poverty alleviation. The systematic impoverishment of the world’s most vulnerable peoples robs the institution of legitimacy. The World Bank’s response to its well-documented and consistent failure to implement the policy’s objectives is shameful. One would expect a serious re-assessment of resettlement practice and an emphasis on improving performance. Instead, the Bank is currently seeking to weaken the policy.

Proposed revisions to the policy leaked to the public reveal a dramatic reduction in the rights of local people and a failure to learn from past mistakes. At the same time, Bank management (including President James Wolfensohn) and borrowing governments are lamenting the “high cost” of compliance with the policies – completely disregarding the exceedingly high economic, social and cultural costs associated with the destruction of millions of peoples’ livelihoods.

This focus on the costs of compliance stems, in part, from an internal backlash against accountability resulting from the China Western Poverty Reduction Project (also known as the China/Tibet project), a resettlement project which was recently rejected by the Bank’s Board of Executive Directors after a successful and intensive grassroots campaign. An Inspection Panel investigation into the China/Tibet project found serious violations of the Bank’s policies. The Panel report also documented widespread resistance by Bank management and staff to be bound by the terms of those policies, preferring to operate in a “discretionary” mode, with great deference to their client’s perspective on matters such as indigenous peoples, environmental assessments, and resettlement. Now, powerful borrowing countries (with China in the lead), together with Bank staff and management, are launching an assault on the policy framework itself, trying to hijack the revi-

sion process to introduce changes that will significantly weaken the policy and eliminate the unwanted glare of accountability.

Unraveling the Safety Net

Briefly, the proposed changes to the resettlement policy would reverse some of the key policy protections and introduce new language that would diminish the rights and interests of affected communities. The changes would also reduce the Bank’s role and responsibility for ensuring compliance. For instance, the existing policy provides that vulnerable groups, particularly “those who may not be protected through national land compensation legislation,” must be protected through land allocation or culturally acceptable alternative forms of livelihood. In contrast, the draft policy states that only those who have “formal legal rights to land” or “a claim to such rights” are eligible for compensation for loss of land. All others are entitled only to undefined “resettlement assistance.” This change would be especially damaging for ethnic minorities, indigenous peoples and others who have historically have faced enormous obstacles in gaining formal title to their lands.

The proposed draft changes also “clarify” that the Bank policy applies only to direct (and not indirect) impacts, and only to involuntary (but not voluntary) resettlement. Both of these changes threaten to remove protections from vast numbers of people, allowing the Bank to further externalize the social and environmental risks and costs inflicted by resettlement projects to those populations least able to bear them.

The Bank is heading down a dangerous path with its attempt to weaken the resettlement policy; its efforts must be countered by civil society mobilization. The Bank should be forced to adopt a moratorium on all new projects involving resettlement. It should also be required to abandon the practice of involuntary resettlement and instead move toward a model of negotiated settlements with affected communities, in which those communities are given an opportunity to define their own culturally appropriate development path. Finally, there must be a process to examine the Bank’s track record on resettlement and to develop a means to provide reparations for the harm that has been suffered by those communities destroyed by Bank-financed projects. ■

For more information about the Bank’s assault on the resettlement policy, including the latest leaked version of the policy, visit www.ciel.org.

WCD Offers Hope to Dam-Affected Community

by Argwings Odera

The following was presented at a February meeting of the WCD Forum held in South Africa. The author is the Project Coordinator for the Sondu-Miriu Advocacy Campaign in Kenya.

I had my finger broken because I was trying to disseminate the kind of ideals found in the World Commission on Dams (WCD) report.

Why was my finger broken?

At the end of last year, Kenya police shot me in the shoulder, fired over 100 rounds of ammunition at dam-affected people, put me in jail for eight days ... I am now out on bail, faced with the possibility of many years in jail from trumped up charges like inciting the people affected by the Sondu-Miriu Hydropower Project to oppose the project. I am also charged with trespass simply because I was told that where the affected people live is a prohibited area. I am also charged with resisting arrest and publishing a false statement to Japan – I sent a petition by the dam-affected people to Japan so it could better review the project before continuing funding it.

I had to sneak out of the country to be with you today to share in your knowledge, ideas and also let you know of what we dam-affected people think of the WCD report and how it will influence our future process.

I am from Kenya. I live with people terribly affected by the ongoing construction of the Sondu-Miriu Hydropower project in Nyanza, Kisumu. This is a mega-project funded by Japan Bank for International Cooperation (JBIC) and being implemented by the Kenyan Government state corporation KENGEN (Kenya Electricity Generating Company).

How have we interpreted the WCD report?

The WCD report and guidelines echo our everyday desire. The desires to live just like those benefiting from electricity. But what is this we are hearing? Those major dam builders are, quite predictably, attempting to lynch the guidelines. We have heard comments such as the report would make the process of building dams too costly and too time consuming.

I am not here to defend the guidelines because I was not one of the researchers or writers. I defend the report because the report aims to protect my environment, save our river the Sondu-Miriu River, defend my rights

and that of my people. The report, I observe, also defends the rights of people hooked onto the grid and the rights of dam builders to continue building dams ... cautiously.

What are dam builders telling us? That the only way to implement the WCD report is to stop energy-sector development. How much money are we willing to pay to live in a clean, harmonious environment?

How much money ... How much time are dam builders, dam brokers, you and I willing to spend so that there can be a dam acceptable to both ICOLD [the International Commission on Large Dams] and the International Committee on Dams, Rivers and People?

Is this what industry is telling us – “Trash the WCD report, suffer the dam-affected people and let there be light”?

Are dam builders saying, “let us kill 10 indigenous people so that 100 people can benefit from electricity”? Are dam builders telling us, “let us deny 10 more people the source of their livelihood so that these 100 people can satisfy their energy needs”?

When these dams fail, as they inevitably do, will dam builders say, “let’s move downstream, kill those 10 other indigenous people downstream so that those 100 people will have uninterrupted power supply from a second dam”?

And what is the WCD saying? Our interpretation: The WCD is saying let us still provide those 100 people electricity. But also do not kill those 30 people. And by the way, why can’t we provide those 30 people with electricity too and at the same time improve their physical and social environment.

And what are we saying – we the so-called indigenous people, we the so-called tribes. We say, at last! Here is a bible! The gospel according to WCD is what we have been waiting for to bring sanity and rationale to dam building

And what are dam builders telling us? “This is expensive ... this will be time consuming.” This echoes the very problems we are faced with deep in the remote areas where dams are built.

For example, soon after my ordeal, a JBIC mission came to Kenya to have first-hand information about what is happening in their Yen-funded project. Over two days, the community complained and presented evidence of how the project had subjected them to so much grief.

Then what did JBIC do? They told us: “This is purely a Kenyan problem. We are giving you until March to sort out your problems or we will stop the project.”

It was then explained to the poor folks that they would lose their daily wages of US\$2 as menial laborers if the project stopped.

Why? Is it because they find the community demands unrealistic, expensive and can only lead to the stopping of the project ... the same old doomsday messages that dam builders give?

The people panicked and said: “OK, don’t stop the project, but solve our problems first.” What kind of problems are these that JBIC finds unrealistic, time consuming, expensive warranting them to walk out of the power project? Briefly, their concerns center around their environment, the project’s benefits to them and governance issues in the project.

What message did JBIC give its taxpayers when the mission went back to Japan? That the Kenyans have said they want the project to go on! Not a mention of the community demands to the Japanese taxpayers. It is a matter of time before JBIC continues funding this project while the very simple community grievances remain unresolved.

Is this what industry is telling us – “Trash the WCD report, suffer the dam-affected people and let there be light”?

Soon I will be moaning the death of three women, all now on the verge of death. They are victims of dust pollution from project activities in Sondu-Miriu, and now have tuberculosis. They are too poor to afford medical treatment. It is just a matter of time for them. They are not authorized use of a hospital built in the project area because it can only be used by the dam builders. During their funeral, I will carry under my armpit our only source of hope ... the WCD bible.

Before I close, I would like to dedicate my remaining one minute to these three women and other dam affected people and environmental activists all over the world who have died under different circumstances or been incarcerated or harmed so that there can be light. ■

WCD Raises Bar on Resettlement

by S. Parasuraman

The World Commission on Dams (WCD) thoroughly documented the issues and problems with dam-induced displacement in its final report. The report also established guidelines that will give dam-affected communities greater rights, and ensure that risks to those communities are thoroughly explored. It clearly states that affected people must be among the first beneficiaries of a project.

The WCD derived its knowledge base on resettlement from a variety of sources, including numerous studies, testimony and submissions from affected people and other stakeholders. In addition, the Commissioners visited affected people in resettlement areas in several countries.

The Commission found overwhelming evidence to conclude that:

- Dams have displaced from 40 to 80 million people. However, numbers of displaced people are systematically underestimated and several categories of affected groups have been underestimated or not counted at all. People who have suffered livelihood losses downstream and upstream of dams have been omitted in many cases;
- The proportion of displaced people who have not been resettled is often very high (e.g., 75 percent of the displaced in India are not resettled);
- Large numbers of resettlers have not had their livelihoods restored, resulting in impoverishment in many cases;
- Large dams have had significant adverse effects on cultural heritage;
- The higher the number of people displaced the lesser the chances of proper resettlement;
- Most development decisions involving displacement are made without a full assessment of social impacts. Despite greater awareness and improved policies, projects implemented even in the 1990s started without or inadequate assessment; and,
- A lack of legal frameworks to enforce compliance contributed to the impacts of displacement going unmitigated.

In the process of creating dams, the highest risks were borne by society's most vulnerable groups – indigenous and tribal peoples, pastoral communities, fisherpeople and floodplain agriculturalists. With avenues for recourse being largely inaccessible, unavailable or ineffective, impoverishment and social decline were inevitable.

The WCD confirmed that there is good cause for the intense struggle of dam-affected

people which resulted from widespread damage to livelihoods, health, culture and welfare and impoverishment induced by dams and related infrastructure. There is an urgent need to address outstanding social problems associated with existing large dams by providing reparations to dam-affected peoples.

The WCD extensively debated the issue of power relations within society and ways of empowering vulnerable and marginalized groups so they have a meaning role in the planning and decision-making process. The Commission states that, to be socially legitimate and produce positive and lasting outcomes, development projects should provide for greater involvement of all interested parties. Instead of exacerbating existing inequalities, water and energy resources development should be opportunities for achieving a high level of equity. The planning process should be sensitive to, and take account of social and economic disparities, and devise and implement mechanisms for addressing them.

Key policy principles to facilitate public acceptance included:

- Recognition of rights and assessment of risks is the basis for the identification and inclusion of stakeholders in decision making on energy and water resources development. Access to information is key. Legal and other support should be made available to all stakeholders, particularly vulnerable groups, to enable their informed participation in decision-making processes;
- Demonstrable public acceptance of all key decisions is achieved through agreements negotiated in an open and transparent process conducted in good faith and with the informed participation of all stakeholders;
- Decisions on projects affecting indigenous and tribal peoples are guided by their free, prior and informed consent.

The requirement for free, prior and informed consent gives indigenous and tribal communities – the group most seriously affected by development projects with the least power to safeguard their interests – the power to consent to projects and to negotiate the conditions under which they can proceed. The effective implementation of this practice marks a significant step forward in recognizing the rights of indigenous and tribal peoples, ensuring their genuine participation in decision-making and securing their long-term benefits. The Commission believes that all countries should be guided by this concept, regardless of whether it has been enacted into law.

Once a project has received public acceptance, assessment of all negative social impacts and a plan for mitigation and development of the affected peoples should be developed. At the project-design stage, joint negotiations involving government and adversely affected people should result in mutually agreed and legally enforceable resettlement and benefit-sharing provisions. Affected people should become beneficiaries of the project. Successful mitigation, resettlement and development are fundamental commitments and responsibilities of the government and developer in projects developed by private investors. They bear the onus to satisfy affected people that moving from their current context with agreed provisions will improve their livelihoods. Accountability of responsible parties to agreed mitigation, resettlement and development provisions is ensured through accessible legal recourse at national and international levels.

Effective implementation of this involves applying the following principles:

Recognition of rights and assessment of risks is the basis for identification and inclusion of adversely affected stakeholders in joint negotiations on mitigation, resettlement and development related decision-making. Impact assessment includes all people in the reservoir, upstream, downstream and in catchment areas whose properties, livelihoods and non-material resources are affected. It also includes those affected by dam-related infrastructure such as canals, transmission lines and resettlement developments.

Adversely affected people are recognised as first among the beneficiaries of the project. Mutually agreed and legally protected benefit sharing mechanisms are negotiated to ensure implementation.

All recognised adversely affected people negotiate mutually agreed, formal and legally enforceable mitigation, resettlement and development entitlements. Formal acceptance of the negotiated agreements by all negatively affected people signifies their consent to move the project from design to implementation stage.

The WCD final report includes criteria and guidelines operationalising these principles. ■

The author was a Senior Advisor to the WCD. For more information on the report, visit www.dams.org or www.irn.org/wcd/

Brazilian Judge Forbids “De-Construction” of the Pantanal Channelization Scheme

by Glenn Switkes

A series of legal decisions have halted development of the industrial waterway through the Pantanal (the world’s largest tropical wetlands), called the Paraguay-Paraná Hidrovia. On January 24, Federal Judge Tourinho Neto in Brasília rejected the Brazilian government’s appeal to rescind lower court decisions requiring an overall environmental impact study for the project before new ports may be built and dredging undertaken.

The government had argued that broader, coordinated plans for the hidrovia mega-project had been abandoned, and that the hidrovia is now merely a “navigable waterway,” with “isolated” port and dredging projects. In his decision, Judge Tourinho Neto stated, “Can changing the name of something permit what had been prohibited? Would a book no longer be a book if we called it a pen?”

In its groundbreaking decision, the court also ruled that “the inexistence of a project called the ‘hidrovia’, in the view of the Transportation Ministry ... would permit construction of a port without analyzing the impact along the extension of the river, in the upper Paraguay Basin, on the floodplain of the Pantanal. Everything would be carried out piecemeal; today a port, tomorrow another, today construction of a heavy engineering work, tomorrow another; and finally, we would have all the works for implanting the hidrovia, and the name ‘hidrovia’ could once again be applied.”



The Pantanal could be devastated by development schemes.

Photo: Glenn Switkes

The Hidrovia was proposed in 1993 by the governments of Brazil, Bolivia, Paraguay, Argentina, and Uruguay as a project which would dredge, straighten, blast and channelize 3,400 km of the Paraguay and Paraná rivers to open them to larger, heavier convoys of barges hauling soybeans and other grains from the central part of the continent.

The recent legal decision appears to indefinitely stall plans by the US barge giant American Commercial Barge Lines (ACBL) to build a port at Morrinhos, a natural area in the Pantanal, as well as plans by the government of Mato Grosso do Sul state, Brazil to

expand port facilities at Porto Murtinho, both on the Paraguay River. The increasing dominance of US-based soy trading companies has changed the perspective that opponents of the hidrovia are being “manipulated” by US soy growers (the US is the principal producer of the world’s soybeans, with Brazil closing the gap in second place). ACBL is now the largest shipper on both the Mississippi and the Paraguay-Paraná, and the US-based conglomerates Cargill, Archer Daniels Midland, and Bunge now control more than 60 percent of Brazil’s soy exports.

In February, civil society organizations and the Rios Vivos Coalition formed a “Committee in Defense of the Paraguay River.” They joined activists from Bolivia, Paraguay, and Argentina who form part of the 300-member Rios Vivos Coalition in organized opposition to the hidrovia. According to Alcides Faria, Executive Secretary of Rios Vivos, “The hidrovia will impact economic activities which are appropriate for the Pantanal, such as ecotourism and artisanal fishing, eliminating jobs which will be difficult to replace.” He estimates that in Porto Murtinho, 300 people earn a living as captains of small vessels, and 15,000 people in Corumbá work in fishing or ecotourism. By contrast, the ACBL barge port is expected to create less than 10 permanent jobs.

continued opposite

Privatization of Porto Primavera Dam Still on Hold

A February decision by a judge in Mato Grosso do Sul has once again suspended the filling of the reservoir of Porto Primavera Dam, on the Paraná River in Brazil. The judge’s ruling holds that closing the floodgates may not take place during the period of fish reproduction. The latest decision is another setback for efforts by neighboring São Paulo state to sell off its Paraná river dams as part of the privatization of the São Paulo Electric Company, or CESP.

Another problem faced by the São Paulo government is that the buyer of Porto Primavera will also have to assume more than \$500 million in short-term, and nearly \$4 billion in long-term debt, which the government is desperately trying to rollover.

Porto Primavera, more than 15 years behind schedule, will eventually have an installed capacity of 1,800 MW. Its 220,000 ha reservoir, and the forced relocation of 7,000 people, created a gamut of still-unsolved environmental and social problems. In January, Brazil’s environmental protection service granted the go-ahead for filling the reservoir, a process which could now be stalled until at least March.

Indigenous People Demand Reparations from Panama

by Monti Aguirre

A petition by people affected by Bayano Dam in Panama has been brought before the Inter-American Commission on Human Rights (IACHR), demanding reparations from the Panama government for human rights violations, damages and losses caused by dam construction. This is thought to be the first dam-affected peoples case accepted by the IACHR, an autonomous organ of the Organization of American States (OAS). This is bound to set a precedent for similar cases.

The petition includes a demand for \$50 million in damages to the uncompensated who lost sacred lands and homes to the project. Additional claims by the petitioners also include stopping illegal occupation of Indian lands by peasants, land demarcation, and respect of their cultural rights.

The government of Panama has been given until April to address their human rights responsibilities in this case, but if they do not reach a settlement with the indigenous peoples, the case could go to the Inter-American Human Rights Court in Costa Rica.

The 300-MW Bayano dam, proposed by USAID and built in 1979 with World Bank financing, flooded 350 square kilometres of pristine tropical forests and forced the relocation of approximately 4,500 peoples, who were not properly compensated. The dam

was sold during the privatization of the electricity sector to the US-based energy giant AES. This global power company – which bills itself as “the largest independent power producer in the world, after the sun” – is not only buying up dams around the world, but is now getting into the business of building new ones. AES has proposed a new dam in Panama, the 135-MW Esti Dam, as well as large dams on the Nile in Uganda and the Upper Yellow in Tibetan territory.

Panamanian groups CEALP (a legal consulting group) and the Napguana Association, along with the US-based Washington College of Law at American University, prepared the case on behalf of the 3,000 indigenous peoples who were forcibly relocated from their traditional lands by the project. The affected people are from the Kuna and Embera-Wounan indigenous peoples,

At the World Commission on Dams public consultation in São Paulo in 1999, Héctor Huertas, a Kuna lawyer from CEALP, spoke of the impacts the dam caused. Because they were resettled to lands that were less fertile, the people suffered from loss of livelihoods and reduced food security. They were no longer able to hunt, fish or extract traditional medicines. Vegetation left to rot in the reservoir reduced water quality and released methane and other greenhouse gases. The change from rushing river to stagnant reser-

voir led to an increase in mosquito-borne diseases. The displacement from their traditional territories was followed by cultural destruction. “It was like suffering a slow death,” Huertas said.

Access roads to the dam site allowed outside farmers to invade indigenous territories, deforest the land and diminish resources. Indigenous peoples had no title to their lands, which made it harder to defend their territories, and no actions were taken by the government or the World Bank to prevent the settler’s invasions.

For more than 30 years the Kuna and Embera have tried to negotiate with the government to obtain adequate compensation and legal titles for their new lands, but all agreements have been continuously violated.

“Several past administrations have systematically violated the human rights of indigenous Kuna of Madungandi and Emberas of Bayano,” according to a CEALP statement. “These violations began with the construction of the Bayano Dam, which flooded the region and left an artificial lake instead. Indigenous peoples are demanding indemnization for the loss of lands.”

“This is why in 1998 we decided to take the case to the IACHR. This has been a slow process, but participatory. This has been an appropriation process by the community,” said Huertas. ■

Hidrovia continued

The NGOs also hope to be able to counter plans for a series of industrial complexes on the Brazil-Bolivia border at Corumbá-Puerto Suarez. There are proposals for expansion of existing iron ore and manganese mines, pig iron and steel mills, petrochemical plants for manufacturing plastics, a fertilizer factory, and a gas liquefaction plant. Energy for these industries would be provided by at least two gas-fired power plants using natural gas from Santa Cruz, Bolivia, transported through a pipeline financed by the World Bank and Inter-American Development Bank. The pipeline is intended to provide “cleaner” energy for Brazil’s urban centers, but appears to be providing an incentive for electricity-intensive, polluting industries in the heart of one of

the planet’s most fragile ecosystems. The connection between the industrial complexes and the hidrovia is also clear. Eduardo Rodrigues Filho of Rio Tinto Mining, which plans to expand its iron ore mine in Corumbá, told a meeting of the Inter-governmental Committee on the Hidrovia last October “the decision (on our operation) depends exclusively on navigation conditions on the Paraguay and Paraná rivers which can ensure permanent, year-round operations.”

A new study by WWF-Brazil on the impacts of existing barge navigation on the upper Paraguay shows that even without large-scale engineering works, as planned in previous versions of the hidrovia expansion, barges are destroying river banks and gallery forests, and that barge convoys are navigat-

ing in larger configurations than permitted, without enforcement by naval authorities.

Meanwhile, the Pantanal gained broader visibility with its designation in November by UNESCO as a World Biosphere and World Natural Heritage Area. It is hoped that this increased international recognition will provide a degree of caution regarding future plans for economic development activities in the wetlands and surrounding savannas or *cerrados*. Already, several river basins which flow into the Paraguay River have silted up as a result of erosion caused by soy and other extensive monocultures planted in the *cerrado*. Soy interests say that with or without the waterway projects, millions of hectares of the *cerrado* will be cleared for soy plantations in the next decade. ■

WEIGHING THE COSTS OF A REST

by Philip Raphals

On these pages is an excerpt from a new report, *Restructuring Rivers: Hydropower in the Era of Competitive Energy Markets*, prepared by the Helios Institute (Montreal) and published by IRN. The report is intended to offer a clearer understanding of the way in which hydropower and electricity markets and regulation influence one another. It provides not only an understanding of the fundamental issues, but a discussion of the complex technical, economic and regulatory challenges that we face. It provides overviews of the electricity sector before and after restructuring

It is widely recognized that power generation is one of the most significant sources of environmental harm in modern industrial society. Over the past few decades, enormous efforts have been devoted to finding less environmentally destructive ways to meet society's energy needs.

Central to these efforts has been the recognition that the environmental harm caused by electricity generation is in fact one of its costs. However, unlike direct costs, which are incurred by the generator and charged to its customers, environmental costs are primarily borne by third parties. In economic language, these costs are "external" to the seller's balance sheet. Unless these costs (called "externalities") are "internalized," the most economically efficient outcome will not necessarily be the best one for society as a whole.

The environmental impacts of power generation vary both in type and in intensity, depending on how the power is generated. Because the environmental externalities of power generation are so varied, there is no simple way to integrate them into the decision-making process. In the 1970s and '80s, sophisticated techniques were developed to integrate externalities into utilities' decisions about how to meet growing demand for electricity in their service territories.

During this same period, competitive forces were growing in the US electric industry. In the 1990s, these forces exploded into a movement to completely restructure the electric industry by replacing vertically integrated monopolies (where a single company is responsible for generation, transmission and distribution) with competitive markets. While the ongoing energy crisis in California represents a watershed event in their evolution, competitive energy markets are in all likelihood here to stay.

This restructuring process has many implications for energy choices. Restructuring

affects the planning process and the choice of resources. It greatly facilitates inter-regional power transfers. Finally, it is widely recognized that, in a restructured environment, where energy choices are based almost exclusively on price, economic pressures can easily lead to results that are not in the public interest – e.g., by favoring increased generation from old, highly polluting coal plants.

Implications for Restructuring

Electric-industry restructuring profoundly changes the context in which decisions are made about energy resources. In the monopoly world, these decisions were made by utilities that were fully subject to regulatory control. It was in this environment that integrated resource planning developed as the tool of choice to ensure that energy choices were made in the public interest.

Under retail competition, however, the end-use consumer makes the ultimate decisions of whose electricity and what electricity should be consumed, not the distributor or regulator. Thus, the question is no longer whether the utility's energy choices are in the public interest, but rather which energy product is most attractive to consumers. While this freedom of choice is in many ways desirable, it has one important downside – in relieving the regulator of the power to approve plant construction or power purchase decisions, it also eliminates the planning tools that had been developed over the years to balance supply and demand while limiting the damage done to the environment by electricity generation.

This is less true in an environment where competition is limited to wholesale markets. The regulator can still weigh the social and environmental characteristics of competing options before deciding, on behalf of all the distributors' clients, how



their energy needs should be met. Even so, generating options rejected by the energy regulator as too environmentally harmful can still be developed for sale in other jurisdictions, eliminating the regulator's ability to limit excessive environmental impacts from electricity generation.

In practice, however, many jurisdictions jettisoned their integrated energy planning processes at the first hint of competition, well before retail customers were given the opportunity to choose suppliers. In some areas, this has been driven by concern that utilities would be hampered in their competition with non-utility generators if they were subject to planning requirements that their competitors did not bear. In others, such as Québec, where Hydro-Québec faces no significant competition in the foreseeable future, it is better explained by the utility's desire to avoid the public accountability implicit in the planning process.

Once fully implemented, competitive markets are in many ways incompatible with planning processes that, in the past, ensured careful review of the justification for new power plants as the optimal choice to meet forecast demand. If different firms are to



compete for the right to serve consumers over a vast geographic area, they expect to have the opportunity to build power plants based on their own estimation of the projects' risks and benefits. If a firm makes a poor decision, it will lose money, either because its operating costs are so high that it sits idle much of the time (in the case of fossil fuel plant), or because its capital costs are too high relative to the value of the power it produces (in the case of a hydro plant).

While in other industries stranded investments may have few implications beyond private financial loss, the great externalities of many electricity investments means that third parties or the public as a whole can be the losers as well. As such, a



RESTRUCTURED ELECTRIC INDUSTRY

and offers insights into the impact of restructuring on planning and implementation. Against this context, the report considers the implication of competition for the generation of thermal, nuclear, renewable and most importantly, hydropower. The report outlines and assesses the pros and cons of green power marketing, discusses the meaning of renewability, and presents a review of current green power certification systems. *Juliette Majot*

stranded hydroelectric or nuclear project will continue to impose its externalities on society and the environment until (and perhaps after) it is decommissioned, whether or not it is earning a profit or even generating electricity at all.

The process of opening markets to competition also has broader environmental consequences, tending to relegate environmental and other non-market considerations to the sidelines. This trend is almost inevitable in a movement whose primary goal is to lower rates and increase customer choice, and whose emphasis is placed squarely on developing markets.

Restructuring necessarily implies a fragmentation of decision-making – a large number of competing generators, an independent transmission authority, a regulated distributor, a market operator, one or many power exchanges, etc. – thereby inhibiting any serious efforts at addressing complex issues from a broad, integrated perspective.

It is thus imperative to develop new and effective policies to deal with the environmental consequences of electricity generation, transmission and distribution in a competitive environment. It is also important to understand the complex mix of incentives and disincentives for various types of resources that are implicit in the restructured market.

Conservation and Energy Efficiency

It has long been recognized that programs designed to reduce energy needs represent an environmentally beneficial and, in many cases, cost-effective alternative to building new power plants. Such programs can incite people to be more careful in the way they use energy, offer them financial assistance in making their homes and businesses more energy efficient or help them find ways to shift energy usage from on-peak to off-peak periods. These types of measures are known as demand-side management (DSM).



Over the past two decades, it has become apparent that traditional regulation creates many disincentives to DSM. In the short term, DSM adds to utilities' costs while reducing their sales volumes and hence their revenues. In the longer term, it diminishes the

need for new power plants, transmission and distribution lines. Under the traditional regulatory approach whereby utilities' rates

are based on a fixed rate of return on their capital investments, this is not in the utility's financial interest (since new capital assets virtually guarantee greater profits), even though it may well be in the *ratepayer's* interest.

The failure of early attempts to force utilities to take actions that harmed their own financial interests led to the

development of new regulatory tools designed to align the utilities' interest with the public interest.

Complex mechanisms for cost recovery, lost revenue recovery and shareholder incentives were designed and implemented, and, in consequence, many utilities began investing heavily in energy efficiency as a means to balance supply and demand. These mechanisms – and the significant utility spending on DSM that they helped bring about – were to a large extent the crown jewels of the environmental movement's regulatory efforts. With the advent of retail competition, however, these mechanisms become increasingly obsolete. Indeed, the mere threat that utilities might eventually have to



face competition caused their DSM spending to plummet nearly as fast as it rose.

One reason is the utilities' rush to cut costs so that, when consumers are eventually allowed to choose their suppliers, they will be able to offer competitive rates. Substantial DSM programs do raise rates (although the typical ratepayer's *bills* go down), and rate relief was the primary driver behind restructuring. But

insofar as the programs are attributed to the distribution activities of the utility (as opposed to generation), this argument carries little weight. Even after restructuring, distribution utilities remain regulated monopolies. As such, the same cost recovery, lost revenue recovery and shareholder incentive mechanisms can be applied to them, ensuring that they can profit from improving their customers' energy efficiency. However, sensitive to political trends, many regulators have shied away from obliging even the remaining monopoly utilities to invest significantly in demand-side management opportunities, even when they would reduce the economic and environmental costs of energy service.

Another reason that integrated utilities dislike traditional efficiency programs is that customers own the capital equipment (energy efficient refrigerators or motors, for example), unlike power plants, which remain property of the utilities.

Since the utilities don't own the assets, and since recovery of the investment is spread over several years, the mere possibility that captive customers could switch suppliers has helped to sour utilities' appetites for this type of program.

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A Responsible Energy Policy for the 21st Century

by Daniel Lashof & Patricio Silva

The following is an excerpt from a new report by NRDC in response to the Bush Administration's stated intentions to increase reliance on fossil fuels, ramp up supply dramatically and cut budgets for efficiency measures.

This report offers a responsible approach to meeting America's energy requirements. In contrast to recent energy pronouncements by the Bush administration, the path outlined here addresses America's need for energy in a way that is economically reasonable, equitable and environmentally sound.

The cornerstone of the Natural Resources Defense Council (NRDC) plan is increased energy efficiency, relying not on pie-in-the-sky, undeveloped technologies, but on already available cost-effective processes and technologies. In the short term, the plan calls for increased reliance on natural gas as a bridge to renewable and environmentally sound energy sources in the future, and reduced reliance on dirtier fossil fuels. The plan also addresses the urgent needs of low-income households for affordable energy services.

In sharp contrast to NRDC's approach is the Bush administration's controversial energy initiative. Among other things, it calls for opening the Arctic National Wildlife Refuge to oil drilling, and for rolling back environmental safeguards to pave the way for more fossil fuel development. The plan has come under severe criticism for the irreparable harm it would cause to the environment. But there is another fundamental reason to reject the proposal: it is completely unresponsive to the problems it purports to address. It would make virtually no difference to America's energy supply in the short- or long-term, it would have no impact on energy prices, and it would have no practical effect on America's dependence on foreign oil.

The following outlines two of the report's main focus areas and key recommendations.

Key recommendations for electricity: Emphasize clean air, energy efficiency, and conversion to renewables:

- Establish a national fund to promote energy efficiency, support research and development, and maintain universal service;
- Establish a federal "portfolio standard" to ensure that renewable energy steadily increases its market share;

- Extend the renewable energy tax credit, which encourages greater reliance on emerging renewable energy sources;
- Provide tax incentives for advanced energy-efficient buildings and appliances;
- Strengthen energy-efficiency standards for appliances and buildings;
- Require full disclosure to customers about the sources and environmental impact of their electricity;
- Reject new subsidies for so-called "clean coal" and nuclear power, and eliminate existing subsidies.

Contrary to suggestions from the White House, the California crisis is not a function of pollution regulation, and it will not be solved by drilling in the Arctic National Wildlife Refuge. The real reasons for the crisis include a market structure that failed to ensure long-term supplies as a hedge against volatile spot market prices, a contraction in available natural gas supplies, rapid growth in neighboring states, and cutbacks in electricity infrastructure investment throughout the West, among other things.

California already has acted to reduce its exposure to volatile short-term electricity markets through longer-term purchase contracts. Looking ahead, the fastest, cheapest and cleanest response to the electricity crisis is to take advantage of the state's many immediate opportunities to ramp up its energy-efficiency and renewable-energy investments. These measures already are contributing more than 15,000 megawatts to the Western power grid, which has never needed them more. The California Energy Commission has just issued emergency upgrades for efficiency standards governing all new buildings, which will yield the equivalent of two giant coal-fired power plants (1,000 megawatts) in the next five years. Also, last September, the Legislature and Gov. Gray Davis created a 10-year, \$5.5 billion investment fund for energy efficiency and other sustainable energy technologies. The current California legislative session should help the state do more, starting with a large additional energy-efficiency and renewable energy investment from California's budget surplus.



California also needs more highly efficient natural-gas-fired power plants. NRDC supports the ongoing additions of such plants. The new plants are dramatically cleaner than their aging gas- and coal-fired competitors. Indeed, the capacity additions anticipated over the next several years are both clean and large enough to begin improving air quality by displacing those dirtier competitors during at least some hours of the year.

Nonetheless, President Bush said recently, "If there's any environmental regulations ... preventing California from having a 100 percent max output at their plants – as I understand there may be – then we need to relax those standards." But as reported by the *Los Angeles Times* on January 25, Richard Wheatley, spokesman for Houston-based Reliant Energy Co., which operates four Southern California power plants, said that the assertion that environmental regulations are holding back output "is absolutely false. We factor the air quality regulations into our daily operating basis, and they are not causing us to withhold power." The *Times* found just one plant that had to suspend operations temporarily to comply with air quality standards, and it accounted for less than 0.2 percent of California's peak power needs.

In the long-term, the best path for California is the best path for America: strong clean air standards, increased reliance on energy-efficiency measures; a shift away from obsolete, inefficient fossil-fueled plants as a source for electricity; and, eventually, full conversion to renewable, environmentally sound forms of energy.

Taken together, these measures will reduce power plant pollution. The electricity-generating sector today is the single largest source of the four pollutants responsible for the most serious local, regional, national and global air pollution problems we face. These "four horsemen" of power plant pollution are sulfur dioxide (causing

acid rain and producing fine particles), nitrogen oxides (causing ozone smog), mercury (a neurotoxin) and carbon dioxide (causing global warming). Policies to limit air pollution are based on outdated assumptions. As a result, support is growing for integrated requirements to reduce the four horsemen. A major benefit of an integrated pollution cleanup approach is that it would provide a clear road map for business in planning long-term investments.

Large pollution reductions can be achieved at reasonable cost while meeting America's electricity needs by maximizing efficiency and reliance on renewable energy. Market barriers have inhibited the widespread deployment of environmentally preferred options. Two of the most effective and market-compatible public policies to address this problem are "public goods" or "system benefits" funds, and renewables portfolio standards.

A public goods charge – a small surcharge on customers' electricity bills – can help fund cost-effective, long-term investments in energy efficiency, low-income services and renewable energy. At least 20 states have some form of system benefits charge.

Renewables portfolio standards encourage greater diversity of energy resources, which enhances reliability, by requiring that electricity providers include a minimum percentage of renewable energy resources in the electricity mix they deliver to their customers.

Another solution is to rely more on distributed power generators, which are relatively small power plants located at or very near the point where the electricity is used. Small, clean distributed generators can economically reduce demand on the grid, improve reliability and reduce environmental harm. Examples include small-scale solar, wind, fuel cells, and combined heat and power generators (co-generators). Not all distributed generators are clean. For instance, diesel generators – the most common form of distributed generation – emit more than 110 times as much nitrogen oxides and particulate matter as new central station power plants. NRDC supports air regulations to ensure that these generators don't prosper at the expense of the environment; California and Texas are now developing such standards. Currently, most generators smaller than 1 MW fly below the regulatory radar screen.

Key recommendations for a responsible oil policy:

- Provide tax credits to individuals who buy clean, efficient vehicles employing hybrid gasoline-electric drive.

- Raise fuel economy standards for new cars, sport utility vehicles (SUVs) and light trucks to an average of 39 miles per gallon over the next decade.
- Require replacement tires to be as fuel-efficient as the original tires on new vehicles.
- Expand programs to weatherize low-income Americans' housing and help pay their energy bills.
- Provide incentives for smart-growth development patterns that reduce sprawl.

The reality that proponents of drilling in the Arctic Refuge refuse to acknowledge is that the United States cannot drill its way out of its energy problem. America has 5 percent of the world's population, but consumes nearly a quarter of the world's oil supply. It already has extracted the majority of its available oil. The obvious conclusion is that the US can have a much greater impact on oil prices worldwide and can do more to help ensure its own economic security by cutting its demand.

Indeed, fuel efficiency improvements can deliver more oil, more quickly and more cheaply than the Arctic Refuge. Updating fuel efficiency standards to reflect the capabilities of modern technology would produce even greater savings. Increasing fuel efficiency standards for new vehicles to an average of 39 miles per gallon over the next decade

would save 51 billion barrels of oil over the next 50 years – more than 15 times the likely yield from the Arctic Refuge.

Conclusion

Eventually the United States will have no choice but to turn to greater energy efficiency and renewable sources of power. Demand for fossil fuels surely will overrun supply sooner or later, as indeed it already has in the case of US domestic oil drilling. Recognition also is growing that the air and land can no longer absorb unlimited quantities of waste from fossil fuel extraction and combustion. As that day draws nearer, policy-makers will have no realistic alternative but to turn to power sources that today make up a viable but small part of America's energy picture. And they will be forced to embrace energy efficiencies – those that are within our reach today, and those that will be developed tomorrow. Precisely when they come to grips with that reality – this year, 10 years from now, or 20 years from now – will determine how smooth the transition will be for consumers and industry alike. n

The authors work with the NRDC's air and energy program. The full report is available at <http://www.nrdc.org>

Bush Administration Proposes Cuts in Energy Efficiency

While the US is seeing huge increases in heating bills and California is facing an electricity crisis that could cripple its economy, the Bush Administration is calling for a 7 percent cut in energy efficiency and renewable energy research and development and deployment programs (apart from low-income home weatherization programs). The budget request is to be sent to Congress on April 3.

"The Bush Administration should expand these important programs, not cut them," said Howard Geller, former director of the American Council for an Energy-Efficient Economy (ACEEE).

The Department of Energy recently documented that 20 of its most successful energy efficiency and renewable energy activities have already saved consumers and businesses around \$30 billion. In addition, appliance efficiency standards recently issued by DOE will save consumers additional tens of billions of dollars.

The proposed cuts would slow efforts to develop the next generation of super-efficient cars, appliances, heating and

cooling systems, windows, and lighting products; limit funding for partnerships aimed at developing cleaner, more efficient ways of making energy-intensive products like aluminum, cut technical assistance to small and medium-size industries on improving energy efficiency; and hamper efforts to develop improved, lower cost renewable technologies.

ACEEE and other groups are urging the Bush Administration and Congress to increase funding for DOE's energy efficiency programs by \$170 million (20 percent) in this budget. President Bush has proposed a variety of actions aimed at increasing conventional energy supplies.

In another ironic twist, the Bush energy team has proposed more than \$1bn for research for renewable energy sources, but has tied the funding to drilling in the Arctic Refuge. The administration also proposes cutting overall Energy Dept. spending by 3%. Environmental groups vowed to fight for the alternative energy spending and against the Arctic Refuge drilling plan.

SHORTS

New Energy Resources

■ A recently published report offers a clear view of dam decommissioning potential in California. "Rivers of Power: A Citizen's Guide to Hydro-power and River Restoration" explains that some 50 dams are scheduled for relicensing in the next 20 years, offering opportunities for dam removal or improved operations that could restore fisheries and other ecosystem values. The free booklet is available from Friends of the River, Ph: 916.442.3155; email: info@friendsoftheriver.org; www.friendsoftheriver.org.

■ A new website will help people find experts on a range of energy issues from renewable energy technologies and energy efficiency to climate change. The site (<http://www.sustainableenergy.org/>) is hosted by the Sustainable Energy Coalition, a group of 30 national business, environmental, consumer and energy policy organizations that advocates sustainable generation of electricity. The site provides information on emerging technologies, news on energy and related issues, weekly updates and links to breaking news.

■ Global Environment Facility (GEF) predicts in a new report that clean, green energy technologies are set to take off. "Renewable Energy: GEF Partners with Business for a Better World," predicts that developing nations will need as much as five million megawatts of new electrical generating capacity in the next 40 years and are ideally suited to renewable energy applications.

Two billion people – a third of the world's population – currently live without the benefit of electricity. "If renewable energy captures just three percent of the market in developing nations within 10 years, investments could exceed \$5 billion a year," says Mohamed El-Ashry, chairman and CEO of the GEF.

The full report can be downloaded from the "What's New" section of the GEF's website at: <http://www.gefweb.org>.

News Briefs



Editor's Note: Due to the unprecedented US energy crisis, we devote this section to energy proposals that offer hope in light of the proposals coming from Washington, DC to drill the Arctic Refuge and weaken environmental rules.

A BETTER WAY

DAM OPERATOR PUSHES EFFICIENCY:

To relieve the current electricity shortage in the Pacific Northwest, the Bonneville Power Administration (BPA) will kick off a 5-year, \$200 million energy conservation and renewable resource development program. Bonneville says the program will help relieve the Northwest's current electricity shortage, save dwindling salmon populations and help meet its need for new power resources.

Regional utilities that buy power from BPA and choose to participate will get a discount on their wholesale power bill if they agree to invest in conservation measures or renewable resources. Each utility will decide how to spend its discount funds to achieve the desired results for its service area.

Given the current and projected price of power on the market, conservation and renewables can come at very attractive prices, said acting administrator Steve Wright. "Our customers are eager to pursue these opportunities," said Wright. "This is a program we had intended to start next fall, but, with the current shortage, we are offering it immediately."

"Installation of local renewable generation by individual customers qualifies for the discount," said John Pynch, BPA's conservation manager. This includes distributed generation such as fuel cells, photovoltaic arrays, wind generators, fuel-efficient biogas turbines and other equipment.

In other news, Federal agencies spilled water over Bonneville Dam in early March to aid five million migrating fall chinook smolts from a hatchery. The returning adult hatchery fall chinook are an important buffer to Endangered Species Act listed populations.

"With the water volume in the Columbia River heading toward the worst year on record, meeting this request will not be easy," said Bonneville's Wright.

Spilled water does not go through turbines at the dam and does not produce power. The value of the water being spilled is expected to be about \$2.1 million. "Even though this is costly and water is in short supply," said Wright, "we are committed to doing what we can to help the salmon recovery effort."

SHADY BUSINESS: The Los Angeles Department of Water and Power (LADWP) is undertaking a tree planting program to provide cooling shade and energy savings to all city residents, according to Environmental News Service. "Trees for a Green LA" will encourage LADWP customers to plant trees around their homes and provide 100,000 drought-tolerant shade trees each year over the next few years. The program has a \$4 million budget.

Shade trees can reduce air conditioning demands and help air conditioners run more efficiently. Trees also capture rainwater, reducing storm water runoff that can carry pollutants into waterways and the ocean.

"Now, more than ever, it is critical that we pursue energy efficiency programs that preserve our environment and reduce demand, especially in this time of crisis for the state," said Kenneth Lombard, president of the Board of Water and Power Commissioners, said "The more energy we save in Los Angeles, the more the LADWP can provide surplus electricity to California communities in need."

Through the program, trees would be available to residents who attend workshops where they would learn how to plant trees to maximize energy efficiency benefits. Residents would be required to pay for half the cost of the tree, as well as for the planting of the tree.

GREEN SCISSORS: The new "Green Scissors" report, by a coalition of environmen-

tal, taxpayer and consumer groups, details 74 federal programs whose elimination could protect the environment and save taxpayers \$55 billion. The 2001 report, endorsed by more than 24 organizations, highlights programs that taxpayer, environmental and consumer organizations agree should be cut. The full list of recommended cuts ranges from money losing timber sales to coal industry subsidies. This year's report targets a number of environmentally harmful energy programs.

The Republicans have introduced a wish list for the nation's largest polluting industries. If enacted, the bill would give new handouts to the oil, coal, gas and nuclear power industries to destroy natural resources. The bill would deepen US dependence on fossil fuels, worsen air quality, exacerbate global warming and degrade national treasures like the Arctic National Wildlife Refuge – all at taxpayer expense.

"These subsidies only fatten the wallets of corporate interests," said Cena Swisher of Taxpayers for Common Sense. "Why are policymakers asking taxpayers to give more of their hard-earned dollars to industries that are seeing record profits?"

The Green Scissors recommends cutting the following bad energy programs: the "Clean Coal" Technology Program, which would save at least \$325 million over 5 years; the "Partnership for a New Generation of Vehicles," a research subsidy to the "Big 3" automakers that is encouraging the production of diesel vehicles, the cutting of which would save \$1.1 billion over 5 years, and petroleum research and development research programs, which benefit large, profitable fossil fuel and auto companies, at a savings of \$1.6 billion.

The report is available at www.greenscissors.org.

WINDS OF CHANGE

FORCING THE ISSUE: The next generation of power plants to supply Colorado's surging demand will include a major new wind farm, after a state utility commission forced Colorado energy company Xcel Energy to include the alternative energy source in its plans.

The move means a 162-megawatt wind farm to be built by Texas energy giant Enron in Colorado could come on line as early as next year, paid for by ratepayers. A megawatt supplies the ongoing demands of about 1,000 average US homes.

"We're delighted," said Ron Larson, an energy consultant and member of an alter-

native-energy coalition that lobbied the Public Utilities Commission to overrule Xcel and mandate the wind farm in a list of power plants to come on line in the next few years.

Xcel opposed including the wind farm in its plans because it claims wind power will be more expensive than natural gas-generated electricity in coming years. The company also said wind power is unreliable and that it would have to build backup sources for when winds die down.

"This shows that wind is cost-effective. And it will open the door for other renewable-energy projects," said Rudd Mayer of Boulder's Land and Water Fund. Enron's backers have also said building the hundred-plus wind towers, at \$750,000 each, will be an economic boon for the region.

SLOWDOWN IN ORDERS: The worldwide boom in wind energy slowed during the year 2000, but still remained strong, shows a new analysis by the American Wind Energy Association. About 3,500 MW were installed last year, the association said in mid-February. The rate of growth worldwide of wind power installations increased by 26 percent in total capacity for the year 2000 as compared to a 37 percent jump in 1999.

The slower rate of growth was due to a temporary dip in the US market, the trade group said in its annual report on global market trends. In the US, just 53 MW was installed, compared to 732 MW in 1999.

"It's ironic that at a time when California and much of the West is reeling from a shortage in electric generation capacity, the growth of one of the most promising and economical new electricity sources has been hampered by on-again, off-again federal government policies," commented American Wind Energy Association executive director Randall Swisher.

California consumer interest in home wind energy generators has increased dramatically since the beginning of the year as the state's electricity crisis has raised customer fears of rate increases, AWEA said.

AWEA's report is available from www.awea.org/faq/global2000.html

MEGAWIND PROJECT: The world's largest wind farm is about to be built on the Washington-Oregon border. Its 450 wind turbines will generate 300 megawatts.

PacificCorp, an Oregon utility serving six states, with wind-power developer FPL Energy of Florida, announced in early January that they hope to have the wind farm churning out power before the end of the

year. The utility will purchase the output of the project over a 25-year period.

Officials say the extra energy could help ease fears of power blackouts in the Pacific Northwest, which typically has a summer power surplus but needs to draw electricity from California in winter.

Various environmental groups, including the Renewable Northwest Project and the Blue Mountain Audubon Society, were involved in the planning stages of the State-line Wind Generating Project to make sure the site wasn't in a flyway for migratory birds, said Rachel Shimshak, director of the Renewable Northwest Project.

The project will generate 200 construction jobs and 25 permanent jobs. It will also provide local farmers with rent money from the lease of their land. States that will receive power from the new wind farm are New Mexico, Colorado, Wyoming, Montana, Arizona, Utah, Idaho, Nevada, California, Oregon and Washington.

NUKES TO WIND: Part of a former nuclear weapons testing site in Nevada will be transformed into the nation's second largest wind power facility. In his last week as Secretary of Energy, Bill Richardson signed an agreement with US Senator Harry Reid of Nevada to build the enormous wind power facility on 664 acres of the Nevada Test Site (NTS), 65 miles northwest of Las Vegas.

The agreement paves the way for transforming the test site into a renewable energy facility that will help stabilize volatile utility supplies for both consumers and the government, particularly in California and Nevada.

The first phase of the three-phase project calls for at least 120 wind turbines to be operational by the end of 2001 and supply 85 megawatts of electricity. The other two phases of the project will be developed 18 months after the first phase is completed.

Following those two installations, the wind farm will have 325 wind turbines producing 260 megawatts of electricity. The project will also create jobs for 150 to 200 construction workers and about 30 maintenance and operating jobs.

Larger than the state of Rhode Island, the Nevada Test Site covers 1,350-square-miles. Prior to the signing of the Limited Test Ban Treaty on August 5, 1963, which banned atmospheric testing of nuclear weapons, the Department's predecessor agencies conducted more than 1,100 above ground nuclear tests at the Nevada Test Site.

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For similar reasons, independent electricity marketers in a customer-choice environment are unlikely to offer capital-intensive DSM programs like rebates for efficient appliances. Consumers are unlikely to commit to a single supplier for any significant length of time, and certainly not for five- or ten-year payback periods required to tap into many of the most interesting efficiency opportunities. At best, the result is energy efficiency cream-skimming, with programs and offers primarily limited either to financing or to symbolic, low-cost gifts and rebates.

Some proponents of retail competition argue that DSM will actually increase under competition, with marketers offering DSM services as well as kilowatt hours to customers. Indeed, large commercial customers are increasingly being offered long-term contracts in which it is in the provider's interest to implement all cost-effective DSM measures. It is far less obvious, however, that similar opportunities will be made available to small- or medium-sized consumers.

An interesting development in this regard is the creation of Efficiency Vermont, an independent utility dedicated to providing energy-efficiency services throughout the state. This approach is meant to avoid the conflict of interest inherent in asking electric utilities to spend money to reduce the sales of their core product. Efficiency Vermont is operated by the Vermont Energy Efficiency Corporation, a not-for-profit energy services organization, which will consolidate the efficiency programs already offered by Vermont utilities and offer new ones statewide. It is funded by an "energy efficiency charge" on customers' bills, ranging from 0 to 2.5%. This model has been discussed for years as the most elegant solution to providing energy efficiency services in a restructured environment, but Ver-

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political will to make it happen. But it will happen over time.

The energy crisis – perhaps better referred to as the energy consumption crisis – should be exploited for what it tells us about our gluttonous energy consumption, the greed of those generating and transmitting energy, and how public policy can and should best regulate energy in the interests of society as a whole. The crisis should *not* be exploited to derail the growing movement for river restoration and dam decommissioning, while propping up a hydropower industry that is gasping its last breath. ■

mont is the first to put it into practice in North America.

In theory, it should be possible to bid demand-side resources into a spot market the same way generating resources are bid. Thus, an energy services company that had made appropriate arrangements with energy consumers could offer to reduce load by a certain number of megawatts whenever prices surpassed a given level. This "demand-responsive load" would allow the consumer to benefit from high market prices (by reducing consumption) in the same way as a generator does – for example, by getting a rate reduction by shutting off the air conditioner during price spikes.

In fact, recent studies demonstrate that demand-side bidding would create very substantial benefits for all electricity consumers. Studies of the California market show that, by lowering the supply curve, energy efficiency investments can lower the price dramatically, especially on-peak. In practice, however, demand-side bidding has yet to become a reality. The problems – including the need for sophisticated meters, real-time mechanisms to reduce demand on short notice and to confirm that the reductions actually took place – are complex, but soluble. In the near term, however, demand-side bidding will almost certainly be limited to large consumers.

Generation Issues

Large-scale power transfers imply that the electricity consumed in one region is often generated in another. Since all power generation has an environmental cost, this implies that much of the environmental cost related to one region's energy consumption is borne by another. Thus, every power transfer creates a corresponding transfer of environmental harm in the opposite direction. In the words of Arturo Gándara of the University of California at Davis, "The importation of power results in the exportation of its environmental burden, and the exportation of power results in the importation of an environmental burden."

Gándara demonstrates that electricity imports and exports have significant environmental impacts for the exporting country which are not internalized or otherwise accounted for in the importing country. For Gándara, this situation reflects a troubling national policy: "It is a welcome mat for undocumented alien electrons – but only insofar as they leave the environmental burdens they generate at home. It raises serious questions of environmental justice when the cost of hydroelectric development in Canada

are imposed on the Cree Indians and the cost of thermal electric development are imposed on the United States-Mexico border region, a chronically economically disadvantaged region." He proposes that the US Congress amend the Federal Power Act to require authorization for power imports, which would be granted only on the condition that the power did not result in the creation of unacceptable environmental impacts.

These concerns about exporting externalities are not merely theoretical. Canada's three largest government-owned hydro utilities (B.C. Hydro, Manitoba Hydro and Hydro-Québec) are all, to one degree or another, focussing their future development on market opportunities in the US. By far the most ambitious is Hydro-Québec.

In 1997, Hydro-Québec announced that it would build almost 6,000 MW of new hydroelectric supply by 2010. Analysis of Québec's projected energy needs made clear that the bulk of this new generation would serve exports to the US. While the expansion program has taken far longer to get under way than originally announced, company executives have made it clear that the long-term plan remains essentially unchanged. Indeed, the Government of Québec recently adopted legislation designed in large part to facilitate these plans.

The California energy crisis, combined with fears that the same thing could happen in other regions, could well increase pressure for new hydro development in Canada. Despite the multiple and complex causes of this crisis, at the political level, many still believe the problem to be simply one of inadequate supply. Thus, President Bush recently stated that for both Mexico and the United States, "we need more supply."

While Bush's first choice is to expand domestic energy production, it would be no surprise if he were to ask Canada to increase its exports. Surprisingly, this option is still seen as free of environmental consequences. In a recent editorial, the *Washington Post* asked: "Where there is [environmental] risk, would Americans rather take a chance on damaging the environment or depending more on Canadian imports?"

Such imports, of course, are in no way free of environmental impacts, but those impacts remain largely hidden from US consumers. In Gándara's terms, as Canada's energy exports increase, it will import the environmental burden from the ever-increasing consumption of electricity in the US. ■

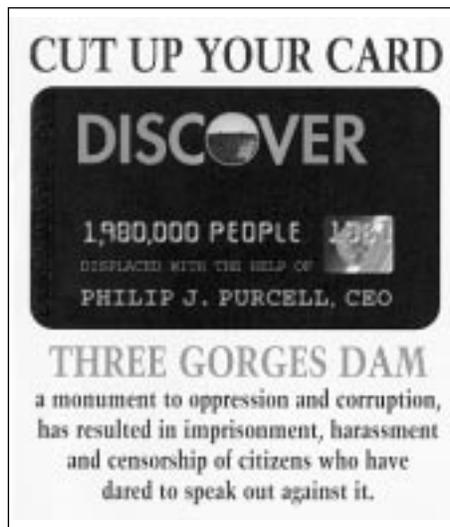
The full report is available from IRN. Contact Yvonne Cuellar (von@irn.org).

Morgan Stanley Receives Chinese New Year Greeting: Stop Financing Three Gorges

by Doris Shen

In the spirit of the tradition of not lending money during the Chinese New Year's period, Morgan Stanley CEO Philip Purcell received a red envelope on January 30 from more than 1,000 petitioners urging the firm to stop financing the highly controversial Three Gorges Dam. Petitioners declared a boycott of the firm's Discover credit card and other services until written confirmation is provided that the firm will not finance construction of the world's largest dam on the Yangtze River. Petitioners are also calling for the firm to adopt environmental and social policies to govern core business practices, including underwriting.

Morgan Stanley helped underwrite a total of \$830 million in bonds to the China Development Bank (CDB), the single largest funding arm for the dam in 1997 and 1999. The firm's continued involvement with the dam is through their joint venture with the China International Capital Corporation



(CICC), the lead advisor on raising overseas capital for the Three Gorges Project Corporation. CICC is managed and 35% owned by Morgan Stanley. Wall Street firms have made

an estimated \$5.4 million in profits underwriting the deal. The Chinese government guarantees all bonds.

IRN launched the boycott of the Discover Card as a means to pressure Morgan Stanley to commit to a public policy of not participating in any direct or indirect financing of the Three Gorges Dam project. College students, a primary marketing group for the Discover Card, comprised a large number of the petition signatures.

The cost of building the dam is estimated at \$25 billion but could run as high as \$72 billion. The project is already burdened with cost overruns and technical difficulties. Reports have shown the dam is rife with corruption and embezzlement of funds originally allocated for relocation and compensation for hundreds of thousands of people. ■

For more information on the campaign to get Wall Street out of Three Gorges, see www.floodwallstreet.org.

Leaked Letters Confirm Official Exaggeration of Three Gorges Dam Benefits

by Doris Shen

Priate correspondence between top Three Gorges Project officials reveals that many government claims about the Three Gorges Dam could be false. The letters, leaked to Canadian group Probe International, reveal that project officials have been deliberately misleading the public about key project benefits.

The letters are between Zhang Guangdou, the principal examiner of the Three Gorges Dam feasibility study, and Guo Shuyan, director of the Three Gorges Project Construction Committee.

"Perhaps you know that the flood-control capacity of the Three Gorges Project is smaller than we declared," Professor Zhang wrote in a May 16, 2000 letter. "The research was done by Qinghua University. After learning this, the Chinese People's Political Consultative Conference Vice-Chairman Qian Zhongying questioned the Yangtze Water

Resources Commission. The commission also admitted this was true."

With a smaller than reported flood-control capacity, the dam will be far less effective at flood control and electricity generation than claimed.

"... Never, ever let the public know this."

In his letter to Guo, Zhang proposed that the threat of floods be addressed by lowering the water level in the Three Gorges reservoir to 135 metres, which would adversely affect shipping on the river. "But," he said, "never, ever let the public know this."

In the past, project proponents have claimed that if the dam's reservoir was kept

at 175 metres, navigation would boost the regional economy greatly.

The letters also confirm that billions of dollars in investments will be required to address a looming environmental crisis in the reservoir area of the dam. Insufficient funds had been budgeted for the work, which Zhang estimate would cost US\$37 billion over 17 years.

According to Zhang, the Chongqing Government had been slow in preparing pollution control projects and had only begun water treatment plants for the stretch of water near the city. A treatment facility built with World Bank loans was inadequate and would leave 940 million cubic metres of industrial waste water untreated out of the 1.18 billion cubic metres discharged by the city. Water in the reservoir is due to rise to 135 metres in 2003 and 175 metres by 2009. ■