



Some Dam – Hydro News

and Other Stuff

4/06/2007

Quote of Note: *“Don't walk in front of me, I may not follow. Don't walk behind me, I may not lead. Just walk beside me and be my friend.” - - Unknown*

Other Stuff:

(Someone finally figured out that some of the environmental movement have actually been a detriment to the global warming problem.)

Greens don't always live up to the name

By TODD MYERS, GUEST COLUMNIST, Seattle Times, 3/28/07

Here's a little known secret. Environmental activists don't care about global warming.

Carbon in the atmosphere is increasing steadily and burning fossil fuels contributes to that trend. Altering that trend apparently is issue No. 1 for environmental activists. Their actions, however, don't always match that goal. This is surprising, especially because Seattle Mayor Greg Nickels made leadership on climate change a central theme of his administration, including Seattle's plan to meet the Kyoto carbon emission targets in 2012. The mayor promised to spend \$37 million in the next two years and millions more to achieve that goal -- about \$21 to \$42 for every ton of carbon emissions reduced.

The high cost, however, leads one to question if reducing carbon emissions is the mayor's primary goal. The city of Seattle could go to established organizations such as the Oregon Climate Trust, which charges only \$10 per ton of CO₂ reduced, or the Chicago Climate Exchange, where carbon credits cost \$4 per ton. Those organizations offer programs that reduce carbon emissions elsewhere to offset Seattle's emissions. Buying offsets would reduce carbon far more than funding expensive public works projects.

That's not the only example.

Environmental activists advocate "green building standards" for state buildings. Paying a little more up front on energy systems in new buildings, they say, will reduce energy use later. Many of these "green" buildings such as Seattle City Hall, however, end up using more energy than those they replaced. A "green" Tacoma middle school used 25 percent more energy in its first year than a comparable non-"green" school built at the same time in the same district. The reaction of environmental activists to such data is illustrative. Instead of demanding improvements, they defend the failed standards. One proponent of such standards admitted that "the certification process doesn't audit actual performance of the building or how much energy it really uses."

Further, market-oriented solutions that successfully reduce carbon emissions often are shunned. That was made obvious recently in Europe. Energy producers who reduce carbon emissions may sell credits to others who exceed the emission cap. In Britain, energy firms earned 1 billion pounds (\$1.88 billion) from such trading. Instead of celebrating this confluence of environmental responsibility and profit motive, the World Wildlife Fund called for a "windfall tax" on that profit. Their discomfort with "profit" outweighed concern about global warming. Taxing the profit serves only to reduce the incentive of companies to reduce carbon emissions.

In Washington state, green power advocates actively oppose our largest source of carbon-free, renewable energy -- hydropower. **Although they claim that no new sources of significant hydropower exist, they added additional barriers to potential development by classifying major hydro as non-renewable in Initiative 937.** That same initiative, however, counts other renewable energy sources an extra 20 percent toward required targets if the project is built using union apprentices. Such efforts seem to indicate that they are willing to sacrifice carbon reduction for an economic ideology.

Environmental activists frequently lament we are not taking global warming seriously. The gap between their words and actions undermines their credibility. Until they are willing to support effective market-oriented environmental solutions that preserve consumer choice, we have to wonder whether they really care about reducing carbon emissions, or are just using the issue to achieve other goals.

Todd Myers is director of Washington Policy Center's Center for Environmental Policy. Contact Washington Policy Center at 206-937-9691 or online at washingtonpolicy.org.

Restored: the world's first hydroelectric house

Vanessa Thorpe, April 1, 2007, The Observer

William Armstrong had his most brilliant ideas while standing thigh-deep in water. The maverick Victorian inventor, who created the mechanisms that raise Tower Bridge in London and open Newcastle's Swing Bridge, was also a passionate fisherman and came up with the idea of hydraulic power at the age of 24 while trout fishing in the Dee in Dentdale. This weekend, the largest monument to Armstrong's ingenuity is open to the public again after total refurbishment. Craggside, in Northumberland, was home to Armstrong for 30 years and was the first house in the world to be fitted with hydroelectricity. The incredible gadgets, from the rotating spit in the kitchen to the hydraulic lift, were all powered by a vast water pressure system housed in the basement. Dubbed the 'palace of a modern magician' by one contemporary visitor, it boasted an early dishwasher, a Turkish bath and hot and cold running water. In completely refitting and rewiring the house for the first time, The National Trust had to commission 500 carbon-filament lamps.

In later life Armstrong described his moment of illumination that day in the river: 'I was lounging idly about, watching an old water-mill, when it occurred to me what a small part of the power of the water was used in driving the wheel, and then I thought how great would be the force of even a small quantity of water if its energy were only concentrated in one column.' Armstrong became one of the richest men in Europe by inventing and manufacturing the Armstrong gun, a cannon. The son of a corn merchant from Newcastle upon Tyne, he founded one of the world's leading engineering firms, WG Armstrong, which sold hydraulic cranes around the world. He employed more than 20,000 men at his works on the Tyne. In 1869 he expanded the house he had built six years earlier on a country estate in Rothbury. The architect Richard Norman Shaw built Craggside by transforming a modest sporting lodge and Armstrong installed a hydroelectric generator in 1878, having dammed a nearby river to create a lake. He wanted to create a cutting-edge home to show important guests, including the King of Siam, the Shah of Persia, an Afghan prince, and the future King Edward VII and his wife Alexandra.

Armstrong eventually presented the patents for his guns to the British government and was knighted in gratitude in 1859. Then in 1887, Queen Victoria's jubilee year, he became the first engineer to be raised to the peerage, as Baron Armstrong of Craggside. The founder of Newcastle University, he died at Craggside at the age of 90 in 1900.

- Craggside, Rothbury, Northumberland (www.nationaltrust.org.uk)

Ethanol - Biobutanol

NEW YORK (CNNMoney.com) -- All of a sudden, everybody hates ethanol. Among the criticisms: Ethanol takes more energy to produce than it yields ... it can't be easily shipped ... it's driving up the price of food ... it's perverse to put food in fuel tanks while people starve. Now a partnership between two corporate heavy weights aims to commercialize Biobutanol, a fuel similar to ethanol but with a few important advantages. The question is: Can they make it cheap enough? Biobutanol's first advantage: it packs more power. Conventional corn-based ethanol - the kind most widely produced in the United States - is only about 70 percent as efficient as gasoline. This means consumers have to use more of it to drive the same amount of miles. Biobutanol, on the other hand, is nearly as efficient as gasoline, according to Reese Tisdale, a project consultant at the Cambridge, Massachusetts-based Emerging Energy Research.



Dams

(Do you feel like you're doing the twist with Chubby Checker – “Round and Round We Go”?)

New data back removal of Klamath dams

Opponents criticized an earlier report, but the state again finds that the plan to aid salmon makes environmental and economic sense.

By Eric Bailey, LA Times, March 27, 2007

SACRAMENTO — Firing the latest salvo in a battle over the future of the Klamath River, the California Energy Commission on Monday reaffirmed its stand that removing four hydroelectric dams that block salmon migration would cost less than trying to keep them. In December, the commission issued a report asserting that removing the dams and purchasing replacement power would cost roughly \$100 million less than installing extensive new fish ladders for imperiled salmon and steelhead.

PacifiCorp, the Portland-based company that owns the dams, volleyed back with a 50-page study of its own suggesting that the commission study, performed by a private consulting firm, got it wrong. The power company argued that the commission failed to consider several important economic and environmental factors and that renovating the dams to accommodate the fish would actually save \$46 million more than dismantling them. The firm submitted its study to the Federal Energy Regulatory Commission, which is considering whether the dams will win a new long-term operating license.

In recent weeks, the state Energy Commission's consultant ran the numbers anew, taking in numbers PacifiCorp said it ignored. The results were far different from PacifiCorp's. The commission's latest report said that dam removal would be even more cost-effective than its consultant originally determined — about \$114 million less than relicensing the dams and installing the fish ladders.

California Energy Commissioner John Geesman said in a statement that the new analysis, which used PacifiCorp's numbers, "clearly indicates" that the utility's electrical customers would save money with dam removal. PacifiCorp's four dams produce enough power for thousands of homes in the Northwest but have blocked 300 miles of upriver habitat for salmon and steelhead. Federal wildlife agencies have ordered that the dams be retrofitted with fish ladders, but PacifiCorp argues that the dams are too tall for ladders to work. The company proposed using trucks to haul fish around the dams. Commission officials said their economic model provided all sides with a "good-faith analysis of the pros and cons" of the various options for the dams. The model is available online at <http://www.energy.ca.gov/klamath>.

Dam removal to cost California US\$67M

April 2, 2007, International Water Power & Dam Construction

California is to spend US\$67M to tear down five small dams along Battle Creek, a tributary to the Sacramento river.

The State Department of Fish and Game has announced the funding as the final piece of a two-decade long effort to make it easier for salmon and steelhead to migrate upstream to their spawning beds.

Eight dams along Battle Creek, built in the early 1900s, diverted water to power houses that generate electricity for 15 Million Pacific Gas & Electric customers from Eureka to Bakersfield. PG&E said the utility will replace the lost power with other sources but will keep three dams in operation.

Removing five dams and adding fish ladders to the other three will open 42 miles of spawning and rearing habitat to wild salmon and steelhead.

But critics say the project doesn't go far enough because the best fish habitat sits above the dams that will be left in operation.



Hydro

(So, why are we dismantling hydro projects and not building new ones, particularly at existing dams? When I first started my hydro, a wise experienced engineer who taught me much about hydro made the statement – “there’s no such thing as an uneconomical hydro project.” He was right then and he’s right today for all renewables. Our problem is that we don’t allow renewables to look good economically, because State PUC’s insist on payoff times of 10 years or less thereby penalizing renewables.)

Idaho electricity cheapest in U.S.

Survey reports that residents pay just 6.12 cents per kilowatt hour for power, compared to the 23.36 cents paid by Hawaiians

By Joe Estrella - Idaho Statesman, 03/27/07

Idahoans pay the lowest price in the nation for electricity, according to a government report released last week. The U.S. Energy Information Administration report showed that in 2006, Idaho households paid 6.12 cents per kilowatt hour for electricity. West Virginians paid 6.32 cents and Washington residents 6.81 cents. The EIA's report noted Hawaiians pay the most for electricity, an average of 23.36 cents per kilowatt-hour.

Idaho Power Co. spokesman Jeff Beaman said which state is credited with the lowest cost is usually determined by who is doing the survey. "But historically, Idaho has always been among the lowest-cost producers," Beaman said. He attributed Idaho Power's ability to deliver low-cost electricity to a "system that anchored by our hydroelectric base, and coal-based resources that are also very economical." However, he warned that the cost of generating electricity is increasing for utilities around the nation.

"There is going to be upward pressure on prices," he said. "But at the end of the day, we're confident that we will remain among the low-cost producers."

Utah households also enjoyed some of the lowest electrical rates in the nation at 7.61 cents per kilowatt-hour, or more than 27 percent less than the average price nationwide. A typical Utah household uses about 775 kilowatt-hours of electricity each month. "Our electricity costs in Utah are relatively low because we have access to low-cost generating resources — coal-fired power plants and hydroelectric facilities," said Dave Eskelsen, spokesman for Rocky Mountain Power, which serves about 85 percent of the state's residents.

The same can be said for the roughly 50 municipally owned utilities and member-owned electrical cooperatives that serve the remaining 15 percent of the state's population. They, too, get power from coal-

fired plants and hydroelectric facilities while their counterparts in other states get a greater percentage of their electricity from more expensive sources, such as nuclear plants or those that burn natural gas.

Only eight states pay less for their electricity than Utah. Still, Utah's electricity rates have had their ups and downs. Rates peaked at around 8.5 cents per kilowatt hour in 1985-86 after Rocky Mountain Power, then known as Utah Power, completed construction of its Huntington and Hunter coal-fired power plants and began to pass those costs along to its customers. Yet those projects also laid the groundwork for the 30 percent decline in electricity rates that took place between 1990 and 1997, Eskelsen said. "A lot of customers don't remember their rates going down during that time because the decreases were only 1 percent to 2 percent at a time," he said.

[\(It's curious why Hydro needs the LIHI to be considered green?????\)](#)

Oregon Dams Join Green Power Ranks

Forbes, 3/30/07

The largest hydroelectric project totally inside Oregon's borders is now officially generating green power, with a designation achieved by only 26 hydro plants in the United States. On Wednesday, the Low Impact Hydropower Institute (LIHI) Board certified the Pelton Round Butte project as low impact, based on an array of planned environmental protection measures, including a new fish passage system that will be under construction this fall. With 465 million watts capacity, and one of its dams rising 440 feet, Pelton Round Butte is the second largest hydro project in the United States to receive the designation. Only one other Oregon facility has LIHI certification: the 4.3-million watt Falls Creek Dam, northeast of Eugene.

LIHI certifies hydro projects after they have passed a rigorous series of tests that demonstrate minimum impact on fish and wildlife. Pelton Round Butte is unusual in that most certified projects are small dams, sometimes built in streams that have few migrating fish to begin with. The project is owned by Portland General Electric Company (PGE) (NYSE: POR) and the Confederated Tribes of Warm Springs (CTWS). The Federal Energy Regulatory Commission (FERC) issued the project's new license in 2005.

"Based on the feedback we received during our review of the Pelton Round Butte project, I believe that PGE's and the Tribe's approach will be a model for future FERC relicensings of complex large hydro projects," said Fred Ayer, LIHI executive director. "We congratulate this forward-looking partnership in meeting LIHI's tough but achievable standards." "Portland General Electric strongly believes that protection of the environment and cost-effective business practices are compatible," said Stephen Quennoz, PGE's vice president for power supply. "PGE is a national leader in providing renewable power to our customers. We are proud that low-impact hydro is now part of the regular supply sent to our customers."

"The Confederated Tribes of Warm Springs are finally beginning to see the benefit of efforts that have been undertaken during a long licensing process," said Jim Manion, general manager, Warm Springs Power and Water Enterprises. "The commitment to restore the environment above the project has been a high priority for the Tribes. CTWS is the first tribe to take an ownership interest in a large hydroelectric complex. The Tribes have committed revenue that is not recoverable in a rate base to restore the fisheries that are vital to our culture," he said. Because of the impact on fish and other environmental factors, electricity from a U.S. hydro plant may not be considered eligible to be sold as "renewable" power until the related generating project has received LIHI certification. Wind, biomass and geothermal energy have been historically accepted as renewable.

Pelton Round Butte impounds the Deschutes River, a federal Wild and Scenic River and a tributary of the Columbia, about six miles west of Madras and about 90 miles southeast of downtown Portland. Its three dams have blocked fish passage, including that of wild salmon and steelhead, since 1968. However, PGE and the CTWS will restore passage with an innovative system expected to be operating by the end of 2009. As designed, 96 percent of downstream migrating fish that arrive at the passage facility will safely transit into the lower Deschutes. Species to be reintroduced above the dams include summer steelhead (a federally listed threatened species) and spring Chinook salmon. Resident kokanee should naturally convert to

sockeye salmon as they head downstream.

The new system will reopen 226 miles of streams above the dams to fish migration while allowing continued production of low-cost, renewable hydroelectric power. Pelton Round Butte generates enough electricity to supply a city about the size of Oregon's capital, Salem, with a population of 143,000. In the current system, juvenile salmon and steelhead can't find their way downstream because of turns in the current of the upper reservoir. The solution will be a 273-foot high underwater tower that will take in most of the surface water, drawing the fish to a collection system that will send them below the dams.

Pelton Round Butte improvement plans will not restrict recreation and should actually improve recreational fishing for salmon and steelhead over the long run through increased populations and better habitat. Additional details can be found at www.PortlandGeneral.com/fish -- click on "Deschutes River."

Portland General Electric Company, headquartered in Portland, Ore., is a fully integrated electric utility that serves more than 793,000 residential, commercial and industrial customers in Oregon. Visit our Web site at www.PortlandGeneral.com. The Confederated Tribes of the Warm Springs Reservation of Oregon is a federally recognized Indian Tribe with more than 4,000 members. Its reservation in north central Oregon covers 1,000 square miles. Visit www.WarmSprings.com.

[\(Is hydro the only energy source subject to blackmail?\)](#)

Connecticut River Towns Look Forward To Big Financial Bonus

Jacob Grant, Staff Writer, Saturday March 31, 2007, The Caledonia Record

Don't be alarmed if you hear music up and down the Connecticut River this year: It's because the towns along the Fifteen Mile Falls project area are getting a bonus - a bonus to the tune of \$2.1 million. The money comes from TransCanada - the power company that owns the three dams along the Fifteen Mile Falls area - as a result of a settlement agreement between the original owners of the dams and the other parties involved. The money has been building up in a special fund and will be paid to the Vermont towns of Concord, Barnet, Lunenburg and Waterford, and the New Hampshire towns of Littleton, Monroe and Dalton.

"[The money] is a big boost," said Littleton interim Town Manager Tony Mincu. He said residents decided to contribute Littleton's share of the money to the long-awaited stabilization and rehabilitation of the town's historic Opera House. Voters also appropriated \$500,000 worth of taxes to the cause, which, altogether, kicks in about \$1 million to the estimated \$2 million project. "It'll be a big help," Mincu said.

Each town involved in the Fifteen Mile Falls project will be paid a sum of money based on how much acreage each town has that is affected by the project, according to a notice from the Northeastern Vermont Development Association.

- Concord has the largest percentage of acres affected, 2,506, and will receive the largest sum, about \$450,000. (This amount is estimated.)
- Littleton, N.H., with 2,397 acres affected, will get nearly the same at \$449,684.
- Waterford has 934 acres affected and will receive \$175,221.
- Barnet has 583 acres affected and will receive \$109,372.
- Monroe, N.H., has 414 acres affected and will receive \$77,667.
- Dalton, N.H., has 142 acres affected and will receive \$26,640.
- Lunenburg has the smallest acres affected, 15, and will receive \$2,814.

Brian Hardy, select board chairman for the town of Dalton, said there hasn't been anything more than preliminary discussion on what to do with Dalton's share, but they have some ideas. "We definitely believe it should be used for river related environmental recreation," he said. "Beyond that, we don't have much more than just early discussion." Most of the other towns haven't talked much about it.

Fifteen Mile Falls Project

The Fifteen Mile Falls project, as the name implies, covers a 15-mile stretch of the Connecticut River. Within that area there is, at the northern end, the Moore Dam, spanning the river between Littleton and Waterford,

with a huge reservoir behind it; down river is the Comerford Dam, which runs between Monroe and Barnet; and at the southern end, between McIndoe Falls and Monroe, is the McIndoes Station. Because the river is public and spans two states, the owner of the dams needs a license from the Federal Energy Regulatory Commission. This process is often lengthy and very complicated and has, at times, led to extended conflict between interests.

Back in 1996, when relicensing had just begun on the Fifteen Mile Falls area, a settlement agreement was reached to increase opportunity to collaborate on issue resolution. New England Power Company owned the dams back then and was in the midst of relicensing when it announced its intent to sell. Cleve Kapala, director of government affairs and relicensing, said the reason for the sale was because new legislation for the Massachusetts-based company required the separation of its power generation and transmission assets. It was a requirement for most U.S. states, Kapala said, and resulted in the company and interested parties - such as federal state agencies, environmental and community groups - to develop the agreement in the spring of 1997.

The M&E Fund

The agreement called for the establishment of the Upper Connecticut River Mitigation and Enhancement Fund, also known as the M&E Fund, which was to be funded through annual contributions from the dams' owner. The purpose of the M&E Fund is to provide financial assistance to projects that will restore, protect, and/or enhance the river's ecosystem affected by the hydroelectric projects. However, there is no restriction on the communities' use of these funds. The Fund is administered by the New Hampshire Charitable Foundation and the Vermont Community Foundation.

US Generating Company bought the Fifteen Mile Falls generating facilities in the fall of 1998, according to NVDA. USGen contributed to the development of the settlement agreement and the relicensing process, which lasted from 1995 to 2002. In 2005, the dams were sold again, this time to TransCanada Hydro Northeast Inc. TransCanada has until 2012 to fulfill the settlement agreement. In a statement from NVDA, the communities will, in all likelihood, receive additional funds.

Onetime job magnet faces hard questions

By Bruce Henderson, CHARLOTTE OBSERVER, 4/1/07

BADIN, N.C. - The jobs went first. Now the 90-year kinship of a community and its biggest industry is crumbling under a cloud of pollution and competing claims to the river that put Badin on the map. Alcoa's aluminum works once paid nearly 1,000 people good wages. Stanly County saluted its leading employer with a smelting crucible on its official seal. Now most of the jobs are gone, and county leaders worry about what's left behind.

Contamination is at the top of the list. Smelting aluminum produces tons of hazardous waste, and, before environmental laws were enacted, Alcoa simply dumped it. Local leaders fear the county will be left with sick people and huge cleanup bills. Alcoa vows it won't walk away from the tainted soil and groundwater in and near the plant. North Carolina authorities haven't decided whether it poses health risks.

Then there's the \$44 million a year Alcoa earns from its four hydroelectric plants on the Yadkin River, which once helped power the smelters. The county wants a taste, arguing that the wealth of its most vital natural resource is being exported. Alcoa says no. Hard feelings have divided the county. Many residents - "company-store people," County Commission Chairman Tony Dennis calls them - spent careers at the aluminum works. "They've always treated us as a worker colony here," said Dennis, who helped bury Alcoa waste years ago, "and they're still treating us like a worker colony." In Badin, a lakefront town of 2,000 where many live in old rowhouses built by Alcoa's French predecessor, the company still gets the benefit of the doubt.

"They're crucifying them" now that the company is no longer a job magnet, said Coy Ritchie, an Alcoa retiree who owns an antiques store. "They're harassing Alcoa for absolutely nothing." The conflict flared in 2002, when the Alcoa Power Generating subsidiary moved to renew its 50-year license to manage the river. That's

also the year the parent company largely shut down the Badin works, shedding more than 300 jobs. Seventy-two workers remain. After the usual relicensing debate over lake levels and dam releases, Stanly County officials last year began asking hard questions about contamination. "They're fair questions to ask," said Gene Ellis, an Alcoa official in Badin. "How they get asked is another story. Unfortunately, the method the county commissioners chose was like a disrespectful inquisition."

The county contends that Alcoa has dodged its questions, many of which lie outside the normal scope of hydro licensing. Alcoa did agree in February to donate about 1,100 acres - an offer pared down in part because some of the land was contaminated - to expand nearby Morrow Mountain State Park. It also agreed to sell 4,700 acres to the state. The company says it will do environmental assessments of any land it divests. The Badin works produced 2.3 million pounds of hazardous wastes in 1997, when it ran at full tilt, federal documents say. State records document 13 contaminated sites in and around the plant. The plant and a nearby landfill Alcoa shared appear in the federal Superfund database of hazardous sites, but not on its cleanup priority list.

Alcoa has spent \$8 million to remove contamination at eight sites, Ellis said, and will spend as much as \$2 million more at one. Monitoring wells have been installed to detect the movement of contaminated groundwater. "We can't and we won't walk away from our responsibility to those sites," Ellis said. Alcoa's critics say more waste could lie hidden among the company's 15,000 acres. And they're suspicious of the large number of Stanly County wells tainted by arsenic, which occurs naturally but also in Alcoa's wastes. If the wells were plotted on a map, county health director Dennis Joyner said, an unusually large number of dots would appear near the Alcoa-controlled Yadkin shoreline. He is unable to tell whether arsenic or other aluminum wastes could have sickened people. "I have no indication, from what I'm aware of, that [Alcoa] is contributing," Joyner said. "But at the same time, I don't know that it's not there." Alcoa said it was not to blame for the tainted wells. The county and company continue to spar, meanwhile, over the Yadkin.

Local leaders say they hope to negotiate a return of some of Alcoa's hydroelectric revenue to stimulate local job growth, if not regain control of the river itself. The region has lost 18,000 manufacturing jobs in five years. "Here we are struggling financially, but we're rich in natural resources," said banker Roger Dick, who argues that the Yadkin should benefit local people. "It sounds like something South America or Africa is fighting for." Alcoa said such talk smacked of the seizure of private property. The county already shares the revenue from power sales, it said, in property taxes based on those revenues. County commissioners have hired a Washington law firm and said they were willing to spend \$150,000 in the relicensing fight.

Licensed to operate the lake: FERC grants AmerenUE authority to operate Osage hydroelectric plant for 40 years

Utility plans to address its management plan for Lake of the Ozarks at a series of public meetings

By Joyce L. Miller/Lake Sun Leader, April 1, 2007

LAKE OF THE OZARKS ' After more than a year of operating under a temporary license, the Federal Energy Regulatory Commission has signed off on an agreement that gives AmerenUE the authority to operate the Osage hydroelectric plant for the next four decades. The license is the culmination of a process that began more than five years ago. As part of the license, AmerenUE is responsible for the management of Lake of the Ozarks.

Now that the license has been granted, AmerenUE officials are expected to unveil a newly revised shoreline management plan. The SMP will serve as a guide for growth and development and protection of environmentally sensitive areas within the boundaries of the project that encompasses the lake. The original SMP was shelved after it drew fire from lakefront property owners, realtors, bankers and others who opposed the plan that said some of the restrictions on placement of docks went too far.



Since then AmerenUE, state and federal resource agencies, along with the shoreline management committee, has revamped the plan in an effort to address concerns. The new license assures the continued operation of a reliable power source in the region while minimizing downstream erosion and protecting water quality, fisheries, wetlands, recreation and historical resources at the project,' FERC said through a press release issued Friday. The release continues, 'An uncontested

Dams Program: <http://npdp.stanford.edu>

settlement agreement, submitted in support of the company's application for renewal, also was approved.

As part of the license, AmerenUE is required to file a shoreline management plan with the Commission within one year to ensure that shoreline development activities within the project boundaries are consistent with the license. A shoreline management plan is important to manage the multiple resources and uses of Lake of the Ozarks' 1,150 miles of shoreline within the project's boundaries, while protecting the environment and recreation values, and addressing the needs of the public,' FERC said.

The 40-year license issued to AmerenUE takes effect immediately and, among other things, provides for: 'upgrades to existing generating units; a fish protection plan; improvements to recreational facilities; development and implementation of a recreation management plan; development of an operations and flow monitoring plan; monitoring of downstream shoreline erosion; and continued monitoring of lake level, inflow and project discharge.

Rockford dam studied for hydropower prospects

April 02, 2007, By Matt Vande Bunte, The Grand Rapids Press

ROCKFORD -- The city plans to study creating hydroelectric power at the downtown Rogue River dam. The idea is one of several goals included in budget planning for the fiscal year that starts this summer.

"It was a power-generating dam at one time," said Councilman Neil Blakeslee, who is pushing for the study. "The technology seems to be growing by leaps and bounds. The Rogue River Electric Light and Power Co. set up shop near the dam in 1903, inside a building that now houses the Rockford Area Historical Museum. It held two large turbines powered by the river.

That year, G.A. Krause opened a shoe factory in Rockford that now is known as Wolverine World Wide. Museum curator Kathy Cornwell said that, when the factory opened, there wasn't enough electricity for it and the village. Cornwell said the power house was moved across the road to its current location at 11 E. Bridge St. in 1937, when Consumers Energy became the primary power source. Since then, the power capacity of the river has gone untapped. "All that water goes over there, and the power from it is not used. It's wasted," Cornwell said. "It's always there. It's free. It's non-polluting."

City Manager Michael Young said a consultant will analyze the river's flow to determine how much power a spinning turbine could produce with today's technology and what it might cost.

Rockford leaders envision the river providing "supplemental power" for municipal functions or, perhaps, the whole city. Dan Bishop, a Consumers Energy spokesman, said "it's never as simple as it sounds" because government licensing and regulation is involved.



Environment

(There's green and then there's hydro!)

Turning to the tide for green energy

SHANNON MONEO, The Globe and Mail, Toronto Can., 3/27/07

VICTORIA -- The fast-moving tides and deep waters near Victoria were the backdrop for Prime Minister Stephen Harper's January announcement of \$1.5-billion in spending over 10 years to boost Canada's supply of green energy. Mr. Harper chose Race Rocks Island -- 10 nautical miles southwest of Victoria -- because it is home to a made-in-B.C. tidal-energy experiment. Last summer, Vancouver-based Clean Current Power Systems, which received funds from Alberta's energy giant EnCana and the federal government, installed a tidal turbine generator near Race Rocks. It's a harsh work environment. Salt water corrodes the metal equipment, and the tides flow like a fast-moving river, which is more taxing on the generator than a slower current.

Other challenges have surfaced.

Huge capital expenditures, environmental assessments, B.C. Hydro's co-operation and consumers willing to pay more are required for the project to be a success. "It's definitely not going to be easy," said Glen Darou, president of Clean Current. "It comes down to how badly do we want it." Tidal generators are anchored to the ocean floor and work like windmills. The tide flows in and turns the blades, which have a magnet attached. The magnet passes by coils, creating electricity that powers a lighthouse and a couple of buildings on the island. The lessons learned from the prototype, which cost \$7-million to build and has developed problems with its bearings, will be used in the planning of a larger, commercial generator, said Mr. Darou, a former chief financial officer at Shell Canada and Cominco.

If 20 large units were placed near Race Rocks, they would produce about 75 million kilowatt hours of energy. That's enough to supply 7,500 average B.C. homes. In Discovery Passage, near Campbell River, the tides are also fast, and there is underwater space for up to 200 generators. Each one would be almost as tall as B.C.'s Legislative Building. Mr. Darou envisions a wall of the 19-metre-blade units, silently working. The large tidal farm could produce 850 million kilowatt hours of energy -- enough for 85,000 average homes.

By comparison, B.C. Hydro's largest hydroelectric facility, the W.A.C. Bennett dam (one of 30 hydroelectric sites in the province) can generate 2.73 million kilowatts of power at any one time. The Discovery Passage project would cost about \$800-million and take three years to complete. To be cost-effective, a large-scale installation is necessary. Mr. Darou doesn't think British Columbians are ready to finance the expensive project, or for the higher hydro bills. He optimistically estimates a rate of about eight cents per kilowatt hour for tidal power, which is 33 per cent more than the six cents per kilowatt hour B.C. Hydro customers pay now.

University of Victoria ocean physics professor Chris Garrett said British Columbians shouldn't pin their hopes on tidal power. He cautions that predictions of the amount of energy that can be generated are based on optimum conditions, and thus are exaggerated. The average production at a tidal farm could be as little as 20 per cent of the estimate. In 2005, B.C. Hydro assessed tidal power and concluded that it wasn't commercially feasible. But now that the gap between supply and demand is growing, B.C. Hydro is considering alternative energies. In December, it will accept bids for projects from both "proven" and "innovative" technologies.

B.C.'s Energy Plan states that new electricity generation projects must have zero net greenhouse emissions, which tidal power can achieve. B.C. Energy Minister Richard Neufeld said tidal power is in its infancy. It will be part of the province's energy mix once its price is comparable to hydroelectric. When the cost of hydroelectricity rises by 2 per cent, Mr. Neufeld said his office receives thousands of complaint letters. Keeping voters happy while creating 30,000 gigawatts of energy over the next 25 years will be a balancing act, he said.

Dr. Garrett would be delighted if tidal power "would save the world," but as a "green" energy source, its value is a tad tarnished. During his 40-year career, Dr. Garrett has studied the effect of tidal generators on the environment, and when many generators are installed, they exert a drag on the water and slow its flow. Currents and tides can be significantly altered, he said. And even though they are anchored 15 metres deep or more, generators can prevent the passage of large ships and fish, and can kill marine mammals. More collaboration between engineers and oceanographers is required when tidal projects are being considered, Dr. Garrett said.



There She Flows - The East River Generates Electricity

WorldChanging Team, March 31, by Worldchanging NY blogger, Mark Caserta

The term *hydropower* tends to evoke images of large hydroelectric dams, born from some massive public works project during a bygone era, right? The truth is that hydropower can also refer to

Program: <http://npdp.stanford.edu>

something much smaller and more eco-friendly --and New York City is currently host to two of them. Didn't know that? Well, that's because they are under the East River, near Roosevelt Island. It seems that back in December 2006, an innovative energy company known as [Verdant Power](#) planted two state-of-the-art turbines in the East River. They spin with the ebb and flow of the river's tides, turning the water's boundless energy into electricity (as long as dead bodies don't get stuck in the blades). Eventually, Verdant hopes to generate as much as 10 megawatts in the East River, and 500 megawatts statewide, with the help of the [New York State Energy Research and Development Authority](#) and New York University.

There are some concerns in the eco-community that the turbines could hurt aquatic life or disturb fish breeding grounds. But for the time being it's pretty clear that this new form of clean energy is a lot better for the East River than the usual stuff that flows off the streets of the city on a daily basis. While ten megawatts is a small amount of energy in the scheme of things, it's a start. We probably won't be cozying up to a movie like *The Life Aquatic with Steve Zissou* with the help of these little East River turbines any day soon, but hey -- we can dream!

[\(The internet is amazing! Who are these people?\)](#)

Suit adds twist to Klamath dams

Monsters and Critics.com, By Hil Anderson, Mar 30, 2007

LOS ANGELES, CA, United States (UPI) -- A California environmental group this week opened a new front in the battle to remove four hydroelectric dams on the Klamath River that had become bogged down in a standoff over economic forecasts. By alleging that a fish hatchery maintained at one of the four dams was actually damaging the Klamath salmon habitat with its waste products and toxic algae, Klamath Riverkeeper raised the ante in the process of issuing a new federal license to PacifiCorp, the company that operates the dams.

PacifiCorp is part of MidAmerica Energy, a subsidiary of Warren Buffett's Berkshire Hathaway, a fact not lost on Klamath Riverkeeper as it appealed directly to the Oracle of Omaha's legendary business judgment. 'We call on Mr. Buffett to scrutinize PacifiCorp's operation of these dams and take action to prevent further devastation to the River and the salmon,' the organization said in a news release this week. 'Hopefully, our citizens' enforcement suit will be the first step in resolving these issues and restoring the Klamath River, and the communities that rely on the river, to what they once were.' Unspoken in the statement was the implication that shutting down the 40-year-old Iron Gate Dam hatchery would leave PacifiCorp without the cushion it provided in the form of salmon hatchlings to offset the loss of population wrought by the dam itself. And without that cushion, PacifiCorp might find it impossible to meet federal environmental regulations without taking the draconian step of removing the dams and allowing the Klamath to theoretically return to its 'natural' pre-dam state.

The idea of tearing down hydroelectric dams on the Klamath and other western rivers has been a vision -- or a pipedream -- depending on one's view, of the ambitious notion that the electricity supply given up for the sake of white water and great fishing can be replaced without a significant impact on the regional economy. The Klamath Hydroelectric Project is located on the California-Oregon border and has a capacity of 169 megawatts (MW). That is a fairly small output when compared to coal power plants, but nonetheless larger than most wind farms, and big enough to supply power to about 1.6 million customers. Proponents of western dam breaching contend that it is easy enough to replace the electricity produced by hydropower.

The cost of procuring power to replace cheap hydropower is an issue that depends on a number of economic variables; however, the bigger issue on the Klamath is the cost of accommodating the migrating Coho salmon, which are listed as a 'threatened species.' The California Energy Commission this week issued a consultant's report that contended it would be cheaper for PacifiCorp and its ratepayers to close down the Hydroelectric Project than it would be to take on the cost of constructing the fish ladders that will likely be mandated by FERC in order for PacifiCorp to receive a new operating license.

'The ... report finds that mitigation to stop and begin reversing the environmental damage from the Klamath hydroelectric operations will cost between \$230 and \$470 million; power production will be reduced by 23 percent, and the project will be unable to provide quick power during peak periods of electricity demand,' the

Energy Commission said in the accompanying news release. 'The PacifiCorp ratepayers will bear the greatest economic risk for unsuccessful mitigation strategies aimed at fisheries and water quality.' The Energy Commission report was a direct counterpoint to PacifiCorp's own estimates that relicensing the four dams and continuing to sell the electricity would actually save the company \$46 million, even with the mitigation measures on behalf of the salmon.

'This is complex and not a simple matter of removing some concrete slabs,' said PacifiCorp President Bill Fehrman. 'This is low-cost power now used by our customers with virtually zero emissions. Taking the dams out will certainly cost money. Replacing the power will necessarily cost our customers more money, and potentially a lot more money.' There is also the issue of possibly toxic sediment that has built up behind the dams over the years that would be washed downstream if the dams were removed. As with the projections of the long-range costs of shutting down the dams or relicensing them, any level of certainty can appear fuzzy. But if a lawsuit could shut down the Iron Gate Dam hatchery or force PacifiCorp to pay for improvements, it would have a concrete impact on the size of the Klamath salmon population that would add to the liability side of the ledger. United Press International

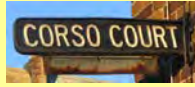
Eel ladder eyed for Stevenson, other dams

ASSOCIATED PRESS, Connecticut Post, 4/2/07

MONROE — The Company that owns five hydroelectric power plans on the Housatonic River wants to bring eels back to the waterway. FirstLight Power Resources Company Inc. is working with state and federal agencies to build a temporary eel ladder on the Stevenson Dam on the Monroe/Oxford town line. Plans call for the company to build similar structures on its other dams, allowing the American eel to make its way up river as far north as Massachusetts. The plan is part of an effort on the East Coast to restore eel populations, which in recent years have declined so rapidly that the eel has been considered for inclusion on the nation's endangered species list.

"Historically, we know they used to be in the river," Steven Gephard, supervising fisheries biologist with the state Department of Environmental Protection, said last week. "They used to catch big ones, as far north as Lakeville. And we know there are none above the dams now." Alex Haro, a biologist with the U.S. Geological Survey's Conte Anadromous Fish Research Center in Turners Falls, Mass said bringing eels to the Housatonic is an environmental plus. "Eels play a significant part in the environment," Haro said. "They're generalists, they feed on a great variety of invertebrates. And they're food for just about anything that can eat them — bass, trout pickerel. Herons love them. Cormorants love them. Let's say they go down easily." Because of many factors such as dams, water pollution and overfishing, American eel populations have seriously declined. In 2006, however, the U.S. Fish and Wildlife Service declined to list eels as a threatened or endangered species. After a year's study, the service concluded that while eels have declined in some places, their populations are thriving in others.

ⁱThis compilation of articles and other information is provided at no cost and should not be used for any purpose other than as free information for those interested in hydropower, dams, and water resources issues and development.



Some Dam – Hydro News and Other Stuff

4/12/2007

Quote of Note: *“A single rose can be my garden --- a single friend, my world”* - - Leo Buscaglia

Other Stuff: This subject is a confusing mess of contradictions.

More on global warming. If you saw the movie –“The Inconvenient Truth”, then maybe this should be viewed too:

The link below to a recent British documentary by the BBC is for your consideration and for those searching for more information on the subject so that we can all draw our own conclusions, and not be over influenced by the conclusions of others. It is about 1:15 long.

<http://video.google.com/videoplay?docid=4340135300469846467&q=global+warming+swindle>
(And, more on the subject from the IPCC!)

Southwest could become Dust Bowl, study warns

Shaun McKinnon, The Arizona Republic, Apr. 6, 2007

Rising temperatures will fuel longer and more intense droughts across Arizona and the Southwest, according to a new climate-change report that warns of conditions not seen since the 1930s Dust Bowl. What sets the report apart from others that have painted an equally bleak future is its assertion that changes already have begun, that the state's 12-year-old drought may reflect what scientists call the new climate for the Southwest. The study, published today in the journal *Science*, arrives along with a broader assessment of global warming by teams of international scientists. That report, set for release this morning in Belgium, charts a litany of ecologic and economic threats posed by manmade greenhouse gases and concludes that, in many areas, the threats have now become real.



Both reports attempt to inject urgency into the contentious discussion of climate change, with authors arguing that their dire forecasts will come true unless governments move to reduce emissions from automobiles, power plants, factories and other sources of carbon dioxide. A study by the Intergovernmental Panel on Climate Change, which produced the international report out today, concluded earlier this year that humans are almost

certainly responsible for much of the planet's higher temperatures.

"It's important for Americans to realize we're not going to escape the big impacts, whether it's more

hurricanes and sea-level rise in the East or drought here in the West," said Jonathan Overpeck, director of the University of Arizona's Institute for the Study of Planet Earth. "These things are going to challenge business as usual and quality of life. This should be a wake-up call." The drought study startled some scientists with its confidence level. Researchers from several universities and the National Center for Atmospheric Research used 19 models, some dating to 1860, and found that all but one pointed to the same conclusions: The Southwest will turn drier, perhaps as soon as 2040, and will grow drier through this century as less rain and snow falls. "We're really talking about something we haven't seen since Europeans came to North America," said Overpeck, who has studied climate change and drought for many years. "We might already be in this trend toward greater aridity in the Southwest. The end result will be average conditions that will be like the worst drought of the 20th century."

Effects on Arizona's water

The drought study did not look at another effect of climate change, the shortening winter snow season and shrinking runoff supply. Scientists have spotted that trend in higher elevations of the Rocky Mountains and the Pacific Northwest and expect it to spread. Western states rely heavily on runoff to meet water needs. A permanent change in flow on the Colorado River could cause shortages among users and reduce the amount of hydroelectric power available to cool the warming region. In Arizona, most of the serious effects of climate change link directly to water and drought.

With less rain and snow, forests dry up, leading to increased fire danger and more frequent insect invasions. As runoff decreases into streams and rivers, wildlife habitat disappears and the wildlife follow. The heat itself will worsen air quality, allowing greater buildup of ozone as average July and August temperatures climb by as much as 9 degrees by 2070. As the dominoes fall, the damage spreads. A bark beetle invasion near Winslow earlier this decade virtually wiped out a stand of pine trees, which destroyed habitat for some species. Biologists fear the entire ecosystem will change in the coming years. "The species we have today have evolved over several hundred years under certain climatic conditions, in the presence of other species," said Lisa McNeilly, northern Arizona program director for the Nature Conservancy and a former researcher at the Pew Center on Global Climate Change. "When you start changing those things quickly, it's hard to predict what will happen," she said. "We're putting things at risk we hold dear if we don't do something to reduce emissions."

Evidence of change

Although both the drought study and the larger international report say climate change already has affected the environment, scientists say they still need time to confirm that some of what is happening is not just cyclical changes.

"Some of what's happening with the early snowmelts could be due to variations based on ocean circulation," said Gregg Garfin, project manager for the UA institute. "But there's a pretty large fraction that can't be explained that way, and we think that's due to increasing temperatures." Evidence of climate change will help scientists understand it better, said Netra Chhetri, an Arizona State University researcher who worked on the international study. "Until recently, a lot of focus in the study of climate change has been driven by models," said Chhetri, who also teaches classes on climate change. "But recently, some of us are beginning to look into actual indicators, things like early arrival of growing seasons or early flowering of trees."

More real evidence will probably drive discussion of the topic beyond universities. Attitudes already have changed in recent years. A survey of Arizonans by the polling company Public Opinion Strategies indicated that two-thirds of those asked believe enough evidence exists about the threat of global warming to spur government action. Only 15 percent in the poll thought the issue had been exaggerated. The next section of the international report, due next month, will focus on what countries and individuals can do to slow climate change and adapt to its effects.



Dams

Corps of Engineers running tests at Salamonie Reservoir, Roush Lake dams

By SHEILA RHOADES, Wabash Plain Dealer, April 2, 2007

The U.S. Army Corps of Engineers is conducting studies at the Salamonie Reservoir and J. Edward Roush Lake. Bob Brown, Wabash County Emergency Management Agency executive director, told Wabash County Commissioners on Monday, April 2, that the Corps has begun an exploration of the two dams.

Corps Dam Safety officer Bruce Murray, P.E., P.G., told the Wabash Plain Dealer that they have “done some drilling already at both dams,” and it is “typical practice to insure dam safety.” There has been no particular incident or event at either site that has prompted the action. Rather the study is being done because the two reservoirs are in the same geological environment as the nearby Mississinewa Dam, which had internal erosion in the bedrock. Unlike the circumstances which prompted a 10- to 12-year study of Mississinewa Dam, the current project will take no more than a year or two, Murray said. The project will occur in five different phases:

- Phase I - Implement interim risk reduction measures
- Phase II - Geophysical, drilling, and laboratory testing
- Phase III - Engineering evaluation and analysis
- Phase IV - Development of report of findings
- Phase V - Development of dam modification plans and specifications if required

According to a fact sheets from the U.S. Army Corps of Engineers Louisville District:

- At Salamonie Dam, there is “a history of seepage on the toe of the downstream embankment, zones downstream of the toe at and near the conduit, and along the abutment contacts. Additionally, the rock foundation below the left and right extremes of the embankments was not exposed, inspected, or treated during construction.”

- At J.E. Roush, “items of concern are embankment, abutment and foundation seepage and piping. Additionally, the rock below the foundation soils toward the abutments was not properly inspected or treated during construction.” It also mentions several “seepage areas” on the downstream embankment slope and several other places. “There has been a continual settlement of the dam crest to the left of the concrete section since at least 1978. It is possible that the settlement is the result of internal erosion caused by seepage.”

According to the fact sheet, officials plan to “explore, analyze, and prepare a major rehabilitation report” for both sites and, if determined necessary, funding will be sought for repairs. In 2001, work on Mississinewa Dam began. Fractured and weathered limestone under the dam created voids, which were detected. Its guardrail had dipped about six inches over the years, necessitating repairs, which topped \$50 million. The dam reopened in 2005.

[\(The State of Missouri just can't get it right? Dams that should be inspected are exempt. And, it seems that the state would be inspecting all the Corps of Engineers' dams and the few regulated by the FERC too. In addition, it is impossible to inspect a high hazard dam for \\$450.\)](#)

House endorses inspections and permits for dams

By CHRIS BLANK, Associated Press Writer, April 05, 2007

The Missouri House endorsed legislation Wednesday that would expand the state inspection of dams, spurred by the December 2005 collapse of the Taum Sauk reservoir.

The bill, given first-round approval by voice vote, would require permits, add new fees for dam owners and mandate regular state inspections, depending on the size and severity of a possible failure. There currently are some state inspections of dams that are at least 35-feet high, but facilities that are regulated by the federal government are not inspected by the state. The legislation would require annual inspections for dams regulated by the federal government. Dams that would likely cause deaths if they failed would be inspected every three years, and reservoirs likely to cause property damage but not kill people would need to be reviewed every five years. The riskier dams that could cause deaths would be classified "high hazard" dams, while those that could cause property damage would be called "substantial hazard" facilities.

Agricultural and fireclay quarry dams would be exempt from the new requirements. Lawmakers last year considered many of the same provisions, but concerns over cost and questions about whether to also regulate dams that protect farm fields stalled the bill. Concerns about dam inspections were fueled by the failure of the Ameren-owned Taum Sauk reservoir, which allowed a billion gallons of water to flow down a mountain in southeastern Missouri and through Johnson's Shut-Ins State Park. The resulting flood washed out the home of the park's ranger and injured his family.

The St. Louis-based utility earlier this year announced plans to rebuild the reservoir. The House also added an amendment to the bill that would require there be at least one person always at the Taum Sauk facility. Rep. Albert Liese, D-Maryland Heights, said a worker at the site could at the least warn people downstream of a pending problem. A spokeswoman for Ameren said a superintendent with monitoring responsibility is always on the site. Spokeswoman Susan Gallagher said the utility also had no concerns about state inspections because federal regulators already look at the reservoir. **Initially, the legislation also would have added new dams under state regulation by lowering the height requirement by 10 feet to a new standard of 25 feet high. But rural lawmakers objected and voted 111-47 to strip the provision.**

Rep. J.C. Kuessner - whose legislative district includes the Taum Sauk site - said the new requirements are an "overreaction to Taum Sauk." Kuessner, D-Eminence, said people misunderstand how most dams work and wrongly think changes are needed. Unlike the Taum Sauk reservoir, which was placed on top of a mountain, most dams are in valleys and do not produce a "wall of water" if they fail because "they have volume but no momentum," he said. Rep. Walt Bivins urged lawmakers on the House floor to look up at the public galleries that surround the House, a full story above the floor. Bivins, R-St. Louis, urged legislators to consider whether a dam that high should be inspected. "Now, imagine a wall of water 25 feet high coming down this assembly," he said. Bivins' bill also would require construction and operation permits for "high hazard" and "significant hazard" dams. Those seeking to build new "high hazard" or "substantial hazard" dams would need to pay \$3,000, or 1 percent of the construction costs if it is less than \$300,000. There would be an annual \$450 inspection fee for the higher-risk dams and a \$250 fee for the other ones.



Hydro

RG&E to invest in more hydropower

Work at 2 Genesee River plants will yield clean energy for 6,000 homes

Nicole Lee, The Rochester Democrat and Chronicle



(April 5, 2007) — Rochester Gas and Electric says it will increase the generating capacity of two hydroelectric plants on the Genesee River, benefiting customers and the environment. More than \$20 million will be invested in the project by 2010.

The generating capacity at Station No. 2 at High Falls, which currently produces 6.5 megawatts, will be doubled. A building to house a second generator will be constructed at the site, and the work is expected to be complete by 2009.

By rewinding a generator at Station No. 5, at the Middle and Lower Falls, capacity will increase 1.5 megawatts, said RG&E spokesman Dick Marion. The station currently operates at 42.5 megawatts. That project will begin in the summer of 2008.

Hydroelectric plants use the energy of moving water to generate electricity, and one megawatt of generating capacity is enough to serve about 700 homes. The two stations now produce enough power for about 35,000 homes. The capacity increases will not affect the flow of the Genesee River, Marion said, and hydroelectric power is renewable energy that can be produced without the pollution of burning fossil fuels.

Under RG&E's licensing agreement with the Federal Energy Regulatory Commission, the flow of water over the falls must be a minimum of 300 cubic feet per second, Marion said. Under a 2004 policy established by the state Public Service Commission, at least 25 percent of New York state's energy should come from renewable sources by 2013.

In 2004, about 19 percent of the energy used in New York came from renewable sources. With the capacity increases, RG&E will be able to supply hydroelectricity to about 6,000 more homes in the Rochester area, Marion said. "Renewable energy is certainly the future."

COLUMN: NYPA's contributions overlooked

By Timothy S. Carey, Niagara Gazette, 4/2/07

The Gazette's recent articles and editorial on Niagara Project hydropower simply failed to see the forest for the trees. By focusing narrowly on allocation criteria and unallocated power, the Gazette ignored the tremendous contribution Niagara Project hydropower makes to Western New York's economy. Sold at rates that are about 75 percent less than the average wholesale market prices in New York State, Niagara Project electricity is linked to about 43,000 jobs in Western New York. Its operation is tied, directly or indirectly, to nearly \$16 billion in gross regional production. Over the last few years alone, some 90 megawatts (mw) of new active allocations have been approved to 60 area businesses, with commitments of 3,600 new jobs and capital investment of more than \$1 billion.

The Gazette's reporting left the misleading impression that the Power Authority has broad discretion in hydropower allocations. As an administrative arm of New York State government, our responsibility is to follow the law. The programs supplying Niagara hydropower are governed by state law, which identifies the criteria for eligibility as "the number of jobs created as a result of a power allocation; and the business' long-term commitment to the region as evidenced by the current and/or planned capital investment in business' facilities in the region." Job retention is a key element of other, non-hydropower economic development programs that NYPA administers. Two things must be kept in mind in comparing these statutorily authorized initiatives with the hydropower programs: The power supplies for the non-hydro programs are nowhere near as low in cost, making it reasonable to require new jobs in return for the hydropower. Secondly, businesses in Western New York, who needed lower-cost power to retain jobs, were eligible to participate in the other statewide economic development programs. In fact, more than 90 enterprises in the region applied for and received non-hydro allocations linked to protecting over 16,000 jobs.

Late last year, the Temporary State Commission on the Future of New York State Power Programs for Economic Development recommended establishment of new, common criteria for the various programs NYPA administers, including those supplied with Niagara hydropower. Among the conditions were significance of power as a cost factor, attraction and retention of jobs, total payroll and benefits, capital investment, energy efficiency, net economic impact, and regional economic factors. Whether or not to turn these recommendations into law is for Governor Spitzer and the State Legislature to decide. Another issue addressed by the Gazette is the future disposition of up to 70 mw of hydropower relinquished, for one reason or another, by specific businesses. The power, from one of the two large blocks of Niagara hydropower known as Replacement Power, has been sold by NYPA into the market to support Energy Cost Saving Benefits (ECSB) for customers of several other economic development programs, as required by a 2005 state law.

In 2006, the state law was amended to extend the ECSB from its scheduled end on Dec. 31, 2006, until June 30, 2007. However, that law also provided for the 70 mw of Replacement Power to be made available again for allocations to Western New York businesses, after Dec. 31, 2006. The region will NOT lose this power after June 30, 2007, unless the governor and the state Legislature act to change the law to use the

power in some other manner. The various laws governing allocations of hydropower and other economic power sources for businesses can be confusing, but we all want to maximize the benefits of Niagara hydropower for Western New York and strive to work, within the law, to achieve that goal. NYPA is working with the Buffalo Niagara Enterprise, the Niagara County Center for Economic Development and National Grid in a vigorous campaign to make existing and potential employers aware of the hydropower available for new allocations.

The New York Power Authority fully recognizes the importance of the Niagara project to the region's economy. The good news is that the Federal Energy Regulatory Commission on March 15 approved a new 50-year license for the project following balanced settlement agreements with key stakeholders to preserve the low-cost power for the area's economy, while adding to our regional contributions, for financial, environmental, recreational and other benefits.

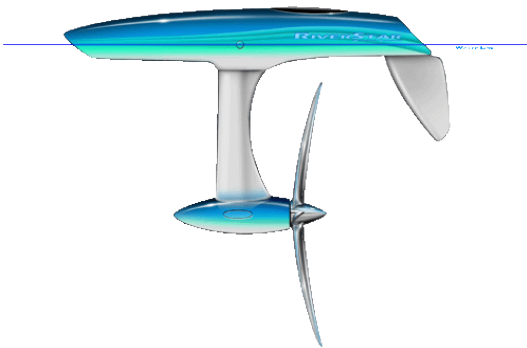
Timothy S. Carey is president and chief executive officer of the New York Power Authority.

[\(Has anybody seen this technology and does anyone know how it works?\)](#)

Bourne Energy, an energy research and development company based in California, has developed a novel hydropower technology that does not require a dam or reservoir to produce power. Bourne's RiverStar (Patent Pending) river power system, a 20-foot long self-contained energy module, is designed to be sited in-river in long arrays. Bourne plans to build a series of prototypes leading to full-scale demonstrators to promote its utility scale hydropower power systems worldwide. Bourne's new hydropower technology promises to open up vast hydropower potential creating a new age of hydropower that can help move the world toward sustainability.

[\(PRWEB\)](#) April 4, 2007 -- Bourne Energy (<http://bourneenergy.com/>), an energy research and development company based in California, has developed a novel hydropower technology that does not require a dam or reservoir to produce power. Bourne's new hydropower technology promises to open up vast hydropower potential creating a new age of hydropower that can help move the world toward sustainability. Today, hydropower is the world's major renewable energy, producing 24% of global electricity. It is also our least expensive energy having an average cost of 2-5 cents/kWh. But only 4% of the world's gross hydropower potential has been developed. Bourne's RiverStar (Patent Pending) hydropower technology eliminates the need for dams and reservoirs. It does not stop or slow natural processes - fish migration, sedimentation and biological processes. And it does not prevent other uses of the river - commercial and private marine traffic.

Bourne's river power system is a 20-foot long self-contained energy module composed of a stabilizer, energy absorber, energy transmission and mooring system and energy conversion and control system designed to be sited in-river in long arrays. Each unit, utilizing a proprietary turbine design, produces approximately 50 kW at peak capacity.



The concept behind the RiverStar is to harvest hydropower along the entire length of a river instead of harnessing energy in one massive site using a dam and reservoir. The concept behind the RiverStar is to harvest hydropower along the entire length of a river instead of harnessing energy in one massive site using a dam and reservoir. The system can be applied to each river's environment, culture and commercial activities as seamlessly and invisibly as possible thus opening up vast untapped amounts of hydropower worldwide. In highly industrialized and populated river sites RiverStar can blend in as small islands, sand bars and rocky embankments. And it can be modified to appear as

visually acceptable structures that offer dual-use such as docks, small boat marinas, wharfs, floating offices, restaurants and school buildings that produce power from river currents below the surface and solar or wind power on the roof.

In rural sites vast numbers of arrays of RiverStar modules can be seeded across rivers. Farmers around the country who already grow corn for ethanol and soybeans for biodiesel and lease their land to wind farms may soon harvest the power of rivers that border their property. Bourne's Developing World version is

composed of several modified RiverStar units that can be towed up river or trucked in to a hydro-site, and quickly set up to produce the electricity for a rural village during the day and evening and then shift, using its integrated watermaker, to fill the freshwater tanks of the village during the night. It can also be used to help in irrigating crops as well double as an emergency flood pumping system.

Energy East to Upgrade Hydroelectric Plants

Projects Will Provide Direct Environmental Benefits

PORTLAND, Maine, April 6 /PRNewswire-FirstCall/ -- Energy East Corporation's subsidiary Rochester Gas and Electric Corporation (RG&E) plans to invest more than \$20 million over the next three years in its Station 2 and Station 5 hydroelectric plants on the Genesee River in the City of Rochester. The investment will result in additional generating capacity of 9 megawatts (mw) at the two plants that currently have a combined generating capacity of approximately 49 mw.

"This planned investment in our hydroelectric generating stations is a testament to our commitment to the environment and renewable sources of energy," said Jim Laurito, president and CEO of NYSEG and RG&E. "Optimizing the output of these plants is also an important step in diversifying the fuel mix for generating electricity." Most of the work will take place at Station 2 at High Falls. Planning will begin in 2007 to double the size of the facility and its current 6.5 mw generating capacity. This work is expected to be complete in 2009. In addition, the existing generator at the plant will be rewound to make it more efficient, netting an additional generating capacity of 1 mw. This work will be done in 2008.

RG&E also plans to rewind a generator and complete related work at Station 5 at Middle/Lower Falls next summer. This project will add approximately 1.5 mw of generating capacity at the plant. Completion of these projects will provide direct benefits to the environment because the additional environmentally-friendly generation will offset generation from fossil-fuel sources. Each year, the additional generating capacity at Stations 2 and 5 will mean nearly 14,000 tons of carbon dioxide (CO₂), nearly 60 tons of sulfur dioxide and nearly 20 tons of nitrogen oxides from fossil-fuel sources will be avoided. The CO₂ emissions avoided are the equivalent of planting more than 1.8 million trees or not driving more than 27 million miles. RG&E and its sister company NYSEG together are the third largest generator of renewable energy in the state. One mw of generating capacity is enough to serve approximately 700 homes.



Water (See slide show additional attachment to email.)

An Arid West No Longer Waits for Rain

By [RANDAL C. ARCHIBOLD](#) and [KIRK JOHNSON](#), April 4, 2007, NY Times

A Western drought that began in 1999 has continued after the respite of a couple of wet years that now feel like a cruel tease. But this time people in the driest states are not just scanning the skies and hoping for rescue. Some \$2.5 billion in water projects are planned or under way in four states, the biggest expansion in the West's quest for water in decades. Among them is a proposed [280-mile pipeline](#) that would direct water to Las Vegas from northern [Nevada](#). A proposed reservoir just north of the [California](#)-Mexico border would correct an inefficient water delivery system that allows excess water to pass to Mexico.

In Yuma, Ariz., federal officials have restarted an idled desalination plant, long seen as a white elephant from a bygone era, partly in the hope of purifying salty underground water for neighboring towns. The scramble for water is driven by the realities of population growth, political pressure and the hard truth that the Colorado River, a 1,400-mile-long silver thread of snowmelt and a lifeline for more than 20 million people in seven states, is providing much less water than it had.

According to some long-term projections, the mountain snows that feed the Colorado River will melt faster and evaporate in greater amounts with rising global temperatures, providing stress to the waterway even without drought. This year, the spring runoff is expected to be about half its long-term average. In only one year of the last seven, 2005, has the runoff been above average.

Everywhere in the West, along the Colorado and other rivers, as officials search for water to fill current and future needs, tempers are flaring among competing water users, old rivalries are hardening and some states are waging legal fights.

In one of the most acrimonious disputes, Montana filed a suit in February at the [United States Supreme Court](#) accusing Wyoming of taking more than its fair share of water from the Tongue and Powder Rivers, north-flowing tributaries of the Yellowstone River that supply water for farms and wells in both states. Preparing for worst-case outcomes, the seven states that draw water from the Colorado River — Colorado, Wyoming, Utah and New Mexico in the upper basin and California, [Arizona](#) and Nevada in the lower basin — and the United States Bureau of Reclamation, which manages the river, are considering [plans](#) that lay out what to do if the river cannot meet the demand for water, a prospect that some experts predict will occur in about five years.

“What you are hearing about [global warming](#), explosive growth — combine with a real push to set aside extra water for environmental purpose — means you got a perfect situation for a major tug-of-war contest,” said Sid Wilson, the general manager of the Central Arizona Project, which brings Colorado River water to the Phoenix area. New scientific evidence suggests that periodic long, severe droughts have become the norm in the Colorado River basin, undermining calculations of how much water the river can be expected to provide and intensifying pressures to find new solutions or sources. The effects of the drought can be seen at Lake Mead in Nevada, where a drop in the water level left docks hanging from newly formed cliffs, and a marina surrounded by dry land. Upriver at Lake Powell, which is at its lowest level since spring 1973, receding waters have exposed miles of mud in the side canyons leading to the Glen Canyon Dam.

In California, Gov. [Arnold Schwarzenegger](#) has sounded alarm bells by pushing for a ballot measure in 2008 that would allocate \$4.5 billion in bonds for new water storage in the state. The water content in the Sierra Nevada snowpack has reached the lowest level in about two decades, state hydrologists have reported, putting additional pressure on the nation’s most populous state to find and store more water. “Scientists say that global warming will eliminate 25 percent of our snowpack by the half of this century,” Mr. Schwarzenegger said recently in Fresno, Calif., “which will mean less snow stored in the mountains, which will mean more flooding in the winter and less drinking water in the summer.”

In Montana, where about two-thirds of the Missouri River and half of the Columbia River have their headwaters, officials have embarked on a long-term project to validate old water-rights claims in an effort to legally shore up supplies the state now counts on. Under the West’s water laws, claims are hierarchal. The oldest, first-filed claims, many dating to pioneer days, get water first, with newer claims at the bottom of the pecking order. Still, some of the sharpest tensions stem more from population growth than cautionary climate science, especially those between Nevada and Utah, states with booming desert economies and clout to fight for what they say is theirs.

Las Vegas, the fastest-growing major city in the country, and the driest, developed the pipeline plan several years ago to bring groundwater from the rural, northern reaches of the state. The metropolitan area, which relies on the Colorado River for 90 percent of its water, is awaiting approval from Nevada’s chief engineer. Ranchers and farmers in northern Nevada and Utah are [opposed to the pipeline plan](#) and have vowed to fight it in court, saying it smacks of the famous water grab by Los Angeles nearly a century ago that caused severe environmental damage in the Owens Valley in California. “Southern Nevada thinks it can come up here and suck all these springs dry without any problems,” said Dean Baker, whose family’s ranch straddles the Nevada-Utah border, pointing out springs that farmers have run dry with their own wells. “We did this ourselves. Now imagine what pumping for a whole big city is going to do.” Meanwhile, Utah has proposed a \$500 million, 120-mile pipeline from Lake Powell to serve the fast-growing City of St. George and Washington County in the state’s southwestern corner. Nevada officials have said they will seek to block that plan if Utah stands in the way of theirs.

“Utah is being very disingenuous, and we’re calling them on it,” said Patricia Mulroy, the chief executive of the Southern Nevada Water Authority, the agency responsible for finding water for Las Vegas and its suburbs. “St. George, Utah, is growing as fast as southern Nevada, because the growth is going right up the I-15 corridor.” Dennis J. Strong, director of the Utah Division of Water Resources, said Nevada was protesting too much and instead should be cheering the Lake Powell project because Colorado River water that Utah does not use would flow in Nevada’s direction. Mr. Strong said that Nevada’s protests “may be a bargaining chip.” He said he hoped for a compromise that would allow both projects to move forward.

In Yuma, near the Arizona border with Mexico, officials have pinned hopes on a desalination plant built 15 years ago. The plan then had been to treat salty runoff from farms before it made its way into Colorado River

headed to Mexico, thus meeting the terms of an old water treaty. But a series of unusually wet years made it more efficient to meet the treaty obligations with water from Lake Mead, so the plant sat idle. Drought has changed all that. Arizona water managers, who are first in line to have their water cut in a shortage under an agreement with other states, called for the plant to be turned on. Under an agreement with environmentalists, the federal Bureau of Reclamation plans to monitor the environmental effects of using the plant, and study, among other things, using the purified water for purposes other than meeting its treaty obligations, like supplying the growing communities around Yuma. "It never made sense to me to just dump bottled-water quality water into the river anyway," said Jim Cherry, the bureau's Yuma area manager.

What unites the Western states is a growing consensus among scientists that future climate change and warmer temperatures, if they continue, could hit harder here than elsewhere in the continental United States. "The Western mountain states are by far more vulnerable to the kinds of change we've been talking about compared to the rest of the country, with the New England states coming in a relatively distant second," said Michael Dettinger, a research hydrologist at the [United States Geological Survey](#) who studies the relationships between water and climate. Mr. Dettinger said higher temperatures had pushed the spring snowmelt and runoff to about 10 days earlier on average than in the past. Higher temperatures would mean more rain falling rather than snow, compounding issues of water storage and potentially affecting flooding.

In some places, the new tensions and pressures could even push water users toward compromise. Colorado recently hired a mediator to try to settle a long-running dispute over how water from the Rocky Mountains should be shared among users in the Denver area and the western half of the state. Denver gets most of the water and has most of the state's population. But water users in the mountains, notably the ski resort industry, also have clout and want to keep their share. Robert W. Johnson, the Bureau of Reclamation commissioner, said he shared the optimism that the disputes could be worked out, but he said he thought it might take a reconsideration of the West's original conception of what water was for.

The great dams and reservoirs that were envisioned beginning in the 1800s were conceived with farmers in mind, and farmers still take about 90 percent of the Colorado River's flow. More and more, Mr. Johnson said, the cities will need that water. An agreement reached a few years ago between farmers and the Metropolitan Water District of Southern California, the chief supplier of water to that region, is one model. Under the terms of the agreement, farmers would let their fields lie fallow and send water to urban areas in exchange for money to cover the crop losses. "I definitely see that as the future," Mr. Johnson said.



Environment

Are more dams California's way to cope with global warming?

By The Associated Press, 04/07/2007, [San Jose Mercury News](#)

Gov. Arnold Schwarzenegger has proposed \$4.5 billion in bonds to build two new dams, which his administration says are needed to boost water supplies. Most Democratic lawmakers and conservationists are opposed. Here are some of the issues involved in the debate:

Q: Why are more dams under consideration?

A: Scientists say climate change will reduce California's snowpack—its largest source of water—by as much as 90 percent by the end of the century. Department of Water Resources director Lester Snow has said dams are a key part of the state's strategy to accommodate future population growth and the effects of global warming. Building more reservoirs would give the state more space to store about 3 million acre feet of water. By comparison, Lake Oroville north of Sacramento holds about 3.5 million acre fee. The additional water likely would be used for water supply, restoration of fish habitat and improving water quality. The additional dams also could provide more places to send water when rivers in Northern California and the Central Valley are close to topping their banks and levees, potentially saving communities below the dams from flooding.

Q: What are some of the concerns about building new dams?

A: Dams are expensive and alter the natural flows and habitats of rivers. Opponents say a dwindling snowpack could make some existing dams obsolete because global warming could lead to less water flowing from the Sierra as snowmelt. They say the state should invest money on alternatives such as conservation efforts, desalination, water recycling and recharging groundwater.

Q: Where could dams be built?

A: The state has two leading candidates for new reservoirs. The first is known as Temperance Flat in the narrow canyon above Millerton Lake on the San Joaquin River, northeast of Fresno. It could hold up to 1.3 million acre feet of water, which local officials and farmers say they need to satisfy agriculture and a growing population. The state is considering another area along the Sacramento River in the rolling hills and grasslands of the Antelope Valley, about 60 miles north of the state capital. River water would be diverted to the valley and would flood about 14,000 acres.

Q: Why don't we just finish the Auburn Dam?

A: It's the project that never seems to go away. Congress approved a dam along the American River in the 1960s as a way to provide more water to farmers in the Sacramento and San Joaquin valleys. But a 5.7-magnitude earthquake in 1975 north of Sacramento exposed a fault line that ran under the construction site, bringing the project to a halt. Republicans in Congress are anxious to get construction crews back to the dam site in the Sierra foothills east of Sacramento. Supporters say it will improve Sacramento's flood protection, but recent cost estimates have put the price tag at more than \$10 billion. It's unlikely the Democrat-controlled Congress will back such an expensive dam in a scenic canyon of the American River.

Q: What are the alternatives to dams?

A: Local water agencies are trying to improve methods to recycle water for use at industrial plants, to recharge groundwater basins and restore habitat. Some coastal cities are considering removing salt from sea water, but the technology is expensive.

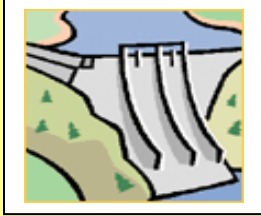
Pumping water into the ground could free up reservoir space, but one limitation is the amount of time it takes for water to seep into deep aquifers. The state Department of Water Resources estimates that cities can save up to 2.3 million acre feet of water by encouraging residents to install low-flush toilets and other water-efficient devices. Meanwhile, farmers can reduce the amount of water used for agriculture by as much as 2 million acre feet by 2030 if they use water-saving pipes and switch to crops that require less water.

Q: Is the Peripheral Canal back?

A: State Sen. Joe Simitian, D-Palo Alto, has introduced a bill that would allow for a canal that sends Sacramento River water around the delta. The idea was resoundingly defeated by voters in the 1980s, but the fragility of the Sacramento-San Joaquin Delta has led some researchers to give the proposal another look. A canal would deliver fresh water directly to the San Francisco Bay area and Southern California. Relying on the delta is risky for several reasons: Rising sea levels or a break in an earthen levee could contaminate delta water with higher levels of salinity, making it useless for municipal and agricultural use.

Copy obtained from the National Performance of Dams Program: <http://npdp.stanford.edu>

ⁱThis compilation of articles and other information is provided at no cost and should not be used for any purpose other than as free information for those interested in hydropower, dams, and water resources issues and development.



Some Dam – Hydro News and Other Stuff

4/19/2007

Quote of Note: *"It's no good to try to stop knowledge from going forward. Ignorance is never better than knowledge."* - - Enrico Fermi

Other Stuff:

The Power of the Tides

Energy Central, April 13, 2007, By Salvatore Salamone, Guest Editor

A pilot project in New York's East River is evaluating the use of underwater turbines to generate electricity. If the project bears fruit, the technology could have widespread applications. The effort, formally called New York's Roosevelt Island Tidal Energy Project, is being conducted by Verdant Power and the New York State Research & Development Authority. As part of the project, Con Edison is using the electricity produced by the turbines to power a grocery store and parking garage on Roosevelt Island, which sits adjacent to midtown and upper Manhattan in the middle of the East River. With the project, three-bladed turbines from Verdant Power are used. Each turbine can generate from 16 to 32 kilowatts of electricity. In December, two turbines were put into place. One was pushed to its limit to gather operational data. Its blades collapsed. The other remains operational. And the companies plan to deploy about a half dozen more turbines in the spring.

There is great interest in the in-stream power generation. The water current driven turbines offer some characteristics that might make them more appealing or more practical than some other renewable power sources. "Compared to other sources of distributed generation, this technology is not episodic," said Trey Taylor, president of Verdant Power. He noted that you can look at a tidal chart and know what the currents will be on any given day in the future. This means utilities using the technology would be able to predict and forecast exactly how much power they could derive on a regular basis from a group of turbines. That is not something that utilities can do with solar or wind generation systems, which depend on the weather conditions on any particular day. Additionally, the fact that the turbines are underwater eliminates a problem many wind generation projects have faced. To be precise, many wind projects around the country have encountered stiff local "not-in-my-backyard" resistance.

Like windmills, the underwater turbines still have to go through a licensing process. One aspect of the project will be to determine the environmental issues with using the technology, such as the impact of the turbines on marine life. New York's East River, thanks to its incredible currents, is turning out to be a great place to test in-stream hydropower generation. In a separate project funded by the U.S. Department of Energy, the New York City Department of Parks and Recreation is in the early stages of developing a system that combines solar, wind, and tidal-power units. Another firm, Natural Currents Services, which develops hydro, tidal, and ocean energy systems, will build the hybrid plant, according to the *New York Post*.

The Technology's Potential

Underwater turbines can be driven by currents in oceans, rivers, and even canals. The energy produced by tides or in-stream currents driving an underwater turbine is called dam-less, small-scale, or kinetic hydropower. There are many regions of the United States that are well suited to using this technology including most major rivers and areas with strong ocean tides, such as the northeast, Pacific northwest, particularly in the Puget Sound, parts of Alaska and California, particularly in the Golden Gate area. Additionally, there are many other places where the technology could be useful. For instance, underwater turbine technology "could enable economic in-stream hydropower generation from free-flowing sources of water, such as canals, waste water treatment plant outfalls, power plant cooling towers and ocean tides," according to the financial industry research firm SNL Financial.

SNL Financial adds that the U.S. Department of Energy estimates that U.S. rivers could generate 30,000 megawatts using this in-stream technology and the devices could potentially produce another 10,000 megawatts from industrial flows and canals. Interest in these forms of power generation is gaining industry appeal. The Electric Power Research Institute has recently published a number of reports and is involved with a number of tidal and in-stream energy-generation projects.

(Bill Gates likes hydro.)

Microsoft opens server farm in Washington

BY JESSICA MINTZ, Associated Press, Miami Herald, 4/17/07

SEATTLE --

Microsoft on Monday opened the doors of a massive data center in central Washington, turning what was once a bean farm into a "server farm." The data center, based in Quincy, Wash., is about 474,000 square feet and is surrounded on three sides by fields of potatoes, beans and broccoli. An undisclosed number of servers inside are now online, handling Internet traffic to Microsoft's Hotmail e-mail program, instant messaging and other tools. The server farm is the first of six Microsoft has planned for Quincy; construction of No. 2 is under way, but beyond that, growth will be "tied to adoption of online services," said Michael Manos, a senior director of data center services at Microsoft. He said the facility uses hydroelectric power exclusively. Last year, Web portal business Yahoo said it also planned a Quincy server farm; earlier this month, Google announced plans to invest \$600 million to build a similar data center in South Carolina.

CALIFORNIA IMPACT

Mercury News, 04/17/2007

Some findings in the report by the Intergovernmental Panel on Climate Change that affect California:

After 2020, 41 percent of the water supplied to Southern California is likely to be vulnerable to warming from loss of Sierra Nevada and Colorado River basin snowpack.

In Southern California, additional summer electricity demand will intensify inherent conflicts between statewide hydropower and flood-control objectives. By late in the century, heat-wave days in Los Angeles will increase from 12 per year to as many as 95.

High water levels combined with changes in winter storms along the Pacific coast have produced severe coastal flooding and storm impacts. At San Francisco, 140 years of tide-gauge data suggest an increase in severe winter storms since 1950 and some studies have detected accelerated coastal erosion.

Warmer nights have enhanced production of high-quality wine grapes, but additional warming may not. For 12 major crops in California, climate fluctuations over the past 20 years have not had large effects on yield; they have been a slightly positive factor for oranges and walnuts but negative for avocados and cotton.

(This is interesting. Use undependable wind power to backup hydro! Mmmm!)

Lawmaker: Wind could bolster hydropower

BusinessWeek.com, By DIRK LAMMERS, 4/10/07

SIOUX FALLS, S.D.

Falling water levels on the Missouri River are resulting in higher energy costs for South Dakotans, but untapped wind power could provide the perfect supplement to drought-affected hydropower plants, Sen. John Thune said Tuesday. The Western Area Power Administration provides power to a number of electric cooperatives, Ellsworth Air Force Base, state government and 33 towns and cities in South Dakota. The Lakewood, Colo.-based arm of the Department of Energy predicts a firm power rate adjustment of about 25 percent for 2008. WAPA uses Missouri River dams to fill long-term hydropower contracts, but it buys power off the open market when adequate hydropower isn't available.

Thune said wind could help provide extra electricity through existing transmission lines when water levels are lacking. "With the pool levels being what they are in the dams and the lack of an ability on the part of the (U.S. Army Corps of Engineers) to generate the amount of hydropower that they traditionally have, wind might be able to come in and complement that," the senator said. The 2005 Energy Bill directed WAPA and the corps to study integrating hydropower and wind power along the Missouri River and on tribal lands. Thune said the report was supposed to be released in 2006 but hasn't come out yet.

In 2005, WAPA released a study showing that the Dakotas could export more electricity within the current system. The study looked at seven transmission sites, including four in South Dakota and three in North Dakota. Currently, the largest wind farm in the state, near Highmore, is a 27-turbine operation that generates 40 megawatts of power. A 50-megawatt wind farm is planned in Brookings County, and a 90-megawatt facility is in the works for north-central South Dakota. "There's no reason why the Dakotas can't be generating more wind power given the capability we have to do that," Thune said.

Wind power needs significant incentives for companies to invest in the technology, Thune said. The current 1 1/2-cents-per-kilowatt wind production tax credit likely needs to be higher to entice companies to build large-scale wind farms and transmission lines, he said. At the least, the tax credit needs to be more consistent, as it has expired three times during the past six years, Thune said. "What the investors are saying is we need certainty," he said. "It's got to be in place for an extended period of time so that people making investment decisions know it's going to be there. And Congress continues to mess with this thing."



Dams

(Everybody picks on dam builders.)

Officials exploding Gills Creek beaver dams

April 12, 2007, WISI-TV

COLUMBIA, SC (WIS) - If you're in the area of Gills Creek Friday, you may hear some explosions. The area of Timberlane Drive has been flooding, and officials of the City of Columbia Utilities Department and US Department of Agriculture are hoping that destroying beaver dams in the area will stop the problem. The explosions will happen from 10:30am until 6:00pm.

Flood control efforts had impact

April 17, 2007, BY JIM MOORE, Republican-American

As the rivers rose in Connecticut and throughout New England Monday, about half a dozen meteorologists and engineers at the U.S. Army Corps of Engineers Reservoir Control Center in Concord, Mass., were making moves to protect lives and property. "We started throttling back the dams yesterday," said Corps spokesman Tim Dugan on Monday. Water was held back in Vermont and New Hampshire to reduce the storm's impact downstream, and water already in Connecticut was held in reservoirs at various locations for the same reason. "We're watching the situation and holding back as much as we can until the situation resolves," Dugan said "We're pretty used to this."

Rainfall amounts ranging from 3 inches to 6 inches or more throughout the southern New England watershed Sunday and Monday sent rivers surging, resulting in localized flooding at various locations throughout Connecticut and Massachusetts. As city and state officials watched their rivers rise, computers collected data from nearly 100 river monitoring stations throughout Connecticut. The information was relayed by satellite to the control center. "We get real-time data," Dugan said. "We look at the entire system. We're monitoring day-to-day and hour-to-hour impacts." As of 3 p.m. Monday, none of the 10 western Connecticut flood control dams built in the wake of the 1955 flood had exceeded 36 percent of their reservoir capacity, Dugan reported.

Dugan said most of the flood control dams in Connecticut were built on smaller rivers and streams to control the release of water into the main rivers. Holding water in the tributaries reduces the impact on major waterways including the Connecticut River, the Farmington River, and the Housatonic River. Efforts to manage the water began more than a week in advance, Dugan said, with decisions to release extra water and draw down local reservoirs based on anticipated rainfall combined with melting snow from the north. "One of the things we have to contend with is the snow melt from the northern states. This year, there's less snow melt," Dugan said. "That would have contributed more to the system."



Hydro

(Hydro is pretty much left out again!)

Oregon Senate approves renewable energy bill

By AARON CLARK, Associated Press Writer, KGW.com, 4/10/07

SALEM, Ore. -- After a vigorous debate, the Oregon Senate passed a bill Tuesday that would require the state's largest utilities to eventually draw 25 percent of their power from renewable sources such as wind, waves, sunlight and manure. A centerpiece of Gov. Ted Kulongoski's effort to reduce global warming, supporters argued the bill also would help insulate Oregonians from volatile fossil fuel prices. The measure passed despite opposition from Republicans who said it might result in higher costs for consumers by forcing new technologies into the market before they are cost competitive.

"This bill is one of the strongest actions this body can take to do our share to curb global warming and protect and our increasingly fragile planet," said Sen. Ben Westlund, D-Bend. "It helps brand us as the environmentally clean state that we are ... this has huge implications not only for today but for our future."

The bill would require Oregon's major utilities to obtain 5 percent of their power from renewable resources by 2011, increasing by increments to 25 percent by 2025. But most Senate Republicans said the bill unfairly moves the cost and risk of developing new renewable energy sources from private businesses to residential and industrial electricity consumers. "This is a huge shift of a burden to two groups of people that we need desperately," said Sen. Larry George of Sherwood. "One is our businesses, and two are the most vulnerable citizens who can't afford to pay higher rates."

The bill allows utilities to recover the cost of investing in new generating sources, such as wind farms, through increases to customers but includes a provision that could release them from the mandate if their costs increase by more than 4 percent of their revenue in one year. Sen. Ted Ferrioli, R-John Day, said the bill was "part of somebody's political agenda, and it has got a lot of energy behind it, a lot of heat behind it, and a lot of political power behind it. But it isn't good public policy."

Ferrioli and other Republicans said they supported a renewable energy standard for the state but argued a renewable mandate should include electricity generated from hydroelectric dams. Although the legislation allows electricity generated from new "low-impact" dams to count toward the standard, existing hydroelectric generation is not included under the bill. Oregon gets about 40 percent of its electricity from hydroelectric dams, according to the state's Department of Energy.

Supporters said the measure would kick-start new technologies and techniques and help make Oregon a leader in the rapidly emerging clean energy, low-carbon economy, as it continues to race with other states for swiftly flowing investment capital. "There are unique situations when the government does create a market, knowing that the market will outpace government," said Sen. Jason Atkinson, R-Grants Pass, one of

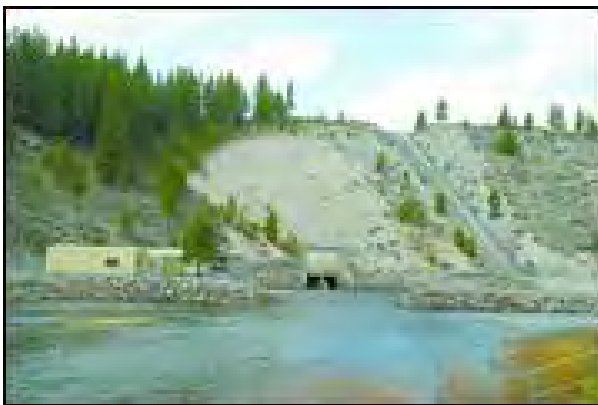
two Republicans to support the bill. The other was Sen. Bruce Starr, R-Hillsboro. "Quite honestly this bill will not be able to keep pace with the investments and the technologies that come in after this bill is passed," Atkinson said.

Atkinson said the bill was critical to keeping Oregon competitive for investment capital, particularly as markets for clean energy technologies in neighboring Washington accelerate. "There is a giant sucking sound of investment capital leaving this state and going north," Atkinson said.

(How about the name of this newspaper?)

Clean contract is rolling on the river

Christine Stanley, North Lake Tahoe Bonanza News Service, April 11, 2007



Decades ago, the Truckee Donner Public Utility District began looking at the dam at Stampede Reservoir as a possible resource for renewable energy. But it wasn't until now that a contract to purchase hydropower from the local source could finally be secured. "All of the directors from that time - some are still living, and some aren't - would be delighted to know that we are finally going to get that power," said board member Pat Sutton.

The hydroelectric generation plant at Stampede, located on the Little Truckee River about eight miles from its confluence with the Truckee River, currently produces an annual average of 11,000 megawatt hours or MWH, according to Stephen

Hollabaugh, the district's electric utility manager. Under a new contract with the Western Area Power Administration, the district will have access to half. The City of Fallon has contracted for the other half. "This fits very well into our need for resources," said Hollabaugh, who noted that the addition of hydropower would help the district come closer to meeting its goal of using 21 percent renewable energy by 2012.

The new contract, which will go into effect in July and last until 2024, will allow the district to purchase hydropower for \$30 to \$35 per MWH. "Awesome. That's really awesome. Good move. Thank you," said ratepayer Neal Mock to Hollabaugh at a board meeting on Wednesday. The district has been unable to purchase power from the Stampede plant since it opened in 1987 because Sierra Pacific Power Company held the contract.

(Oh oh! Something is wrong with someone's arithmetic.)

FD to end Hydroelectric Dam contract

City seeks return of \$195,000

By BILL SHEA, The Messenger

Fort Dodge officials are cutting ties with the company hired in 2005 to put the Hydroelectric Dam back in use. The city is ending its contract with Cedar Rapids-based Fort Dodge Hydroelectric Development Co. It is also demanding that the company return the \$195,000 that's already been paid. Those moves are revealed in papers attorneys for the city filed recently with the Federal Energy Regulatory Commission. That commission would have to issue a license before the dam can again produce electricity. In a letter to the company, Dennis W. Johnson of the Des Moines law firm Dorsey & Whitney wrote that the city is terminating the contract because of "misrepresentations" by Fort Dodge Hydroelectric Development Co.

“After more due diligence and the work by Stanley Consultants, it was evident that this project would not support itself financially,” said Mayor Terry Lutz. Lutz said the hydroelectric project as first proposed is probably dead. But he didn’t rule out the possibility of a revised project in the future. A call seeking comment from Gary Young, the president of the company, wasn’t immediately returned. “Right now we’ve been working with the city to get some things resolved,” said Ken Rieck, the company’s secretary/treasurer. “I don’t know what the reasoning is behind their request.” Rieck said the company is preparing a response to the city’s action. He added that the company will not make any more statements until that response is completed.

After working with city officials, principally former Mayor Will Patterson, on a handshake basis for about three years, the company was hired by the City Council in September 2005. Its job was to obtain a license for the dam and manage the process of restoring it to use. The company was to be paid \$795,000. The hydroelectric plan called for installing two 700 kilowatt turbines. Electricity from those turbines would power the John W. Pray Water Facility, the wastewater treatment plant, pumps on the water wells, downtown streetlights and the Municipal Building. On Dec. 6, 2005, city voters OK’d borrowing up to \$7 million to pay for the equipment and repairs needed to restart the dam. That ballot measure passed by a margin of about 80 percent to 20 percent. Lutz said that vote gave the city the power to borrow the money, but it does not require the government to do anything.

Following additional research authorized by the city last year, sharp differences of opinion on finances and the dam’s generating capacity emerged. Those disagreements resulted in the move to end the contract. **Fort Dodge Hydroelectric Development Co. projected that the dam could produce 7,506 megawatt hours of electricity per year. It also estimated that the project would be in the black by \$800,000 over the course of 20 years.**

In 2006, another firm hired by the city, Stanley Consultants of Des Moines, projected that the dam could produce 5,980 megawatt hours of electricity per year. It also calculated that the project would lose \$5.9 million over 20 years. That firm concluded that restarting the dam would not be economically sound. “We don’t seem to be moving forward and there’s no sense in spending any more money,” said Councilwoman Jane Burleson. She described ending the contract as “our best bet.” Councilman Dan Payne said the project now “seems just a little shakier than it did when we first looked at it.” Councilman Don Wilson said he wished the city had pushed ahead with the project. He added that council members are just getting “bits and pieces” of information on it. Burleson, Payne, Wilson and Councilman Curt Olson all shared the hope that a different plan for restarting the dam can be developed.

“I’d like to see it going, but we have to take a different route,” Olson said. Even if no turbines are ever installed, the city still faces about \$1 million worth of repairs to the dam. The dam was built in 1916. It stopped producing electricity in 1971 because its aging equipment couldn’t produce enough electricity to be cost effective.

[\(A bit of history and a little hydro.\)](#)

Power water - Upgrade set at 1815 hydroelectric plant

By John Dignam, Worcester Telegram & Gazette, 4/12/07

WEBSTER— Whatever the age of the replacement turbine to be installed at Webster Hydroelectric Co., it will be new compared to the turbine it replaces, which was installed in 1815 when the plant was built. Company owner Lucas W. Wright said the vintage turbine powered the Slater Woolen Mill, later Anglo Fabrics, in the North Village area. The teeth of the turbine’s gears, while not original, are made of wood. “This is one of the places where the Industrial Revolution started” in the United States, Mr. Wright said earlier this week while checking the Mill Street hydroelectric plant on the French River. This town was founded by Samuel Slater, considered the father of the American cotton textile industry, who died here in 1835. The hydro plant played a role in that revolution, and some of its equipment is still used. Now, it generates electricity to power homes. The Massachusetts Technology Collaborative has awarded the company a \$125,000 grant to install a smaller, refurbished turbine, as well as a new generator, upgraded switchgear and controls, and to repair the canal walls. “This is such a shot in the arm,” Mr. Wright said. “There are a lot of repair and maintenance needs. This will help build up revenue so the plant can be self-sustaining. There hasn’t been any revenue coming out of this plant that hasn’t gone back into it.” Mr. Wright

said the smaller turbine will run better, provide more control over the amount of water used, and use the river's water more efficiently. It will also probably help the plant to stay in business, he said.

Amy Barad, project manager for the MTC clean energy program, said Mr. Wright's grant application was a rare, unsolicited request and the grant was awarded because "it was a good proposal that offers an opportunity for adding to the state's supply of clean, renewable energy." She said it would allow the facility to operate during more of the year and to benefit the environment because the new equipment "will manage the flow in the river in a more stable fashion." She also said the additional revenue the improvements will bring to the company "will help maintain the property."

According to MTC, electricity is created by a river's running water causing a turbine to spin, with generators then transforming that rotational energy into electricity. The MTC is responsible for awarding grants from the Renewable Energy Trust to support clean energy technologies. The trust is funded through surcharges on electric bills.

Ms. Barad said most grants go to small wind and solar power projects and that there is little information on the existing hydro facilities on Massachusetts rivers. She said few grants are sought for hydro projects, but that MTC is actively working to change that. "We want to develop a program to address the issues the small hydro owners face so we don't lose this resource. With hydro, you don't need to build anything new on a new site. Most just need some rehab," she said.

The Webster Hydroelectric Company is one of five small hydroelectric facilities owned by Ware River Power Co. There are two others in Barre and two in Ware, all on the Ware River. Power generated by this plant is sold to the Holden and Princeton municipal light departments. The historic turbine here, one of two in the plant, is inefficient and oversized, designed to pull as much water as possible from the river to power the mill, according to Mr. Wright, of Hardwick. The one that will be replaced has not worked in a decade. The other one has a modern generator. Electricity generated the last two decades here has been uneven, in part because of the irregularity of the water supply, but also because old equipment cannot adjust to that irregularity.

The plant has generated about 500,000 kilowatts of electricity each of the last three years, which Mr. Wright called "three years of good water." But in the mid-1990s the plant generated about 250,000 kilowatts a year, sometimes 100,000 kilowatts. With improvements, it could generate 1 million kilowatts annually. It takes an average of 1.5 kilowatts an hour to provide power to a house today, up from 1 kilowatt an hour a few years ago, according to Mr. Wright. But the profits are small for hydro plants, he said, adding that the most Ware River Power Co. has made for electricity was 8 cents per kilowatt hour in the early 1980s and that it has not matched that price since then.

David W. Wright, Lucas Wright's father, who is retired, started Ware River Power Company in the early 1980s. The younger Mr. Wright, 36, said he began working with his father when he 10 years old. And, like his father, he said he has a passion for the old hydro facilities. "The focus in renewable energy is on wind and photovoltaic (solar energy), but hydro power is already developed. And, it's completely renewable. A hydro plant downstream will use the same water we use here," he said. Mr. Wright said the company's four other plants are along 20 miles of the Ware River and "they use the water in that river four times a day. It's the same stuff." Mr. Wright said low profits make it difficult to modernize equipment and keep up the buildings of the many hydro plants, many of which were built in the 19th century to power mills. He compared small hydro facilities to small farms, noting "we've lost a lot of small farms, and we could lose the small hydro facilities."

[\(Trouble North of the border for hydro.\)](#)

Hydroelectric proposal for B.C. Interior draws fire

April 16, 2007, *CBC News*

Opposition is mounting in southeastern B.C. to a proposed \$300-million hydroelectric project that would generate power from two isolated creeks in the Purcell Mountains about 100 kilometres southeast of Revelstoke. The Glacier Howser power stations would produce clean, green electricity, say the developers. But some local residents say it will come at the cost of local forests and wildlife.

Gary Diers of the Purcell Alliance For Wilderness Society said the transmission lines and construction roads

would damage habitat that's critical for grizzly bears and other wild animals. Diers, who lives in Argenta, said many local residents are considering civil disobedience to stop the project. "It just needs to be shut down, that's all there is to it. And if the environmental office doesn't do it, the people will have to." Neil Murphy of Glacier Power B.C. Ltd. said his company is committed to minimizing the impact from construction.

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Neil Murphy of Glacier Power B.C. Ltd. said his company is committed to minimizing "As far as cutting down old-growth forest, things of that nature, that's not in our plans." Murphy said the roads that are built for construction would only be temporary, and his crews would not cut in old-growth forests. The project is undergoing federal and provincial environmental assessments. If it gets the green light, construction could begin next year.

[\(New hydro in BC, Canada where it is considered green.\)](#)

Plutonic Power Successfully Applies for Three New Run-Of-River Green Energy Hydropower Projects

VANCOUVER, BRITISH COLUMBIA--(CCNMatthews - April 17, 2007)

Project Highlights

- Three project sites located at Dalgleish Creek, Jimmie Creek and the Upper Toba River
- Total design capacity of approximately 116 Megawatts ("MW")
- Expected to generate approximately 350 Gigawatt hours ("GW.h") of renewable energy annually

Plutonic Power Corporation is pleased to announce that it has successfully completed Stages 1 and 2 towards securing a Water License and Crown Land rights from the Integrated Land Management Bureau (Ministry of Agriculture and Lands) and the Water Stewardship Division (Ministry of the Environment), for the development of three run-of-river non-storage hydroelectric power generation projects to be located on Dalgleish Creek, Jimmie Creek and Upper Toba River, near the headwaters of Toba Inlet, approximately 100 km North of Powell River, BC. These projects have a design capacity of 116 MW and could be expected to generate approximately 350 GWh of green energy per year, enough energy to meet the needs for approximately 35,000 homes.



Environment

Appeals court: Bush plan for Columbia dams violates Endangered Species Act

By JEFF BARNARD, AP Environmental Writer, Seattle Times, 4/9/07

GRANTS PASS, Ore. — Using strong words, a federal appeals court today upheld a ruling that found the

Bush administration's novel plan for making Columbia Basin dams safe for salmon violates the Endangered Species Act. The ruling by a three-judge panel of the 9th U.S. Circuit Court of Appeals in San Francisco lets stand a federal court order requiring the dams to sacrifice power production to help salmon. It also keeps open the possibility that four dams on the lower Snake River in eastern Washington could be breached to restore salmon in danger of going extinct.

In 2004, after more than a decade of losing court challenges to its management proposals, the federal agency in charge of restoring salmon populations came up with a new approach. NOAA Fisheries argued that the dams were built before the Endangered Species Act became law, so their existence was part of the environmental baseline, and not subject to change to help salmon. The same went for basic operations, such as irrigation, flood control and power generation. The appeals court called that approach "little more than an analytical sleight of hand."

Time is right to start making green investments

By JOEY FITZPATRICK Personal Finance Column, The Chronicle Herald, CA

There can be gold in going green.

If you're looking for investment opportunities this year, the environment may be a good option. With all federal political parties now championing a more aggressive approach to reducing greenhouse gases, the stars are in alignment for companies focused on environmental technology. "There's an emerging awareness that if we're going to have a sustainable planet, we're going to have to take more green approaches to everything we do," says Bob Gorman, chief portfolio strategist with TD Waterhouse. Wind power, solar generation, hydroelectric, waste management and environmental remediation are all burgeoning sectors. One of the chief sources of CO2 emissions is the burning of fossil fuels to generate electricity, which accounts for about 40 per cent of total emissions in the U.S.

So how can you profit from the drive to generate more electricity and less CO2? Some of the leading sectors include hydroelectric and wind power generation. Hydro accounts for a major part of Canadian electricity generation and there are a number of ways to invest in either mature or developing hydro plants for income or growth. A power trust is a type of income trust that specializes in generating electricity, including hydroelectric. "The stream of income is pretty stable," Gorman points out. "It's water going over the dam and through the turbines." They have an assured market for the power — typically a regional utility — with long-term contracts. A few of the names include Great Lakes Hydro Income Fund and Algonquin Power Income Fund.

Due to lower hardware costs and a relatively low cost of capital, the cost of wind power has declined significantly. With the provinces providing incentives to reach renewable energy targets, wind turbine construction has accelerated and there are several Canadian plays on this theme. Creststreet Power and Income Fund have holdings in two major wind energy projects, including Pubnico Point in Nova Scotia. This wind farm has a contract to provide Nova Scotia Power with 30 megawatts of electricity over the next 14 years for \$7 million a year. "Wind power is not like the dams, which have been around forever. Because it's newer and smaller, there are more variables involved. So as an investor, you have to keep your eyes open." Environmental funds fall into the broader category of socially responsible investing, which integrates personal values and societal concerns with investment decisions. A family of funds called Acuity offers a number of environmental and social values funds, with its own scientific advisers. The Ethical Funds Company is Canada's most comprehensive family of socially responsible mutual funds, with about \$2 billion in assets under management. Of course, an environmental investor can also choose individual stocks, an approach that has its advantages. "With an ethical or environmental fund, you may or may not be in total agreement with the selection criteria employed by a fund," Gorman points out. Most specialty equity funds have a management-expense ratio of above two per cent, so it may also be less expensive to buy invest directly in stocks.

The downside of buying equities is that you have to do all of the due diligence: learning about a company's management team, financial stability and profit margins — all the things a professional fund manager is paid to do. As well, a fund means you're diversified across a series of firms, and possibly a number of industries as well. "Many of these areas are not that mature as industries, so there can be significant volatility," Gorman adds. "You don't invest only for the warm and fuzzy feelings it gives you, but you want to make sure it meets your investment criteria as well."

(Somehow, you get the feeling this is more a political statement than an editorial about salmon!)

The breaching option

A Register-Guard Editorial, OR, April 13, 2007

Four years ago, President Bush stood on one of the Snake River dams and declared that they would never be breached - and that the Northwest's endangered salmon runs could recover despite the presence of dams on the river.

Time will tell. And so will the federal courts.

In a scathing and richly deserved rebuke, a federal appeals court Monday rejected the Bush administration's 2004 plan for making Columbia Basin hydroelectric dams safe for salmon. The three-judge panel of the 9th U.S. Circuit Court of Appeals upheld orders by U.S. District Judge James Redden requiring the dams to sacrifice power production to help juvenile salmon migrating to the ocean. Since 1993, the courts have struck down three separate federal plans, known as biological opinions, to balance endangered salmon against power production from the Columbia basin dams. The latest ruling dealt with a 2004 Bush administration plan that was based on the ludicrous premise that the dams are permanent fixtures of the ecosystem and therefore not subject to removal to help salmon. The plan applied the same argument to basic dam operations, including irrigation, flood control and power generation.

The judges were appropriately brutal in their assessment of this plan, dismissing it as "analytical sleight of hand" that claims to help salmon but fails to deliver. "Under this approach, a listed species could be gradually destroyed, so long as each step on the path to destruction is sufficiently modest," Judge Sydney Thomas wrote. Under court order, federal agencies must offer a new strategy next month - the fourth by this and previous administrations. The stakes could hardly be higher. Redden, a judge not given to idle threats, has made it clear that failure to produce a plan that adequately protects salmon could prompt him to order the breaching of the four hydroelectric dams on the lower Snake River in Eastern Washington. On Tuesday, the four agencies in charge of restoring salmon populations - National Oceanic and Atmospheric Administration Fisheries, the Bonneville Power Administration, the Bureau of Reclamation and the Army Corps of Engineers - pledged to produce a workable plan to restore the 13 species of salmon and steelhead that are listed as threatened or endangered. Given their abysmal track record, it's hard to be optimistic that the agencies will deliver on that promise.

As for the Bush administration, it's far more interested in dismantling the Endangered Species Act than it is in making the financial and political commitment necessary to save salmon from extinction. Consider the recent U.S. Fish & Wildlife draft proposal that would give the BPA, not the federal courts, the final say on whether Columbia Basin dams conflict with salmon survival. Salmon runs have dwindled gradually for the past 150 years as a result of mining and logging in vulnerable headwaters, grazing, irrigation, farming, development and ocean fishing. But it was the construction of the dams in the 1960s and 1970s, in particular those along the Snake, that have pushed Columbia Basin salmon to the brink. This week's ruling leaves the door open to all options, including the one President Bush has sworn will never happen - removal of the Snake River dams.

Court's ruling on salmon plan threatens dams - as well as common sense

The fact is that nobody knows for certain how to fully restore the salmon runs. Any plan will involve trial and error, which means it is prudent to consider the impact the plan will have on society.

Daily Editorial, April 14, 2007, Walla Walla Union-Bulletin

A few years back the cry to breach the four Snake River dams was loud.

But in recent years common sense drowned out the cries. It became clear that taking down the dams on the

Snake - or the Columbia - would have a devastating impact on the Pacific Northwest. It would put the Northwest's economy - literally - under water. And dam breaching would not necessarily ensure the survival of salmon. Given that, other ways to enhance the salmon population have wisely been pursued. And the salmon population has been on the rise. A variety of factors, including the weather, have played a role. Yet, some are still itching to bring down the dams. Unfortunately, their cause got a boost last week when 9th U.S. Circuit Court of Appeals upheld a federal judge's order requiring dams sacrifice power production to help juvenile salmon migration to the ocean. The judge, James Redden, has ordered the U.S. Army Corps of Engineers to spill more water over the dams. The Associated Press reported that this keeps open the possibility that Redden could order the Snake River dams breached. Redden said he would do just that.

Redden, and the 9th Circuit Court, have gone too far. It is not for the courts to mandate solutions or set policy. The Bush administration and Congress should be establishing the plan. Redden and the 9th Circuit, however, maintain that satisfying the requirements of the Endangered Species Act are a "first priority" over other laws. **That's nonsense.**

The fact is that nobody knows for certain how to fully restore the salmon runs. Any plan will involve trial and error, which means it is prudent to consider the impact the plan will have on society, not just salmon. In 2001 the U.S. Army Corps of Engineers issued a study on breaching the Snake River dams. It considered a variety of factors and concluded that dam breaching would do more harm than good. The Corps said dam breaching would increase the chances of salmon restoration only slightly - if at all - while taking a huge toll on the economy of the region. The ruling by the 9th Circuit upholding Redden's effort to legislate from the bench should be appealed so a common-sense approach to saving salmon can be put in place.

[\(It looks like the not so endangered sea lions are on the hit list to save endangered salmon. What a choice!\)](#)

States' request to kill sea lions is controversial

By Les Blumenthal, *McClatchy Newspapers*, April 15, 2007

WASHINGTON, D.C. — For three years, the California sea lions dining on endangered salmon below Bonneville Dam on the Columbia River have been blasted with rubber buckshot, chased by boats, harassed by firecrackers and rockets, and subjected to irritating noises from underwater speakers. It hasn't worked. In increasing numbers, sea lions continue to feast on salmon runs that are struggling to survive. But now the sea lions could face a death sentence. Washington State, Oregon and Idaho together have asked permission to kill more than 80 sea lions a year. Legislation to expedite the request was introduced in late March in the U.S. House.

In the battle between sea lions and the thousands of salmon heading upstream to spawn, both sides have picked up important allies. Backers of the salmon include the three states, Indian tribes and four members of Congress. Backing the sea lions: the Humane Society of the United States. Two of the nation's pre-eminent environmental laws are involved, the Endangered Species Act and the Marine Mammal Protection Act. It's a standoff no one really wanted. "It's a frustrating dilemma," said U.S. Rep. Brian Baird, D-Vancouver, who supports eliminating some sea lions. "I am not happy about it, but the trend lines show salmon runs decreasing and sea-lion populations growing."

State wildlife officials agree.

"As resource managers, we face choices that sometimes aren't desirable," said Guy Norman, the state Department of Fish and Wildlife's regional director in Vancouver. "But we have to make these decisions." Before passage of the Marine Mammal Protection Act in 1972, California sea lions were rarely sighted in the 140-mile stretch of river between the Pacific Ocean and Bonneville Dam, the first of the 19 huge hydroelectric dams on the mainstream of the Columbia and its largest tributary, the Snake River. The numbers of California sea lions had dwindled to fewer than 10,000 before Congress acted. Until 1972, Washington and Oregon paid bounties for sea lions killed in the Columbia, and a state-sanctioned hunter was employed. Now, an estimated 300,000 California sea lions inhabit the Pacific, breeding off Southern California and chasing food as far north as Puget Sound.

On a typical day, a dozen or so can be spotted below Bonneville Dam. As the spring chinook runs peak in late April, between 80 and 85 have been seen on a single day. At the same time that the sea-lion population

was expanding, salmon were in sharp decline. The fish runs were decimated by the dams, habitat destruction and other factors, rather than such predatory pinnipeds as sea lions. Critics say the sea-lion issue is little more than a smokescreen to hide the fact that little has been done to restore the runs and that hard choices involving knocking down dams, restoring habitat or severely restricting fishing haven't been made. "It's distracting attention from the real issues," said Sharon Young, the Humane Society's field director for marine issues.

(The other view is always to tear down the dams.)

Salmon Advocates Say Kill Dams, Not Sea Lions

by Shreema Mehta, The New Standard

Environmentalists are reacting to a proposal to slaughter some sea lions in order to save the few salmon they in turn kill, pointing to deadly dams as the elephant in the room.

Apr. 17 – To reduce the decline in the salmon population in the Northwest, a US congressional representative has proposed a measure to kill sea lions who feed on the endangered fish. But since the sea lions are responsible for only about 3 percent of salmon deaths, according to the US Army Corp of Engineers, environmental groups say the bill misses the point. They say the true solution is to eliminate the four dams in the lower Snake River, which flows through several western states, including Washington, Oregon and Idaho. The dams trap and kill thousands of salmon annually.

Last year, the Army Corps of Engineers found that sea lions killed almost 3 percent of the salmon passing Bonneville dam, a number that has steadily increased in the past 4 years. Sponsored by Representative Bill Baird (D-Washington), the proposed legislation would allow the federal government to issue permits for the killing of some sea lions as a way to preserve the salmon population in the area. The Commission could not kill more than one percent of the sea lion population. A spokesperson for the congressman said Baird supports the bill because he thinks it would have an immediate impact on the salmon population. "Non-lethal measures [for deterring sea lions] are preferable," Ciaran Clayton told *The NewStandard*, pointing out that the bill first requires the government to make sure that non-lethal measures are not effective enough.

Salmon advocates, however, say the bill addresses a symptom of the problem, not the problem itself, which they say is loss of habitat from the construction of dams in the rivers the salmon use to migrate from spawning waters to sea. "[The solution is to] restore that habitat so the salmon can come back," said Amy Kober, a spokesperson for the conservation group American Rivers. "That's where the focus of our elected leaders needs to be." Kober pointed out that salmon and sea lions have co-existed for thousands of years, but the dams have created an "artificial situation" where salmon congregate in reservoirs behind the dams and attract sea lions. She also argued the bill does not address the real culprits, since compared to the dams, sea lions are responsible for very few salmon deaths. The amount of salmon that die trying to pass through the dams depends on the species of the fish and the season. On average, dams kill about 40 to 60 percent of baby salmon migrating to the ocean, with mortality rates on some rivers reaching 92 percent, according to the Federal Caucus, a group of federal agencies that enforce the Endangered Species Act in the area.

As groups like the Humane Society protest the bill, they and others are urging the federal government to take more-dramatic steps to better protect the fish. Last week, the Ninth Circuit Court of Appeals upheld a lower-court decision blasting the federal government for failing to protect the endangered salmon populations in the Northwest and violating the Endangered Species Act (ESA) of 1973. "At its core," wrote Judge Sidney Thomas in his ruling, the government's decision on the affects of proposed dam operations on salmon "amounted to little more than an analytical slight of hand, manipulating the variables to achieve a 'no jeopardy' finding... The ESA requires a more realistic, common-sense examination." In a press statement, federal officials from the US Department of the Interior, the Army Corps of Engineers, and other participating agencies responded to the ruling: "We remain hopeful that collaboration will increase the likelihood that the final [decision] will not only protect salmon but will have broad regional support as well."

American Rivers and the environmental group Save the Wild Salmon say any new conservation plan should involve removing the dams. They say the energy and transportation routes the dams create do not justify the large numbers of salmon deaths they cause each year. The lower Snake River dams generate about 1,200 megawatts of energy a year and have the capacity to produce 9 percent of the energy in the Northwest, according to the Bonneville Power Administration, which distributes the electricity from all the dams in the

Northwest. He added that the dams are a significant source of emissions-free energy. But dam opponents argue that to preserve the salmon population, the millions of dollars spent to maintain the dams should be re-directed to developing other renewable energy to replace the hydropower. They also call for increased investment in rail transport to replace barges. According to a 2002 study released by the RAND Corporation, a nonprofit research organization, the lower Snake River dams could be replaced with energy-efficiency measures and wind power. Kober said the declining salmon population has wide repercussions. She pointed out that many animals, from tiny insects to grizzly bears, depend on salmon for food. "So," she said, "when salmon are in trouble, all those animals suffer."

(Now, here's a bit of classic nonsense! There is no mention of the fact that both Sacramento and San Francisco own large hydro projects which supply a major portion of their power requirements. Does that mean that large hydro is not a renewable?

Letter to Editor:

"Your article "Sacramento No. 2 user of renewable energy" is totally misleading. While the Cities may follow the State's renewable portfolio standards, both would show a larger percentage of renewables if the large hydroelectric projects owned by those Cities were included. The failure to mention the large hydro projects is typical because many organizations do not recognize larger hydro projects as a green and renewable resource. That is nonsense. California's hydroelectric power production is among the largest of all the States and is critical to its energy future. Both cities enjoy some of lowest power rates in the Country and that is due in large part to their hydro projects which are renewable energy projects.")

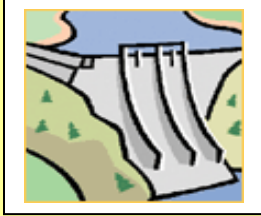
Sacramento No. 2 user of renewable energy

Sacramento Business Journal, April 16, 2007, by Celia Lamb

Sacramento has tied with San Francisco and San Jose as second in the country for cities using renewable energy, according to an online "green" product and business directory. SustainableCircles Corp., which operates SustainLane.us, said Sacramento and the other two cities rely on renewable sources, such as solar, wind, geothermal and small-scale hydroelectric systems, for 12 percent of their city governments' energy use.

The survey included the 50 largest cities in the United States. Oakland was No.1 on the list, with 17 percent of its municipal electricity drawn from renewable sources. Other California cities in the top 10 were San Diego in fifth place with 8 percent and Los Angeles in seventh place at 5 percent. The directory company attributes California cities' high ranking to the state's Renewable Portfolio Standard, which set minimal requirements in 2002 for utility purchases of renewable energy for the state's electric grid. That standard requires a 20 percent renewable energy total for the state's utilities by 2020.

¹This compilation of articles and other information is provided at no cost and should not be used for any purpose other than as free information for those interested in hydropower, dams, and water resources issues and development.



Some Dam – Hydro News and Other Stuff

4/27/2007

Quotes of Note: *“Every one can master a grief but he that has it.” - -
William Shakespeare*

Other Stuff:

It appears that this article has totally missed the pint. The cost of electricity has gone up because of deregulation, not the loss of customers. Otherwise, how can one account for the huge difference in the cost of supplying power, i.e. from 4.5 cents to double?)

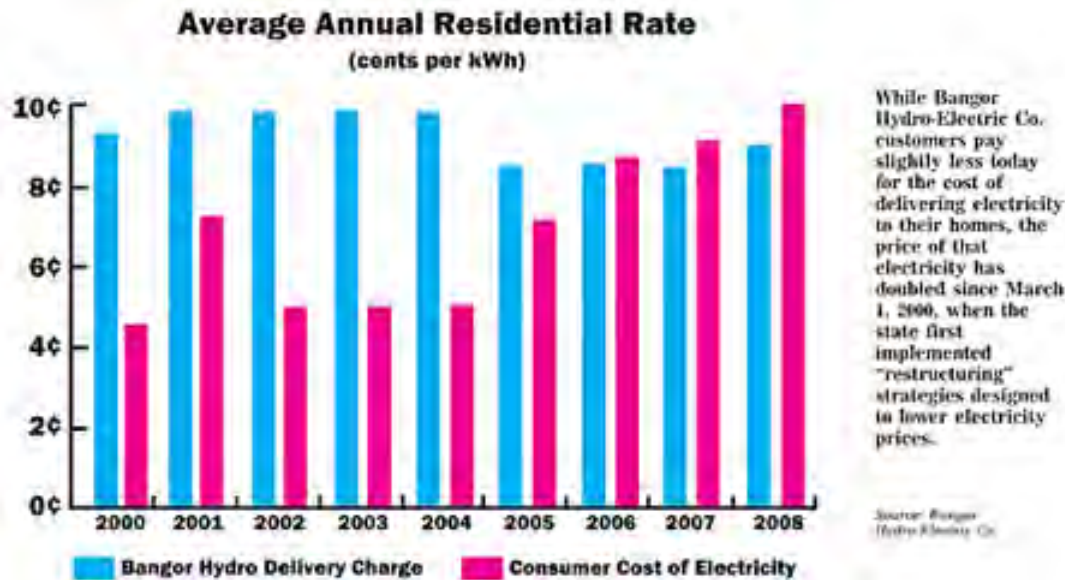
Electric Bills Reflect Restructuring

By Tom Walsh, The Ellsworth American, 4/19/07

ELLSWORTH — Monthly electric bills reflect two separate costs: the cost of generating electricity and the cost of delivering that electricity to consumers. Although Bangor Hydro-Electric Co. does the billing in much of Hancock and Washington counties, it doesn't generate the electricity it delivers and hasn't since 2000. In hopes of lowering prices through increased competition, Maine's Electric Utility Restructuring Act of 1997 required Bangor Hydro and other electrical utilities throughout the state to get out of the business of generating the electricity they distribute. Those restructuring regulations forced Bangor Hydro and other Maine utilities to sell their hydroelectric dams and coal-fired generating stations. The new rules also contributed to the permanent closure of the Maine Yankee nuclear power plant in Wiscasset, the state's only nuclear power plant. Phased into use in 1972 and taken out of service in 1997 for repairs, it had been licensed to operate through 2012.

Bangor Hydro now owns and maintains the transmission and distribution system that delivers electricity provided by independent energy wholesalers under annual “standard offer” contracts negotiated with the Maine Public Utilities Commission (MPUC). Two-thirds of the electricity being distributed by Bangor Hydro to its residential customers in Downeast Maine is now provided by the Maryland-based Constellation Energy Commodities Group. The other one-third is provided by Florida-based FPL Energy Power Marketing, a subsidiary of Florida Power & Light Co. These wholesale brokers purchase electricity from the companies that actually generate it. State law requires that “renewable” sources — biomass, municipal solid waste, hydroelectric, fuel cells, geothermal, solar, tidal, wind – account for at least 30 percent of the electricity provided.

During 2005, approximately 33 percent of Maine's electricity was generated by a mix of these renewable fuel sources, according to the MPUC. Its statistics show that hydroelectric generation supplied about 18 percent, the same as nuclear generation. That compares to 31 percent for natural gas and oil combined.



While the cost of the electricity it supplies has increased significantly since 2000, Bangor Hydro has been able to reduce the costs of distributing that electricity to its 115,600 customers, including 26,500 residential, commercial and industrial customers in Hancock County and another 16,568 in Washington County. On March 1, 2000, when the cost of supplying electricity for residential customers was 4.5 cents per kilowatt hour, the cost of delivering that electricity was 9.4 cents per kilowatt hour. Today, with the cost of residential electricity at 9 cents per kilowatt hour, the distribution cost is 8.5 cents per kilowatt hour.

Bangor Hydro attributes that reduction in distribution costs to automation, fewer workers and other cost-cutting programs. The company notes that its efforts to keep a lid on costs are being affected by loss of revenues resulting from some of its largest commercial and industrial customers shutting down, relocating or building their own generation facilities in response to higher electricity prices. Those lost revenues require Bangor Hydro to shift the cost of operating and maintaining its transmission and distribution system to other customers. Those cost-sharing adjustments are expected to increase the monthly bill for a typical residential customer by 70 cents, beginning in January 2008.

Originally organized in 1925, Bangor Hydro was the successor to the Bangor Railway and Electric Co., which began powering street cars and electric lights in the late 19th Century. Since 2001, Bangor Hydro has been owned by Emera Inc., which is headquartered in Halifax, Nova Scotia.

(Now, here's a stinking idea – one square! No wonder Lance Armstrong split up with her.)

Americans may be using less toilet paper, if Sheryl Crow has her way.

Monday, April 23, 2007, Fox News

The singer, who is crossing the country on a biodiesel bus with producer Laurie David, proposes limiting toilet paper use as one solution to global warming, according to a Washington Post report. "I have spent the better part of this tour trying to come up with easy ways for us all to become a part of the solution to global warming," she wrote April 19 on the Biodiesel Bus blog, according to a report by the Washington Post. "Although my ideas are in the earliest stages of development, they are, in my mind, worth investigating." Her toilet paper manifesto would limit how many squares of toilet paper Americans use in a sitting.

"Now, I don't want to rob any law-abiding American of his or her God-given rights, but I think we are an industrious enough people that we can make it work with only one square per restroom visit, except, of course, on those pesky occasions where 2 to 3 could be required," she wrote.

(Oh Oh! The International Rivers Network isn't going to like this.)

U.N. panel lists climate-change cures

April 23, 2007, Houston Chronicle, By The Associated Press

— The draft report of the Intergovernmental Panel on Climate Change's working group on mitigation, a report whose final version will be issued May 4 in Bangkok, lists dozens of available technologies that could significantly reduce global-warming gases.

Some of the most important:

ENERGY SUPPLY

- Fuel switching from coal to gas, nuclear power, **hydropower**, solar, wind, geothermal and bio energy.

TRANSPORT

- More fuel-efficient vehicles, rapid public transport systems.

BUILDINGS

- Efficient lighting, better insulation and ventilation, more efficient heating and cooling devices.

INDUSTRY

- More efficient electrical equipment, heat and power recovery.

AGRICULTURE

Improved land management to increase carbon storage in soil, improved livestock and manure management to reduce methane emissions.

FORESTRY

- Reduced deforestation, restoring forests, planting new forests.

WASTE

- Control of methane emissions from landfills.

(And, hydro!)

Solution to warming is nuclear power

Press of Atlantic City, April 24, 2007

Americans and others around the world have been demonstrating to reduce global warming. Solutions have been offered, but many — such as solar power, wind power and other alternative sources that are a waste of time and money to be even considered — are not practical and cannot meet the energy demands required.

Global warming is attributed to greenhouse gases that come from the way energy is produced. Most gases come from fossil-fuel power plants, from industry and from combustion engines such as automobiles.

The world must convert to the use of electrical energy generated by nuclear and/or hydroelectric power plants. These plants have the capacity to supply the energy requirements needed and put nothing into the atmosphere.

This is being done right now and has been done for decades. These plants have been generating electricity safely, with excellent results and no greenhouse gases into the atmosphere.

If you really want to eliminate global warming, nuclear and/or hydroelectric power plants are the answer.

PETER FANTACONE

Mays Landing



Dams

Fire officials say Newmarket dams will hold

By STEVEN GINTZ, The Democrat Staff, April 19, 2007



NEWMARKET — Fire officials say water levels are near those of last year's floods, and as long as rain holds up, dams will not burst and they will not have to add to the list of over 1,000 evacuees. "We still have to wait for the next high tide to pass, but we're hopeful that it won't be much of a problem," said firefighter Liz Coffey. "At this point they're holding strong, and we're watching, but don't think they'll go. "With the rain finally letting up on Wednesday, the Lamprey River had a chance to empty into the Great Bay unhindered, but breaches in the Newmarket Dam on Packers Falls Road from Monday's rains had added concern throughout the week that the dam would burst.



Water levels remained high throughout the Lamprey, putting unusual pressure on the dam from upstream rivers, including the Piscassic. "If it kept raining it probably would have burst, but luckily the rain has subsided so we can give the water a chance to recede," said Coffey. The concrete and granite dam, built in 1925, faced similar levels of water during last year's Mother's Day floods, according to firefighters, but when the water flow over the dam lessened through Wednesday, their concerns were at least temporarily eased. "We were concerned about a major breach or burst, but it doesn't look like that's going to happen, and we're very happy about that," said Coffey.



Firefighters built a retaining wall of sandbags to contain the water flow from destroying an unoccupied building sitting above the concrete and granite dam. Coffey said Fire Chief Rick Malasky had been prepared with an emergency plan in case of the failure of a nearby dam, but could not give specifics. She said the plan will likely be unnecessary, but if a dam did bust, the water would flow into Moonlight Stream and into an already saturated area, so more areas would likely have to be evacuated. "We probably would have ended up evacuating about 100 more homes," Coffey said.

Grace Levergood, an engineer with the Department of Environmental Services, said the water of the MaCallen Dam on Main Street was also near that of last year, and would again hold if the rain continues to do the same. "It has gotten quite high over the last couple of days, but they're strong, and it's looking a lot better now," she said. Coffey said one of the hardest hit areas was the Riverside Cemetery area, including Salmon, River, Piscassic, and Twin River streets. The Twin Rivers complex has 96 units, according to Coffey, and had begun evacuations on Monday into the Red Cross shelter established in the

town's community center. As of 8 a.m. Thursday morning, the shelter, that had served more than 55 evacuees since Monday held just eight, including a family of 5, two senior citizen women, and one man, from Cedar, Piscassic, River, and Salmon Streets.

First public hearing tonight on activities near river dams

Salisbury Post, Apr 19, 2007

The N.C. Wildlife Resources Commission will conduct two public hearings, the first one tonight in Newton, asking for comments on proposed exclusionary zones around dams on the Catawba, Green and Yadkin rivers. The exclusionary zones, affecting nine dams owned by Alcoa Generating Power and Duke Energy, would prohibit swimming, boating and fishing within 100 feet upstream or downstream of the dams.

Tonight's hearing is at 7 p.m. and will give attendees the opportunity to comment on proposed exclusionary zones around seven dams on the Catawba and Green rivers. The hearing will be held at the 1924 Courthouse on 30 North College Avenue in Newton. The second hearing, on April 26 at 7 p.m., will focus on proposed exclusionary zones around two dams on the Yadkin River. This hearing will be held at Pitts School Road Elementary School cafeteria at 720 Pitts School Road in Concord.

Duke Energy and Alcoa jointly submitted a petition to Wildlife Commissioners at their Feb. 27 meeting requesting the exclusionary zones since the often-turbulent waters surrounding the dams can be hazardous to boaters and swimmers. Sudden discharges from automatically operated turbines, locks and gates can cause waters to rise rapidly, creating turbulence and giving boaters and swimmers insufficient time to leave the area. Specific areas where the proposed exclusionary zones would be established for Duke Energy-owned dams are:

- * Bridgewater Hydroelectric Station on the Catawba River in Burke and McDowell counties;
- * Cowans Ford Hydroelectric Station on the Catawba River in Lincoln and Mecklenburg counties;
- * Lookout Hydroelectric Station on the Catawba River in Catawba and Iredell counties;
- * Mountain Island Hydroelectric Station on the Catawba River in Gaston and Mecklenburg counties;
- * Oxford Hydroelectric Station on the Catawba River in Alexander and Catawba counties;
- * Rhodhiss Hydroelectric Station on the Catawba River in Burke and Caldwell counties;
- * Tuxedo Hydroelectric Station on the Green River in Henderson County.

Specific areas where the proposed exclusionary zones would be established for Alcoa Power-owned dams are:

- * High Rock Hydroelectric Station on the Yadkin River in Rowan and Davidson counties;
- * Narrows Hydroelectric Station on the Yadkin River in Stanly and Montgomery counties.

[\(There's a lot of Dam news from NH.\)](#)

State eyes dam fixes as maintenance lags

N.H. has 3rd-highest number of deficiencies

By DANIEL BARRICK, Concord Monitor staff, April 20, 2007

As New Hampshire residents dry out from the third major flood in the past 18 months, state officials are trying to come up with a better system for maintaining and inspecting the state's dams, many of which need to be repaired. The proposed changes include hiring more safety engineers at the state dam bureau, increasing the frequency of inspections for the most dangerous dams, increasing the number of annual dam repair projects and providing a more stable source of money for the dam maintenance fund, which is now insolvent. There are more than 3,000 dams in New Hampshire, less than 10 percent of which are owned by the state. The remainder are owned by individuals, businesses or municipalities. Many of those dams are in bad shape. According to Environmental Services Commissioner Thomas Burack, New Hampshire has the third-highest number of deficient dams in the country. Burack and members of the state dam bureau were unavailable to speak yesterday. In a letter to lawmakers last month, Burack acknowledged that the state's dam inspection process was in need of improvement. According to Burack, approximately 240 dams in the state have known deficiencies, and nine have "major deficiencies." And of the 273 state-owned dams, Burack said, 33 are in need of repair, at an estimated cost of \$7.6 million.

In the same letter, Burack also pointed out that the state lacks a long-term funding source to cover the costs of inspecting and repairing its dams. Attempts to change that in recent years have been rejected by lawmakers. In May 2006, just a week before floodwaters swamped much of the state, the Senate Finance Committee voted to slash a \$1 million funding request for dam maintenance to a single dollar. "I think right now there's just not the opportunity to check and repair dams as often as should be done," said Rep. Frank

Davis of Pittsfield, who's sponsored a bill to increase funding to the dam maintenance fund. "The last two years, what's happened has made us all aware of this issue."

Residents of some New Hampshire towns have learned firsthand about the precarious condition of state dams. Last year, Bristol residents were evacuated because of concerns that a series of privately-owned dams on the Newfound River were close to bursting. State engineers breached the dams in order to ease the pressure and avoid a surge of water across downtown. And in Hollis, Pembroke and other towns earlier this week, residents were evacuated from their homes because of a risk of dam breaches. Incidents like those have state officials thinking about changes in the way dams are cared for and inspected. Gov. John Lynch wants the state to hire two new dam safety engineers and fill five vacant dam maintenance positions. According to Lynch, those positions will allow the state to increase the frequency of inspections at the most dangerous dams, labeled "high hazard" dams, which would cause loss of life if they failed. Currently those dams are inspected once every two years; the added inspectors will allow the dams to be checked once a year. Also, Lynch has asked that \$1.85 million be set aside to repair nine state-owned dams over the next two years, including the Pittsfield Mill Dam, the Buck Street Dam in Pembroke and the Alton Power Dam. Several of those dams were affected by this week's flooding. Residents and firefighters stacked sandbags around the edge of the Pittsfield Mill Dam on Monday night, to keep it from flowing over onto several homes and businesses.

Beyond the dangers posed to life and property, dam maintenance is important for other economic reasons, state officials say. The majority of the state's surface waters are bound, at least in part, by state-owned dams, luring tourists and yielding higher property values for tax purposes. Many of New Hampshire's dams date to the 1800s, when they helped fuel the state's shift towards industrialization. According to the Department of Environmental Services, approximately six state-owned dams each year need major repairs or reconstruction. The costs of these repairs come from the Dam Maintenance Fund, which is funded from rent payments the state receives from leasing some dams to hydropower plants that sell electricity to Public Service Company of New Hampshire. But those rent payments dropped sharply five years ago, when PSNH renegotiated its purchase contracts. As a result, the Dam Maintenance Fund saw a 40 percent drop in revenue and is now insolvent, according to a letter from Burack to the House Ways and Means Committee, dated March 29.

In 2006, the American Society of Civil Engineers graded New Hampshire's dam systems and found that staffing and funding in the state dam bureau was inadequate. The society's report also recommended that the state evaluate the overall dam system and come up with a plan to address repair needs. Specifically, the report urged the state to include more precise data about the likelihood of dam failure when inspecting a structure. A bill now in the Legislature would establish a stable source of money for the maintenance fund through unrefunded fuel taxes from boaters. Another bill would increase the inspection fees the state charges private dam owners. "The recent weather events have highlighted the need to close that gap in funding for the state's dams," said Rep. Don Brueggeman, a Concord Democrat who sponsored the proposed fee increase. "I wouldn't say were in a place where the dams are unnecessarily risky, but we will get there if nothing changes."

Private dams cause problems

National Guard called in as collapse of Hayden Mill Pond Dam feared imminent

By Sara Pratt, Apr. 20, 2007, The Cabinet

HOLLIS — The town called in the National Guard late Tuesday afternoon after deciding, for the second time this week, to evacuate about dozen homes downstream of the 150-year-old Hayden Mill Pond Dam and close Route 122.



The town issued the mandatory evacuation order after Dale Guinn, an engineer from the Department of Environmental Services dam bureau determined the earthen dam, contained between two granite block walls, was at risk for imminent collapse.

as Program: <http://npdp.stanford.edu>

With the pond not draining fast enough on Wednesday afternoon, the dam bureau brought in a backhoe to chisel away at a portion of the concrete barrier in the spillway, allowing part of the eight million-gallon pond to surge out into Witches Brook. The release dropped the water level in the six-acre pond another three feet, allowing the evacuation order to be lifted and Silver Lake Road, which had been closed from Truell Road to Ames Road, to be reopened around 5 p.m.

In January 2006, DES noted the Hayden Mill Pond Dam, "in its current state of disrepair is a menace to public safety, as a failure of the dam would damage the downstream secondary state highway, NH Route 122, as well as cause major economic loss to residential structures." This week, the rising floodwaters brought to the surface an ongoing dispute over the disrepair of the historic dam, which has involved the state dam bureau, the town, the local residents association, and a court battle among the Kalin siblings, who inherited the dam and adjacent property from their mother's estate. In the summer of 2005, DES ordered Richard Kalin, who co-owns the dam and adjacent property with his sister Rebecca, of New York City, and brother Jeffrey, of Connecticut, to repair the dam after a 30-foot-long section of the granite block face collapsed. The Kalins are required to maintain the dam as part of the subdivision's covenant because the pond is a source of water for the Fire Department. Otherwise, a cistern will have to be built nearby for fire protection.

"Yes, there is a responsibility to maintain the dam," said Kalin on Tuesday. However, Kalin said his sister, the executrix of the estate, has abdicated responsibility for the repair of the dam based on improperly drafted legal documents, and that she is the main impediment to repairing the dam. "My sister and I are having a battle in the courts," said Kalin. "My sister in New York wants to tear it down, but I'm here in Hollis and I want to fix the dam."

In November 2005, DES noted that previously requested repairs had not been made to their satisfaction and asked that the pond be drained for safety reasons, which Kalin did. The pond remained in that condition — with only a small stream snaking across the mudflats towards a shallow pool that stood roughly 18 feet below the dam crest — until the nor'easter rolled in last Sunday. The downpour, combined with runoff from melting snow, "raised the water level in the pond more than 20 feet almost overnight," said Kalin. The Hollis Fire Department began monitoring the dam around 4:30 a.m. Monday when water began to seep through the dam's granite stone face. Early on Monday morning, the rising pond overtopped the crest, prompting Don McCoy, the town's emergency management director, to issue the first evacuation order, a voluntary one, around 8:30 a.m. for about a dozen homes downstream. According to the town's emergency management plan, if the dam were to be breached, it would take about 30 minutes for the floodwaters to reach Route 122, where the homes are. "It would go through an unpopulated area until it reached 122, which is a significant way," said Cath Hallsworth, director of administration for the town.

By Monday afternoon, the rain had slackened and the pond was no longer spilling over the crest, but water continued to spurt through the granite block face, severely eroding the sand matrix between the stones. By Monday evening, most of the evacuated residents had returned to their homes, Hallsworth said, although the voluntary order was still in effect. Meanwhile, the selectmen held one emergency meeting at the Hollis Pharmacy, which is owned by Selectmen Vahrij Manoukian, to discuss the condition of the dam with McCoy, and another on Tuesday morning at the police station. On Tuesday, the Department of Public works set up surveying equipment to monitor any motion of the dam. The water was about two to three feet below the crest and by all accounts the outlook was improving. "The water is going down," DPW Director Jeff Babel reported Tuesday morning. "The danger isn't gone, but it's less than it was yesterday at this time." But the water wasn't going down fast enough and the situation changed rapidly.

According to Kalin, a 40-inch-diameter gate valve at the base of the dam had remained fully open during the course of the storm, but the outflow just could not keep up with the rain and runoff pouring into the pond. After sinkholes began to form on the crest and the surveying equipment trained on the face of the dam detected further slumping of the previous collapse, McCoy called an emergency meeting Tuesday afternoon to "consider our options." The option town officials chose was to issue a mandatory evacuation and to close Route 122 for the second time this week. At that point, the National Guard was also called in to help with traffic control, relieving some of the town's exhausted public servants. "That's been a great help to the town," said Selectman Mark Johnson on Wednesday morning. Johnson estimated that the town spent tens of thousands of dollars this week on overtime for the police, fire and DPW workers who handled the road closures and evacuations caused by the breach of the Mossman Road dam and the potential collapse of the Hayden Mill Pond Dam. "Regrettably, this has been in response to situations with privately-owned dams," he said, noting that the town will be investigating further. "There are certainly going to be some ongoing issues for the property owners," Johnson said. "Identifying who is responsible for some of these issues is going to be a priority."

Spring Storm

Flooded residents eye river's new path

Course of Suncook changed last year

By WALTER ALARKON, Concord Monitor, April 21, 2007

Just like dozens of other homes on the Suncook River, Chris Nye's house in Allenstown was flooded this week by more water than anyone could remember. And, like those other homes' owners, Nye wonders why. During storms in 1984 and 1987, the water rose just few inches, to levels marked on Nye's foundation by the previous owners. Nye, the house's owner for three years, said that water rose four feet up the side of his house during the 2006 Mother's Day floods, when a record amount of rain fell and the Suncook River jumped its banks and took a new course. But water rose about six feet high on Nye's house Monday, even though less rain fell and no river shifted, he said. "They just didn't have floods back then," he said. Nye and other residents in Allenstown, Pembroke and Epsom, where the river took a new course, have asked if the river's shift has put their properties at risk. That shift put the river on a straighter path, one through a sand and gravel pit. Nye has another theory; he blames the dams downstream for failing to release enough water.

Scientists said that the shift last year could have been a factor in this week's flooding. But a state dam expert and the owners of the dams downstream from Allenstown said they could have done little with dams to lessen the flooding. Rick Chormann, senior hydro-geologist for the New Hampshire Geological Survey, said that when the river broke through the sand and gravel pit last year, sediment began piling up in the river bed downstream, making the river shallower. "The chances are the water would be more likely to top the banks and spread out because of the channel being filled in places," Chormann said. The river's waters may also be flowing with more velocity than before, which would make it more likely to jump its banks, said Rob Flynn, a hydro-geologist with the United States Geological Survey. Compared with the old path, the new path is steeper, shorter - a mile long instead of two - and softer - sandy, instead of bedrock - Flynn said.

Both men cautioned that they can't prove the actual effects of last year's river shift, but an upcoming study by the Department of Environmental Services could. The study aims to determine how the shift happened, the current state of the river and whether the river could be rerouted to its old channel, said Steve Landry, the state's Merrimack River watershed coordinator. The \$40,000 study, paid for by a DES grant and the town of Epsom, will determine the river's course, flow and the amount of sediment in it, Landry said. He added that other factors may have contributed to this week's floods, which forced the evacuation of 61 homes in Allenstown, about 10 in Epsom and Pembroke, and 6,000 across the state. Landry said that the increased riverside development in New Hampshire has increased the amount of water running off into the river itself. He also said that people should consider whether global warming has played a role in the frequency of recent major floods throughout New Hampshire. "It's not just the Suncook," Landry said. "How many 100-year events have we had in the past four years? Three or four." He noted that an October 2005 storm caused a major flood in Alstead. "They're happening in a higher frequency. That should be questioned," he said.

And though the state received less rainfall during this week's nor'easter than it did during last year's Mother's Day storm, some towns received much more rain than others, said Chris Pope, the state's director of homeland security and emergency management. From Sunday through Tuesday, 3.6 inches of rain fell in Concord, less than half the rainfall of last year's storm, according to the National Weather Service. But in Barnstead, the only town on the Suncook River where the National Weather Service measured rainfall, 5.6 inches fell, just an inch less than the 2006 storm total. Experts didn't buy the theory that the floods could have been lessened by opening up dams on the Suncook River. Jim Gallagher, chief engineer of the state's dam bureau, said that the two dams downstream on the river from Allenstown are too small to hold back enough water to affect flood levels upstream. The two dams help two companies generate hydroelectric power, so they're built to continuously allow water through, not stop it, Gallagher said. All of the dams on the Suncook "are pretty small, old mill dams," he said. "There are no flood-control dams." Gallagher said that the larger of the two dams - the China Mill Dam in Allenstown - can hold back only 960,000 cubic feet of water, a volume that would have been filled during this week's storm within two minutes. And that's if the river was empty, he said. Pittsfield Fire Chief Gary Johnson, whose town has its own dam along the Suncook River, said he asked dam engineers if they could release water from the rivers' dams slowly, to minimize effects on the towns. The engineers told him that that's what they did, Johnson said. "The floodgates at the dam were never fully opened," Johnson said. "They were opened very gradually - three, four inches at a time."

But Nye, the Allenstown resident, said he thought that was too quick. "They should've released it slower, not faster," he said. "This time I don't have contents. This time I lost electronics, everything. Now I'm totally screwed."

(This is a common reaction from the public. There seems to be a need to get information out that is understandable for the public to explain that there's more to what causes flooding than the amount of rainfall.)

Officials: Flooding not fault of dams

By STEPHEN BEALE, Union Leader, **Apr. 22, 2007**

GOFFSTOWN – When a natural disaster repeated itself within a year, many residents of the flood-ravaged Lynchville and Danis parks area suspected manmade dams along the Piscataquog River were to blame. Rainfall was about half that of the Mother's Day deluge, they said, but floodwaters came within inches of where they were last year. The Lynchville and Danis neighborhoods sit between two dams -- Greggs Falls and Kelley Falls that could have averted disaster had they been better managed, residents said last week. But those dams are not designed to store or stop water, state dam bureau chief Jim Gallagher told the New Hampshire Sunday News. The Greggs Falls Dam can hold back about a billion gallons of water.

Downstream, the Kelley Falls Dam has a capacity of 300 million gallons. Compare that to the dam the U.S. Army Corps of Engineers has at the Everett Reservoir farther upstream. That dam has a storage capacity of 52 billion gallons, according to Jennifer Samela, a park ranger at the site. That dam is designed to control floods. Normally water runs through at 218 cubic feet per second but during the storm, the dam reduced the flow first to 50 cubic feet on Sunday afternoon and then down to 20 on Monday morning.

Unlike the Everett dam, officials said the Greggs Falls and Kelley Falls dams were not built to store water during floods. Instead, they said their job is to make sure the water safely flows through them. At the peak of the storm, the Piscataquog River surged at 11,100 cubic feet per second -- less than the 100-year flood level of 12,500, but more than the 10,000 record set last year. "If you do the math, that's a lot of water," Gallagher said. Under normal conditions, 720 cubic feet per second passes through the two hydroelectric generators at Greggs Falls. During floods, dam operators can open two flood gates, unleashing an additional 480 cubic feet of water. The rest must come over the spillway, which can safely handle 30,000 cubic feet.

Residents want changes to Goffstown dam system

The Algonquin Power Income Fund, not the state, operates the dams. But as a condition of its license agreement with the Federal Energy Regulatory Commission, the company must have an emergency action plan, which outlines what it will do during storms as severe as the one last weekend, according to David Kerr, the company executive director. That plan was put into effect last weekend, Kerr said. At 2 p.m. on Sunday, one flood gate -- also known as a waste gate -- was opened and the second one was partially open. The second gate was in full use by 7:30 Monday morning, according to Gallagher. The river did not reach its peak until 6 p.m. that evening, he said. Algonquin Power officials also had to notify the downstream dam at Kelley Falls of what they were doing, Kerr said. That dam is operated by Enel North America, headquartered in Andover, Mass.

The Kelley Falls Dam had already opened its only waste gate on Friday, letting out 100 cubic feet of water per second and lowering the river behind it by about a foot. An additional 500 cubic feet passes through a generator and a bypass for fish while as much as 24,000 cubic feet can pour over the spillway, according to Gallagher. So why was this storm just as bad? More rain did fall last year but that happened after a long, dry period. This storm came in April while the ground was still saturated from several recent winter snows, Gallagher said.

Residents remain skeptical. "I think they got the dams confused," Ronnie Dashowski of 20 Russell Avenue said. "The river filled up Saturday and Sunday, so how can the dam be open?" The state does have plans to modify the Kelley Falls Dam so that it can discharge more water. Because those plans-drafted in response to last year's floods-are still in their early stages, Gallagher said he did not have exact measurements available on how much more water it could release. But the risk of flooding will always remain in low-lying areas, Gallagher said. "You can never completely eliminate flooding," he said. "You can only reduce it."

Dam's removal will have to wait

By Lynda V. Mapes, Seattle Times, 4/24/07

Dam removal delayed

Dam removal on the Elwha River may not begin until 2012 instead of 2009.



The long road to dam removal on the Elwha River just got longer: Work may not even begin on the country's largest dam demolition until 2012, instead of 2009, as had been expected. The National Park Service now says that two water projects associated with the dam takedown may take as long as five years to complete. That pushes back the start date on dam removal, said Barb Maynes, spokeswoman for Olympic National Park. Two new water-treatment plants must be built to provide clean water for Port Angeles, a paper mill and two fish hatcheries. "What has changed is just that we are closer now, we are out of the planning and design phase, and we are at the very beginning of the first construction," Maynes said. "You go forward with your best estimate and the best timeline you have. As you get close to implementation, the picture just becomes much more clear. "We don't have a firm timeline, and we won't until we get further into construction. The water projects may take as long as five years, and dam removal starts after that."

Advocates for the long-awaited project on the Olympic Peninsula said they are disappointed but will continue to push for the earliest possible removal. "It's frustrating for us," said George Behan, chief of staff for U.S. Rep. Norm Dicks, D-Bremerton. "Regrettably it sounds like we are going to have to live with a little more delay, but we will keep the pressure on. The clock is ticking; we need to move this along The more we delay, the more the costs will go up." The Elwha and Glines Canyon dams are slated for removal as one of the best chances for salmon recovery in the region. The dams have blocked fish passage on the river for nearly a century. Removal is expected to help boost recovery of threatened Puget Sound chinook, which could in turn help endangered orcas, which dine almost exclusively on Chinook salmon.

Generations of ancestors of the Lower Elwha Klallam Tribe also depended on the river and its salmon. So the delay is all the more disappointing, said Tribal Chairwoman Frances Charles. "We are just continuing on, and waiting for the day to see the dams come down," she said. "Our elders want to see it in their lifetime." It has been 14 years since Congress first approved removing the dams. "We don't have any more time to lose," said Kathy Fletcher, executive director of People for Puget Sound. "We are at a tipping point with the Puget Sound ecosystem, and it argues strongly to do the things we know we can do, as quickly as possible."

Boaters, Be Careful Around Dams

Apr 23, 2007, WSAW TV, WI

Governor Doyle has proclaimed the week of April 28-May 5 to be Dam Safety Awareness Week in Wisconsin. The Wisconsin DNR and the Midwest Hydro Users Group are promoting safety at dams this week. Wisconsin Public Service tells us that they do have buoys, lights, and alarms that warn people when a dam is about to open, but it's still a good idea to stay away from dams. The DNR says that understanding the potential dangers near dams and using common sense can prevent most accidents that occur near dams.



Hydro

Hydroelectric power studies gain approval

By Elizabeth Dinan, seacoastonline.com, April 18, 2007

PORTSMOUTH — A pair of competing hydroelectric developers were granted permits to study the feasibility of harnessing energy from Piscataqua River currents by the Federal Energy Regulatory Commission Monday. The N.H. Tidal Energy Co. and UEK Corp. were given approval to study the local potential for harnessing energy from the river for a period of 36 months. The FERC approval requires both companies to file semi-annual progress reports and a notice of intent for a license to operate within a year.

NHTEC's proposal calls for 50 to 100 devices to be placed in the Piscataqua to harness electricity from river currents, which would then be sold to a local utility. Owned by Oceana Energy, NHTEC has applied for permits to test hydroelectric potential in 11 other rivers in seven states. Oceana President Dan Power told the Herald in July that the technology is being developed with the U.S. Navy and based on Navy propulsion systems and "mag lev," or magnetic levitation principals. "It floats on magnets," he said, adding the science is patented and the company's backup technology is propeller driven. UEK, Underwater Electric Kite, was also granted approval to study hydroelectric projects in the Piscataqua, like NHTEC, from Rockingham County to York County, Maine. Its proposal calls for up to 120 of its hydrokinetic turbines, which are buoyant and anchored to the ocean floor.

Both permits cite conditions calling for the protection of the surrounding environment and restoration of any test sites. Early complaints that the applicants were "land banking," or taking out multiple permits for the purpose of monopolizing the domain, were dismissed by FERC, which explains that the permits are only for studying the feasibility of the hydroelectric projects and do not grant any property rights. The permits also do not allow for construction, or work on private property.

FERC said its permits are designed to promote competition, that it will "closely monitor" progress, and if either company does not show adequate progress or fails to comply with conditions, the permits may be canceled. The permits, the commission also notes, are not transferable. Lee electrical engineer Rob Cinq-Mars objects to the permits and filed a seven page objection with FERC. In summary, he urges the federal agency to adopt stricter scrutiny, he criticizes a lack of technological specificity and contends power estimates are inflated. Cinq-Mars also contends "a permitting gold rush" is occurring and urges FERC to deny permits for large-scale projects and to establish an impartial board to determine when the technologies are mature.

Ukiah hydroelectric plant set to generate power

By GLENDA ANDERSON, THE PRESS DEMOCRAT, April 19, 2007

After sitting idle for nearly half of its 20 years in existence, Ukiah's problem-plagued hydroelectric power plant at Lake Mendocino is on the verge of again generating electricity. "It should be up and running within days," project manager Murray Grande told officials from Ukiah, state Fish and Game, the U.S. Army Corps of Engineers and the Northern California Power Agency at ceremonies Wednesday marking the plant's reopening.

Ukiah City Councilman Doug Crane raised a glass to the plant, a wine glass he acquired at the plant's opening ceremony 20 years ago. "Hopefully we will see the returns (the project's original planners) anticipated for this facility," he said. Officials hope the plant will finally begin offsetting some of its costs, which include \$3.5 million in recent repairs and a \$2 million annual debt payment on the \$23 million bond used to build the facility. When it was previously operating, the plant contributed little to its debt payment, but as electric rates rose, its value has increased. It's now expected to generate about \$750,000 a year in energy, said Grande, a facilities manager with the Northern California Power Authority, who has been on loan to Ukiah during repairs.

But the cash will not immediately flow with the water. With a drought expected to drop lake levels to a record-breaking low point this year, Grande said the plant may produce about half that much energy. At full capacity, the plant is capable of producing 3.5 megawatts but that amount of generation can only be maintained when water flows are high, usually in the winter, Grande said. Based on historical flows, he estimated the plant realistically will produce 15,000 megawatt hours a year, about 12 percent of Ukiah's annual power consumption.

Power generation at the plant was halted almost nine years ago in order to repair a large sliding door called a tainter valve. It initially was expected to require simple repairs, but the plant's design had become outmoded and no longer complied with regulations intended to safeguard fish populations. Whenever the plant was shut and restarted, water flowing from Lake Mendocino into the Russian River had to be blocked. Restarting it would take from 90 minutes to five hours, officials said. That's no longer acceptable under rules

to protect endangered fish in the Russian River. The facility languished for several years because it had never been profitable and officials questioned whether it was worth repairing. But the process toward repair restarted in 2004 and modifications were made to allow water to continue running into the river with only a brief interruption while it was shut.

More problems followed.

In early 2006, heavy rains flooded the underground bunker, causing additional damage. While making flood-related repairs, workers discovered the turbines themselves needed work. Murray said that was a blessing in disguise, because now all the equipment is in good shape and should remain operational for at least another 30 years. The city also has added new control equipment that allows the facility to be electronically monitored and operated by the power authority from its headquarters near Sacramento. The new controls have the added benefit of allowing water flows out of the lake to be adjusted more quickly keeping more water in Lake Mendocino, which will be particularly useful during low water years.

World's 'largest renewable energy city'

Engineerlive.com, 4/20/07



A farm of underwater tidally-driven turbines in New York's East River could make the city the world's largest in the renewable energy stakes. The first set of tidal turbines has been deployed in the Roosevelt Island Tidal Energy (RITE) Project and is under test. The three-bladed units can each generate from 16kW to 32kW of electricity. The farm will eventually have a capacity of 10MW but the total project, comprising four sites, will have a potential capacity of nearly 40MW. Once developed, it would make New York the world's largest renewable energy city. The project is led by Verdant Power, which is also conducting a survey of a second tidal energy site in the Buttermilk Channel of the East River, alongside Governor's Island - an area known as New York City's Golden Triangle. Verdant Power was formed in

March 2000 and says it is constantly in a global search for additional locations in areas that need sustainable power generation. It is in the process of examining sites in South America, China, India, and others.

The company says the size of the world kinetic hydropower market is over 250,000MW and the US share is 12,500MW. It quotes the Electric Power Research Institute (EPRI) as believing that free-flow, or kinetic, hydropower systems could be the key answer to distributed generation - putting generation close to consumption. Verdant Power says by starting its first US project in New York City, conceivably the toughest US regulatory environment, the Company has become the industry's trail blazer in changing the regulatory process and setting its standards.



Water

(This seems to be more about water than just a dam, although the dam is important.)

OXFORD: Rush of water a powerful sight to see

April 23, 2007, BY QUANNAH LEONARD, Republican-American

The series "Our Places" visits some places in the Naugatuck Valley and Northwestern Connecticut that are beautiful, historic or useful, and give meaning to people's lives. A dam on the Oxford-Monroe line produces more than power for homes in New England -- it creates a splash for people in the area. The 103-foot-high

Stevenson Dam, built in 1919 and owned by FirstLight Power Resources in Rocky Hill, draws people to the Housatonic River to watch water rushing over the archways. It moves at a pounding pace after heavy rains or as the snow melts in the spring. The state plans to rebuild the Stevenson Dam Bridge, which on average sees 10,000 vehicles a day, according to 2004 numbers from the state Department of Transportation.

Last Monday after a nor'easter barreled through the state, people gathered on both sides of the dam, taking photos or videos of the water spilling from the portals under the bridge to the river below. Some parked on the side of Route 34 in Oxford, while others crossed the bridge to watch the show by the power house in Monroe. "It's breathtaking," said Jim Mayhew of Shelton. "It's awesome to see what God can do." After a storm event last year, Mayhew took his two children to the dam, but he forgot a camera. This time, he brought his video recorder so he could show his children later. He said the bad side of an event like this is the flooding that occurs along the Housatonic. "It's a real tragedy," Mayhew said.

Stevenson can produce enough power for 17,000 homes, said Robert A. Gates, station manager with Connecticut Hydro. Stevenson is one of 10 hydroelectric dams in Connecticut within Connecticut Hydro, a division of FirstLight Power Resources. Stevenson used to be part of Connecticut Light & Power Co. In 2000, it was sold to the Northeast Generation Co. and in 2006, it was sold to FirstLight Power Resources. That company has a license to operate the dam for 40 years from the Federal Energy Regulatory Commission, Gates said. Four employees work during the day at the site, and it is operated remotely from the Rocky River Pump Station in New Milford, he said. Stevenson is 1,250 feet long, or a quarter of a mile, and the dam can withstand a flow of about 372,000 cubic feet per second, Gates said.

During last week's flooding, flow was about 50,000 cubic feet per second, said Chuck Burnham, an external affairs administrator with FirstLight Power Resources. In the flood on Oct. 16, 1955, the highest flow was 75,800 cubic feet per second, he said. Stevenson has two flood gates on the Oxford side, and 20 spillway bays. During a flood, water will escape through the spillway bays, and the two flood gates are opened for water to pass around the dam, Gates said. Gates said Connecticut Hydro works with local officials to alert residents of flooding.

Andy Fesenmeyer, a project manager for the state Department of Transportation, said the DOT is proposing to take the bridge off the dam and build a new one in 2009 on Lake Zoar, a little west of the dam. Total construction cost is estimated at \$45 million, he said. Other improvements include providing a way for canoeists and kayakers to go under the new bridge so they don't have to cross Route 34 in Monroe, Fesenmeyer said. There also will be a sidewalk on the west side of the bridge.

Naugatuck resident Georgette Lamoureux, who grew up in Monroe, said her mother always took her to the Stevenson Dam after a storm. Last Monday, Lamoureux, who is a nanny, shared the sight with 7-year-old James Edwards of Waterbury. "It's just something you don't see all the time," Lamoureux said. James said, "I think it's very cool."



Environment

(What's an eco-topia? They did move all the strange people from CA to Oregon! And, we see the mention of the grand plan, long denied by environmentalists, to take down many large dams.)

Climate Change Adds Twist to Debate Over Dams

By WILLIAM YARDLEY, NY Times, April 23, 2007

KLAMATH FALLS, Ore., April 19 — The power company that owns four hydroelectric dams on the Klamath River says the dams provide a crucial source of so-called clean energy at a time when carbon emissions have become one of the world's foremost environmental concerns. But the American Indians, fishermen and environmentalists who want the dams removed point to what has happened since the first one was built nearly 90 years ago: endangered salmon have been blocked from migrating, Indian livelihoods have been threatened, and, more recently, the commercial fishing industry off the Oregon and California coasts has been devastated. They say the dams are anything but clean. They say the river is a mess. "Should we have

to sacrifice water quality for air quality?" said Craig Tucker, who is coordinating efforts by the Karuk tribe of Northern California to take down the dams. "Should Indians and family fisherman be the ones who have to sacrifice to address this problem?"



Whether the power company, PacifiCorp, wants to keep the dams because they improve air quality or simply because they are inexpensive to operate is not clear. But emphasizing an environmental argument that touches on climate change has added a new wrinkle to the longstanding debate over dam removal in the Pacific Northwest. In a region where plenty of residents measured their "carbon footprints" long before green became the new black, PacifiCorp is suggesting that righting one environmental wrong could lead to another, one that could affect people more than fish. The Klamath dams provide enough power to serve about 70,000 homes, a small fraction of PacifiCorp's 1.6 million customers, which span six Western states. But the company says only coal or natural gas are likely to be reliable enough to replace the river, which hits hydroelectric turbines four times on its way to the sea from east of the snow-capped Cascade Range. Those who support removing the dams largely dismiss the clean-energy argument, saying the benefits outweigh losing a relatively small source of hydropower. They note that PacifiCorp's increased interest in the environment comes as recent rulings by judges and federal fisheries agencies have given new momentum for removal.

The company's federal license to run the dams expired last year, and the government has said PacifiCorp must build fish ladders over the four dams to get a new license, a proposition that could cost \$300 million and reduce the power the dams generate, potentially making removal a less costly choice. Yet whatever is spent to restore salmon, and whether the solution is fish ladders or dam removal, the company has said that its customers will bear the cost, and the carbon. "It's a conundrum in many ways," said Dave Kvamme, a spokesman for PacifiCorp. "Taking away a very useful resource like the Klamath puts more pressure on us to build something else or buy it on the market."

The Klamath runs more than 250 miles from southwest Oregon to the California coast, connecting two states where power and water supply have long been contentious issues. Gov. Arnold Schwarzenegger of California and Gov. Theodore R. Kulongoski of Oregon are helping lead the push for clean fuel sources. Last year, California passed a law requiring a 25 percent reduction in the state's carbon dioxide emissions by 2020. Oregon is also pushing to increase the amount of renewable energy it uses. Both governors have said removing the Klamath dams should be an option, but they have not taken firm positions. Earlier this year, Mr. Schwarzenegger proposed spending about \$4 billion to build two dams on the San Joaquin River for water storage, an idea environmentalists have long opposed. The Northwest, where more than 80 percent of the power generated comes from hydroelectricity, has long had some of the lowest electricity rates in the nation. It has also been the setting for epic environmental fights that reflect the tension across the region's topographic and demographic divides.

"We think of ourselves as ahead of the curve, as eco-topia, when it comes to saving endangered species, like the spotted owl," said John M. Findlay, a history professor at the University of Washington. "But these things are much more complicated when we try to actually solve them." Mr. Findlay said the region's identity as an environmental leader was rooted in cities like Portland and Seattle, not in the areas where rivers provide power and water for farms. "They're the most sympathetic to taking down the dams," he said of big-city residents. "But they're also the people who are kind of taking cheap power for granted. If you're in a city and you have the power just piped in over wires it's too easy to not recognize where that comes from, and not to realize that people and economies are all connected to that." The Klamath dams are among the most controversial in a much broader dam removal effort led by environmentalists, American Indians and commercial fishermen.

In the next several years, dams on the Elwha and White Salmon Rivers in Washington and the Sandy River in Oregon are scheduled to be removed. But in many ways, they are only steppingstones to larger targets, including the dams on the Klamath and four on the Lower Snake River. More fish could be saved by removing the bigger dams, but more power would be lost, too. Supporters of removal say conservation measures and new sources of energy like wind and sun can replace lost hydroelectric power. Some also say the fact that snowpack is decreasing could reduce the amount of electricity dams generate. Dam owners in the region, including private utilities and the federal government, say the new sources of clean energy cannot replace dams. The use of wind power is expanding quickly, but its effectiveness depends in part on having dams or another steady energy source during lulls in the breeze.

In a written statement last month, Bill Fehrman, the president of PacifiCorp, said replacing power from the Klamath would “cost our customers more money, and potentially a lot more money” and “could result in adding combustion emissions to the environment.” PacifiCorp has said it is not opposed to removal, but it would need approval from regulating commissions in six states before it could pass on costs of dam removal to its customers. Blending the cost and climate change arguments could strengthen its case. “We have to demonstrate to our commissions that we’ve done what we can to protect their interest,” said Mr. Kvamme, the spokesman. Salmon and air quality are not all that is at risk. The river and its dams support an elaborate irrigation system started by the federal government more than a century ago. Water from the river provides for about 240,000 acres of cattle pastures, alfalfa fields and other farming. It also flows through a wildlife preserve.

When Edward Bartell and his family moved to southwest Oregon from California to raise beef cattle 30 years ago, land, water and power were inexpensive. Now, the water supply is at the mercy of an ever denser maze of environmental regulations intended to protect fish. And the price of power, delivered wholesale thanks to the Klamath dams, went through the roof when PacifiCorp said it could no longer justify the discounted rate in the current market. Mr. Bartell shook his head when asked if families who moved here to farm because of the available irrigation knew such a knot could one day develop, that the dams might not last forever. “It was unthinkable,” Mr. Bartell said. “Obviously, nobody would have come.”

ⁱThis compilation of articles and other information is provided at no cost and should not be used for any purpose other than as free information for those interested in hydropower, dams, and water resources issues and development.