ORAL TESTIMONY

OF

CHRIS HOCKER

PRESIDENT
NATIONAL HYDROPOWER ASSOCIATION (NHA)

BEFORE
THE

HOUSE COMMITTEE ON RESOURCES

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Good morning Mr. Chairman, members of the Committee. My name is Chris Hocker. I am the President of the National Hydropower Association (NHA). I appreciate the opportunity to appear today to talk about hydropower – the nation's most valuable domestic renewable resource – and its relationship with federal resource agencies.

As you may know, hydropower is the nation's leading renewable. It represents about 10 percent of the nation's electricity and about 80 percent of its renewable energy. Overall, 98,200 Megawatts (MW) of clean and efficient power is produced from hydro facilities – enough electricity for 98 million homes.

While these are impressive facts, hydro's contributions go well beyond energy. These benefits include irrigation, transportation, water supply, recreation, and invaluable contributions to cleaner air and a safe, reliable transmission system. Despite these benefits, today I bring to your attention two troubling facts I believe deserve policy consideration.

First, hydropower is on the decline. And second, there is a large amount of untapped hydropower that has been ignored for too long. I find it somewhat ironic that at a time when hydro should be most valuable, it is waning due to an arcane

regulatory scheme and actions by resource agencies who hold the upper hand in the licensing process. These problems also play a large part in why development of potential new capacity is neglected. These problems can be fixed, however, but we need your help, and that of the Administration, to resolve them. And quite frankly, time is running short.

Hydropower is losing capacity and operational flexibility due to the Federal Energy Regulatory Commission's (FERC) hydropower licensing process. We strongly believe the process is broken and badly in need of repair. In fact, the Energy Information Administration (EIA) said for the first time last year that hydro capacity will decline due to "regulatory constraints."

This problem demands urgent attention as half of licensed capacity – 28,784 MWs – must to be relicensed by 2016, and over 52 % of it is located in Western states where energy supply and reliability issues have already reached a critical stage, and water resource issues are paramount.

The licensing process is exceedingly complex, needlessly fragmented, excessively costly and frustratingly inefficient. Further, it fails to fully weigh the benefits of

hydropower and often results in extended and contentious litigation, costing both the project and the environment.

Attached to my written statement, you will find a document that shows case after case where the process has failed, strongly highlighting the need for reform. I encourage you to carefully review it.

What can be done to fix a process all stakeholders agree needs improving? Enact legislation this Congress which requires a more balanced review by resource agencies such as the Departments of Interior (DOI) and Commerce (DOC) in their mandatory conditioning authority under Section18 of the Federal Power Act, as well as the Department of Agriculture (USDA), under Section 4 (e). We support legislative action because we honestly believe our largest concern, balancing energy and non-energy values, can only be achieved through legislation.

This is not to say that administrative reform efforts over the last 18 months have been useless. They have been very helpful, in fact, and we encourage these efforts to continue. We hope Congress will provide support and encourage agencies to continue efforts devoted to administrative solutions in the areas that are most appropriate. We also commend the resource agencies for their efforts as progress

has been made. The fundamental problems with licensing, however, must be addressed legislatively.

We must develop a process that permits agencies to consider non-resource issues in their review and conditioning authority. By requiring agencies to consider the economics effects of resource protection on other project values, we will bring balance and certainty to the process that is desperately needed. In addition, we ask that the process allow licensees to review and comment on mandatory conditions during the process, limit conditions to project-induced impacts, enforce process deadlines, and improve the collaboration amongst agencies and stakeholders. Otherwise, we will continue to lose clean, reliable hydropower.

While we must act to stop the bleeding of lost hydro capacity due to licensing, we can also act to encourage undeveloped, environmentally-sound hydropower. The U.S. has an impressive amount of new hydropower potential. A Department of Energy (DOE) study shows there are approximately 21,000 MWs of potential capacity at existing dams. Over 4,300 MWs are available at existing hydro facilities alone. More importantly, much of this potential – over 10,000 MWs – is located in the capacity-hungry west.

This hydro capacity sits unused largely because of the complex regulatory scheme I already mentioned. But, it is also undeveloped because there are no incentives for producers to bring new generation on-line, a process that is more expensive and complicated than ever.

Providing production tax credits for new hydropower capacity at existing sites will help resolve this problem. Production credits already exist for wind and biomass, why not hydro? Several proposals have been circulated this Congress to extend the credit to other renewables. NHA strongly supports the tax credit expansion to include hydro at existing facilities and non-hydro dams. Without it, development will not occur and we will fail to gain the benefits of additional hydro. Further, we will fail to replace capacity already lost.

Before I conclude my remarks, I want to leave you with a few final thoughts I hope you will remember as you examine policies regarding our natural resources and energy strategies.

One, the hydropower industry takes very seriously its role as stewards of the rivers we are privileged to use. We strongly believe that healthy rivers and hydropower

can coexist. Resource agencies need to develop a better understanding that we can achieve both and they should be directed to pursue policies that recognize this.

Our attempts to reform the licensing process will not remove the conditioning authority of the agencies or undermine existing environmental laws designed to protect our resources. NHA believes in both resource protection and the pursuit of effective and meaningful energy strategies that include hydropower.

Two, as we look for solutions to our energy problems, it is without question in our greatest interest to expand the use of our domestic renewable resources such as hydropower. It is important for fuel diversity, energy security, reliability and clean air.

Finally, time is running short. As we look to self-sustaining energy strategies, now is clearly the time for policymakers to better incorporate hydropower into the nation's energy mix. It behooves us all to craft energy policies that embrace this extremely valuable resource, not further contribute to its decline.

Thank you. I look forward to your questions.

WHAT'S WRONG WITH THE HYDROPOWER LICENSING PROCESS?

REAL-LIFE EXAMPLES

Roughly half of all federally-regulated hydroelectric capacity -- 240 projects in 38 states, representing 28,784 megawatts of electricity generation -- is due to be relicensed by FERC in the next fifteen years. An inefficient licensing process that is time-consuming, arbitrary, and costly places all of these projects, and the future of hydropower as a clean, renewable energy source, at risk. The following examples, taken from hydro projects around the nation, illustrate some of the many problems associated with the current hydropower licensing process.

ARBITRARY AND UNILATERAL EXERCISE OF MANDATORY CONDITIONING AUTHORITY

On February 23, 2000 FERC rescinded a license previously issued for the 4.1 MW Enloe Dam Project in Okanogan County, Washington. Although FERC was in the process of engaging all parties in addressing fish passage issues at the dam, the National Marine Fisheries Service (NMFS) challenged that process as encroaching its unilateral conditioning authority under Section 18 of the Federal Power Act. NMFS insisted on imposing a fish passage requirement in the project license despite i) opposition to such passage by the Washington Department of Fish and Wildlife, the Okanagan Indian Nation, and the Canadian government; and ii) the desire of the Congressionally authorized Northwest Power Planning Council to assign financial responsibility for fish passage at Enloe Dam to regional entities.

NMFS had stated that its preferred position in the proceeding was license denial and dam removal. By insisting on fish passage as a condition of the license and at the licensee's expense, NMFS not only acted, in the words of FERC Commissioner Massey, "out of sync with regional planning," but ultimately prevailed in gaining denial of the license application. As FERC Commissioner Hébert explained in his concurring opinion:

> "Unfortunately, the Commission's hope that this protracted dispute could result in a mutually-acceptable agreement has been undermined by the recalcitrance of a single agency...In today's order, the Commission states that it no longer has the discretion to continue to resist NMFS' overtures...
>
> One party, carrying mandatory conditioning authority, and focusing myopically on its own particular interest, can upset the collaborative process if so inclined. To a party opposing licensing, stalemate may mean victory for one party and defeat to the rest of America...
>
> I view this process, where some participants, bearing veto power, have more negotiating authority than others, if indeed inclined to negotiate at all, as absurd. As a result, I am encouraged by pending legislative efforts to rationalize this process, by requiring a greater level of cooperation among federal and state resource agencies. Such reform would benefit consumers by forcing all parties

to the table in an effort to resolve such disputes in a fashion that is best suited for the benefit of all Americans. "

ARBITRARY NATURE OF PROCESS / INAPPROPRIATE APPLICATION OF AGENCY AUTHORITIES

PacifiCorp is currently seeking a new FERC license for its eight-dam, 185 MW North Umpqua project in Douglas County, Oregon. PacifiCorp initiated the process in 1992 and went far beyond the normal requirements for public involvement and science collection in the hope that the North Umpqua licensing process would become a model of how a utility could work collaboratively with all stakeholders.

After submitting its relicense application in 1995, PacifiCorp initiated the North Umpqua cooperative Watershed Analysis to identify and address specific resource concerns that emerged during the relicensing process. The watershed analysis was the first-of-its-kind for a hydro project and involved PacifiCorp, federal and state resource agencies, academic institutions and interested members of the public. PacifiCorp and other interested parties then entered detailed settlement discussions in 1997.

After two years of discussions, yielding little consensus, the U.S. Forest Service (USFS) insisted – without providing an adequate scientific explanation - that Soda Springs Dam (one of the eight dams on the project) be removed as a condition of settlement to meet objectives contained in the President's Forest Plan. This, despite the fact that removal of Soda Springs Dam would put the viability of the entire project at serious risk, from both an operational and economic standpoint, and despite there being other mitigation alternatives available. This also represents the first time that the Forest Service has indicated it intends to use its 4 (e) conditioning authorities under the Federal Power Act to require a dam removal. This would create a broad, adverse precedent for other hydroelectric projects in the West located wholly or in part on Forest Service lands.

Pacificorp had recently agreed to remove its Condit Dam in south central Washington because compelling reasons existed. By contrast, no compelling reason exists for removal of Soda Springs. Citing an unreasonable bargaining position by USFS, and concerns over the precedential nature of the removal requirement, Pacificorp walked away from settlement negotiations in November, 1999.

PacifiCorp remained interested in achieving a settlement that balances the need to mitigate for project impacts with the need for cost-effective renewable resources. The company and other stakeholders have been able to restart settlement negotiations and those discussions continue. But the North Umpqua experience points to significant flaws in the current law. If the Federal Power Act required conditioning agencies to take a balanced approach in setting their demands and included some accountability over them, the settlement negotiations might have been conducted more smoothly and efficiently in this case.

EXCESSIVE LENGTH OF PROCESS/ JUDICIAL CALL FOR LEGISLATIVE IMPROVEMENTS

In March, 1997, the Eugene Water & Electric Board (EWEB) received a new FERC license for two projects (23.2 MW combined) on the McKenzie River in Oregon. In the license, FERC incorporated certain fishery conditions prescribed by federal resource agencies under Section 18 of the Federal Power Act (FPA) -- at a cost to EWEB of $14,000,000 -- but rejected several conditions because they did not meet the requirements of the FPA for "fishway prescriptions."

Despite the $14,000,000 of project improvements, several interest groups and agencies requested an administrative rehearing of the license before FERC; upon denial of the requests, the parties challenged the license before the U.S. Court of Appeals for the Ninth

Circuit. Among other claims, the parties contended the FPA does not authorize FERC to refuse to accept any condition prescribed under Section 18. In other words, the parties asked the court to rule that the resource agencies had absolute power to dictate license conditions under the FPA whether they met the intent of the FPA for a fishway prescription or not.

In its August, 1999 decision, the court did just that -- concluding the FPA denied FERC the authority to modify, reject, or reclassify prescriptions submitted by resource agencies under Section 18, even while noting FERC's observation that the resource agencies "do not concern themselves with the delicate economic versus environmental balancing required in every license." The court went on to acknowledge Congressional "failure" to require agencies to develop improved "regulations, procedures or standards for implementing Section 18." The court noted that, absent Congressional action, the court was powerless to rewrite the statute. "Our task," the opinion stated, "is to apply the statute's text, not to improve upon it." The court's decision means that currently only a federal court of appeals has the authority to determine whether a fishery condition offered by a federal resource agency and required to be included in a license meets the requirements for a "fishway prescription" under the FPA.

With its hands thus tied, the court's decision will mean a remand of the license back to FERC to be re-written once the appeal is completed -- 8 years after EWEB first submitted its license application; with only the Ninth Circuit then having the authority to decide whether any condition prescribed by a resource agency meets the FPA requirements for "fishway prescriptions."

CONDITIONS MAKING PROJECT UNECONOMIC/ ARBITRARY NATURE OF PROCESS/INSUFFICIENT IMPACT ANALYSIS

In 1996, during the relicensing of the Edwards Dam near Augusta, Maine, the US Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) prescribed a fishway system on the dam to safeguard a few species of fish. The fishery agencies estimated this fishway system would cost approximately $9 million dollars while the licensee estimated the cost at $12 million - both of these estimates effectively rendered the project uneconomic. Lacking the authority to amend the prescription or

otherwise balance it against the energy or other resource values of the project, FERC instead ordered the removal of the dam in November 1997.

During the relicensing process, the USFWS and NMFS also recommended that flows of 4,500 cubic feet per second be released annually in July into a deep hole below the dam they determined was a spawning and nursery habitat for the Atlantic sturgeon. This flow recommendation had severe economic implications on the project since it would force the project to forgo power generation completely in July most years. This deep hole was located just below the area where the dam was eventually breached and this once-important spawning and nursery habitat is now assumed to be filled with rubble.

The US Department of Interior and segments of the environmental community have hailed FERC's decision as a means of restoring a 17-mile stretch of the Kennebec River to its "natural condition". Moreover, certain environmental groups are now claiming that the simple act of removing the dam has successfully restored this section of the river yet no comprehensive studies are being planned to actually measure the success of this dam removal on the restoration of the river ecosystem.

ARBITRARY NATURE/ EXCESSIVE LENGTH OF PROCESS

In an ongoing relicensing of a 35.5 MW facility in New York State, arbitrary fishway prescriptions have been proposed by the USFWS, at a cost of over $2 million. Why arbitrary?

- The blueback herring, the primary species on which the prescriptions were premised, is not native to the river where the project is situated.
- With an 80-foot waterfall blocking upstream fish passage, there would be no migration without the man-made lock system adjacent to the project.
- The project (and other hydro facilities on the river) have operated without fishways for several decades – and during that time the fish population has grown to over 100 million annually.

Pre-filing consultation started on this project in 1986, and a final license order still has not been issued. If the fishway prescription is included in the license along with other resource protection measures, the project would become economically unviable.

ARBITRARY NATURE OF PROCESS/ FERC APPROVAL OF INAPPROPRIATE CONDITIONS

In a recent relicensing of a Western project, the U.S. Forest Service imposed numerous conditions, including one that required the project owner to annually send the Forest Service a set payment, expected to cover all operation and maintenance costs associated with existing campgrounds in the project vicinity. The owner pursued an administrative appeal of this condition at the Forest Service, arguing that the Forest Service failed to demonstrate that most of the campgrounds' use was related to the project. Furthermore, the Forest Service did not attempt to justify the amount of the annual payment for the operation and maintenance costs it sought from the licensee.

Nonetheless, FERC included the condition in the project license, concluding that it lacked the authority to even consider if a relationship between the condition and the project justified the Forest Service condition. Similarly, FERC was unable to reject an instream flow release imposed upon the project by the Bureau of Land Management, even though FERC summarily dismissed as inappropriate and unsupported the same exact amount of instream flow release recommended by the California Department of Fish and Game.

After FERC issued the new license for the project, containing the contested condition, the owner challenged the condition at FERC and took the case before the U.S. Court of Appeals. Just prior to the case being heard and five years after the first of the two administrative appeals were filed with the Forest Service, the Forest Service decided that the operation and maintenance costs were indeed inappropriate and accepted an owner-proposed method for reimbursement of only those campground operation and maintenance costs related to the project – approximately 1.25% of the amount originally demanded by the Forest Service.

FERC APPROVAL OF CONDITIONS THAT RESULT IN "NO QUANTIFIABLE BENEFIT"/ EXCESSIVE LENGTH OF PROCESS

After FERC asserted jurisdiction over a 70 year old, 1.2 MW project in New England, the project owner reached agreement with one state agency on the level of minimum flows to be released from the project. However, a resource agency from an adjacent state and the USFWS prescribed a minimum flow that was nearly twice the agreed upon level. In its final environmental assessment for the project, FERC concluded that the owner's minimum flow could be provided with existing project equipment and that there was no "quantifiable benefit" from requiring the USFWS flow level rather than the level proposed by the owner.

However, because the recommendation was made under section 10(j) of the FPA, and because the recommendation appeared "consistent with the FPA," FERC incorporated the higher minimum flow requirement in the license. FERC's rubber stamp approval of the USFWS 10(j) recommendation, along with other conditions imposed on the project, had the effect of reducing net revenue from the project by 60%, making the project economically marginal at best. (Note: Issuance of the license for this small project took more than 8 years.)

DUPLICATIVE NATURE OF PROCESS

The Energy Policy Act of 1992 specifically prohibits federal land managing agencies from requiring an existing hydropower project to obtain a Special Use Permit. However, in a number of licenses, the Forest Service has taken the standard Special Use Permit terms and included them in the conditions submitted to FERC under section 4(e) of the Federal Power Act. In turn, FERC has had no choice but to impose these conditions on the project license. These Special Use Permit conditions are designed to allow the Forest Service to regulate the project in the same manner that FERC administers the licensed project. Thus, despite the Energy Policy Act prohibition, the Forest Service is duplicating FERC's legislative mandate to administer federally licensed hydropower projects.

CONDITIONS MAKING PROJECT UNECONOMIC

In 1997, six years after the licensee filed its initial plan, FERC issued an order approving a mitigation and management plan for the 170 MW Kerr Project in Montana. The FERC plan incorporated conditions submitted by the Department of the Interior requiring a variety of non-operational measures, including: a fish and wildlife implementation strategy to be funded through a one-time payment of $12.5 million and annual payments of $1.27 million, a fish stocking plan, the acquisition of 6,800 acres to serve as replacement wildlife habitat, the construction of five islands to serve as waterfowl habitat and construction of erosion control structures.

The FERC environmental impact statement (EIS) on the mitigation and management plan concluded that the conditions imposed by Interior would "eliminate the project's positive economic benefits." The EIS found that the project's current annual net benefits were approximately $9 million, but that with Interior's conditions, the annual net benefits would be a negative $2.7 million. Not even Interior disputed that the conditions would reduce the project's net annual benefits by many millions of dollars. However, the Commission noted that "any economic analysis of the impact of Interior's conditions is of at best tangential relevance to our decision," since FERC was obligated to impose the Interior conditions.

CONDITIONS MAKING PROJECT UNECONOMIC/ INSUFFICIENT IMPACT ANALYSIS/ ARBITRARY NATURE OF PROCESS/LITIGATION AS ONLY RECOURSE

The 700kw Yaleville project in upstate New York is one of the smallest hydro facilities operated by Niagara Mohawk Power Corporation. In pre-filing consultation in connection with the 1988 licensing of the project, the USFWS raised the issue of fish passage. The agency recommendation was to provide for downstream passage of freshwater non-migratory resident species, namely bass and walleye. This, despite:

- spillage over the dam provided natural passage of fish at least 85% of the time;
- despite decades of hydro project operation, an abundance of bass and walleye was evident on the river both above and below the project; and
- the $400,000 price tag for the agency-recommended fishway was prohibitive for such a small project.

Niagara Mohawk disputed the agency recommendation in its license application and FERC, in its 1991 draft Environmental Assessment (EA) for the project, agreed with the owner and recommended a lower cost fish protection alternative. USFWS, after failing to sway FERC away from its position in dispute resolution proceedings, responded by prescribing the downstream passage fishway under its Section 18 mandatory conditioning authority.

FERC denied the fishway prescription in its 1992 license order because it did not meet the day's definition of "fishway" [at the time, a fishway had to serve the purpose of passing fish whose life cycle depended entirely on migration past the hydro facility –

which was not the case with the Yaleville bass and walleye.] A broader "fishway" definition was established with the passage of the Energy Policy Act of 1992; accordingly, FERC had to rescind its prior denial and require Niagara Mohawk to install the fishway – despite the lack of biological basis and the fact that its cost would negate the economic operation of the project.

Niagara Mohawk promptly appealed the FERC order. Negotiations with USFWS ultimately led to an agreement to install a less expensive fishway design (at a cost one-tenth of that originally prescribed.) If the owner had not pursued an aggressive litigation action, USFWS would likely never had agreed to negotiate. Litigation, in this case, spawned reason; but only after more than 8 years of licensing process and a cost to the owner of nearly $300,000.

CONDITIONS MAKING PROJECT UNECONOMIC

In 1997, FERC issued a license for a 70 MW project in Washington state. In the text of the license itself, FERC noted that the prescribed resource agency conditions would result in a yearly operating loss of over $6.5 million for the project owner. Indicating that the project as licensed would not be "economically beneficial", FERC issued the license with the conditions, leaving it to the owner to "make the business decision whether [to operate the facility] in view of what appear to be the net economic costs."

National Hydropower Association

One Massachusetts Avenue, NW,
Suite 850
Washington, DC 20001

Tel: 202-682-1700
Fax: 202-682-9478
www.hydro.org

Sustaining Hydropower:
How Policymakers Can Reverse the Decline of America's Leading Emissions-Free, Renewable Resource

Hydropower is our largest renewable resource – accounting for about ten percent of the nation's electricity and over 80 percent of its renewable energy. It is an emissions-free, clean, reliable source of domestic energy which possesses many valuable benefits beyond power supply. Among its benefits are transmission system reliability, water supply, irrigation, flood control, recreation and transportation. More importantly, as an emissions-free power source, hydropower helps our nation meet its clean energy goals and reduces the number of health problems associated with air pollution.

Supply of hydropower is waning, however, and America is in danger of losing significant hydropower capacity at a time when it is most needed. As we face rising energy prices, increased levels of pollution, energy shortages and reliability concerns, now is clearly the time for policymakers at the federal level to better incorporate hydropower into the nation's long-term energy strategy.

As we devise a clear long-term energy strategy, there are steps policymakers can take now to address the decline of hydropower. What's more, steps can also be taken to encourage development of additional hydropower capacity at existing sites, allowing the country to increase its use of renewable, emissions-free generation and strengthen the reliability of the transmission system.

What can be done to reverse the decline of hydropower and bring new growth to an industry that is crucial to the nation's energy strategy? The National Hydropower Association (NHA)[1] suggests the following:

Hydropower Relicensing Reform

First and foremost, the hydropower relicensing process needs to be reformed. Over the next 15 years, two-thirds of all non-federal hydroelectric capacity – nearly 29,000 MW of power (enough to serve six million retail customers) – must undergo the Federal Energy Regulatory Commission's (FERC) relicensing process. This includes 284 projects in 39 states, much of it in western states where power supply is a major concern.

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[1] NHA is the only national trade association committed exclusively to representing the interests of the hydroelectric power industry. Our members represent approximately 60% of domestic, non-federal hydroelectric capacity and nearly 80,000 megawatts overall. Its membership consists of more than 140 companies including public utilities, investor owned utilities, independent power producers, equipment manufacturers, engineers, consultants and law firms.

While there are many perspectives, all stakeholders agree that the relicensing process is in need of improvement. A multitude of statutes, regulations, agency policies and court decisions has made the process time-consuming, costly, contentious, duplicative and generally frustrating for all. Federal agencies are allowed to set conditions on licenses without regard to their effects on project economics, energy benefits and values protected by other statutes or regulations. Many times, agencies fight agencies and conflicting demands are issued. Worse, conditions are placed on a license that have little to do with project impacts.

Hydropower licensees have no recourse to appeal, or even question, the basis of mandatory conditions set by the agencies, except through litigation. Further, a typical hydropower project can take eight to 10 years to weave its way through the process – some have taken more than 20 years – and cost up to a million dollars a year. The end result of this broken process is the loss of operational flexibility and generation capacity – on average 8% per project – possibly putting at risk system reliability and clearly resulting in the loss of clean, renewable power.

Enacting legislation, such as bills offered in the 106th and 107th Congresses – Congressman **Joe Barton's** substitute amendment to Congressman **Ed Towns' H.R. 2335**, or Senator **Larry Craig's S. 71** – would give federal resource agencies the responsibility to consider and document the power, economic, and other impacts of their mandatory conditions before imposing them on a hydro license. The bills would also impose deadlines on Federal resource agencies for submission of final conditions. Reform legislation *will not* change or modify any existing environmental laws, nor will it eliminate mandatory conditioning authority of federal resource agencies. What legislative reform will do is bring a much needed balance and certainty to the relicensing process and help stop the decline of hydropower, all while protecting the river resource.

Properly developed and implemented administrative remedies can certainly help on a number of fronts and should be encouraged as well. Taken alone, however, administrative reforms can not fully address the substantive problems with the process. In some instances, administrative reform can actually complicate matters. For example:

In January of 2001, the U.S. Departments of Interior (DOI) and Commerce (DOC) proposed a new policy regarding Section 18 fishway prescriptions. The proposed policy serves to define "fishways" broadly to include virtually any project structure or operational measure related to fish and would redefine the term "fish" to include virtually every form of water-related animal life other than mammals and birds. Further, it would give the agencies virtually unbounded authority to prescribe new or modified fishways *throughout the term of a license*. This will result in further overlapping and conflicting federal roles in the relicensing process and will exacerbate the uncertainties for licensees and other stakeholders that currently plague the relicensing process.

Also in January, DOI and DOC implemented a new policy for administrative review of mandatory conditions and prescriptions developed by the departments under the authorities in sections 4(e) and 18 of the Federal Power Act. Despite agency intention to "improve" the hydro licensing process, the new policy fails to define substantive standards for review of mandatory conditions and to detail procedures for the development of an administrative record. While the proposal does represent a good faith effort to improve the process within the confines of current law, it does not resolve industry's concerns and it fails to address the fundamental problems with the process.

Again, NHA believes that legislative fixes are necessary to reform the relicensing process in a manner satisfactory to most stakeholders.

Market Incentives for Hydropower Development

Although maintaining a strong and viable hydropower industry is a critical component of the nation's long-term energy strategy, hydropower development has been stagnant – almost non-existent – for a long period of time. Yet, most legislative proposals that address renewable energy ignore hydropower and its increasingly marginal economic state due to regulatory costs and capacity restrictions. This misguided omission threatens to jeopardize our country's most successful renewable energy resource as competition, and serious concerns over reliability and power supply, comes to the electric power industry.

NHA forecasts that 21.3 GW of additional power from hydroelectric resources could be developed by 2020 – *none of which would require the construction of a new dam or impoundment.* In terms of greenhouse gas reductions, this would equal displacing 24 million metric tons of carbon emissions. Of the 21.3 Gigawatts (GW), over 4,000 Megawatts (MW) can be developed at existing hydroelectric facilities alone.

Bringing new hydro generation on-line, however, is increasingly difficult and expensive. While not the same disadvantages as those encountered by other renewable industries, hydro's disadvantages hold equal merit and demand similar counter-measures in policies designed to encourage the development of renewable sources of power. Providing financial incentives for hydro producers – such as those proposed in the 106th Congress by Congressmen **John Shadegg** and **Albert Wynn**, or proposals in the 107th Congress that expand the Section 45 production tax credit to include all renewables, including hydropower – will encourage hydropower development at existing sites, allowing the United States to rely more on a clean, domestic resource.

In the west, for example, 45 percent of hydro capacity in California, and 73 percent of Northwest capacity, faces the gauntlet of relicensing in the next 15 years. Given the current trend in relicensing, California and the Pacific Northwest might retire 1,200 or more megawatts of generation capacity. On the other hand, with changes to the process, and the proper financial incentives described above, another 8,800 MW of new capacity could be developed without building a single new dam. Given the current state of affairs in this region of the country, it is hard to imagine why we would not pursue policies to encourage additional clean, renewable hydropower capacity.

Dam Decommissioning and Removal

Hydropower dams have been a rich and vital part of our American history and continue to be an important part of our American landscape. Many of their benefits play a crucial role in regional economies and in national energy policy. Dams are not simply a remnant of our past, they continue to play an important role for our future.

Despite this importance, there are some dams that have outlived their usefulness when considered within the context of rigorous new environmental standards. NHA recognizes the fact that maintaining some hydro dams, once their full public benefit is weighed against environmental and other social needs, may no longer be prudent. In these cases, decommissioning and removal may be the most appropriate course. However, we believe that when all benefits are considered, dam removal will occur only in rare instances. The real issue in dam removal is whether **all** of the benefits of a dam are appropriately weighed against the real, not subjective or hopeful gains.

There is a movement, mostly an ideologically driven one, to remove many of the dams in the country. As we consider all the aspects of dam removal, we must remember that this infrastructure is not easily replaced. Smart policy dictates that dam removal should be considered as a last resort when there is no other means to address the environmental consequences of the impoundment and all of the project benefits have been appropriately considered. Obviously, the growing interest in dam removal stems from our common concern over the health of our nation's rivers. The fact remains, however, that dams and healthy rivers can coexist. As a nation, our goal should be the preservation of both.

In those cases where prudence dictates removal, the hydropower industry believes that all stakeholders must be in common agreement. Removal should be a collaborative effort. FERC does not have the authority to unilaterally order removal of a facility, and the owner of the facility must be made whole in the process.

Hydropower owners and operators are good stewards of our waterways. Dam removal is a major issue of concern, not only to the industry, but also to the nation. Working with all stakeholders, policymakers can develop a rational national policy that can both protect and preserve our waterways and the infrastructure within them.

Actions Needed in the 107th Congress

- Enact hydro relicensing reform legislation as soon as possible and continue to pursue administrative reform efforts where helpful.

- Enact incentives legislation such as tax credits or incentives payments for capacity upgrades and efficiency improvements at existing hydroelectric facilities, and for new development at existing dams.

- De-politicize the debate over dam decommissioning and dam removal and pursue national policy based on sound science with full consideration of all project benefits.

By focusing on the three areas NHA has discussed, federal policymakers have an opportunity to not only protect our hydropower resource, but to also promote modest growth of a clean, renewable, domestic energy resource that is crucial to meeting long-term energy strategies.

If you have any questions or comments, or would like additional information, please contact Mark R. Stover, NHA's Director of Government Affairs, at 202-682-1700, or at mark@hydro.org.

NHA
National Hydropower Association

Issue Brief

One Massachusetts Ave., NW • Suite 850 • Washington, DC 20001
202-682-1700 • Fax 202-682-9478 • www.hydro.org

Hydropower Licensing Improvement
A Balanced Approach to Preserving Our Nation's Leading Renewable

Overview

In the wake of ongoing energy supply shortages and reliability concerns in California, the Pacific Northwest and throughout the nation, it is crucial that existing sources of energy – especially those that are clean, low-cost, reliable and efficient – remain in abundant supply. Yet, domestic generation of hydropower, our nation's leading emissions-free, renewable energy resource, is waning as a result of a Federal Energy Regulatory Commission (FERC) licensing process that all parties agree is in need of repair. It is indeed ironic that our nation's hydro supply is in decline when our nation needs it most.

Hydro licensing improvement legislation introduced in the 106th Congress (H.R. 2335/S.740) gained strong bipartisan support in both Chambers and was approved by the House Commerce Subcommittee on Energy and Power. With energy policy concerns taking center stage in the 107th Congress, Congress has an opportunity build on this momentum and enact meaningful hydro licensing process improvements this year to ensure that crucial megawatts (MW) of hydropower are preserved for current and future generations.

Background

Since 1986, FERC has been required, under the Federal Power Act, to give "equal consideration" to a variety of factors when issuing hydro project licenses and relicenses. This balancing authority requires FERC not only to consider the power, economic, and development benefits of a particular hydro project, but also to consider energy conservation and the protection, mitigation of damage to, and enhancement of fish and wildlife. In other words, under Federal law, FERC has the responsibility and authority to strike a balance between power and environmental values.

The courts, however, have interpreted the Federal Power Act so as to prevent any balancing from taking place. The courts, in effect, have given Federal resource agencies the authority to set "mandatory" conditions on FERC licenses – conditions that are automatically attached to a final license. This means that FERC has no opportunity to question the basis of mandatory conditions set by the agencies.

This would not be a problem if Federal resource agencies, when imposing a mandatory condition, considered the various factors that FERC is required to examine pursuant to the Federal Power Act. However, this is simply not done. The net result is that no one is balancing. No one has the authority to look at the big picture of how hydro fits into our national energy policy.

The implications are significant. Hydro project owners are facing higher costs, loss of operational flexibility, and lost generation due to new constraints imposed on operations. A typical hydro project can take from eight to 10 years to weave its way through the licensing process, at an average cost of $1 million per year. In its Energy Outlook 2000 Report, the Department of Energy's Energy Information Administration (EIA) for the first time forecasted decreased hydroelectric capacity as "regulatory actions limit capacity at existing projects."

The Urgency

Over the next 15 years, more than half of all non-federal hydroelectric capacity (nearly 29,000 MWs of power – enough to serve six million retail customers) must go through the FERC licensing process. This includes 284 projects in 39 states. What's more, 45 percent of hydro capacity in California, and 73 percent of Northwest capacity faces relicensing in the next 15 years. Given the current trend in relicensing, California and the Pacific Northwest might retire 1,200 or more MWs of generation capacity – enough power for 1.2 million homes. Given the current state of affairs in this region of the country, it is hard to imagine why we would not pursue policies to improve the licensing process.

Congress must do its part to ensure that this important renewable resource continues to operate in a cost-effective and environmentally compatible manner. If current trends continue, the nation could lose a number of hydropower projects and, with them, enormous clean energy, reliability, drinking water, flood control, irrigation, transportation and recreation benefits. Moreover, consumers could face increased energy replacement costs with polluting sources.

Summary

Hydropower has been a rich and vital part of our American history and continues to be an important part of our American landscape. Many of its benefits play a crucial role in regional economies and in national energy policy. Hydropower is not simply a remnant of our past, it continues to play an important role for our future. Working with all stakeholders, policymakers can develop a rational national policy that can both protect and preserve our waterways and environment, as well as the infrastructure within them.

The hydro relicensing debate has, for years, been a search for balance: can the nation balance the benefits of hydropower with environmental protection and mitigation? A growing number of members of Congress from both parties believes it can. Given the enormous role that hydro plays and must continue to play in our national electricity grid, the time for balancing – and the time for federal policymakers to better incorporate hydropower into the nation's long-term energy strategy – is clearly now.

For more information, please contact Mark R. Stover, NHA's Director of Government Affairs, at 202.682.1700 x-104, or at mark@hydro.org, or visit our website at www.hydro.org.

NHA
National Hydropower Association

Issue Brief

One Massachusetts Ave., NW • Suite 850 • Washington, DC 20001
202-682-1700 • Fax 202-682-9478 • www.hydro.org

FORECAST FOR HYDROPOWER DEVELOPMENT THROUGH 2020

Two federal agencies have estimated large potential capacity from hydroelectric facilities in the U.S. But the National Hydropower Association (NHA) expects that the existing licensing process will prohibit realizing any new capacity in the future. In fact, NHA is currently predicting a loss of renewable hydroelectric power in the U.S. without legislative changes to hydropower regulations.

The Federal Energy Regulatory Commission's (FERC) river basin studies show a potential of 73,200 MW of additional U.S. hydroelectric capacity.[1] Emphasizing engineering feasibility and some economic analysis, but no environmental considerations, the FERC estimate is the likely "upper limit of conventional water power potential in the United States".[2]

The U.S. Department of Energy (DOE) has undertaken an assessment of hydropower resources using FERC's river basin analysis while also screening for environmental, legal and institutional constraints at potential sites including threatened or endangered species, national designations, cultural values and other non-power issues.[3]

DOE's results show there are 5,677 undeveloped hydropower sites with a potential capacity of about 30,000 megawatts.[4] Of that amount, 57 percent (17,052 MW) are at sites with some type of existing dam or impoundment, but no power generation. Another 14 percent (4,326 MW) exists at projects that already have hydropower generation, but are not developed to their full potential. Only 8,500 megawatts or 28 percent of the potential would require new dams.[5]

NHA anticipates that, given the regulatory burden associated with the federal licensing process – the cost, delay and duplication – *none* of this new capacity will be developed by 2020. And worse, with no changes in the current licensing process, studies show an average eight percent loss of hydroelectric generation in relicensing.[6] Furthermore, considering the uncertain future of some federal projects, the potential loss of generation from our nation's hydroelectric system could be very significant.

However, there are factors that could change NHA's bleak forecast:

- The need for greenhouse gas reductions that would drive domestic policy to again encourage hydropower development;
- The hydro licensing process is improved so that it increases investor certainty and recognizes the unique energy characteristics and environmental benefit of hydropower; and
- The resulting licensing rules fairly balances environmental and energy needs.

Under these circumstances, NHA forecasts that 20,915 MW of additional power from hydroelectric resources could be developed by 2020 – none of which would require the

construction of a new dam or impoundment. In terms of greenhouse gas reductions, this would mean displacing 24 million metric tons of carbon emissions from coal.[7]

Hydroelectric generating capacity would rise to 99,478 MW – a 27 percent increase from current levels – and this nation's use of hydropower resources would rise to 4.9 quads.[8]

Other factors that could further stimulate the development of hydropower capacity are:

- The development of commercially viable advanced turbines that further improve biological conditions for fish (fish friendly turbines);
- Greater efficiency from these advanced turbines;
- The trend in the growing deregulated market to value hydropower's ancillary benefits — its unique ability to stabilize the electric grid.
- Increased acceptance of green power programs that charge a premium for the delivery of clean and renewable electricity in a deregulated market.

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1 Hydroelectric Power Resources of the United States; Developed and Undeveloped, FERC, Washington, DC, January 1, 1992, p. xi.

2 Id, p. xxxv.

3 "Identification of Undeveloped Hydropower Resources in the United States, Based on Environmental, Legal, and Institutional Attributes", Table 2, J.E. Francfort and A.M. Conner from Waterpower '97 Proceedings of the International Conference on Hydropower, Volume 2, ASCE, New York, NY., p. 1307.

4 Hydropower Resource Assessment program draft report, US DOE Hydropower Program, Idaho National Engineering and Environmental Laboratory, <www.inel.gov/national/hydropower/index.html>, November 1998.

5 Interview with Jim Francfort, Hydropower Resource Assessment program, September, 1998.

6 "Scenarios of US Carbon Reductions: Potential Impacts of Energy Technologies by 2010 and Beyond", Office of Energy Efficiency and Renewable Energy, US DOE, September 15, 1997, p. 7.21.

7 According to "Impacts of the Kyoto Protocol on U.S. Energy Markets and Economic Activity," prepared by the Energy Information Administration, October, 1998, Table 17, p. 75, coal fired technologies emit 571 pounds of carbon per Megawatthour.

8 In 1996, total hydropower consumption was 3.911 quads. Hydropower capacity in 1996 was 73,129 MW. The ratio of quads consumed to capacity is .0000491.