

LOW IMPACT HYDROPOWER INSTITUTE

34 Providence Street
Portland, ME 04103
Tel. (207) 773-8190 • Fax (206) 984-3086
www.lowimpacthydro.org

FREQUENTLY ASKED QUESTIONS

INTRODUCTION

What is the Low Impact Hydropower Institute (LIHI) and what does it do?

The Low Impact Hydropower Institute (LIHI) is a national independent environmental non-profit organization established in 1999 and headquartered in Portland, Maine. LIHI's mission is to reduce the impacts of hydropower dams through market incentives. LIHI does this through its Low Impact Hydropower Certification Program, a voluntary certification program designed to help identify and reward hydropower dams that are minimizing their environmental impacts. Just as an organic label can help consumers choose the foods and farming practices they want to support, the LIHI certification program can help energy consumers choose the energy and hydropower practices they want to support.

Who started LIHI?

LIHI was conceived of by the non-profit river conservation organization American Rivers and was ultimately launched as an independent organization with the support of a broad range of conservation, renewable energy, and public interest organizations. LIHI's Governing Board now includes representatives from organizations such as American Rivers, Trout Unlimited, the Natural Resources Defense Council, Environmental Defense, the Appalachian Mountain Club, and the Northwest Power Planning Council, among others.

Why certify hydropower dams?

There are two reasons to certify hydropower dams: first, to encourage improvements at dams to help reduce their environmental impacts and second, to help consumers seeking "green" electricity to identify hydropower sources that meet tough environmental protection standards.

What is the Low Impact certification standard?

The Low Impact certification criteria are aimed at ensuring that the certified dam adequately protects or mitigates its impacts in eight key resource areas: river flows, water quality, fish passage and protection, watersheds, threatened and endangered species, cultural resources, and public access and recreation opportunities. The eighth criterion requires that the dam not have been recommended for removal.

The standards under each criteria vary depending on the specific mitigation measures recommended for the hydropower dam by expert state and federal natural resource agencies in licensing or similar regulatory proceedings. LIHI will certify as low impact only those projects

that have met the most stringent recommendations for the project in certain key areas—even if the project is legally authorized to operate with less stringent measures.

The standards are designed to be tough but achievable and to reflect the best available analysis about a project’s impacts. The standards are not designed to eliminate all impacts—that would be impossible. Rather, LIHI wants to make sure that a certified Low Impact hydropower facility has minimized its impacts in its particular river context in accordance with the best available science applied to that project.

REASON FOR THE CERTIFICATION PROGRAM

How does certification help improve existing dams?

There are thousands of existing dams in the United States that are used to generate electricity. The dams come in variety of shapes and sizes and they can produce a variety of adverse impacts on the environment. Dams can block the ability of salmon and other fish species to migrate, and they can flood important fish and wildlife habitats. Hydropower dam operations can significantly interfere with natural river flows causing water quality problems and damaging the habitats that aquatic species depend on to survive.

Typically, the only way to limit environmental impacts from existing dams (other than removing them) is to seek improvements through the regulatory process. Working within the regulatory system is sometimes effective, but it can also be very expensive, time-consuming, and adversarial.

The founders of LIHI thought there was another way to help: why not encourage environmental improvements at hydropower dams by giving the operator a chance to earn more money for better environmental operations? While the regulatory “stick” can help push improvements, an economic incentive could serve as a “carrot” to improve conditions as well.

Thus, the aim is to certify hydropower dams that are limiting their environmental impacts and to help the dam owner earn recognition and more value for the power produced because of those efforts. As consumers demand certified hydropower, other hydropower dam owners will want to take the steps needed to get LIHI certification.

What is “green” power and how does certification help?

“Green” power is variously defined, but it generally means energy produced by renewable or sustainable energy resources with fewer environmental impacts than our standard, nuclear or fossil-fueled energy production (which is based on coal, natural gas, and oil). “Green” power sources may include wind and solar power, hydropower, geothermal, biomass (the burning of natural forest or agricultural byproducts) and landfill gas.

These energy sources are of increasing interest and national support because of concerns over global warming, which is produced in part by the burning of fossil fuels for energy production. Concerned consumers throughout the country now have the option of buying their power directly from “green” power suppliers or marketers, or encouraging their local utilities to increase their share of “green” supplies.

Hydropower is often considered an option for these “green” programs and markets because it is not generated from the burning of fossil fuels. But most consumers recognize that not all hydropower is environmentally sound. It’s important that concerned consumers have information about hydropower when making that choice, and that’s where Low Impact certification can help. It’s important that concerned consumers have information about which hydropower facilities have taken significant steps to minimize environmental impacts when making that choice, and that’s how Low Impact certification can help.

Isn’t hydropower always “green”?

No, we don’t think so. Although hydropower is an emission-free energy source, hydropower dams can have significant adverse impacts on our rivers and streams and the fish, wildlife, and human communities that depend on them. Concerned consumers need a credible and independent means of identifying which hydropower sources are minimizing such impacts. By certifying dams that meet the “Low Impact” standard, LIHI provides concerned consumers the means to identify appropriate hydropower for “green” programs, to recognize dam owners who meet the standard, and to encourage other dam owners to follow suit.

Okay, well aren’t at least “small hydro” facilities “green”?

No, not necessarily. Small size doesn’t necessarily mean few impacts. Some small dams can have significant environmental impacts (such as blocking fish migration) while some large facilities can minimize their impacts through extensive mitigation measures and careful management.

Nonetheless, the “small hydro” standard is very commonly used to define “green” or “acceptable” hydropower for energy markets. But the “small hydro” standard is based on the capacity of the generator, not on the size or impacts of the dam the generator is located at. Worse, the vast majority of hydropower facilities in the United States (89 percent) are classified as “small hydro” i.e., having a capacity under 30 megawatts. That means a “small hydro” standard will allow most dams to pass as “green,” without bothering to investigate their individual or cumulative impacts on the environment.

“Small hydro” accounts for most of the dams, but not most of the hydropower. Only 8 percent of the hydropower capacity in this country is produced by “small hydro.” The remaining capacity—92 percent—is produced by facilities over 30 megawatts in size. That means that a “small hydro” standard for ensuring adequate environmental protections fails to adequately address either the majority of the dams, or the majority of the hydropower energy produced.

Because a small dam isn’t necessarily free of significant impacts, and because a big dam can minimize its impacts to the environment while producing more emission-free energy, the LIHI standard is not based on size, but rather on the individual impacts of the specific dam.

RELATIONSHIP TO OTHER CONSERVATION EFFORTS

How does certification tie in to efforts to reduce global warming?

Electric power plants that burn fossil fuels are this country's largest industrial source of the pollutants that cause acid rain, smog, mercury poisoning in lakes and rivers, and global warming. One way to help reduce global warming is to encourage the use and development of renewable energy sources, such as wind and solar power so that we avoid the use of fossil fuels in energy production. Hydropower can help in this effort too, provided it is not just any hydropower, but hydropower produced by a facility that has been evaluated against rigorous criteria, such as LIHI's. LIHI helps support the growth of green power usage by providing a credible and accepted means for including hydropower, which can then be used as a significant supply of "green" power for energy markets, helping to grow their use and to support the further development of new green energy supplies.

Isn't the regulatory process for hydropower pretty tough, so that certification above that isn't necessary?

We agree that the modern Federal Energy Regulatory Commission (FERC) licensing process is rigorous, and rightly so given the significance of our rivers and streams as a precious resource. However, the FERC licensing process does not require that the dam owner adopt the most stringent environmental measures recommended for the dam. We think that if hydropower is going to have a place along with wind and solar power in "green" energy programs, it must earn that place by demonstrating superior performance and not just meeting the requirements for licensing, however rigorous.

Does the certification program weaken the argument against dam removal, which at least some of your supporting organizations advocate?

No, LIHI certification complements but does not compete with dam removal programs. LIHI is the third leg of the tripod of options for addressing the environmental impacts of hydropower dams: one leg is the regulatory licensing process in which changes can be recommended and are sometimes included; another leg is dam removal, which may be appropriate when a dam has outlived its usefulness or its current benefits are far outweighed by its environmental impacts. The third leg—LIHI certification—addresses the gap in between, where a project is subject to a regulatory process but still needs some environmental improvements, but dam removal is not appropriate because of the continued public values associated with the project. LIHI can serve as a market-based "carrot" to encourage environmental improvements at such existing dams.

HYDRO COMPARED TO OTHER ENERGY SOURCES

Is a certified Low Impact facility better than a wind or solar facility, or other renewable resources?

We think this is a decision for the concerned energy consumer, as it will reflect personal choices and values. We do think that a LIHI-certified hydropower facility should be considered eligible for the same kinds of programs and incentives that renewable energy facilities of all kinds are

generally eligible for, but again, the specifics are up to consumers and marketers. We note that hydropower from a LIHI-certified facility blended with wind or other intermittent electricity sources may be a good source of pollution-free energy at a competitive price.

Is a certified Low Impact facility better than a non-certified hydropower facility?

We think so, if both have applied for certification. However, since this is a voluntary certification program, the fact that a dam has not been certified doesn't necessarily mean that it is a "bad" dam or an environmentally problematic one. It may mean the dam owner hasn't sought certification or may not be eligible for certification. If you are interested in a hydropower dam in your area, and you see that it has not been certified (all certified facilities are listed on our website), ask the owner if they have applied for certification, and if not, why they have not.

Is a certified Low Impact facility better than a natural gas plant or a coal plant?

We think that a certified Low Impact facility is better for the environment than a natural gas plant or a coal plant. That's because the Low Impact facility produces no emissions and does not require fossil fuels for energy production, while at the same time it has minimized its other impacts to the environment and may even provide important benefits, such as recreation opportunities (lakes or whitewater boating for example) that a gas or coal plant does not. This comparison has been addressed as well by the Power Scorecard (www.powerscorecard.org) (sponsored by several independent environmental organizations), which reaches similar conclusions.

DETAILS OF THE CERTIFICATION PROGRAM

Is any hydropower dam eligible for the program?

Not all dams will be eligible for the program. LIHI expressly excludes pumped storage hydropower facilities (which often use fossil fuels in pumping operations). LIHI also excludes new dam construction—if the dam was not built as of August of 1998, it is not eligible for certification. We don't consider new dam construction because we do not want to encourage such developments—there are already plenty of dams in the United States, and we think they should be improved before more new dams are considered.

We will, however, certify existing dams that added new power after 1998 through refurbishment or retrofits under certain circumstances, since these will add power without new dams. LIHI may in the future consider certifying new "non dam" technologies for hydropower. LIHI does not certify dams outside of the United States, although we may in the future modify the program to address hydropower projects in Canada.

Although most dams will be eligible for consideration, there will be many dams, both large and small, that cannot be certified because of their inability to meet the criteria.

What is the size limit for certification?

LIHI does not impose a size limit. The size of a hydropower facility is not a good indicator of its environmental impacts. Some small dams can have significant environmental impacts (such as

blocking salmon migrations), while some large facilities can minimize their impacts through extensive mitigation measures and careful management. Moreover, since LIHI's goal is to reduce the impacts of hydropower dams, it is important that large dams that produce the bulk of the hydropower in this country be eligible for evaluation under the program.

How were the Low Impact criteria established?

Draft criteria originated with the non-profit river conservation organization American Rivers, which then worked with the Green Mountain Energy Company (a renewable energy marketing company) and the non-profit Center for Resource Solutions (which manages the "Green-e" renewable energy certification program) to develop a comprehensive certification program. A multi-stakeholder task force including representatives from environmental, renewable, consumer protection, green marketing, and hydropower industry groups further developed the criteria and the program. The program and criteria were vetted through a public process and finally launched in 2000 by LIHI.

How is a Low Impact Hydropower Facility Certified?

Facilities undergo a rigorous analysis including opportunities for public review, comment, and appeal before a decision is made to certify it. All applications and all supporting information are posted to the LIHI website. LIHI hires independent technical consultants to verify and investigate all applications. The public is invited to review and comment on applications (there is a 60 day period provided), and any commenter who disagrees with a certification decision of the LIHI Governing Board may appeal to an independent Appeals Panel. With the combination of independent review and extensive public oversight opportunities, LIHI provides a very transparent and credible process.

Is the certification perpetual?

No. LIHI certification is for five years and may be renewed at the end of that term provided the facility is in compliance with the criteria, including any criteria that may have been added. In addition, LIHI requires that facilities annually confirm their compliance with the criteria and LIHI may do spot-checks on compliance as well. LIHI may suspend or revoke a certification for violations.

How does the dam owner use the certification?

Once certified, the applicant/dam owner may market the power produced from the facility as coming from a certified Low Impact facility. As renewable energy choices become more popular, the expectation is that certification will provide the dam owner with the ability to charge more for the energy produced from a certified facility in recognition of meeting the strict LIHI standards, and that consumers will be willing to pay a premium because they can be confident that the project has been carefully evaluated and meets stringent standards. Dam owners may also want to use the certification as independent confirmation or acknowledgment of good stewardship practices or other corporate environmental goals.

Does LIHI get a share of the price premium paid to the certified facility?

No, LIHI does not get a share of any price premium or any other aspect of the certified facility. Initially, LIHI received its funding from environmental charitable foundations such as the Charles Stewart Mott Foundation, but since mid-2004 the Institute's funding has come primarily from application fees. Application fees vary depending on the amount of power produced by the facility applying, and range from a low of \$2,500 for facilities producing 43,800 megawatt hours annually or less, to \$57,500 for facilities producing over 1,795,800 megawatt hours annually.

Isn't certification required by some states?

No, the certification is currently entirely voluntary. However, other voluntary market-based "green" power programs may require LIHI certification for any hydropower facilities used in their programs in recognition of LIHI's comprehensive standard for hydropower. In some states interested stakeholders have agreed to have their utility green pricing programs accredited under the Green-e label and have required that any hydropower for the utility programs in the state be certified by LIHI (e.g., in Minnesota, Georgia, and North and South Carolina)(see www.resource-solutions.org/greenpricing.htm). In addition, the Green-e Renewable Electricity label considers hydropower from LIHI-certified facilities to be eligible for the Green-e certified power products (www.green-e.org). The Power Scorecard (www.powerscorecard.org) uses LIHI certification to rate electricity service products containing hydropower supplies.

How many projects has LIHI certified?

As of January 2005, LIHI has certified 16 projects representing 40 dams with an installed capacity of 1075MW, in Oregon, Idaho, Colorado, Washington, Maine, New York, Wyoming, Rhode Island, Georgia, Kansas, Vermont, and Connecticut. The certification of the project in Idaho is currently suspended because of the inability to maintain required flow levels. Details about certified and pending projects are available on the LIHI website. LIHI staff has evaluated dozens more potential applications, but the owners never submitted them for formal processing because the projects did not appear to meet the Low Impact criteria.

For more information please see our web site www.lowimpacthydro.org or contact us at (207) 773-8190 or info@lowimpacthydro.org