

SB

140

ALASKA STATE LEGISLATURE



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SENATE RESOURCES COMMITTEE

SPONSOR STATEMENT

SB 140

"Small Water-Power Development Projects"

On November 9, 2000, Congress approved legislation extending programs under the federal Energy Policy and Conservation Act. Title V of this Act, placed in federal statute as Public Law 106-469, was proposed by Senator Murkowski who is chair of the Senate Energy and Natural Resources Committee.

Senator Murkowski's language amends the Federal Power Act to allow licensing and regulatory authority over small hydroelectric projects in Alaska to transfer from the federal government to the State of Alaska. Small hydroelectric projects are defined as those of 5,000 kilowatts (5 megawatts) or less. The federal enabling legislation applies to new projects and to existing projects if the owner so elects. A number of our small utilities as well as the State supported this legislation.

Before Alaska can acquire jurisdiction from the Federal Energy Regulatory Commission (FERC), which currently oversees hydroelectric projects, the Legislature must adopt legislation and the Governor must submit a program to FERC to satisfy the requirements in Title V of PL 106-469. All current environmental and other protections required under federal law must be contained in the State program. Small hydroelectric projects located on Indian reservations, conservation units of ANILCA, or rivers designated for the Wild and Scenic Rivers System would not be eligible for State jurisdiction.

SB 140 will begin implementation of Title V of PL 106-469 in an effort to bring regulations closer to home and to reduce the great time and expense currently associated with federal licensing and regulation of small hydro projects in Alaska. The time and money required for federal licensing is virtually prohibitive for some small projects. Now the Legislature has an opportunity to remove this hindrance and encourage development of renewable electric infrastructure.

Date OCT 26 2000

Petersburg Pilot

Client No. 420A

House approves hydroelectric regulatory bill that may help City

^{210A 420A 310 330 620 630}
Petersburg has been working for nearly five years and spent almost \$500,000 to have the Blind Slough Hydroelectric Facility re-licensed by the Federal Energy Regulatory Commission. It is expected to take several more years to com-

plete and cost upwards of \$1 million when all is said and done.

But, legislation passed this week might be able to offset the need to have the 2.5 megawatt project controlled by the federal government and put the control

of similarly sized projects in the hands of the state.

The House of Representatives on Tuesday, approved a bill, which previously had passed the Senate, allowing the State of Alaska to regulate small scale hydroelectric projects in Alaska, rather than having them regulated by the Federal Energy Regulatory Commission.

The bills now head to the President for his signature.

This summer Petersburg Power and Light Superintendent Dennis Lewis testified before Congress on the current re-licensing process saying "the current federal hydropower licensing process of small rural facilities is dysfunctional."

This week, after hearing the news, he said that Petersburg would be very interested in having the federal license process vacated and dealing with a state regulatory process.

"Alaska has great potential for small-scale hydroelectric projects that would help reduce the price of electricity to consumers in Alaska and help the environment by reducing air pollution," said Sen. Frank Murkowski. "But under existing law, a project, no matter how small or remote, must obtain a federal license and the licensing process itself is a major impediment and cost for these small projects," said Murkowski.

While saying the five- to 10-

year FERC licensing process may not defeat a giant project, it represents a significant cost increase for smaller projects.

Murkowski said the Black Bear Lake project on Prince of Wales Island, a proposed 4.5-megawatt generator, took seven years and \$1.2 million to complete the licensing process — adding significantly to the \$10 million cost of the project. The nearby Goat Lake project required five years and \$1 million in spending to win FERC approval, adding to its \$10 million construction cost.

"For a small project located in a remote region of Alaska,

Continued on page 5

FERC

Continued from page 3

FERC's licensing process is a major expense. And for too many small projects, this alone dooms an otherwise economically viable and environmentally beneficial project," said Murkowski.

He noted that most of these projects are not on salmon spawning streams, but small creeks or at the outflow of lakes and that the projects have no effect on the environment or wildlife.

"Small hydro projects in Alaska are environmentally sound, renewable power sources since they replace fossil-fuel burning diesel generators as power sources. It is important to note that this legislation does not

Instead, it allows the state to regulate (them) in lieu of FERC. I ask, who is more interested in the environment of Alaska — Alaskans or distant FERC regulators?" asked Murkowski.

Murkowski noted that Alaskans on average pay 36 percent more for electricity and that some in rural Alaska pay up to 43 cents per kilowatt hour — five times the national average. These high costs result from the fact that power is generated from diesel generators whose fuel must be shipped to remote areas at great cost.

The FERC exemption will only be triggered if Alaska's Governor notifies the Secretary of Energy that the State has in place a comprehensive process for regulating the new facilities

resources, or cultural resource protection laws.

The bill has been endorsed by Alaska Legislature's Utilities Restructuring Committee, by the Alaska Village Electric Cooperative and by Alaska State government.

The small hydro bill (S. 422) passed the Senate on March 26, 1999 and again last week when it was added to the re-authorization of the Energy Policy and Conservation Act (EPCA) (H.R. 2884). EPCA also authorizes the nation's Strategic Petroleum Reserve and the new Northeast Home Heating Oil Reserve.

The 2.5 megawatt Blind Slough Hydroelectric Facility, which supplies the city with about one-quarter of its peak power consumption needs was

Statement of Robert S. Grimm, President
of Alaska Power & Telephone Company.
Dated 3-15-2001



I would like to voice my strong support of Senate Bill No. 140.

Alaska Power & Telephone Company is an employee-owned corporation that has been providing public utility service to Alaska since 1957. We currently provide service to the residents of 25 different rural communities from above the Arctic Circle to the very southern portions of Alaska. Our experience in developing small hydropower projects is extensive and current.

I have attached a copy of my testimony on this issue when it was heard by the US Congress, House of Representatives, Committee on Commerce, and Subcommittee on Energy and Power on March 30, 2000. These comments remain relevant to Senate Bill No. 140.

Secondly, I have attached a paper titled "Alaska Small Hydroelectric and the Question of Sustainable Development" dated March 1999.

Both of these documents point out the difficulty and high cost associated with the development of small hydroelectric projects. I am testifying in the hope that this legislation will result in cost and time savings when permitting small hydroelectric projects.

Finally, I would like to make a few other points:

1. In Southeast Alaska the number of small hydropower projects (500 to 5000 kw) is finite. I have prepared a list of the hydropower projects that may likely developed in the next ten years. While I am sure there are others, I thought it would be useful to point out that the numbers of projects are limited and thus the work load and associated costs of the agency given responsibility should be commensurate with the number of projects.

Otter Creek in Skagway
Thayer Lake in Angoon
Reynolds Creek in Hydaburg
South Fork on Prince of Wales Island
Wolf Lake near Hollis
Gartina Crook in Hoonah

Gunnuk Creek in Kake
Sunrise Lake near Wrangell

A few relicense efforts are under way or will occur soon at:

Crystal Lake in Petersburg
Dewey Lakes in Skagway

2. With the new legislation, Alaska would be unique. For projects under FERC, there is no minimum size. For example, if an Alaskan resident had a site that could generate 2 KW for their personal use, it could be jurisdictional by FERC, requiring a license that could make the project uneconomic because of the licensing process. If the state develops a well thought out and cost effective program, it will make micro-hydro (under 500KW) very attractive. Another plus of the legislation is that it would likely remove any temptation by micro-hydro developers to merely build their projects without licensing because of the costs and time associated with the current federal process.
3. Currently the State permits small domestic water systems for villages and towns. I believe small hydropower projects are very similar. I do not think we need to or intend to create a State FERC with its high cost and untimely decisions. We need to develop a process that is Alaskan in scope, well thought out and cost effective while meeting the requirements of the this legislation. We need some agency to take the lead. This agency must balance any of adverse impacts with the beneficial impacts of any proposed hydro development. I believe agencies with general charges such as the RCA, DGC or DNR are appropriate and have statutory responsibility to balance impacts (adverse and beneficial) so that hydro development occurs in a cost effective and timely manner consistent with the public interest. I have attached a paper written in 1999. It is critical of resource agencies that take the narrow view of their responsibilities. This problem needs to be corrected whether or not the state wishes to assume the responsibility of permitting small hydropower projects.

In this regard, the Alaska Rural Electric Cooperative Association (ARECA) membership passed a Resolution 01-9, supporting the recognition of hydroelectric power as a renewable energy resource, and requiring federal and state agencies to take a balanced approach to existing and new hydroelectric projects. I have attached a full copy of this resolution for your consideration.

Resolution 01-9

A Resolution Supporting the Recognition of Hydroelectric Power as a Renewable Energy Resource, and Requiring the Federal and State Governments to Take a Balanced Approach to Existing and New Hydroelectric Projects

Hydroelectric power is a clean, economical and renewable energy alternative to power plants using fossil fuels, which are dependent on price variations and encounter transportation, storage and air emission problems. In Alaska, most small hydro projects use natural water features that do not require the damming of free-flowing rivers. Some interest groups and some in the federal government have come to consider hydroelectric power as a non-renewable energy resource. ARECA encourages the Alaska Congressional delegation to seek legislation recognizing hydropower as a renewable energy resource.

ARECA supports the efforts of its members to develop and redevelop hydroelectric projects. Furthermore, ARECA supports state-level policy that would require state resource agencies to balance the impacts of habitat changes associated with hydro projects with the benefits of such projects relative to fossil fuel alternatives.

Adopted: December 14, 2000

HYDROELECTRIC LEGISLATION

HEARING
BEFORE THE
SUBCOMMITTEE ON ENERGY AND POWER
OF THE
COMMITTEE ON COMMERCE
HOUSE OF REPRESENTATIVES
ONE HUNDRED SIXTH CONGRESS
SECOND SESSION

ON

**H.R. 2335, H.R. 1262, H.R. 3852,
S. 334, S. 422, S. 1236, and S. 1937**

MARCH 30, 2000

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~~native to the parent licensing process, which is being used in many cases throughout Alaska.~~

~~American Rivers and our partner organizations in Michigan also oppose HR 1262, which would exempt hydropower facilities on the Pentwater River and owned by the City of Hart, Michigan from regulation under the Federal Power Act. The Pentwater River is a tributary to Lake Michigan and a small but important steelhead fishery that currently suffers from inadequate flows from the Hart Project. These flows, which drop down to almost zero at night, cause wild fluctuations that harm migrating fish and cause significant problems with water temperature all for a small amount of power. There is no reason that this project should be exempted from the same environmental standards that others must meet.~~

~~As a general matter, American Rivers and the members of the Hydropower Reform Coalition oppose Congressional extensions for commencement to construct new hydropower projects. The Federal Power Act currently provides for a two-year period in which to commence construction of a dam with an option to extend that period for an additional two years. Extending commencement of construction to 10 years as proposed in S. 439 could render environmental and economic evaluations conducted during the licensing process useless as conditions in the project area may change. Such extensions also limit alternative economic activity at the site, including alternative power development. Projects should not be licensed unless they are fully prepared to carry out their obligations and responsibilities. Congress should simply not accept so many extension bills.~~

CONCLUSION

~~Our nation's rivers and fisheries are facing a crisis of slow but steady extinction. Resource agencies with expertise in these areas are in the best position to address this threat. The relicensing process can always benefit from incremental administrative improvements, and perhaps one day we will come to a conclusion that it is time to look at an entirely new way of doing business, but until that point, HR 2335, and bills like it, will only turn back the clock to an era of litigation, hostility, and continued environmental decline. We can endeavor to find better ways to generate hydropower and new sources of energy but we cannot bring back species once they have gone extinct.~~

Mr. SHADEGG. Thank you. And I'd like to compliment each of the witnesses so far for staying quite close to the timeline. Mr. Grimm?

STATEMENT OF ROBERT S. GRIMM

Mr. GRIMM. Thank you, Mr. Chairman and members of the subcommittee. My name is Robert Grimm. I serve as president of Alaska Power & Telephone Company. AP&T is an investor-owned, employee-owned corporation which has been providing public utility services in Alaska since 1957.

We currently provide service to 25 different communities from above the Arctic Circle to the very southern portions of Alaska. Most of these communities are very small and due to lack of infrastructure, have isolated electric systems utilizing small diesel electric generating units that use fossil fuel.

In addition to representing my own company, I'm speaking today on behalf of Alaska's electric utility industry through our statewide association known as ARECA. We strongly support S. 422 for the reasons I would like to outline, using my utility experience as an example, but emphasizing that many other companies in Alaska have similar experiences.

One of the solutions to fossil fuel generation in these remote areas is the development of small hydro to provide a renewable and nonpolluting source of energy. We at AP&T began the program to identify and develop cost-effective projects in 1984. In 1987 we applied for a preliminary permit from FERC, which we received in June, for 36 months. In November 1993, FERC issued the license authorizing the project with a capacity of 4.5 megawatts. The

project was completed and began commercial operation in 1995. The permitting and licensing process took 7 years and cost \$1.2 million. The actual construction took 1 year and cost \$10 million. It's interesting to note that the licensing cost and permitting cost exceed the installed cost of equivalent diesel electric generating units.

This is not just a bad example or an anecdotal thing. We also have another project in Skagway, Alaska with a capacity of 4 megawatts. It's at Goat Lake, which is near Skagway. Filed for the preliminary permit in 1991. In 1994 a license application. Got the license in 1996. Took over 5 years and cost over \$1 million. The project was completed in the fall of 1998 at a cost of \$10 million.

Additionally, we have a couple of other projects that are currently under license. We've been through a relicense in our Dewey Lake system. Hence, we have first-hand experience with FERC during the last decade. It appears to us that the lack of flexibility, large project, small project, large impact, small impact in the FERC rules, regulations and requirements for these small projects has been the major reason so few have been developed in Alaska. Thus, we're forced to use fossil fuel in these remote areas; with the significant impacts associated with fuel storage, fuel spills, air emission, more than offset any of the adverse effects that have been identified in any of the projects that we've already completed or have currently under license.

These projects are very similar to small community water systems which are being developed in Alaska under State law. Small hydropower is a resource that has prove itself, yet the regulatory maze continues to hinder its development. Those of us on the front line trying to implement renewable energy policies are bewildered. With all the benefit associated with the development of small hydropower when compared to the continued use of fossil fuel, why is everybody making it so hard and difficult to develop?

My last point is tidal power. In Alaska, a lot of the communities are either on coastal sites, because there's no roads—very few roads in Alaska—or along rivers. And we've looked at several different free-flowing turbines which are essentially an adapted wind-mill type of a thing that is actually put into the water. Uses the—captures the free-flowing energy of the river that many of these villages sit by.

Unfortunately, these units are very small—in the neighborhood of 100 KW. Well, because these rivers are navigable, that would make a FERC permit required. So we would be looking at \$1 million or more to permit a project of 100 KW in these villages where we're now using—it just makes some of the alternative energy a non-option.

To reiterate, S. 442 will not diminish public interest, environmental or conservation considerations and protection as under FERC. The bill will simply transfer regulatory jurisdiction from a very distant Washington, DC to our State government in Juneau.

My understanding is that because of our special situation in Alaska, FERC does not object to the Alaska-only program contained in S. 422, and the State of Alaska supports it. Thank you.

[The prepared statement of Robert S. Grimm follows:]

PREPARED STATEMENT OF ROBERT S. GRIMM, PRESIDENT, ALASKA POWER & TELEPHONE COMPANY

My name is Robert S. Grimm. I serve as President of Alaska Power & Telephone Company (AP&T). AP&T is an investor-owned and employee-owned corporation which has been providing public utility services in Alaska since 1957. We currently provide services to 25 different communities from above the Arctic Circle to very southern portions of Alaska. Most of these communities are very small and, due to the lack of infrastructure, have isolated electric systems utilizing small diesel electric generating units that use fossil fuel.

In addition to representing my own company, I'm speaking today on behalf of Alaska's electric utility industry, through our statewide association known as ARECA. We strongly support S.422 for reasons I would like to outline, using my utility's experience as an example, but emphasizing that many other of our rural utilities have similar experiences.

One of the solutions to fossil fuel generation in these remote areas is the development of small hydroelectric projects to provide a renewable and non-polluting source of energy. We at AP&T began a program to identify and develop cost-effective projects in 1984.

In July 1987 we applied to the Federal Energy Regulatory Commission (FERC) for a preliminary permit for the Black Bear Lake Project on Prince of Wales Island in Southeast Alaska. In June 1988, FERC issued a preliminary permit for a term of 36 months. During this period, as evidenced by progress reports filed with the agency, AP&T spent a considerable amount of time and effort consulting with the agencies. In May 1991, we filed our license application. In November 1993, FERC issued the license authorizing the project with a capacity of 4.5 MW. The project was completed and began commercial operation on August 28, 1995. The permitting and licensing phase took seven years and cost nearly \$1.2 million. The actual construction took one year and cost \$10 million. It is interesting to note that the permitting costs alone almost exceed the installed cost of equivalent diesel electric generating units. I would like to point out that this project was funded entirely from private funds.

Another of our projects is located near Skagway, Alaska and has a capacity of 4 MW. The project is called the Goat Lake Hydropower. We filed for a FERC preliminary permit in January 1991 and the FERC issued that permit in June 1991. In May 1994, we filed our license application and FERC issued the license in July 1996. The permitting and licensing process took over five years and cost us \$1,043,100. The project was completed in the fall of 1998 at a cost of about \$10 million. Again, this project was funded entirely with private funds.

Another small hydroelectric project, Wolf Lake, is also located on Prince of Wales Island, and has a capacity of about 2 MW. The preliminary permit was issued by the FERC in April 1995. We fulfilled our obligations under the permit and filed our license application March 27, 1998. We are still awaiting a FERC license. This project would have been already permitted and under construction if the proposed legislation before you had been in place five years ago.

Additionally, as part of the Upper Lynn Canal Regional Energy Plan, we are waiting for FERC licensing for a 3 MW project located on Kasidaya Creek north of Juneau near Skagway and Haines in Southeast Alaska. We filed for our preliminary permit in July 1996 and FERC issued the permit in November 1996. We then followed an Applicant Prepared Environmental Assessment Process. That process took three years, and we applied for the license last October.

In addition, we have had the opportunity to re-license and amend our 1 MW project for Dewey Lakes FERC Project No. 1051 at Skagway, Alaska.

Hence, we have had extensive first hand experience with FERC during the last decade. It appears to us that the lack of flexibility (i.e. large impact vs. small impact) in the FERC rules, regulations, and requirements for these small projects has been the major reason that so few have been developed in Alaska.

The continued use of fossil fuel generation in these remote areas and the significant impacts associated with fuel storage and air emissions more than offset the minor impacts of these hydroelectric projects. These projects do not have large dams that constrict free-flowing rivers. These projects are very similar to the small-community water systems being developed in Alaska under state law.

As you are aware, the environmental costs associated with the continued use of fossil fuels are significant. One authority has attempted to estimate the "bottom line" cost of fossil fuels. Included in this assessment were health costs, damage to water resources, treatment costs necessary to counteract the adverse effect of fossil fuel use on food supplies, water resources, climate, and health. These costs, when tabulated, equal 3.35 cents per kilowatt-hour of fossil fuel energy. Even this assess-

ment does not include the environmental costs of cleaning up contaminated fossil fuel storage sites, which in rural Alaska alone is a \$300 million dollar problem waiting to be addressed. These facts are understood and widely accepted.

Small hydropower in Alaska is a resource that has proven itself, yet the regulatory maze continues to hinder its development. Those of us on the front line trying to implement renewable energy policies are bewildered. With all of the benefits associated with the development of small hydropower when compared to the continued use of fossil fuels, why is it that small hydro is so difficult to develop?

The proposed legislation will provide us significant regulatory relief from the hardship we are now encountering when trying to displace fossil fuel generation with a proven renewable and non-polluting resource. That relief translates into dollars and time savings.

You may hear how FERC regulations contain shortcuts to be used by smaller projects and how the Applicant Prepared Environmental Assessment can deliver a FERC license in a shorter time period. We have had direct experience with these shortcuts and have found them to be largely ineffective. While we appreciate the intent and efforts of individual FERC staff, the Applicant Prepared Environmental Assessment process simply has not saved us time or money.

A major underlying problem is the diffusion of hydropower oversight that once was exclusively FERC's. Over the years FERC's overall authority under the Federal Power Act has been eroded by court decisions and legislative initiatives giving multiple state and federal agencies authority over various aspects of the licensing process. The process has become very inefficient and confrontational and results in very long licensing time periods and additional costs. Many small hydro power projects simply cannot afford these costs.

My last point is tidal power. Currently we believe that small tidal or free flowing hydropower plants placed upon navigable waters will be subject to the jurisdiction of FERC. In Alaska this technology may have promise for many small coastal or riverside villages. However, the cost and time required for a FERC license make this technology a non-option for small-scale development.

S.422 recognizes the special circumstances that exist in rural Alaska: very small communities, remote sites, no interstate (or for the most part intrastate) power grid, stand-alone generation that is largely diesel, limited local financial resources and much undeveloped small hydroelectric potential. Hence, S.422 would greatly facilitate the development of Alaska's small hydro potential by removing regulatory overlay while still requiring applicants to receive approvals from all other local, state and federal agencies.

To reiterate, S.422 will not diminish public interest, environmental or conservation considerations and protections as under FERC. The bill will simply transfer regulatory jurisdiction from a very distant Washington, D.C. to our state government in Juneau. This jurisdictional transfer would only occur upon submission by the Alaska governor of a state regulatory program and the approval of that program by FERC after consultation with the secretaries of the Interior, Agriculture and Commerce. My understanding is that, because of our special situation, FERC does not object to the Alaska-only program contained in S.422, and the State of Alaska supports it.

We ask for your support and passage of S.422. I will gladly respond to any questions.

Thank you for this opportunity.

Mr. SHADEGG, Mr. Grimm, thank you very much for your testimony. Mr. David Piper.

~~STATEMENT OF DAVID E. PIPER~~

~~Mr. PIPER, Thank you, Mr. Chairman, members of the subcommittee. My name is Dave Piper. I'm President and Chief Executive Officer of PNGC Power, which is also known as the Pacific Northwest Generating Cooperative.~~

~~We're located in Portland, Oregon. We're a cooperatively based energy service provider for our 11 owners who are mostly small, rural electric systems throughout the Pacific Northwest.~~

~~I want to thank you and the staff particularly for convening this hearing and the courtesies that have been extended to us in this process over the last period of weeks and months. I'd like to submit~~

Alaska Small Hydroelectric and the Question of Sustainable Development

By Robert S. Grimm, President
Alaska Power & Telephone Company
March, 1999

I believe that sustainable development is a goal that we, as the most advanced species on earth, will need to adhere to in the future as the demands of our advancing civilization continue to place stresses on our natural environment. The Brundtland Commission over ten years ago proposed the following definition: *development is sustainable if it meets the needs of the present generation without diminishing the ability of future generations to meet their own needs.*¹ The Southeast Alaska Conservation Council also has a definition: It is renewable, it is equitable, and it is digestible².

The global population has tripled in this century. Biomass and food consumption has reached 40 percent of the entire land-based output of photosynthesis. No one is sure if man can continue to increase this number. Fossil and mineral resource consumption is depleting stocks in hundreds of years that took tens of thousands, or millions, of years to accumulate³. This consumption is now affecting the air we breathe and all aspects of the environment of earth.

It occurs to me that any type of renewable resource that can be utilized by mankind should be encouraged and made a priority by the policy makers. This is especially true when the use of that resource has side benefits that not only reduce the depletion of the non-renewable resource, but also reduce the other negative aspects of consuming the non-renewable, such as air or water pollution. Another side benefit is the cost to society of transporting a resource from where it is manufactured or extracted to the point where it is consumed.

It would appear that small hydro development in Alaska meets many, if not all, of the requirements of sustainable development. However, this message has not yet filtered down to the regulators that currently use an adverse and burdensome process when licensing and permitting small hydroelectric facilities. This is true not only in Alaska but in the rest of the nation also.

Alaska Power & Telephone Company has been active in the development of small hydroelectric projects throughout southeast Alaska. We began in 1995 with the development of the Black Bear Hydroelectric Project near Klawock on Prince of Wales Island, and just completed the Goat Lake Hydroelectric Project near Skagway during 1998. In addition, we were able to interconnect Haines and Skagway using a high voltage submarine cable, making both communities energy independent of fossil fuels. Both of these projects took many years to move through the permitting process: eight years at BBI, and seven years at Goat Lake. The cost was huge when compared to the population of the communities served and the continued use of fossil fuels (diesel). Just the permitting cost for both projects totaled over 2 million dollars, all of which will be collected by rates from the local customers. This cost is disproportionate when compared to both the size of the project, the energy output, and the now known impacts that the project had upon the environment and resources of the area.

I am convinced that sustainable development is part of the solution, not part of the problem. It, along with other policies, will allow us as global citizens to insure that the planet earth we leave behind is better than the one we found at our birth. I believe further that the vast hydroelectric resources available to us in southeast Alaska, together with electrical transmission facilities, will allow us to displace fossil fuel energy generation completely. Since we have been given this gift, it is our responsibility to make sure it is utilized, as there are many places on earth that are not as fortunate.

The current decision making process, current regulations, and adverse regulatory environment are too expensive and too much of a burden upon our customers. Why this is, I do not know. Perhaps the process has become tainted by historical hydropower impacts that are easily avoided with today's technology and knowledge. What I do know is that change needs to occur. The overall value of renewable resources and encouragement of sustainable development needs to be recognized in today's regulatory environment. Hopefully, this will lower the current costs and efforts of licensing and permitting small hydroelectric projects to acceptable levels.

Our goal is to enter into discussions to change the process, allowing us as a civilization to authorize construction of renewable small hydroelectric projects in a manner that protects the environment and allows the benefits of the project to be captured by several, if not all, future generations. This would allow the development of these projects in a cost-effective manner so that present and future residents of Alaska do not need to consume a disproportionate amount of their limited resources to develop projects responsibly.

Now that you (person, agency, or group) understand that we are serious and willing to work toward a solution, are you willing to do the same? One of the major issues that must be addressed is the policy or goals of each of the agencies that go about their respective duties without any overview or serious policy guidance in regards to how to balance the overall benefits (direct, as well as indirect) of appropriate development. These benefits must be weighed against the impacts that inevitably come with any development.

For example, currently an agency charged with the protection of fish might, in its zeal to fulfill its mission, place conditions upon a small hydroelectric project that renders the project uneconomical and/or impracticable from an operational standpoint. This results in the small hydro being abandoned or developed in a manner that does not utilize the water resource to its fullest extent. Their actions might preserve some habitat, but in some cases the habitat is marginal at best. They may truly believe that they fulfilled their responsibility to the public by their actions and take pride in their actions, but I believe they have missed the point!

In reality they have inadvertently made the world worse, not better. They have made a policy decision that reaches far beyond their agency mission. Yes, they have preserved some habitat and a few fish, but in the process they have denied the world the use, for generations to come, of non-polluting and renewable resource waterpower. Because this energy is not available, another energy source must be used to meet energy demands. In the foreseeable future this energy will be produced with fossil fuels. As discussed above, fossil fuels rely upon non-renewable stocks that took nature millions of years to create, yet man depletes in mere hundreds of years. Fossil fuels already pollute the air¹ and contribute to the CO₂

¹The fossil fueled generators now used in Alaska produce emissions of about 1.59 pounds per kW-hr. Over a 50-year license term of a small hydroelectric even a small 5-megawatt diesel plant produces 1,741,050 tons of

concentrations that are a major contribution factor to the international concerns of global warming.

This is why the process must be changed. A balancing process must be achieved that views any proposed development in a holistic manner. This insures that the concerns, mandatory conditions and recommendations of one group¹¹ representing only their narrow interests or mission is balanced when viewed from a globally sustainable basis. The first step is for all of us involved in the water resource decisions, to recognize that this balancing must occur and to personally and professionally take responsibility to see that it does occur.

Remember the old bumper sticker, "Think Globally-Act Locally".

Thank you for the opportunity to share my thoughts.

¹ Bruntland Commission, World Commission on Environment and Development, *Our Common Future*, Oxford University Press, Oxford, 1987.

² Southeast Alaska Conservation Council <http://www.seacc.org/pages/SUSTAIN.ITM>, It is renewable. It uses resources no faster than they can be replenished. In general, natural capital is conserved rather than depleted. It is equitable. It is equitable among people and across generations. The future is not sacrificed for the present. It is digestible. The by-products of production are re-usable, recyclable, or biodegradable.

³ William C. Clark, at the Kennedy School of Government, Harvard University, [The world] physical stage is rapidly changing. It holds twice as many people as it did in 1950; four times what it did in 1850. World trade has increased more than 20-fold over the last century; energy use more than 100-fold. This increasing magnitude of human activity has brought about an increasing scale and complexity of interactions among humans, their technologies, and their environment. What were once local incidents of pollution shared throughout a common watershed or air basin now involve multiple nations—witness the concern for acid deposition in Europe and North America. What were once acute episodes of relatively reversible damage now affect multiple generations—witness debates over disposal of chemical and radioactive wastes. What were once straightforward questions of ecological preservation versus economic growth now reflect complex linkages—witness the feedback among energy and tree production, deforestation and climate change that are evident in studies of the atmospheric greenhouse effect. What once was a relatively well-behaved world of smooth and predictable trends increasingly reveals a propensity for abrupt and unexpected change—witness the surprise and consternation of scientists and people alike confronted with the appearance of the Antarctic ozone hole.

emissions into the atmosphere that surrounds earth. Ten years ago the Exxon Valdez spilled almost eleven million gallons into Prince Williams Sound. The total weight of the oil spilled was 40,700 tons. The Valdez spill represents only 2% of the weight created by the operation of a small fossil fuel generator that can be replaced by non-polluting, renewable small hydro. Emission data from AP-42, Section 3.4, Environmental Protection Agency.

¹¹ These groups include project developers, as well as agencies, special interest, and the general public.