

# Summary of the Energy Vision for the Columbia River

The development and operation of the Columbia and Snake rivers primarily for electric power production have reduced salmon and other migratory fish stocks to the point where many are at the brink of extinction. Wildlife populations and the river's ecological health have also been compromised.

Over the decades the Northwest has faced numerous energy crises. When a crisis occurs, such as it did in 2001, the already dangerous conditions for Columbia Basin salmon worsen. Until the emergency passes, river regulators are loath to provide water or alter dam operations "just for fish."

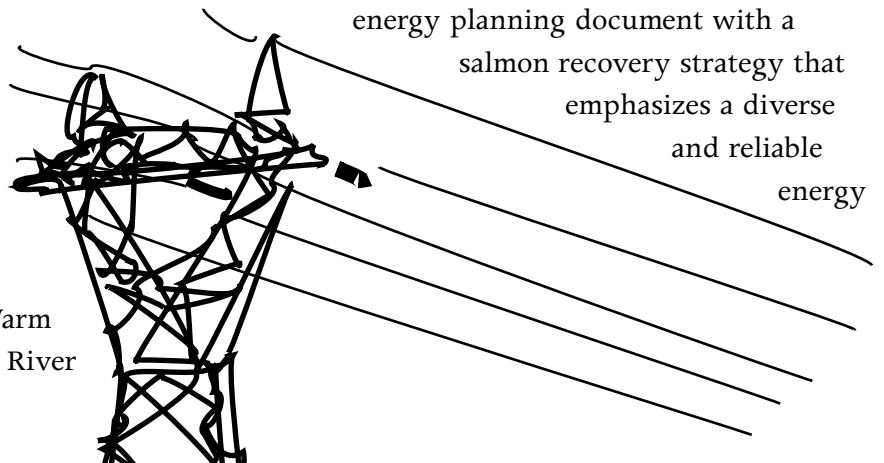
During the unplanned response to the 2001 drought and the summer's other energy problems, the tribes' and the region's salmon were left vulnerable to emergency power operations that resulted in the massive slaughter of juvenile salmon. Many of these salmon would have returned as adults in the following two to five years. This loss further erodes the treaty-reserved salmon resources the tribes rely on for livelihood and subsistence and for cultural and spiritual sustenance. Sport and commercial fisheries and United States treaty obligations to Canada were also negatively affected. In addition, electric utilities and consumers were exposed to dramatic rate spikes.

Yet the Yakama, Nez Perce, Umatilla and Warm Springs tribes, who make up the Columbia River

Inter-Tribal Fish Commission (CRITFC), believe that the Northwest can avert future crises and that river management need no longer be a fish versus power fight, where one side or the other is harmed. The region can enjoy an affordable, reliable energy system and have harvestable runs of salmon that support commercial, sport and tribal harvests.

Our four tribes are convinced that appropriate planning of regional resources can provide the Northwest with a robust energy system that withstands most unknown future events and keeps costs stable. We have outlined an energy strategy or vision that is economically and ecologically based to meet the requirements of fish and wildlife and the energy needs of the Northwest. Our energy vision, summarized in this paper, highlights critical concerns with the region's existing energy system and defines a systematic approach to address these concerns. (The complete *Energy Vision for the Columbia River* will be available soon on CRITFC's website [www.critfc.org](http://www.critfc.org).)

The Energy Vision for the Columbia River is an energy planning document with a salmon recovery strategy that emphasizes a diverse and reliable energy



resource mix, keeps energy costs similar to current costs and recovers abundant, harvestable salmon.

This vision outlines a set of resources that can be developed to meet future needs in a wise and cost-effective manner while reducing the region's energy dependency on the Columbia River hydroelectric system. It also identifies how to free the funds required to make these important changes. *The Energy Vision for the Columbia River* is a companion to our *Wy Kan Ush Mi Wa Kish Wit (Spirit of the Salmon) Plan for Columbia River Anadromous Fish Restoration*.

CRITFC's member tribes are poised to help implement this energy vision. Three of the tribes are considering development of new generation facilities on tribal lands. The Confederated Tribes of the Umatilla Indian Reservation, the Williams Company and the Eugene Water and Electric Board plan to site and build a 1,000-megawatt gas-fired plant in Eastern Oregon. This plant will be strategically placed within the region's transmission grid. The Yakama Nation has formed its own utility, Yakama Power, and is considering short-term and long-term energy resource acquisitions. Warm Springs Power Enterprises, a tribally chartered business of the Confederated Tribes of the Warm Springs Reservation of Oregon, owns major hydroelectric generating facilities and is considering additional energy resource development on or near the Warm Springs Reservation.

Additionally, major federal and private electric power transmission lines and natural gas pipelines cross reservation properties under tribal rights-of-way agreements.

## GOALS AND PRINCIPLES

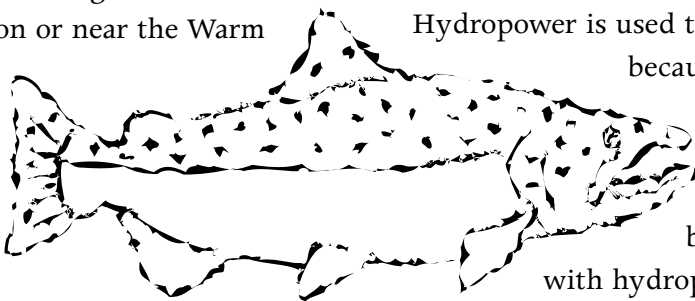
The mission of the Columbia River Inter-Tribal Fish Commission is to protect its member tribes' treaty rights to take salmon. For the tribes and CRITFC to accomplish their mission, salmon stocks must be

rebuilt. The dams on the Columbia and Snake rivers continue to be the main deterrent to salmon restoration. The first goal of the tribal energy vision is to reduce the pressure of energy demand on Columbia Basin fish and wildlife resources, in other words, take energy policy off the backs of salmon and the environment that supports them.

A second goal of the energy vision is to serve utilities and ratepayers more cheaply than they are served today in order to capture the value of the Columbia River's energy system for the Northwest. A third goal is to provide better protection against unforeseen events, such as those the region faced in 2001.

## CURRENT USE OF THE HYDROPOWER SYSTEM

In a conventional power system, utilities build transmission and distribution lines to serve the highest peak load (the maximum amount of electric energy required during certain periods of time). Peak usage occurs infrequently and for short amounts of time. Yet thirty-five percent of all capital in place (including generation, transmission and distribution) is there to serve loads that occur less than five percent of the time. This is inefficient.



Hydropower is used to serve peak loads because dams can react to demand by quickly putting more or less water through generating turbines. Serving peak loads with hydropower kills millions of juvenile salmon every year. During certain times of the year, so much water is drawn down to generate electricity that salmon redds (gravel nests where salmon lay eggs) are uncovered or dewatered and their eggs die. There are other adverse flow effects caused by accommodating peak loads. Additionally, the water held behind storage dams for future power generation — for summer air condi-

tioning, for example — would, under natural conditions, be in the river aiding the swift and timely downstream migration of young salmon. Current operation of the Columbia Basin's hydro system does not provide the natural (or normative) river conditions needed to restore fish to harvestable levels.

## **RECOMMENDATIONS**

Because the Northwest is overly dependent on hydroelectric power, the region is susceptible to many problems, some of them already referred to in this paper. Hydroelectric dams are located mostly in rural areas and power must be shipped over high voltage transmission lines to urban areas, sometimes over great distances. Disruption of the transmission lines can cause widespread blackouts.

An exclusive focus on power production during crises such as power shortages or blackouts can cause huge fish mortalities. As mentioned, during the drought of 2001, unprecedented numbers of fish were killed and power prices rose. If a second successive year of drought were to follow, fish would again be decimated to save hydro system operations and there would still not be enough water to meet the region's electric needs.

Whether or not the Northwest suffers additional drought years, the output of the hydro system will continue to be reduced so that water flows can be used to meet the Endangered Species Act (ESA) requirements for fish passage. As both the drought and the ESA examples indicate, the Northwest would be wise *not* to rely so exclusively on the hydroelectric system to meet its energy needs.

The tribal energy vision recommends the development of a more diverse energy resource portfolio to spread the risk between numerous electric power production means. Diverse production sources and other proposals in the energy vision can be used to make up for losses in power output at federal hydro projects.

**Distributed generation.** The conventional electric utility solution has been to build large generation power plants and transmit the electricity on transmission lines regardless of distance. Instead, by no longer building transmission from centralized power plants, the money saved can be used to construct smaller, more dispersed or distributed power generation. Examples of distributed generation include small gas-fired units, solar voltaic cells and fuel cells.

**Strategically placed gas-fired generation.** Gas-fired power is among the best alternative sources of generation the Northwest can develop to minimize its dependence on the hydro system. It is now cost-effective to build gas-fired generation units in local areas where the power is needed rather than putting up new transmission lines. In fact, transmission and distribution systems for electricity are currently constrained and new construction is very expensive. Gas-fired power plants, on the other hand, can be brought online quickly to meet the needs of power peaking and can be used to provide reliable power when spill or flow is needed for fish operations.

**True-cost pricing of peak power.** Although peak loads are much more expensive to serve, the difference is not captured in rates and is not reflected in the amount of money utilities pay for peak power. Power rates remain constant regardless of the higher costs of providing energy during peak periods. Peak power production using hydroelectric energy kills millions of salmon. True-cost pricing of peak power would reduce peak loads and save salmon.

**Efficiency improvements.** Readily available forms of conservation include home and business wall insulation and efficient lighting systems, appliances, and heating, cooling and ventilation systems. These and other examples of cost-effective conservation reduce demand on the region's energy system.

**Timing of energy consumption.** Energy consumption follows patterns in human behavior. By changing these patterns, energy consumption can drop. Lowering thermostats, turning off lights and shifting

use of electricity to non-peak hours by running dishwashers, clothes dryers and washers after 9 p.m. are examples of changes that help reduce peak power demand. More complex measures include automated equipment that analyzes weather and market prices and adjusts consumption accordingly.

**Wind generators.** Wind power is now priced competitively with other forms of energy production and has few environmental problems. Additionally, it provides insurance against unstable energy prices.

**Fuel switching.** Burning natural gas to create electricity to heat an all-electric home is more expensive than heating that same home with natural gas. Where it makes sense, fuel switching would further alleviate pressure on the electric energy system.

**Bonneville Power Administration (BPA).** As the federal agency that sells power from federal Columbia and Snake river dams and is responsible for funding salmon recovery measures, BPA must take the lead in implementing energy measures that take pressure off the rivers and help restore salmon.

As a first step, BPA can:

- acquire 1,000 megawatts of peak reduction over the next 10 years encouraging changes in patterns of energy consumption, using price mechanisms and supporting efficiency improvements among other methods

**1000 Megawatts (MW)  
is enough electricity to  
power the city of  
Seattle.**

- fund 100 megawatts of distributed generation, such as gas-fired units and solar voltaic cells, as pilot projects over the next two years
- acquire 1,000 megawatts of ancillary reserves, such as wind power or gas-fired generation, to safeguard fish operations

## **CONCLUSION**

Our tribal governments are taking the initiative to achieve this energy vision. The tribes are starting to develop energy resources on reservations and other tribal lands. Moreover, we are explaining our vision to other sovereign governments in the region and in Washington D.C. and describing how it meets the joint goals of the tribes and our neighbors.

The Columbia River tribes are ready to become important partners in developing a responsible and affordable power system for the region.

## **Columbia River Inter-Tribal Fish Commission**

729 NE Oregon St, Suite 200  
Portland, Oregon 97232  
[www.critfc.org](http://www.critfc.org)

