



## Climate Change & Power Generation

You have probably seen or heard the terms *climate change* and *global warming* recently in the media. Discussions on global climate change are occurring in many policy forums and are influencing legislative initiatives at the national, regional, and state levels.

Climate change is a complex matter. This paper attempts to generally describe the issue of climate change and how proposed policy initiatives on this subject may impact those of us who live in the northwestern part of the United States.

While the climate always has varied over time, there is much agreement in the scientific community that a significant contributing factor to increasing global temperatures is the increase in creation of greenhouse gas (GHG). While GHG naturally occurs in nature, gas emissions also are caused by various human activities.

The “greenhouse effect” is the name given to the natural process where GHGs (such as carbon dioxide, nitrous oxide, and methane gas) are released into the atmosphere, forming a blanket of insulation around the Earth. This layer of gas traps the heat from the sun that would otherwise be released into space. Without this protective layer, the average temperature on earth would be about zero degrees Fahrenheit rather than the average 60 degrees that makes life on earth possible. However, too much of this layer can make the Earth warmer than it has been in the past. Much of the current discussion on climate change involves the timing and extent of this effect, the specific impacts to particular regions, and what measures may be needed in response.

With respect to human created emissions, the United States, China and India are the largest contributors of GHG emissions. Power generation by fossil fuel sources, such as coal, causes 40 percent of all man-made emissions, while transportation-related activities (for example, burning gasoline for automobiles) accounts for a third of the total. Other contributors are farming and land-use practices that release methane into the atmosphere, and factories that produce certain GHGs through manufacturing processes.

The Northwest has a long history of climate-friendly generation, energy efficiency efforts, and conservation programs. As a result, energy generation in the Northwest produces less CO<sub>2</sub> per megawatt-hour than any other region in the United States.

However, the region’s existing hydroelectric capacity is already stretched thin and will not be adequate to meet the need for more electricity in the future. Growth in the region is expected to be substantially higher than the national average. This puts the Northwest in a double bind relative to the rest of the country if certain regulatory regimes are put in place to address climate change. For example, a federal system could be imposed that limits emissions but gives out “credits” that can be traded based upon past levels of emissions. This might be very useful in regions more dependent on coal. But, in the Northwest, we would need to find more low-emission generation to serve growing communities though we have fewer opportunities to reduce the emissions from our existing generation facilities because of their already low levels.

While many utilities in the Northwest have not yet proposed a preferred method for GHG regulation (for example, a tax on emissions that have carbon content or cap & trade program like that referenced above), consumer-owned utilities who rely largely on hydropower are working to ensure that *if a national cap and trade system is enacted*: (1) allowances should be based on the amount of generation used, not the amount of pollution emitted; and, (2) allowances attributed to the federal Columbia river power system should flow

through for use by the utilities charged with meeting the future need for additional power. Finally, consumer-owned utilities support the following principles to guide the climate change discussion and legislation:

1. GHG regulation needs to include all sectors of the economy.
2. The point of regulation for GHGs should be upstream where fossil fuels enter the economy, such as at the mine-mouth or wellhead.
3. Federal legislation is strongly preferred over state or regional approaches to addressing GHG emissions.
4. Emissions legislation should credit utilities for their past accomplishments in renewables, energy efficiency, conservation, and GHG mitigation programs.
5. Legislation should acknowledge the different growth rates among regions and not unduly burden high-growth regions.
6. GHG legislation should support the development of new technologies.
7. GHG legislation should help remove legal and institutional barriers on the commercialization of new emission control technologies and the greater use of zero-emission generation.
8. Any climate change strategy should recognize the value of energy conservation and fuel diversity.
9. Investments in energy efficiency and conservation should be encouraged as a viable approach to reducing GHG emissions.
10. Legislative emissions reduction timelines must be aggressive but also accommodate the practical constraints on the speed with which new technology can be developed and implemented.
11. Legislation should include a safety valve, set at a level to protect the economy, while still encouraging meaningful actions to reduce GHGs.
12. Any market established as part of GHG regulation must be carefully designed and subject to strong federal oversight, including safeguards preventing market manipulation.

For more information on these principles and other information on the electric utility industry's views on climate change, please visit the following Web sites:

Public Power Council – [www.ppcpx.org](http://www.ppcpx.org)

Northwest Public Power Association – [www.nwppa.org](http://www.nwppa.org)

American Public Power Association – [www.appanet.org](http://www.appanet.org)

Pacific Northwest Utilities Conference Committee – [www.pnucc.org](http://www.pnucc.org)

National Rural Electric Cooperative Association – [www.nreca.coop](http://www.nreca.coop)

Climate change is a very complex issue that will take a global effort to address. Northwest consumer-owned utilities are pitching in and doing their part to make sure that this region's amazing hydropower system is given adequate consideration in this debate and that the needs of their consumers are well represented as solutions are considered.