

Climate Change: The Top 10 Questions...Answered

Climate change is a topic of increasing interest in the energy industry. But what is climate change, how does it affect electric cooperatives, and what does it have to do with coop members?

In an effort to clarify this issue, we have tackled some of the basic questions about climate change, and how it affects electric cooperatives.

Q. What are climate and climate change?

A. Climate refers to the average weather—temperature and precipitation, among other variables—over a long period of time. The Earth's climate is always changing. Natural climatic changes may occur over seasons, decades and centuries. The periodic rapid warming trend in the eastern Pacific Ocean, known as El Niño, is an example of climate change on a shorter time scale.



Q. What causes climate change?

A. Natural factors and processes contribute to climate change and include changes in the Earth's orbit and changes in the output of the sun. Human activities, such as fossil fuel consumption and deforestation, contribute to climate change.

Q. What are greenhouse gases and how are they produced?

A. Greenhouse gases are chemical compounds that trap heat from the sun in the Earth's atmosphere. This

is known as the greenhouse effect, the natural phenomenon that warms the Earth's surface. Greenhouse gases include carbon dioxide, methane and water vapor. These gases occur naturally and through human activity. Carbon dioxide is released into the atmosphere when forests and fossil fuels are burned. Fossil fuels include oil, natural gas and coal. Methane is released during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal solid-waste landfills. Although water vapor is the most abundant greenhouse gas, its atmospheric concentration is not directly affected by human activity.

Q. What do scientists think about climate change?

A. Scientists agree that greenhouse gases warm the Earth and are accumulating in the Earth's atmosphere as a result of human activities. However, there is considerable uncertainty in scientists' understanding about the impacts of greenhouse gases on the Earth's climate.

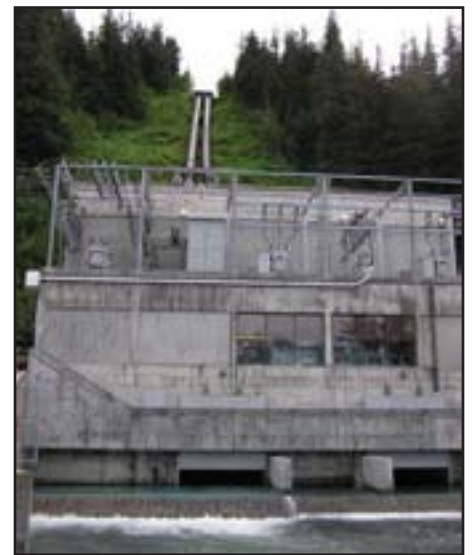
Q. What does climate change have to do with electric cooperatives?

A. The process of generating electricity is the single largest source of carbon dioxide emissions in the United States, representing 40 percent of total carbon dioxide emissions from all sources in 2005. Electric cooperatives generate only about 5 percent of the nation's electricity, and

more than 80 percent of electric cooperatives' generation is from fossil fuels. As a result, electric cooperatives have a well-developed interest in technologies that reduce, avoid and store greenhouse gas emissions.

Q. What are electric cooperatives doing to address climate change?

A. Currently, there is a lack of cost-effective technologies to reduce greenhouse gas emissions from fossil fuel-based generation. Electric cooperatives are working to develop new technologies and energy sources to reduce, avoid, and sequester or store emissions.



Splitter Wall, Solomon Gulch Hydroelectric Plant

Cooperatives across the nation are using and promoting alternative and renewable energy options. CVEA is no exception. Approximately 60% of CVEA's annual generation comes from hydro power.

Q. How can new technologies improve electric cooperatives and climate change concerns?



A. *New technologies that lead to greater energy efficiency are a primary focus for electric cooperatives across the nation. These include building modern, environmentally sound power plants and implementing carbon-efficient electric generation, such as nuclear energy, fuel cells and clean-coal technologies. Electric cooperatives, including CVEA, make every attempt to keep pace with high-tech advancements to improve operations.*

Q. **What can I do as an electric cooperative member to address concerns about climate change?**

A. *CVEA offers green power from hydroelectric generation. CVEA also encourages you, the member owners, to embrace energy conservation and efficiency. This includes using compact fluorescent lighting, upgrading to energy-efficient appliances and following home*

improvement tips, such as installing a programmable thermostat or improving insulation. For more tips on energy efficiency and conservation visit www.cvea.org.

Q. **What is the policy debate about climate change like among policymakers and industry leaders, and what do electric cooperatives support?**

A. *Climate change issues continue to gain increasing attention in Congress and the utility industry. Electric cooperatives support the research and development of low and zero-emission energy technologies, new energy-efficiency technologies, renewable and alternative energy options, financial incentives to acceler-*

ate the use of new technologies and offset higher costs, and will continue

to support voluntary, greenhouse gas emissions reduction efforts.

Q. **How do international factors affect climate change?**

A. *The global population and worldwide demand for fuel are growing significantly. China is the fastest growing major economy in the world, while India runs a close second.*

This growth means people are driving more cars, building more homes and businesses, and using more fossil fuels to generate electricity, thus leading to more greenhouse gas emissions.

Therefore, it is necessary that governments around the world support ways to reduce emissions, while they develop long-term climate change solutions and new technologies.

