

# Clearing the air on environmental issues

**C**lean air and climate change are two different issues. However, these two topics often get jumbled together — in both the ways they are defined and the ways they should be addressed by environmental policies. Energy experts warn us to be careful as we think about these two different issues.

This issue affects electric cooperatives because we rely on fossil fuels to produce more than 80 percent nationally of the reliable, affordable power we provide our members.

## Clean Air

The Clean Air Act, through a variety of programs, regulates air pollutants by reducing emissions from power plants and other sources such as factories, dry cleaners, gas stations, farms and automobiles. The main air pollutants that are emitted by electric power plants and affect air quality are nitrogen oxide (NOx) and sulfur dioxide (SO<sub>2</sub>).

“Industrial emissions leading to high levels of nitrogen oxide and sulfur dioxide in the air have near term health effects, particularly for those with respiratory illnesses,” said Kirk Johnson, Executive Director of Environmental Affairs at the National Rural Electric Cooperative Association (NRECA).

NOx contributes to the formation of smog by combining with sunlight, heat and chemicals called volatile organic compounds. Since heat is a main factor, smog is generally worse in the summer. SO<sub>2</sub> contributes to acid rain, and both SO<sub>2</sub> and NOx form very fine particles in the air that can produce regional haze.

## Climate Change

Carbon dioxide (CO<sub>2</sub>) is emitted from power plants and other sources such as cars, factories and is also increased by cutting down trees, also known as deforestation. The atmospheric build-up of CO<sub>2</sub>, unlike NOx and SO<sub>2</sub>, does not have negative health effects. This is why it is not regulated as an air pollutant under the Clean Air Act.

The atmosphere has always contained greenhouse gases — carbon dioxide, methane and nitrous oxide among them. These gases, along with water vapor, create the natural greenhouse effect where they trap some of the sun’s heat and keep the earth warm enough to sustain life. By increasing some of these heat-trapping gases — and adding new ones — the natural greenhouse effect is intensified.

CO<sub>2</sub> has increased in atmospheric concentrations from a pre-industrial level of 280 parts per million to about 365 parts per million today. And while disagreements continue among scientists over the effects of higher concentrations of greenhouse gases in the atmosphere, many believe it will result in the warming of the earth’s atmosphere and changes in climate, melting polar ice caps and raising sea level — the phenomenon that is referred to as global warming.

“When we talk about climate change, we are mainly talking about CO<sub>2</sub> emissions and their association with gradual, long-term changes in the earth’s atmosphere,” explained Johnson.

## Clean Air Versus Climate Change

It’s important to understand the differences between air quality and climate change, according to energy experts. One reason is that the pollutants associated with diminished air quality are of immediate health concern while the greenhouse gases associated with climate change involve long-term changes to our atmosphere.

“Also, the ways in which these two issues are addressed at both the policy and practical levels are very different. While currently there are technologies that can reduce emissions of NOx and SO<sub>2</sub>, no such technology exists to cost-effectively reduce CO<sub>2</sub> emissions,” explained Johnson.

## Climate Change: Decreasing CO<sub>2</sub> Emissions

Electric co-ops support a variety of voluntary efforts to reduce greenhouse gas emissions from power plants but oppose mandatory caps. With the current lack of cost-effective technology to reduce CO<sub>2</sub> emissions, the implementation costs of a mandatory program and costs to consumers would be too high.

One way to reduce CO<sub>2</sub> emissions is with the capture of carbon through crop, forest and grassland management techniques, also known as carbon sequestration. This is one of the most cost effective ways right now to reduce concentrations of CO<sub>2</sub> in the atmosphere.

Co-ops also support research and technology programs that will lead to greater energy production efficiencies and result in more carbon-efficient energy. However, the development and commercial installation of viable new energy production technologies that emit no CO<sub>2</sub> likely will take decades.

## Clean Air: Decreasing NOx and SO<sub>2</sub>

Currently, the Clean Air Act includes mandatory programs to reduce emissions of air pollutants from power plants and other sources. New regulations continue to be developed to reduce emissions under the Clean Air Act.

Electric cooperatives support programs that are flexible and include emissions trading, a practice in which a national target is set for reductions and power producers determine the most cost-effective emissions reductions to meet the national cap. Co-ops ask federal regulators that the timetable and scope of any new emissions reductions program not impair the array of fuels that are currently used to meet consumers’ power needs reliably and affordably.

## The Good News

Air pollution reduction programs have been effective. A report released in 2003 by the United States Environmental Protection Agency (EPA) says that emissions of six major pollutants, including NOx and SO<sub>2</sub>, have declined 48 percent since the passage of the Clean Air Act in 1970. EPA points out that in the time that emissions have declined by 48 percent, U.S. gross domestic product increased 164 percent, energy consumption increased 42 percent and vehicle miles traveled increased 155 percent.

*Source: NRECA; EPA*