

# Imagine Tomorrow



## Why do we need new sources of energy?

The burning of fossil fuels releases carbon dioxide (CO<sub>2</sub>) into the atmosphere, which causes the earth's climate to warm. Most scientists warn that a temperature rise of 3.6 degrees Fahrenheit could have serious consequences.<sup>1</sup>

### How much atmospheric carbon dioxide does human activity produce?

The world's output of carbon dioxide from human activities totals about 10 billion tons a year and has been steadily rising.<sup>1</sup>

### What activities are the primary producers of atmospheric carbon?

The electric power industry's carbon emissions represent the largest factor in the U.S. contribution to climate change. The industry's carbon emissions have risen 5.9 percent since 2002 and 11.7 percent since 1997.<sup>2</sup>

In the United States, approximately 60 percent of each person's carbon footprint comes from the goods and services they buy, while the other 40 percent comes from their energy use at home, driving, and flying.<sup>3</sup>

### How much has the Earth warmed as a result of humans' carbon output?

The Earth has already warmed by nearly 1.4 degrees Fahrenheit above pre-industrial levels.<sup>1</sup>

### Will global warming stop immediately if carbon emissions cease?

No. Even if carbon emissions stopped today, warming from existing emissions would continue for many generations. A significant portion of carbon emissions will persist in the atmosphere for thousands of years. Atmospheric carbon triggers deep-sea warming, which continues to raise the earth's average temperature even after emissions stop.<sup>1</sup>

### What are the consequences of global warming?

- **Extreme weather.** If global warming continues, we'll experience more severe storms, frequent and intense heat waves, droughts, and wildfires. Change is already underway. For instance, the number of Category 4 and 5 hurricanes has almost doubled in the last 30 years.
- **Melting glaciers.** The flow of ice from glaciers in Greenland has more than doubled over the past decade. If global warming continues and shelf ice in Greenland and Antarctica are lost, global sea levels could rise by more than 20 feet, devastating coastal areas worldwide.
- **Forcing of animals and plants from their habitat.** At least 279 species of plants and animals are already responding to global warming, moving closer to the poles. If global warming persists, more than a million species worldwide could be driven to extinction.
- **Spread of disease.** Malaria has spread to higher altitudes—even 7,000 feet above sea level.