

# Global Warming in the Southwest

## What can we do about it?

### Mitigation and Response

The driving force behind global warming is the emission of greenhouse gases, mainly carbon dioxide (CO<sub>2</sub>), from burning fossil fuels, such as coal, oil, and gasoline. Mitigating global warming means taking actions to reduce greenhouse gas sources or enhance greenhouse gas “sinks”—places where greenhouse gases are safely taken up, such as trees, which use carbon dioxide to grow. The United States, home to only 5 percent of the Earth’s population, is responsible for 25 percent of global CO<sub>2</sub> emissions. Mitigating global warming in industrialized nations presents the challenge of changing energy production methods while addressing the need for energy to serve economic growth and quality of life.

This is especially true for the U.S. Southwest, the fastest growing region in the country. Here solar and wind power offer promise of generating energy from renewable and low emission sources. Governors Janet Napolitano of Arizona and Bill Richardson of New Mexico have created policy initiatives to mitigate global warming, including the Arizona and New Mexico climate change advisory groups, which build political and business partnerships to develop plans to reduce greenhouse gases. Federal, private, and non-profit agencies and organizations, also provide information describing everyday measures that everyone can take to reduce emissions. For more information, there is a list of resources on the back of this handout.



Springerville Generating Station in Springerville, Arizona



The Phoenix, Arizona, skyline

### Adaptation

According to the latest scientific consensus, societies will need to adapt to climate changes. Adaptation to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

During the last 100 years, temperatures in the southwestern United States have been increasing about twice as fast as the global average temperature. The latest Intergovernmental Panel on Climate Change (IPCC) temperature projections show that further warming is likely in the Southwest. Scientists are less sure of the magnitude of regional precipitation changes. Nevertheless, in the arid Southwest, where water resources are already vulnerable to multi-year drought, communities will likely have to adapt to changes in water resource reliability. Land use managers may also need to adapt to ecosystem changes created by longer growing seasons and altered fire regimes.

Adaptation to global warming also means seizing new opportunities when they arise, such as implementing improved irrigation techniques, “water banking” (storing water in underground aquifers), and using reclaimed effluent, where feasible.



## Related Links

This list offers selected resources that provide information on what governments, businesses, and individuals can do about global warming. It is not meant to be comprehensive. Material included in this list does not imply ISPE endorsement of commercial services and products offered on these websites or the political agendas of any agency or company.

### Intergovernmental Panel on Climate Change

*Climate Change 2007*  
<http://www.ipcc.ch/>

### Global Warming Mitigation Initiatives in the Southwest

Arizona Climate Change Advisory Group  
<http://www.azclimatechange.us/>

New Mexico Climate Change Advisory Group  
<http://www.nmclimatechange.us/>

### Mitigation Resources for Individuals and Businesses

An Inconvenient Truth: Based on the film this site provides information on actions individuals can take to become “carbon neutral.”  
<http://www.climatecrisis.net/takeaction/>

Pew Center on Global Climate Change: A non-profit, non-partisan organization with information on solutions to global warming  
[http://www.pewclimate.org/what\\_s\\_being\\_done/](http://www.pewclimate.org/what_s_being_done/)

Seattle Climate Action Plan: A global warming mitigation plan assembled by the city government, businesses, and non-profit organizations. The plan serves as a model for other U.S. cities to develop global warming mitigation actions.  
<http://www.seattle.gov/climate/getInvolved.htm>

U.S. Environmental Protection Agency (EPA) Climate Change: A website providing links to action steps to mitigate global warming. The site also includes detailed information on the type and sources of various greenhouse gases and a current U.S. greenhouse gas emission inventory.  
<http://epa.gov/climatechange/wycd/index.html>

### Renewable Energy Resources

American Solar Electric: An Arizona-based company specializing in the design and installation of solar electric power for commercial, industrial, and residential locations  
[http://www.americanpv.com/c\\_about.php](http://www.americanpv.com/c_about.php)

Database of State Incentives for Renewables and Efficiency: Information on federal, state, utility, and local incentives for renewable energy and energy efficiency  
<http://www.dsireusa.org/>

Geothermal-biz.com: Information on geothermal energy opportunities for businesses, Native American tribes, homeowners, and individuals  
<http://www.geothermal-biz.com/home.htm>

New Mexico Coalition for Clean and Affordable Energy: Information on renewable energy installation, incentives, and organizations in New Mexico  
<http://www.nmccae.org>

U.S. Department of Energy Wind Powering America: This site documents wind power potential and wind energy opportunities for states, businesses, communities, and Native American tribes.  
<http://www.eere.energy.gov/windandhydro/windpoweringamerica/>

**INSTITUTE FOR  
ENVIRONMENT AND SOCIETY**

#### ISPE Contact Information:

Jonathan Overpeck, *Director*  
jto@u.arizona.edu  
(520) 622-9065

Gregg Garfin, *Deputy Director for Outreach*  
gmgarfin@email.arizona.edu  
(520) 622-9016

