

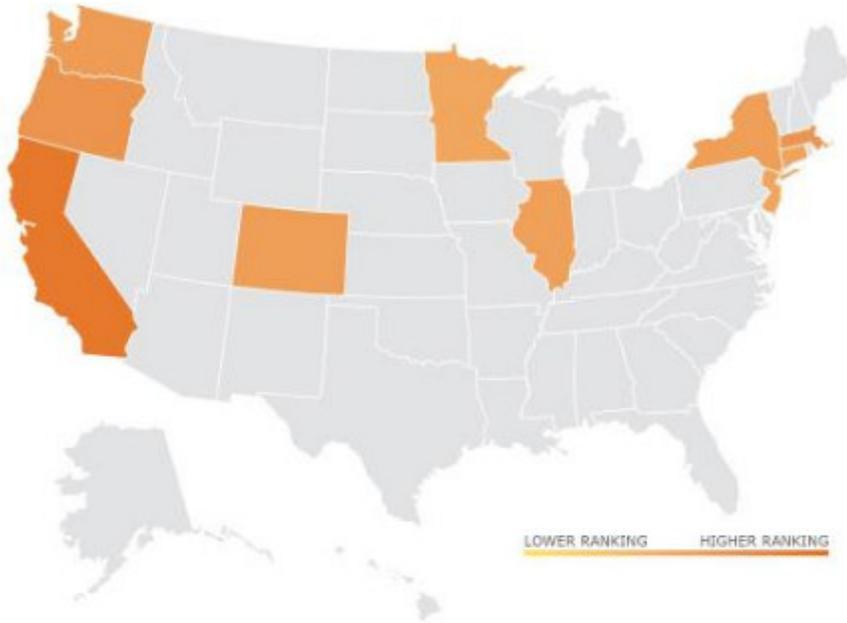
Cool-Cities Messages 2011

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I have excluded messages that were relevant only for the time in which they were sent.

Some of the links may no longer work.

- 1 Jan 2011: There is an excellent web page about hybrid vehicles: [Hybrid Kingdom](#). On the web page is a link for ordering the 2011 Hybrid Vehicle Guide.
- 5 Jan 2011: [Sustainable food trends in 2011](#)
- 5 Jan 2011: Green schools can have a large multiplying effect as their students learn by example: [Center for Green Schools](#); [College Sustainability Report Card](#)
- 7 Jan 2011: [The Great Battery Race](#)
- 8 Jan 2011: [Population of bumble bees has declined disastrously](#).
- 11 Jan 2011: The January issue of Physics Today has an excellent article *Infrared Radiation and Planetary Temperature*. I have summarized the parts of that article relative to global warming in <http://www.roperld.com/science/GlobalWarmingRadiation.htm> . The following quote is the most relevant part of the article for global warming: "For present Earth CO₂ conditions, CO₂ accounts for about a third of the clear-sky greenhouse effect in the tropics and for a somewhat greater portion in the drier, colder extratropics; the remainder is mostly due to water vapor. The contribution of CO₂ to the greenhouse effect, considerable though it is, understates the central role of the gas as a controller of climate. The atmosphere, if CO₂ were removed from it, would cool enough that much of the water vapor would rain out. That precipitation, in turn, would cause further cooling and ultimately spiral Earth into a globally glaciated snowball state. It is only the presence of CO₂ that keeps the Earth's atmosphere warm enough to contain much water vapor. Conversely, increasing CO₂ would warm the atmosphere and ultimately result in greater water-vapor content." Now do you understand why global warming increases global precipitation, which includes snow during winters? I have two web pages about global precipitation: [Precipitation Patterns due to Global Heating](#); [Precipitation Rates Versus Latitude and Longitude](#)
- 12 Jan 2011: I have some honey on my fruit every morning and I used to have bee hives, so the following was of great interest to me and may be of interest to you: <http://www.care2.com/causes/real-food/blog/honey-laundering/>
- 12 Jan 2011: <http://www.thenation.com/article/157434/peak-oil-and-changing-climate>. Another author that is not interviewed in the movie on that web page is James Michael Greer, author of [The Long Descent: A User's Guide to the End of the Industrial Age](#); [The Ecotechnic Future: Envisioning a Post-Peak World](#)
- 17 Jan 2011: [The Guardian's Eco-Power List](#)



U.S. CLEAN ENERGY LEADERSHIP INDEX – TOP 10 STATES

RANK	STATE	SCORE	RANK	STATE	SCORE
1	California	91.6	6	New York	58.6
2	Oregon	68.6	7	Illinois	57.9
3	Massachusetts	67.6	8	Connecticut	55.2
4	Washington	61.8	9	Minnesota	53.4
5	Colorado	59.9	10	New Jersey	52.4

- 21 Jan 2011: Blacksburg needs to join [Project Get Ready](#) to prepare the infrastructure for electric vehicles.
- 21 Jan 2011: <http://news.nationalgeographic.com/news/energy/2011/01/110117-100-percent-renewable-energy/>
- 21 Jan 2011: Dick Dell of [Advanced Vehicle Research Center](#) in Danville has told me about the [Virginia Get Ready](#) project. Dick was on the panel that developed the organization. “It should be an easy task to take what they have done and apply it to Blacksburg.”
- 25 Jan 2011: The Nation’s series on [Peak Oil and a Changing Climate](#)
- 26 Jan 2011: Last evening Sustainable Blacksburg, with financial support of the Mt. Tabor Ruritan Club, had an energy-conservation-in-the-home session at the Blacksburg Public Library. There were over 60 attendees viewing displays by [Sustainable Blacksburg](#), [Energy Check](#), [Baseline Solar](#) and [Association of Energy Conservation Professionals](#) and listening to two talks by Billy Weitzenfeld of AIECP, Dave Roper of Sustainable Blacksburg, Joe Mugavero of Energy Check and Pat Bixler of Baseline Solar. You can view the slides for the four talks through links at <http://www.sustainableblacksburg.org> . Please tell others about this.
- 27 Jan 2011: I have created an [electric-vehicles](#) web page; I also include plug-in hybrids. I will list on the web pages currently or soon-to-be electric vehicles for which detailed specifications are available. So far I have listed: [Chevy Volt](#) (A plug-in hybrid); [Nissan Leaf](#); [Tesla Roadster](#); [Tesla Model S](#); [Ford Focus Electric](#)

- 28 Jan 2011: A study out of Stanford University posits a solar-energy future: <http://www.scientificamerican.com/article.cfm?id=a-path-to-sustainable-energy-by-2030>; <http://www.stanford.edu/group/efmh/jacobson/Articles/I/JDEnPolicyPt1.pdf>; <http://www.stanford.edu/group/efmh/jacobson/Articles/I/DJEnPolicyPt2.pdf>. I have a much-less-detailed web page about the same issue: <http://www.roperId.com/science/SolarFuture.htm>
- 30 Jan 2011: I have created a web page “[Energy Conservation for Renters](#)”. I will probably be adding more to it in the next few days.
- 1 Feb 2011: Details about the new food pyramid: <http://www.mypyramid.gov/>
- 2 Feb 2011: The latest on fracking to extract natural gas from shale: <http://www.care2.com/causes/environment/blog/whats-with-all-this-fracking/>
- 5 Feb 2011: The [Intergovernmental Panel on Climate Change](#), which consists of thousands of climatologist, has given [predictions of extreme weather events due to global warming](#) in the 2007 report. Here is a summary:

Phenomenon and direction of trend	Likelihood of future trends based on projections for 21 st century using SRES scenarios
Over most land areas, warmer and fewer cold days and nights, warmer and more frequent hot days and night	Virtually certain
Warm spells/heat waves. Frequency increases over most land areas	Very likely
Heavy precipitation events. Frequency increases over most areas	Very likely
Area affected by drought increases	Likely
Intense tropical cyclone activity increases	Likely
Increased incidence of extreme high sea level (excludes tsunamis)	Likely

“Precipitation” refers to rain, snow, sleet and hail.

- 5 Feb 2011: Several people have contacted me about energy audits and radiant-energy barriers mentioned in the [Current of The Roanoke Times energy-conservation article on 2 Feb](#). **Energy Audits:** Here are two local

companies that do energy audits. [Community Housing Partners](#); [Energy Check](#). I have had energy audits done by both and highly recommend them.

Window Radiant-Energy Barriers: Here is a web page I have about radiant-energy barriers: <http://www.roperld.com/science/RadiantEnergyBarrier.htm>.

You will see the following links on that page:

<http://www.inflexorpanel.net/about.html>;

<http://www.energyefficiencydr.com/>;

<http://www.inflexorpanel.net/vertblinds.html>;

<http://solarizewindowinsulators.com/index.php/product-applications>. I have been experimenting with the following In'Flector shades: Fixed shade, but reversible between summer and winter; Two-piece shade such the bottom can be easily removed so the window can be opened. Roller shade. I have ordered another shade in three pieces to replace standard window screens in a long window that is never opened. The cost is over \$200 for most windows, depending on the complexity. There are [three layers](#): A perforated aluminum layer with hole sized to allow about 1/3 of the visible light through but not allow much infrared radiation through. A black layer on the back of the aluminum to absorb thermal infrared radiation either from the sun or from objects. A transparent polyester layer to provide stability and stop air flow. The local dealer and installer is **SOLAR TECH, LLC**, Allan Wulff, President, 3305 Hollyfield Circle, SW, Roanoke, VA 24018, Telephone: (540) 776-3440, Home/Fax: (540) 989-0176, Email: solartec@cox.net, Web: olarTechVA.com. The following web pages may also be of interest to you:

<http://www.roperld.com/science/houseenergyrenovation.htm>;

<http://roperld.com/science/energyconservationrenters.htm>;

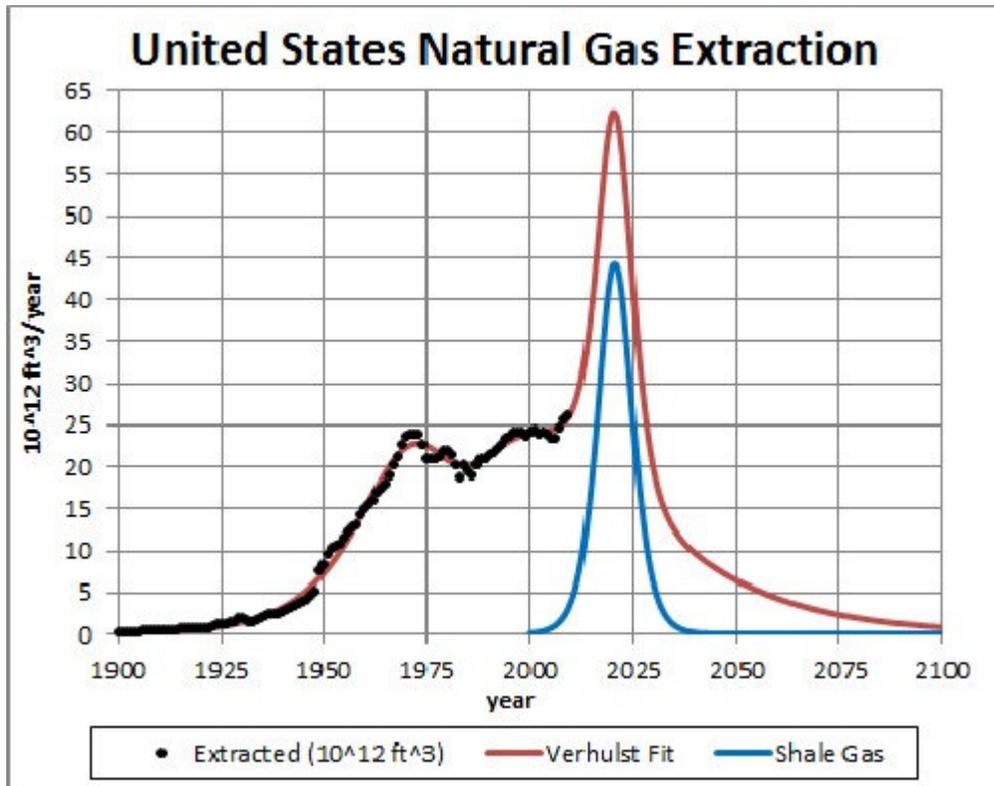
<http://www.roperld.com/science/homeenergyusage.htm>;

<http://arts.bev.net/roperldavid/interdisciplinarystudies.htm>

- 8 Feb 2011: [National Offshore Wind Strategy](#)
- 9 Feb 2011: [Global Warming and Pasture-Raised Beef Production in the U.S.](#)
- 15 Feb 2011: <http://www.care2.com/causes/global-warming/blog/why-wind-is-the-new-coal/>
- 16 Feb 2011: [Climate Counts scorecard for companies](#)
- 20 Feb 2011: I just finished calculations of solar-photovoltaic and solar-hot-water payback periods: <http://www.roperld.com/science/SolarPVPayback.htm>; <http://www.roperld.com/science/SHWPayback.htm>. The payback time for SHW is about half the payback time for PV. (Later: I now advocate that one should consider profit rate on investment instead of payback time.)
- 21 Feb 2011: Greenest cars for 2011: http://www.greenercars.org/highlights_greenest.htm
- 24 Feb 2011: EV charging project: <http://www.theevproject.com/overview.php>
- 1 Mar 2011: [Raising the Steaks: Global Warming and Pasture-Raised Beef Production in the United States](#)

- 1 Mar 2011: [A National Offshore Wind Strategy: Creating an Offshore Wind Energy Industry in the United States](#)
- 1 Mar 2011: [Four degrees and beyond: the potential for a global temperature increase of four degrees and its implications](#). A related book is: [Six Degrees: Our Future on a Hotter Planet](#) by Mark Lynas.
- 9 Mar 2011: [NASA Global Climate Change Key Indicators](#) (graphs versus time of sea level, CO₂ atmospheric concentration, global surface temperature, arctic sea ice, Antarctica and Greenland land ice)
- 9 Mar 2011: FYI from the Roanoke Valley Cool Cities Coalition: The American Lung Association has just released powerful evidence of the health hazards of coal-fired power plants. Our current local energy mix is almost 90% from coal, and we are downwind of the Appalachian power plants that produce these toxics. For example, the EPA and DEQ estimate that half of the particle pollution (PM 2.5) in the Roanoke Valley originates in coal-fired power plants. The negative effects on human health - respiratory, cardiovascular and other - are well-documented by very reliable medical sources.
- 9 Mar 2011: [Why food prices may keep climbing](#)
- 10 Mar 2011: I have posted a web page about Extreme Weather/Climate: <http://www.roperld.com/science/extremeweather.htm>
- 10 Mar 2011: I have heard good words about saving energy and driving aggravation by taking the Megabus between Christiansburg (Falling Branch parking lot) and Washington DC? The schedule and prices are at <http://us.megabus.com/JourneyResults.aspx>. (I later rode it on a round trip to DC; it was great!)
- 10 Mar 2011: I have started the beginnings of a web page Indicators and Consequences of Global Warming: <http://www.roperld.com/science/GlobWarmIndConsq.htm> Check it later for updates.
- 11 Mar 2011: I have finished an analysis of U.S. offshore crude-oil extraction: <http://www.roperld.com/science/minerals/FossilFuels.htm#offshore> . It is far from the country's savior.
- 13 Mar 2011: I finished a web page about the correlation of earthquake strength with increasing sea level: <http://www.roperld.com/science/EarthquakesGW.htm>
- 15 Mar 2011: [Wind: The Center of the Plan B Economy](#) (Earth Policy Institute). [The essential lesson from the Japan earthquake for the U.S.](#) (Scientific American)
- 15 Mar 2011: [Warming World: Impacts by Degree \(National Academy of Sciences\)](#). There are links for downloading the full report and for getting free paper copies.
- 16 Mar 2011: [The Energy-Water Collision: Managing the Rising Tide of Biofuels](#), Union of Concerned Scientists
- 3 Apr 2011: [Solar greenhouses in China](#)
- 17 Apr 2011: Jeff sturgeon wrote an excellent article about electric cars in the Ticker section of The Roanoke Times today: <http://www.roanoke.com/28348/wb/wb/283489>
- 21 Apr 2011: Shale-gas companies are pushing to put shale-gas energy ahead of renewable energy in government policy: <http://www.guardian.co.uk/environment/2011/apr/20/fossil-fuel->

[lobbying-shale-gas](#) . There are many problems with shale gas; one of the biggest is that it will peak in extraction in about a decade since it is being extracted so quickly. See <http://www.roperId.com/science/minerals/shalegas.htm> . Here are some graphs from that web



page: These

curves were created using industry estimates of reserves for the U.S. and assuming world reserves scale to U.S. reserves according to land area ratio. Because of the fast extraction shale-gas prices will go down for the next decade and then will rise precipitously as extraction falls rapidly. It will be difficult for customers and governments to refrain from burning the shale gas as rapidly as possible instead of moving to renewable energy. These curves show that it is very dangerous to put reliance on shale-gas for our energy future. The shale gas should be dedicated to creating the infrastructure for renewable energy rather than burning it for other uses. Your grandchildren will ask “Why did you burn it instead of using it to secure the future?” Energy system needed for the United States (and the World)

- 22 Apr 2011: Is nature warning us about global warming?: <http://www.care2.com/causes/real-food/blog/texas-wildfires-threaten-wheat-crop-drive-food-prices-higher/>
- 23 Apr 2011: Green happenings in British Columbia: [Report Urges Shift from Freeways to Transit](#); [Vancouver Lays Groundwork for Carbon-Neutral Buildings](#)
- 25 Apr 2011: [Germany is considering combining new electric-transmission lines with electric rail lines](#). It is too bad that the U.S. does not have 7800 km of high-voltage electric rail lines, as does Germany, to use as power lines.
- 28 Apr 2011: [Confessions of a Climate Change Convert](#)
- 29 Apr 2011: To follow the progress of the Better Place project for electric cars: <http://www.betterplace.com/>; [Israel project](#); also [see this](#); [Denmark \(in Danish\)](#); [Canada](#); [Hawaii](#); [China](#); [San Francisco \(electric taxis\)](#)

- 30 Apr 2011: [Stanford Study: World can be powered by renewable energy](#)
- 1 May 2011: [NIMBY about solar panels in NJ](#)
- 3 May 2011: Two interesting food web pages: [So All May Eat Café in Denver](#); [Freegans and Others Eat Roadkill](#)
- 15 May 2011: [The Fracking Song](#)
- 16 May 2011: I have created a [web page about the excellent cordless tools](#) that are available. If any of you have suggestions for adding to the list, let me know.
- 7 Jun 2011: McKibben global-warming editorial in Washington Post: http://action.350.org/signup_page/connections
- 14 Jun 2011: Integrating renewable energy with power grid: <http://www.nature.com/news/2011/012345/full/news.2011.307.html>
- 18 Jun 2011: Solar energy at night in Spain: <http://solarenergyutilize.blogspot.com/2011/06/gemasolar-power-plant-still-produces.html>
- 19 Jun 2011: Letter in today's The Roanoke Times: [Renewable energy is the only safe option](#). Remember the 1960s, when we were told that Alaskan oil was going to be the energy savior for the United States? Well, we extracted it so fast that the extraction rate peaked in 1988 and is now almost three times smaller than the peak. Similarly, offshore oil for the U.S. peaked in 2002 and will decline such that very little will be extractable by the end of the century. Reasonable calculations for possible future extraction of crude oil from the Arctic National Wildlife Refuge area of Alaska show it peaking around 2030, then declining rapidly. Now natural gas companies tell us that we have enough natural gas to last 100 years. However, with essentially no environmental regulations for extracting natural gas from shale, the extraction rate is so high that it will peak around 2020, then decline rapidly. (See roperld.com/science/minerals/ShaleGas.htm.) Nuclear power has many insurmountable problems. (See roperld.com/science/NuclearPowerDecline.htm.) And coal is the most dangerous source of energy. So, all we have left without major problems is renewable energy, mainly solar and wind and a few other minor sources. Fortunately, the costs of solar and wind are declining rapidly and their installation is increasing rapidly, especially in Europe and Asia.

- 19 Jun 2011: The largest solar array, 24.8 peak kW, in SW VA is on the Village Green Building in



Floyd:

- 22 Jun 2011: <http://www.wellhome.com/blog/2011/05/the-energy-efficiency-of-movement/>;
<http://www.wellhome.com/blog/2011/05/the-huge-environmental-impact-of-cars/>
- 23 Jun 2011: Germany to opt out of nuclear power:
<http://www.guardian.co.uk/commentisfree/2011/jun/20/germany-nuclear-power-renewable-energy>
- 23 Jun 2011: Should Blacksburg join Project Get Ready? <http://www.projectgetready.org/>
- 28 Jun 2011: [GE Sees Solar Cheaper Than Fossil Power in Five Years](#)
- 28 Jun 2011: [Across Europe, Irking Drivers Is Urban Policy](#)
- 30 Jun 2011: Prius plug-in compared to Chevy Volt:
http://money.cnn.com/2011/06/27/autos/prius_plugin_volt.fortune/. (Also, see <http://www.roperId.com/Science/electricvehicles.htm>.)
- 1 Jul 2011: Community solar financing: <http://solarmosaic.com/>
- 2 Jul 2011: [2010 state of the climate](#)
- 6 Jul 2011: Personal electric vehicles: The [Aug/Sep-2011 issue of HomePower magazine](#) has an excellent article about person electric vehicles. I have attached the article. I have an [electric-assisted folding bicycle](#) that I use to move around Blacksburg. Here it is unfolded and folded:

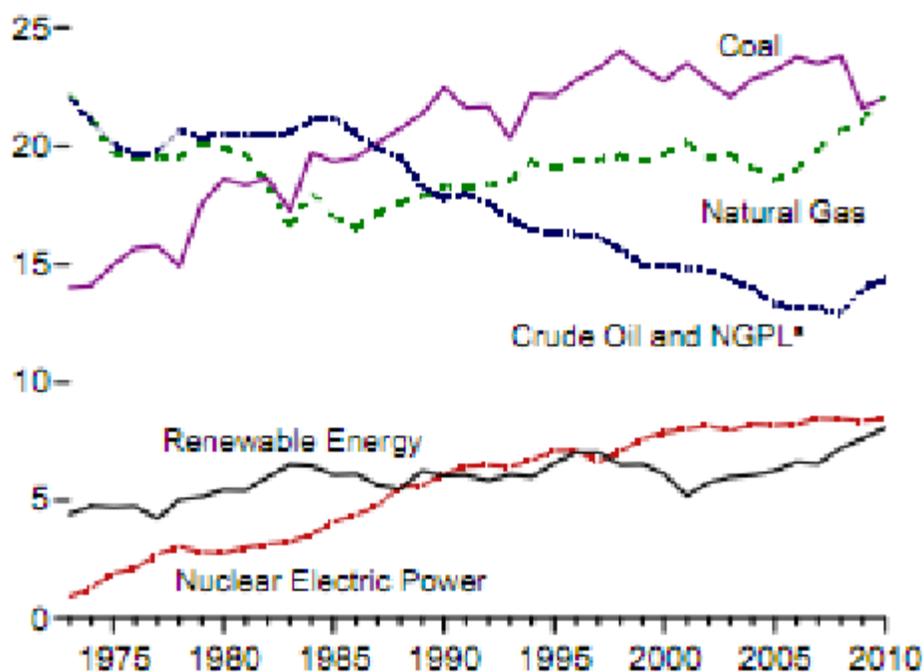


I wish it had

a lithium-ion battery instead of a lead-acid battery.

- 6 Jul 2011: Allowable PV power increased for Virginia: <http://www.governor.virginia.gov/news/viewRelease.cfm?id=792>. The increase is from 10 kW to 20 kW.
- 7 Jul 2011: The [latest monthly energy report for the U.S.](#) (10^{15} BTU/year unit) gives:

By Source, 1973-2010



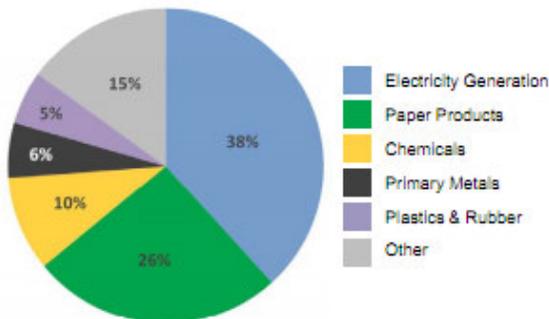
Note that nuclear power has been fairly level for many years, as has coal power with large fluctuations. Note that renewable power has climbed steadily since 2001. Note that natural-gas power has climbed rapidly since 2005 due to the fact that the lack of environmental controls has made it easy to extract from shale. My [web page on shale gas](#) shows that the extraction is so fast that it will peak in about a decade and then decline rapidly. Of course, crude-oil power has declined

steadily since 1985, mainly because extraction of crude oil peaked for the U.S. about a decade before then.

- 7 Jul 2011: [climate change and your health](#)
- 10 Jul 2011: Return of the Dust Bowl?: [U.S. farmers fear the return of the Dust Bowl](#); [Ogallala Aquifer](#); [Ogallala decline](#); 5 July 2011 Tucson & Phoenix AZ dust storm (Read about the Dust Bowl: [Worst Hard Time](#))
- 12 Jul 2011: [Developing countries leading in renewable energy](#)
- 12 Jul 2011: [Rescue of a humpback whale from a fish net](#)
- 13 Jul 2011: [Climate Reality Project](#)
- 14 Jul 2011: [Pocket seafood guide](#)
- 14 Jul 2011: [Adapting to sea level rise in Virginia Beach](#)
- 18 Jul 2011: Benefits of owning a hybrid vehicle: <http://www.consumer-car-reviews.com/benefits-of-a-hybrid/>
- 19 Jul 2011: [Loss of Top Predators is “Humankind’s Most Pervasive Influence on Nature”](#)
- 19 Jul 2011: [Making biodiesel on a Vermont farm](#)
- 21 Jul 2011: [Recycling statistics](#)
- 21 Jul 2011: [Renewable energy is growing despite the recession](#); [Community renewable energy](#)
- 22 Jul 2011: [5 myths about extreme weather](#)
- 26 Jul 2011: [How Power Plants Contaminate Our Air and State](#):

Toxic Industrial Air Pollution in Virginia

Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lbs)	% of State Toxic Air Pollution
Electricity Generation	9,649,261	38%
Paper Products	6,488,679	26%
Chemicals	2,470,838	10%
Primary Metals	1,418,573	6%
Plastics & Rubber	1,383,167	5%
Other	3,794,829	15%
Total	25,205,367	100%

Virginia Key Facts

Toxic Air Pollution
Virginia's electric sector ranked **14th** in toxic air pollution in 2009, emitting over **9.6 million pounds** of harmful chemicals, which accounted for **38%** of state pollution and **3%** of toxic pollution from all U.S. power plants.

Mercury Pollution
Virginia ranked **28th** among all states in mercury air pollution from power plants with about **700 pounds** emitted in 2009, which accounted for **66%** of state mercury air pollution and **1%** of U.S. electric sector pollution.

Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lbs)		Pollution Control Update?
		All Toxics	Mercury	
Chesterfield	Dominion	2,741,988	180	●
Chesapeake	Dominion	2,023,315	140	
Clinch River	AEP	1,159,899	59	
Yorktown	Dominion	1,056,592	89	
Bremo Bluff	Dominion	575,957	98	
Clover	Dominion, Old Dominion Electric Coop.	381,555	15	
Hopewell Cogeneration	SUEZ Energy	326,472	0	
James River Cogeneration	Cogentrix	292,404	17	●
DEGS of Narrows LLC	Duke	234,376	34	
Glen Lyn	AEP	217,028	15	

● Pollution controls have been installed since 2009 or are currently under construction. These investments should reduce emissions of mercury and other toxic air pollutants in future years.



Note: The possibility of already planned retirements or pollution controls at the listed plants may also reduce emissions in future years.
Sources: EPA's Toxics Release Inventory (2009 data), accessed June 2011; EPA's National Electric Energy Data System Database v.4.10 (2010).

Virginia is in the top 20 states for toxic air:

The Toxic Twenty

Power plants are the leading sources of toxic air pollution in all but four of the top 20 states by electric sector emissions.

State	Electric Sector Rank by In-State Toxic Air Pollution	Total Industrial Toxic Air Pollution (lbs)	Electric Sector Toxic Air Pollution (lbs)	Electric Sector Contribution to State Toxic Air Pollution (%)	Status of State Mercury Regulations
Ohio	1	88,883,474	44,545,704	65%	
Pennsylvania	1	50,527,280	41,459,532	82%	
Florida	1	49,039,948	33,442,431	68%	
Kentucky	1	41,340,348	31,947,066	77%	
Maryland	1	29,887,235	27,092,233	91%	●
Indiana	1	39,834,894	28,798,135	68%	
Michigan	1	31,278,291	22,731,782	73%	●
West Virginia	1	25,493,281	21,486,888	84%	
Georgia	1	41,907,848	18,746,817	44%	●
North Carolina	1	30,298,011	14,907,994	49%	●
South Carolina	1	26,774,040	11,453,391	43%	●
Alabama	2	28,573,077	11,418,248	40%	
Texas	2	39,442,151	10,155,177	26%	
Virginia	1	25,205,367	9,649,281	38%	
Tennessee	1	25,070,589	8,864,747	35%	
Missouri	1	12,011,826	6,380,329	53%	
Illinois	1	23,917,015	5,583,222	23%	●
Wisconsin	2	12,810,181	3,451,772	27%	●
New Hampshire	1	2,633,143	2,519,876	96%	●
Iowa	4	15,370,670	2,486,771	16%	
Toxic 20 Total	1	620,069,428	354,600,794	57%	
U.S. Total	1	771,580,707	381,740,601	49%	

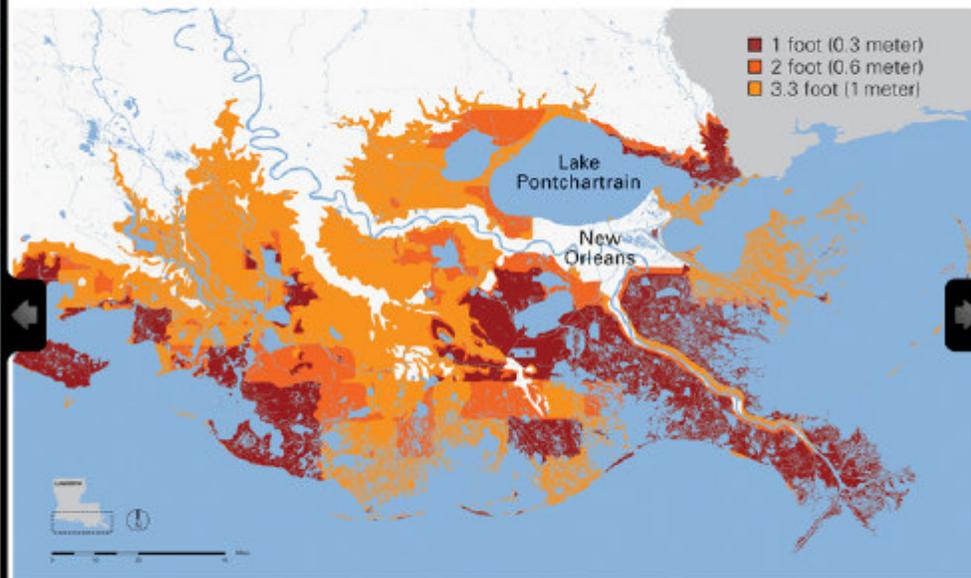
- State has electric sector mercury regulations that are at least as stringent as EPA's proposed utility air toxics rule.
- State has electric sector mercury regulation that are less stringent than EPA's proposed utility air toxics rule.



Note: A table summarizing the emissions from all states is available in the appendix.
Sources: EPA's Toxic Release Inventory (2009 data), accessed June 2011; State environmental departments.

- 29 Jul 2011: Water issues for cities due to global warming: <http://www.nrdc.org/water/thirstyforanswers.asp>

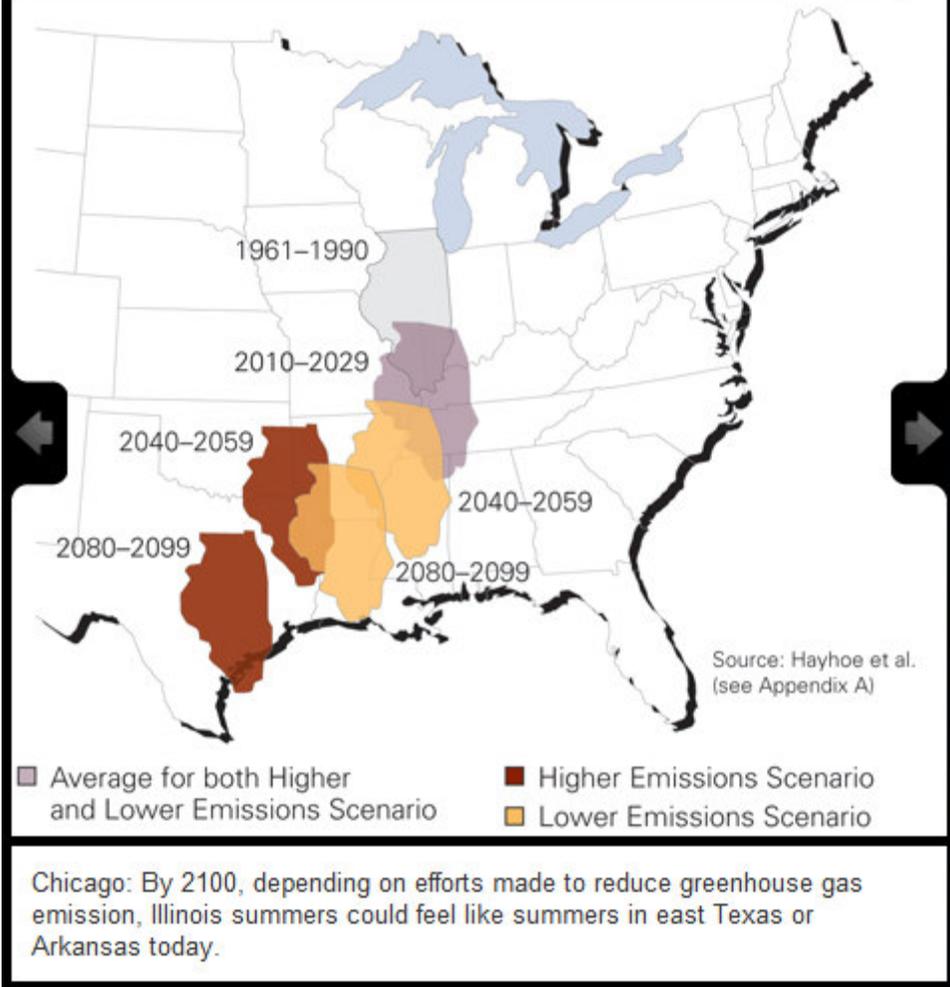
Figure 5.4: Potential wetland submersion by 2100



Source: Adapted from Carbonell and Meffert (see Appendix A)

New Orleans: If the impacts of sea level rise on wetlands are not checked, metropolitan New Orleans could eventually sit on land almost completely surrounded by the open waters of the Gulf of Mexico.

Figure 6.4: Illinois's projected "climate migration" due to changes in summer average temperatures and rainfall



Where does Texas end up after Illinois takes its "spot"?:

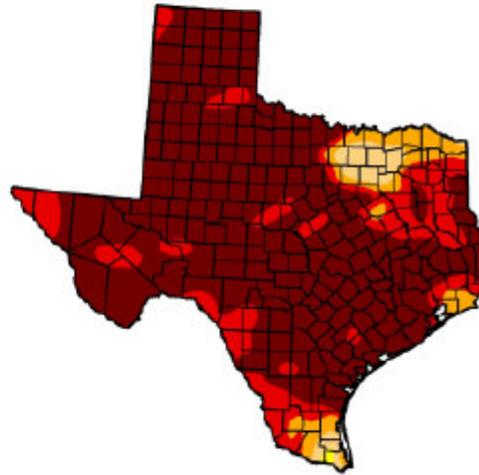
U.S. Drought Monitor

Texas

July 26, 2011
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	99.85	96.88	91.65	75.23
Last Week (07/19/2011 map)	0.00	100.00	98.86	95.78	91.19	75.15
3 Months Ago (04/29/2011 map)	0.00	100.00	100.00	94.97	70.42	17.16
Start of Calendar Year (12/28/2010 map)	7.89	92.11	69.43	37.46	9.59	0.00
Start of Water Year (09/29/2010 map)	75.57	24.43	2.43	0.99	0.00	0.00
One Year Ago (07/29/2010 map)	82.43	17.57	7.37	0.81	0.00	0.00



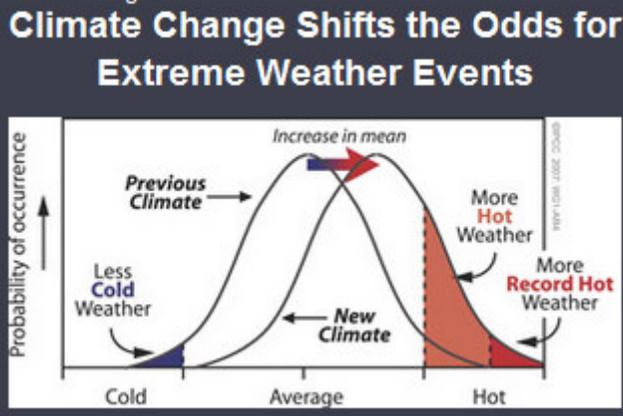
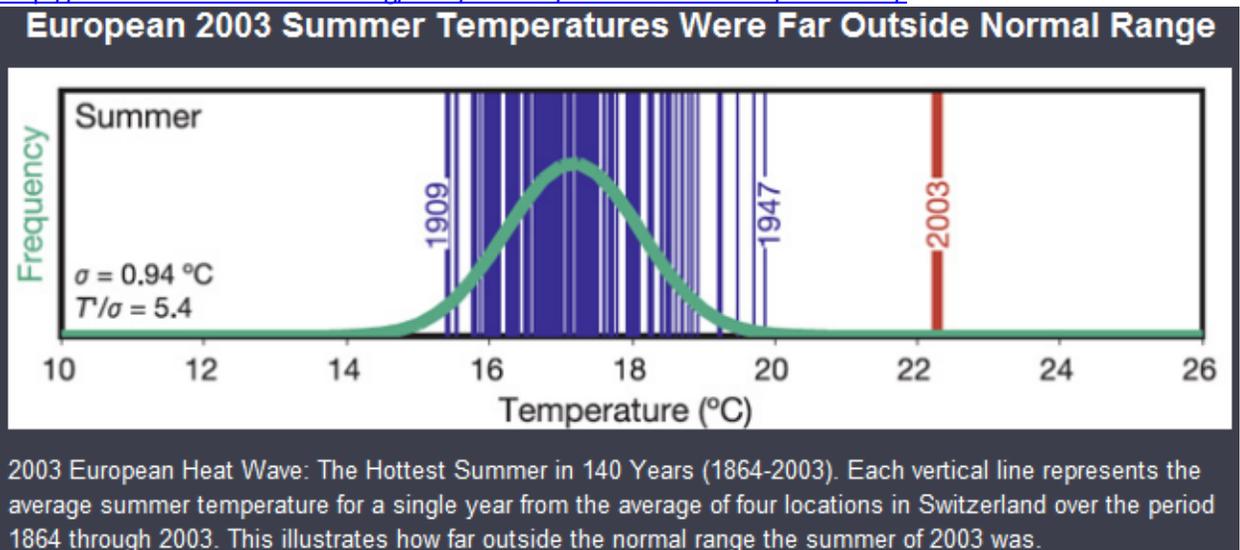
Intensity:



- 4 Aug 2011: [Denmark plans to be free of fossil-fuel use by 2050.](#)
- 4 Aug 2011: [GM to install solar charging stations at Chevy Volt Dealerships](#)
- 7 Aug 2011: [Cost of CO2 emissions higher than previously thought](#)
- 8 Aug 2011: <http://www.climatehotmap.org/>
- 9 Aug 2011: [Union of Concerned Scientist Model-E ideal car](#)
- 14 Aug 2011: [Freiburg Charter for Sustainable Urbanism](#); Also, see <http://www.planetizen.com/node/50883>
- 17 Aug 2011: The U.S. is establishing an Eco-Network. See the 11 Aug issue of Nature. Massive arrays of instruments will be taking data for different ecological regions as shown here:



- 18 Aug 2011: [5 ways to start your green home renovation](http://www.roperld.com/science/houseenergyrenovation.htm). For more local information, see <http://www.roperld.com/science/houseenergyrenovation.htm>. For information about local home renovations, see <http://www.sustainableblacksburg.org/resources/GreenBuildBburg.html>. For a list of some of the green businesses in the NRV, see <http://www.roperld.com/science/greenbusinessesnrv.htm>
- 22 Aug 2011: [IPCC special report on renewable energy sources and climate change mitigation](http://www.ipcc.ch/publications_and_materials/special_reports/special_report_renewable_energy_sources_and_climate_change_mitigation/)
- 24 Aug 2011: I am working on an article about fossil-fuels extraction: <http://www.roperld.com/science/minerals/FossilFuelsExtraction.pdf>
- 9 Sep 2011: <http://1bog.org/blog/infographic-solar-saves-america/>
- 11 Sep 2011: <http://www.care2.com/causes/nuclear-experts-say-u-s-learned-nothing-from-fukushima.html>
- 12 Sep 2011: [Shale gas will not reduce global warming](http://www.care2.com/causes/shale-gas-will-not-reduce-global-warming)
- 15 Sep 2011: <http://www.care2.com/causes/dirty-diaper-recycling-eliminates-110000-tonnes-of-ghgs.html>
- 20 Sep 2011: Here are some revealing graphs from the web page <http://climatecommunication.org/new/articles/extreme-weather/overview/>:



I have two web pages about extreme weather and climate change: <http://www.roperld.com/science/ExtremeWeather.htm>; <http://www.roperld.com/science/extremeweather-tornadoes.htm>