

# Cool-Cities Messages 2010

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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.

- 7 Jan 2010: Check out this description of a [dual-mode electric-car car-bus system](#). 11 Jan 2010: If you have not already read it, you should read James Hanson's book: [Storms of My Grandchildren: The Truth About the Coming Climate Catastrophe and Our Last Chance to Save Humanity](#). He deals in great detail with the complexities of climate change.
- 14 Jan 2010: ECO-ECONOMY INDICATOR: PAST DECADE THE HOTTEST ON RECORD: [www.earthpolicy.org/index.php?/indicators/C51/global\\_temperature\\_2010](http://www.earthpolicy.org/index.php?/indicators/C51/global_temperature_2010)
- 16 Jan 2010: FYI below. Relative to some of what it discusses, I have completed the following calculations: [Arctic Summer Sea Ice Area](#); [Greenland Ice Mass Loss](#); [Antarctica Ice Mass Loss](#). You can access these and many other of my web pages about global warming at <http://www.roperld.com/science/globalwarmingroper.htm>. From Climate Progress, January 4, 2010: Key aspects of the climate are changing faster than expected and if we stay on our current emissions path, we face catastrophe. In 2009, the scientific literature caught up with what top climate scientists have been saying privately for a few years now: Many of the predicted impacts of human-caused climate change are occurring much faster than anybody expected — particularly ice melt, everywhere you look on the planet. If we stay anywhere near our current emissions path, we are facing incalculable catastrophes by century's end, including rapid sea level rise, massive wildfires, widespread Dust-Bowlification, large oceanic dead zones, and 9°F warming — much of which could be all but irreversible for centuries. And that's not the worst-case scenario! The consequences for human health and wellbeing would be extreme. Full story at: <http://climateprogress.org/2010/01/04/the-year-in-climate-science-scientists/>
- 22 Jan 2010: Check out this 46-page report by Physicians for Social Responsibility: [Coals Assault on Human Health](#). [Here is a 16-page summary of it](#). [Here is an article about it](#).
- 24 Jan 2010: Sustain Floyd has a web page: <http://www.sustainfloyd.org/>
- 28 Jan 2010: you might want to check out my new web page: <http://www.roperld.com/science/GlobalWarmingGraphs.htm>
- 3 Feb 2010: The new local organization Renewable Energy Electric Vehicle Association (REEVA), founded by Mark Hanson of Fincastle, now has a [web page](#).
- 8 Feb 2010: <http://www.verticalfarm.com/>
- 10 Feb 2010: Facts of Cap and Trade video: <http://www.youtube.com/watch?v=fwN1OwdUkgg>
- 10 Feb 2010: [Effect of global warming on oceans](#)
- 15 Feb 2010: San Francisco area prepares for the electric car: <http://www.nytimes.com/2010/02/15/business/15electric.html?th&emc=th>
- 17 Feb 2010: [Cap and Dividend talk by Mike Tidwell](#)
- 23 Feb 2010: [Cost of nuclear power](#)
- 23 Feb 2010: Hampton Roads VA sea level rise: [http://www.vims.edu/research/units/programs/icccr/docs/coastal\\_sea\\_level.pdf](http://www.vims.edu/research/units/programs/icccr/docs/coastal_sea_level.pdf)
- 25 Feb 2010: Mobility in the world of \$200 oil: <http://evworld.com/currents.cfm?jid=92>

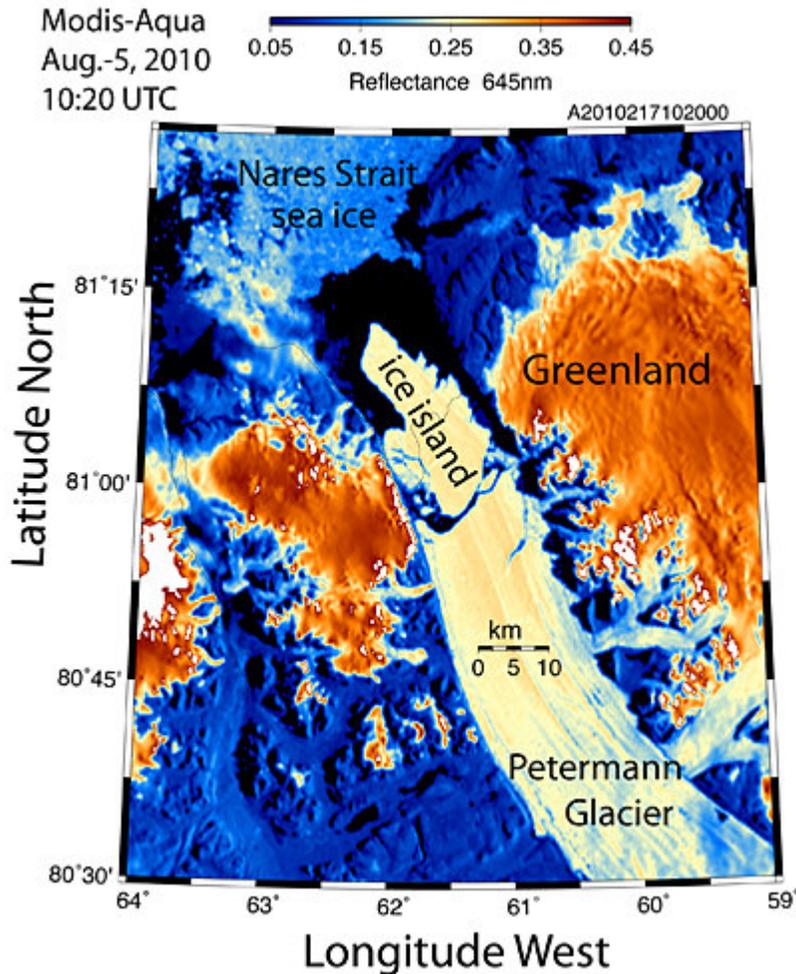
- 1 Mar 2010: Al Gore op-ed in the NY Times: <http://www.nytimes.com/2010/02/28/opinion/28gore.html?emc=eta1> . Al Gore book [Our Choice](#).
- 3 Mar 2010: I am now changing my use of the term "Global Warming" to "[Global Heating](#)", since it is more descriptive of greenhouse gases trapping solar energy in the atmosphere. Thinking about this and the recent snowstorms on the east coast got me to thinking about the increased evaporation and, thus, precipitation, due to global heating. So I just did a study of precipitation history of many countries: <http://www.roperld.com/science/globalheatingprecip.htm> . The effect of increased precipitation for coastal lands and decreased precipitation for non-coastal lands is obvious
- 4 Mar 2010: Plugless electric-car charging in Wytheville VA: <http://evworld.com/news.cfm?newsid=22942>; <http://www.pluglesspower.com/>
- 4 Mar 2010: Richard Hirsch had an excellent op-ed article in the Roanoke Times this morning: <http://www.roanoke.com/editorials/commentary/wb/238596>
- 7 Mar 2010: I just did a study of precipitation versus latitude and longitude for the last six decades: <http://www.roperld.com/science/PrecipLatitude&Longitude.htm> . It also includes graphs of temperature versus latitude and longitude for the last six decades, clearly showing that the last decade has the highest temperatures for all latitudes and longitudes except for the longitudes of the Americas.
- 8 Mar 2010: Energy system of the future: <http://www.newenergynexus.org/>
- 9 Mar 2010: [Solar, wind and other renewable power sources could meet nearly all North Carolina electricity needs.](#)
- 9 Mar 2010: [On Rooftops Worldwide, a Solar Water Heating Revolution](#)
- 12 Mar 2010: Major new book on sustainability: Arising from the 1st Interdisciplinary Nobel Laureate Symposium on Global Sustainability in Potsdam, this book brings together Nobel Laureates in Physics, Chemistry, Medicine, Economics and Peace - top-level representatives from politics and NGOs, and renowned experts on sustainability. In an unparalleled attempt to address humankind's transformation to global sustainability, the authors explore the best scientific and political strategies for reconciling our civilization with its physical and ecological support systems. The book features a radically interdisciplinary approach through a broad range of contributions, covering the latest insights from climate impact research, environmental economics, energy resource analysis, ecosystems science, and other crucial fields. Information about the book is at: <http://www.pik-potsdam.de/news/press-releases/new-book-rises-to-the-global-sustainability-challenge>. The free download site is: <http://www.nobel-cause.de/book>. A hard-copy can be purchased from [Amazon.com for \\$70](#).
- 22 Mar 2010: [Good summary of global heating](#) in The Economist
- 27 Mar 2010: [New way of fish farming could help fix environment: Biologists study whether sea creatures could be used to counteract damage to ecosystems](#)
- 28 Mar 2010: [Biofuel from algae from wastewater at Hopewell VA](#)
- 1 Apr 2010: [Letter of Stewart & Lee Udall to their grandchildren](#)
- 13 Apr 2010: [U. S. is behind Europe in getting clean energy from trash](#)
- 14 Apr 2010: That national security warning we've been dreading, from the *The Guardian*, April 11. (Sad to hear critical American news first from a source abroad): <http://www.guardian.co.uk/business/2010/apr/11/peak-oil-production-supply>.
- 22 Apr 2010: [Interview with Dr. James Hansen](#)

- 25 Apr 2010: [End of peak-oil denial](http://www.roperld.com/science/minerals/FossilFuels.htm#WorldOil). It matches pretty close to my work: <http://www.roperld.com/science/minerals/FossilFuels.htm#WorldOil>
- 28 Apr 2010: Steve Jones says that [human evolution is over](#). Assumptions: Human death rates will remain low; Human population will remain high; Humans' health will remain high; Globalization will remain high; Age of reproduction will remain low.
- 29 Apr 2010: [Top 10 myths about electric cars](#)
- 29 Apr 2010: The complete guide to modern day climate change All the data you need to show that the world is warming: <http://climateprogress.org/2010/04/14/the-complete-guide-to-modern-day-climate-change/>
- 29 Apr 2010: [The Complete Guide to Modern Day Climate Change](#)
- 2 May 2010: The May/June 2010 issue of [MIT's Technology Review magazine](#) has a very interesting [flow chart of U.S. energy use](#).
- 20 May 2010: Steel Interstate System: <http://www.railsolution.org/uploads/PDF/SteelInterstateFlier.pdf>; <http://www.railsolution.org/uploads/PDF/SIS90-secovrvw3.1.pdf>
- 20 May 2010: [Three National Research Council reports on climate change](#)
- 24 May 2010: [Certainty vs uncertainty in science](#)
- 9 Jun 2010: [Tar sands oil, another environmental disaster](#)
- 10 Jun 2010: [Lloyd's of London white paper on Sustainable Energy Security](#)
- 13 Jun 2010: Recommended reading: [Stop wasting scarce resources by Alwyn Moss](#); [We've brought our woes on ourselves by E. A. Paull](#); [Drilling for only six day's worth of oil is absurd by Kathryn Harris](#); [This time is different by Thomas L. Friedman](#)
- 14 Jun 2010: We need to change the vocabulary about energy: Oil is "extracted", not "produced"; "produced" implies that when more is wanted one only has to make more. We don't "need" all the oil and energy we get, we "want" it. We can reduce our wants. There needs to be a "carbon fee" for dumping carbon into the atmosphere, not a "carbon tax". You do not pay a "tax" for dumping trash in a dump, you pay a "fee".
- 15 Jun 2010: I sent the following letter to The Roanoke Times: Dear Editor: The oil industry assured us that it was safe to drill for oil in the deep ocean. We should have known better because of the many oil spills that have occurred during the last few decades. Search the words 'oil spills' and 'history' on the Internet to learn about them. Some are proposing that we increase energy production from nuclear reactors because the new reactor designs are safe. Again, we should know better because of the many radioactive spills that have occurred during the last few decades. Search the words 'nuclear accidents' and 'history' on the Internet. If we become highly dependent on nuclear energy we will be in a very dangerous situation when the next big nuclear accident occurs that contaminates large areas of our country. That contamination will last much longer than any oil-spill contamination. Also, nuclear energy is not renewable. After we mine the easy uranium ore, nuclear energy will be more costly than solar energy. We have no choice but to rely on solar energy, direct and indirect (e.g. wind), in the future. We should quickly institute a large national project to expand our use of solar energy. Yours, Dave Roper
- 22 Jun 2010: Some of you may have read [books by James Howard Kunstler](#): The two most recent are: [The Long Emergency: Surviving the End of Oil, Climate Change, and Other Converging Catastrophes of the Twenty-First Century](#); [World Made by Hand: A Novel](#). You may agree with some critics that his view is too catastrophic. Well, here is his latest catastrophic view: [Mismanaging Contraction](#) At the bottom of that web page he mentions his post-oil America sequel to the *World Made by Hand: The Witch of Hebron* to be published in September 2010.

- 26 Jun 2010: [Two important questions](#): Where does it come from? Where does it go?
- 27 Jun 2010: I just did an interesting small study of the average life expectancy at birth in the United States: <http://www.roperld.com/science/LifeExpectancyUS.htm>. An interesting result is that it is headed for an asymptote of ~79 years.
- 5 Jul 2010: Letter to The Roanoke Times: Your recent articles about widening Interstate 81 in Roanoke and Montgomery counties do not take into account the following two very important facts: The daily vehicle miles (in millions of miles) traveled in Roanoke and Montgomery counties have decreased since 2004. They are 2004: 2.55; 2005: 2.52; 2006: 2.52; 2007: 2.52; 2008: 2.40; 2009: 2.46. Crude-oil extraction averaged over several years is decreasing for the world. As the amount of crude oil available to refine gasoline decreases, the miles traveled on roads will similarly decrease because gasoline prices will increase. I have done a good linear fit of the data given above to the average world crude-oil extraction for those dates and projected the fit to year 2100. The results are that the daily vehicle miles traveled on I-81 for those two counties will be about 1.5 million miles in 2050 and almost down to 1 million miles in 2100. We should be putting our tax money into building railroads instead of roads. Yours, Dave Roper
- 6 Jul 2010: Roanoke Valley Cool Cities Coalition: <http://www.rvccc.org> 8 Jul 2010: Solar airplane flies 26 hours: [http://www.nytimes.com/2010/07/09/world/europe/09plane.html?\\_r=1](http://www.nytimes.com/2010/07/09/world/europe/09plane.html?_r=1)
- 13 Jul 2010: <http://www.roanokevalleylocavore.com/>
- 14 Jul 2010: [Have you read Natural Awakenings magazine?](#)
- 15 Jul 2010: Electric vehicles tipping point: <http://evworld.com/news.cfm?newsid=23641>
- 17 Jul 2010: I recently installed The Energy Detective in our house: <http://www.roperld.com/science/homeenergyusage.htm>
- 22 Jul 2010: [Here is a web page about lawn-mower emissions.](#) [Here is a web page about carbon emissions saved by gardening and composting garden wastes.](#)
- 22 Jul 2010: The Roanoke Valley Cool Cities Coalition as a web page of wind-energy links: <http://www.rvccc.org/wind-links.html>
- 27 Jul 2010: <http://www.care2.com/causes/global-warming/blog/electric-vehicle-fleets/>
- 28 Jul 2010: I just sent the following letter to The Roanoke Times: Dear Editor: Global warming deniers have finally begun to concede that global warming is real, but are now staking their case on claiming that it is not caused by human activities. They are wrong again. The last half million years have had four long major ice ages and five short major interglacials, including the interglacial we are in now (Antarctica ice cores data). Those and other data indicate that doubling the carbon in the atmosphere increases the average earth temperature by about 3 degrees Celsius in the short term and about 6 degrees long term. Since the beginning of the industrial revolution humans have increased the carbon in the atmosphere by about 42% and it continues to rise at over 2% per year. When it reaches 100% we can expect the average earth temperature to increase by 3 degrees, and much more in the long run, which will cause disastrous effects on human habitation, including flooding coastal cities and mass migrations to more desirable places. If we continue to burn finite fossil fuels, the spewing of carbon into the atmosphere will peak at about year 2100 and then slowly fall; so after the global-warming disasters there will be a mild respite. Yours, L. David Roper 29 Jul 2010: [Here is another web page about the social cost of energy.](#)
- 29 Jul 2010: [Social Costs of Energy Consumption: External Effects of Electricity Generation in the Federal Republic of Germany](#) (Paperback) by Olav Hohmeyer. I am working on a web page about that subject. (Later web page: <http://www.roperld.com/science/minerals/energysocialcost.htm>)
- 29 Jul 2010: <http://theenergycollective.com/oshadavidson/40559/study-solar-power-cheaper-nuclear>

- 30 Jul 2010: Recently hot years have got me to wondering if the Roanoke and New River vallies are now subtropical. So I collected the average monthly temperature data for the months of 2009 and found the following: Roanoke Valley (actually Roanoke) is subtropical by 2 of the 3 different definitions for subtropical regions. New River Valley (actually Blacksburg) is subtropical by 1 of the 3 different definitions for subtropical regions. For details see <http://www.roperld.com/science/subtropicalnrv.htm> .
- 7 Aug 2010: I have created a web page about the leveling off of the global fish catch and its possible future decline and related it to the rapid decline in the phytoplankton density (fish food) since about 1950. The decline in phytoplankton density is undoubted due to the rapid rise since 1950 of carbon-dioxide concentration in the atmosphere, and thus in the ocean. See <http://www.roperld.com/science/peakfish.htm> .
- 7 Aug 2010: Converting old cars to electric: <http://www.care2.com/causes/global-warming/blog/retrofitting-remarketing-trash/>
- 8 Aug 2010: I have done a study of how precipitation has changed for many countries due to global heating. I find that there is a near linear decline in precipitation as a function of increasing land-area/coast-length for countries: <http://www.roperld.com/science/globalheatingprecip.htm>. China is in dire straits because of its large land-area/coast-length.
- 8 Aug 2010: <http://www.care2.com/causes/human-rights/blog/power-and-houses-to-the-people-can-haiti-be-rebuilt-with-old-tires-and-heart/>

- 9 Aug 2010: An ice island the size of Manhattan Island has broken off of Greenland:



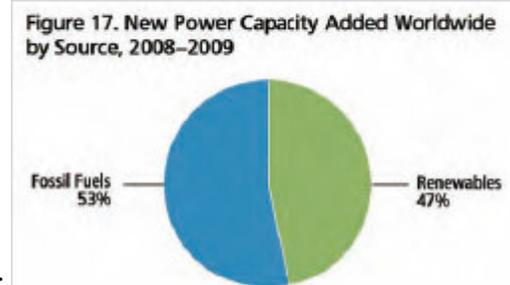
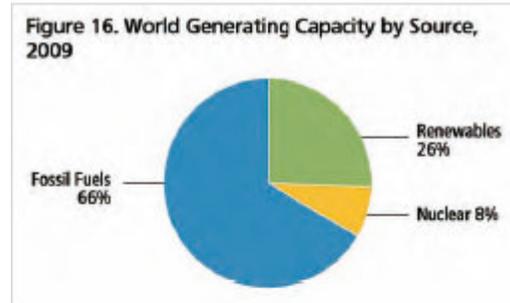
- 18 Aug 2010: <http://www.care2.com/causes/environment/blog/Mockumentary-The-Long-Journey-of-the-Plastic-Bag/>
- 23 Aug 2010: I just sent this letter to The Roanoke Times: Dear Editor: Recent letters indicate misunderstanding of the relationship between polar ice melting and sea level rise. Melting of floating ice does not raise sea level very much, only a little due to thermal expansion. Melting of ice sheets and glaciers on land does raise sea level. If the Greenland ice sheet were to all melt, sea level would rise by about 23 feet. If the Antarctica ice sheet were to all melt, sea level would rise by about 200 feet. Glaciers contain about 1% of the water in ice sheets; if they were all to melt they would contribute about 3 feet to sea-level rise. I have two web pages that might be of interest to those who enjoy the mathematics of this matter:  
<http://www.roperld.com/science/GlobalIceMassLoss.htm>;  
<http://www.roperld.com/science/sealevelvstemperature.htm> . Yours, L. David Roper
- 24 Aug 2010: In [The Flooded Earth](http://www.floodedearth.com/), species extinction expert Peter Ward describes in intricate detail what our world will look like in 2050, 2100, 2300, and beyond — a blueprint for a foreseeable future. Ward also explains what politicians and policymakers around the world should be doing now to head off the worst consequences of an inevitable transformation.  
<http://www.floodedearth.com/>
- 24 Aug 2010: August 21, 2010 marks the day in which we exhaust our ecological budget for the year. Once we pass this day, humanity will have demanded all the ecological services that nature

can provide this year. From that point until the end of the year, we meet our ecological demand by liquidating resource stocks and filling up waste sinks.

[www.footprintnetwork.org/en/index.php/GFN/page/earth\\_overshoot\\_day/](http://www.footprintnetwork.org/en/index.php/GFN/page/earth_overshoot_day/)

- 28 Aug 2010: The end of antibiotics: Have you been keeping up with this issue: <http://www.guardian.co.uk/society/2010/aug/12/the-end-of-antibiotics-health-infections> . This will really compound all the other problems we face!
- 29 Aug 2010: I have created a web page about recycling in Blacksburg: <http://www.roperld.com/science/recycling.htm>. Not the Packing Material section and the interesting link about chewing-gum recycling at the end. If you have suggestions about additions to it, let me know.
- 8 Sep 2010: Genetically engineered crops: [http://www.youtube.com/watch?v=1H9WZGKQeYg&feature=player\\_embedded](http://www.youtube.com/watch?v=1H9WZGKQeYg&feature=player_embedded)
- 16 Sep 2010: <http://www.miller-mccune.com/environment/busting-myths-about-photovoltaics-22718/>
- 19 Sep 2010: Last night I saw the movie, [Gasland](#), about the [social costs](#) of [extracting natural gas from shale deposits](#). The movie helps to understand why natural-gas consumer rates have been going down in recent years. If the severe social costs were added, those rates would be going up.
- 21 Sep 2010: Check out: <http://www.hokies4hens.com/>
- 21 Sep 2010: [Solar Cell Production Climbs to Another Record in 2009](#)
- 22 Sep 2010: [Wal-Mart: Green or Greenwashing?](#)
- 23 Sep 2010: The unveiling of the psychedelic BT hybrid bus today tuned me to a web page I just discovered about an [electric bus with swappable batteries](#). Maybe a few years from now BT will unveil such an electric bus!
- 24 Sep 2010: [Natural Disasters of 2010: The Wrath of Global Warming](#)
- 27 Sep 2010: As of 24 September 2010 there were 62,114 hybrid vehicles registered in Virginia; 98 of which were registered in Blacksburg. That is, 0.16% of hybrid vehicles in Virginia are in Blacksburg. Blacksburg has about 0.54% of the population of Virginia.
- 30 Sep 2010: Electric cars in U.S. & China: [http://www.nytimes.com/2010/09/26/opinion/26friedman.html?\\_r=2&emc=eta1](http://www.nytimes.com/2010/09/26/opinion/26friedman.html?_r=2&emc=eta1)
- 1 Oct 2010: Reforestation of China: <http://www.guardian.co.uk/environment/2010/sep/23/china-great-green-wall-climate>
- 5 Oct 2010: <http://www.virginiaenergysense.org> "Virginia Energy Sense is the Commonwealth's energy education program. Our mission is to help all Virginians understand their energy use and, more importantly, how to save energy easily and cost effectively. Reducing energy consumption will put money in your back pocket. It will also help our state's economy and clean our air, land and water. That's why saving energy just makes good sense."
- 6 Oct 2010: [World's largest PV array is in Canada.](#)
- 12 Oct 2010: UK government climate-change ad: <http://www.care2.com/causes/global-warming/blog/-10-million-climate-change-ad-sponsored-by-uk-government/>
- 13 Oct 2010: Some of you have heard me laud eventually diesel hybrid cars running on biodiesel made from algae. [VW has a high-mileage diesel Passat](#). Imagine what it can do when it is finally made into a hybrid! (Added: and then a plug-in hybrid diesel!)
- 14 Oct 2010: [Renewable-energy projects](#) on [abandoned mines](#), landfills, Superfund sites and [brownfields](#)

- 14 Oct 2010: Chevrolet describes the Volt as a Range Extended Electric Car. Now that Chevrolet has released some [mechanical details of the drive train](#), it is seen to be a series-parallel hybrid, similar but not the same as the Prius.
- 15 Oct 2010: Here is a [very interesting study about combining wind turbines over ~2500 km of the east coast of the US](#) to achieve more continuous power.



- 15 Oct 2010: The following is very encouraging:  
Taken from p.53 of [http://www.ren21.net/globalstatusreport/REN21\\_GSR\\_2010\\_full.pdf](http://www.ren21.net/globalstatusreport/REN21_GSR_2010_full.pdf)
- 17 Oct 2010: I have mostly finished a large web page about *The Solar Future: Why Solar Energy Must Run the World*: <http://www.roperld.com/science/SolarFuture.htm> .
- 21 Oct 2010: [International report on the economic value of nature](#)
- 7 Nov 2010: [Ford web site about electric vehicles](#)
- 9 Nov 2010: Two interesting web pages about powering electric cars by induction: [Charging EVs Wirelessly](#); [Electric Cars without Batteries](#)
- 10 Nov 2010: [Record droughts ahead?](#)
- 18 Nov 2010: [Bike sharing programs are on the rise in the U.S.](#)
- 18 Nov 2010: [Electric cars Public Service Announcements](#)
- 18 Nov 2010: [60-Minutes program on fracking for natural gas](#); [My analysis of shale natural gas depletion](#). It appears that it will be a two-decades phenomenon.

- 19 Nov 2010: Here is an interesting chart from the book [Sustainable Energy – without the hot air](#):

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*Sustainable Energy – without the hot air*

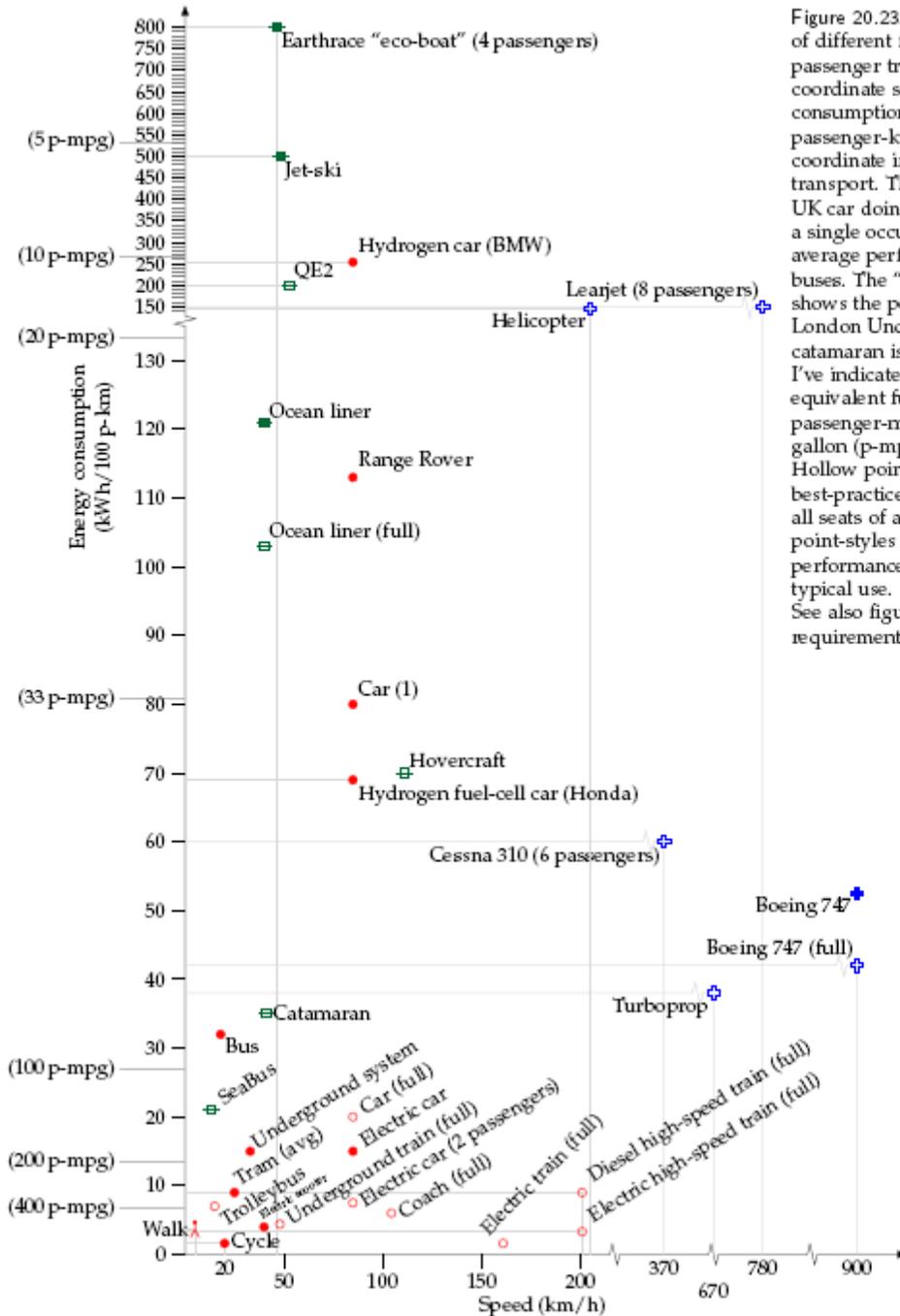


Figure 20.23. Energy requirements of different forms of passenger transport. The vertical coordinate shows the energy consumption in kWh per 100 passenger-km. The horizontal coordinate indicates the speed of the transport. The "Car (1)" is an average UK car doing 33 miles per gallon with a single occupant. The "Bus" is the average performance of all London buses. The "Underground system" shows the performance of the whole London Underground system. The catamaran is a diesel-powered vessel. I've indicated on the left-hand side equivalent fuel efficiencies in passenger-miles per imperial gallon (p-mpg). Hollow point-styles show best-practice performance, assuming all seats of a vehicle are in use. Filled point-styles indicate actual performance of a vehicle in typical use. See also figure 15.8 (energy requirements of freight transport).

- 28 Nov 2010: The EPA ratings are out for the Nissan Leaf and the Chevy Volt. You can see the EPA stickers and other information at <http://www.roperId.com/science/nissanleaf.htm>;
- <http://www.roperId.com/science/chevyvolt.htm>
- 1 Dec 2010: [Residents in the Montgomery County area can now travel to Washington DC and Knoxville TN by Megabus](#)

- 6 Dec 2010: Nature 25 Nov 2010, vol. 468, p.489: The destruction of the Brazilian rain forest is slowing down. See <http://www.roperld.com/science/rainforests.htm> .
- 12 Dec 2010: [Portland OR climate action plan is working](#)
- 16 Dec 2010: [San Jose CA passes ban on disposable shopping bags](#)
- 16 Dec 2010: [Rapid Electric Vehicles](#) in British Columbia is converting Ford F-150 pickups and Ford Escapes to electric vehicles that are capable of providing backup power to houses and bidirectional connection ([V2G](#)) to the grid.
- 16 Dec 2010: [6 myths about electric vehicles:](#)
- 17 Dec 2010: The [Kew Millenium Seed Bank and The Global Crop Diversity Trust have formed a partnership](#) to find, gather, catalogue, use, and save the wild relatives of essential food crops, to help protect global food supplies against the imminent threat of climate change, and strengthen future food security.
- 22 Dec 2010: [The Earth Council has created a long document about subsidizing unsustainable development.](#)
- 24 Dec 2010: [Global Cycle Solutions](#) develops and markets devices powered by bicycles.
- 27 Dec 2010: [Enough is Enough: Ideas for a Sustainable Economy in a World of Finite Resources; Center for the Advancement of the Steady State Economy](#)
- 28 Dec 2010: [New York Restaurants Move Toward Sustainability](#)
- 28 Dec 2010: [Bundle up, it's global warming.](#)
- 31 Dec 2010: [Government organizations have put restrictions on merchants distributing non-biodegradable plastic bags](#)
- 31 Dec 2010: I have revised my [depletion studies of crude-oil extraction to include Canada oil sands and of natural-gas extraction to include shale gas](#). The reality of eminent crude-oil extraction decline is causing [crude-oil prices](#) to rise over time. The reality of the **2-decades bonanza** of natural-gas bonanza has caused [natural-gas prices](#) to fall over time. Of course, crude-oil price rises cause [gasoline price](#) rises for the U.S.
- 31 Dec 2010: I have been doing some reading about the theory of steady-state economies. So I put together a web page about some work I have done related to that: <http://www.roperld.com/science/SteadyStateEconomy.htm>