



## APRIL 2009 TRENDEVENTS

<http://www.latimes.com/news/nationworld/nation/la-na-energy3-2009apr03,0,7532220.story?track=rss>

*From the Los Angeles Times*

### **Wind turbines could more than meet U.S. electricity needs, report says**

The Interior Department report, which looks at the potential of wind turbines off the U.S. coast, is part of the government's process to chart a course for offshore energy development. *jtankersley@tribune.com*

**By Jim Tankersley - April 3, 2009**

Reporting from Arlington, Va. — Wind turbines off U.S. coastlines could potentially supply more than enough electricity to meet the nation's current demand, the Interior Department reported Thursday... Simply harnessing the wind in relatively shallow waters -- the most accessible and technically feasible sites for offshore turbines -- could produce at least 20% of the power demand for most coastal states, Interior Secretary Ken Salazar said, unveiling a report by the Minerals Management Service that details the potential for oil, gas and renewable development on the outer continental shelf.

The biggest wind potential lies off the nation's Atlantic coast, which the Interior report estimates could produce 1,000 gigawatts of electricity -- enough to meet a quarter of the national demand.

The report also notes large potential in the Pacific, including off the California coast, but said the area presented technical challenges.

The Interior Department released an executive summary of the report on Thursday... It noted that "strong wind resources also exist offshore California, Oregon, Washington and Hawaii, but it appears that the majority of this resource lies in deep waters where technology

constraints are potentially significant" -- a sentiment Salazar echoed when asked about Pacific wind potential.

Salazar told attendees at the 25x'25 Summit in Virginia, a gathering of agriculture and energy representatives exploring ways to cut carbon dioxide emissions, that "we are only beginning to tap the potential" of offshore renewable energy.

The report is a step in the Obama administration's mission to chart a course for offshore energy development, an issue that gained urgency last year amid high oil prices and chants of "Drill, baby, drill" at the Republican National Convention.

Critics have accused President Obama and Salazar of dragging their feet on new oil and gas drilling, and Thursday's report does little to rebut those complaints... It includes no new estimates of potential oil and gas reserves offshore and notes that some of the existing estimates are based on 25-year-old seismic studies.

Meeting with reporters after his speech, Salazar said he would wait to decide whether to commission new seismic studies until after he convened a four-stop series of offshore energy hearings, which begin next week in Atlantic City, N.J. In San Francisco, a hearing will be held April 16 at 9 a.m. at the Mission Bay Conference Center at UC San Francisco..

Drilling advocates say updated estimates could show even more offshore oil potential.... In contrast, Salazar said he expected a push to expedite offshore wind development to be one of the most significant aspects at the hearings... He pledged to finalize guidelines for such development, which the Bush administration failed to complete before leaving office, within about two months

## Leading Climate Scientist: "Democratic Process Isn't Working" - March 18, 2009

by: David Adam | Visit article original @ *The Guardian UK*

**Protest and direct action could be the only way to tackle soaring carbon emissions, a leading climate scientist has said.**

James Hansen, a climate modeler with NASA, told the Guardian today that corporate lobbying has undermined democratic attempts to curb carbon pollution. "The democratic process doesn't quite seem to be working," he said. Speaking on the eve of joining a protest against the headquarters of power firm E.ON in Coventry, Hansen said: "The first action that people should take is to use the democratic process. What is frustrating people, me included, is that democratic action affects elections but what we get then from political leaders is green wash.

**"The democratic process is supposed to be one person one vote, but it turns out that money is talking louder than the votes.** So, I'm not surprised that people are getting frustrated. I think that peaceful demonstration is not out of order, because we're running out of time." (The G.W Bush Supreme Court ruled that: Money equals Votes! – (Trendevents-Ed.)

Hansen said he was taking part in the Coventry demonstration tomorrow because he wants a worldwide moratorium on new coal power stations. E.ON wants to build such a station at Kings north in Kent, an application that energy and the climate change minister Ed Miliband recently delayed. "I think that peaceful actions that attempt to draw society's attention to the issue are not inappropriate," Hansen said.

He added that a scientific meeting in Copenhagen last week had made clear the "urgency of the science and the inaction taken by governments". Officials will gather in Bonn later this month to continue talks on a new global climate treaty, which campaigners have called to be signed at a UN meeting in Copenhagen in December. Hansen warned that the new treaty is "guaranteed to fail" to bring down emissions.

Hansen said: "What's being talked about for Copenhagen is a strengthening of Kyoto [protocol] approach, a cap and trade with offsets and escape hatches which will be guaranteed to fail in terms of getting the required rapid reduction in emissions.

They talk about goals which sound impressive, but when you see the actions are such that it will be impossible to reach those goals, then I can understand the informed public getting frustrated."

He said he was growing "concerned" over the stance taken by the new US administration on global warming. "It's not clear what their intentions are yet, but if they are going to support cap and trade then unfortunately I think that will be another case of green wash. It's going to take stronger action than that."

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This is a moderated forum. It may take a little while for comments to go live.

### "The democratic process

Sat, 03/21/2009 - 23:55 — Anonymous (not verified)

"The democratic process doesn't quite seem to be working," he said?? How can it work when governing has long since stopped being democratic? We elect them and kick them out, yet more corrupt politician's line up for the next election, only to govern for themselves, seldom for those who elected them.

### As long as China is building

Sat, 03/21/2009 - 17:18 — Stefan Albrecht (not verified)

As long as China is building one coal fired power plant a week and India is following fast, most of the efforts in the West are just not very efficient. Ultimately, and this means in a relatively short time, we will be running out of all fossil fuels. The discussion should merge those two aspects. It is just totally irresponsible to have little fossil fuels left in 100 years. Cap and trade is a very responsible policy to shift priorities. The entire energy supply system needs to be totally revamped. It will not happen from one month to the next but the process needs to get started as soon as possible, meaning yesterday! Some of the new technologies are just becoming available or will be soon. Within one year superconductive wind turbines and generators will make wind power the cheapest energy source in general. Within the next 2-3 years and definitely before the end of President Obama's first term there will be a huge boom in alternative energy in the US. This will signal to the world a new leadership, that's committed to substantially reduce greenhouse gas emissions.

<http://www.alternet.org/bloggers/>  
<http://brilliantatbreakfast.blogspot.com//132547/>

*Was Eliot Spitzer Taken Out Because He Was Going to Bust AIG?*

## **Brilliant at Breakfast**

By Melina Ripcoco, March 20, 2009

Eliot Spitzer is back and he's talking. The thought of this, no doubt, brings a small shiver to the boardrooms of some of the perps walking around trying to figure out how to hide the money this week. Today Edward Liddy testified that there have been death threats made to or about executives who received bonuses, so no names will be put on the record, but these anonymous players must know that the jig is up in the land of easy-money. Isn't what to do a no-brainer for these great Americans?

Spitzer may be as "*disgraced*" as any anonymous sex loving Republican loser, but America is known for its great second acts, and we may be witnessing the curtain rising on Spitzer's.

Today in Slate Eliot Spitzer has a short op-ed that speaks volumes about what is going on, and indirectly, if you follow the money, what happened to him. Plainly stated, Spitzer brings the AIG Ponzi Scheme one step closer to the revered establishment when he explains how the bailout money was funneled straight into the top players, with Goldman Sachs being the name that comes up again and again. These top players already got bailout money, and Goldman is looking at zero losses at this point, while regular Americans are being asked to make concessions or just plain losing everything. Here are the biggest financial entities in the world, making billions on what appears to have been nothing but air traded back and forth, and having gutted the American people they are walking away with 100% return to their stockholders. In return AIG seems to think that it's appropriate to pay themselves bonuses with the leftover funds. This leaves AIG still a wobbly shell with no plan of how to go forward, and the threat of the collapse of all of the world's financial markets still up in the air. So, what was all that bailout money for? Apparently to make sure that no one at Goldman or the other few top firms in the hand-out-line lost anything!

The relationship between AIG and Goldman goes back long enough that one would think that Goldman would know, having bought so much of

this "insurance" or whatever it was, whether the "products" were ...er...real or feasible at all. Indeed, Goldman and AIG almost merged a few years ago, but Spitzer notes that the unknown black hole of AIG's business practices were probably what prevented it. Still, that didn't stop the incestuous dealings; it almost makes one think that this whole thing was a setup.

This is country that Spitzer is familiar with; he has been a terrible liability to entities that, under the Bush administration, were allowed to literally gut the country and its citizens. All of this seems to have been part of the Bush Administration's own Ponzi Scheme, which figured that the illusion of an ownership society, terrified of the "terraism" and steeped in the me, me, me, culture would look the other way while they finished clearing out the vault. Beyond that, it's clear that the media hyped housing bubble encouraged the house flip mentality and the idea that anyone could be rich. The idea of the lottery dropping on our own heads made us more protective of the rich, because we might one day be one....or look, we could be one with no money down, if we could just balance that on this, and flip that house!!

Every week came a new offer from our bank or credit card to just put the enclosed check into the bank for a \$50,000 loan, unsecured and with a low APR!! Who would know that those same banks would go out of their way to cause a day or week default by changing the cycle or stopping refusing cards that went over-limit, in order to charge fees and raise the rates. Who could know that the fine print on all those little fliers talking about privacy rights and how they are selling all of our information, also said that by-the-way the interest rate is now 25% and the minimum payment has tripled! Default on that and likely AIG has sold insurance to your lending institution that should repay them for making the bad loan in the first place....no money down mortgages? No problem....it's the same story. This is the ownership society and we all need to own a lot of stuff. It is... what did he say? Uniquely American!

Spitzer was questioning this back in February 2008 when he wrote his Valentine to predatory lenders in the Washington Post. He detailed that Attorneys General across the country had entered into litigation in an attempt to protect the people of their states from predatory lending. The response from the federal government was astounding!

What did the Bush administration do in response? Did it reverse course and decide to take action to halt this burgeoning scourge? As Americans are now painfully aware, with hundreds of thousands of homeowners facing foreclosure and our markets reeling, the answer is a resounding no.

Not only did the Bush administration do nothing to protect consumers, it embarked on an aggressive and unprecedented campaign to prevent states from protecting their residents from the very problems to which the federal government was turning a blind eye.

***In 2003, during the height of the predatory lending crisis, the OCC invoked a clause from the 1863 National Bank Act to issue formal opinions preempting all state predatory lending laws, thereby rendering them inoperative. The OCC also promulgated new rules that prevented states from enforcing any of their own consumer protection laws against national banks. The federal government's actions were so egregious and so unprecedented that all 50 state attorneys general, and all 50 state banking superintendents, actively fought the new rules.***

***But the unanimous opposition of the 50 states did not deter, or even slow, the Bush administration in its goal of protecting the banks. In fact, when my office opened an investigation of possible discrimination in mortgage lending by a number of banks, the OCC filed a federal lawsuit to stop the investigation.***

Now, they will say that they fought the consumer protection laws to actually protect the consumers and assure that they could get credit in the future. But actually, Americans could get credit; just credit that they were able to handle and could, by reasonable standards, pay back. This was just more of the same in hindsight. Looking back that all that the Bush administration has done, the beginnings of this disaster looks almost quaint, and not like an institutionalized foray into the dirty underside of criminal activity. There were quotas passed by the government as to who got the loans and the focus was on certain populations who would be helped into homeownership even if they couldn't maintain the credit. It was treated as some sort of fulfillment of the American Dream for people to own something, but really had more to do with the insurance on the loans than the people involved.

***The American dream is dead, as we well know, but what it was, way back then, was that people could afford to own a house and put their kids in college!***

AIG sold insurance to the biggest entities in the financial world to cover the proliferation of bad loans. This insurance became so common that it was impossible that the lions of finance didn't somehow have an inkling that something was wrong. Didn't Goldman and the rest of these huge firms know something about the stability of an impossible business plan? Hadn't Goldman gone over everything in their bid to merge? And what of the government and their mandating of certain loans that were bound to go bad. There were people involved in these things, and it's not like regular people understand the ins and outs of the financial industry. They rely on brokers to explain it to them. But these brokers were being forced to see a certain product to an unqualified population. How could they? Why would they? Those are questions for another time.

Spitzer has been fighting these guys and asking questions all along

Coincidentally, right after the WSJ editorial appeared on Valentine's Day 2008, Spitzer was caught up in what was an extremely unusual sting. So unusual is an investigation like this that it seems almost like it was a set-up; and considering where it all came from and how it all came down, it might well have been.

It seems that Spitzer's bank was investigating expenses under the auspices of the newer Homeland Security laws of the Bush administration.

Greg Palast wrote about this compellingly, and in light of how the whole thing is shaking out now, and what Spitzer said back then about this financial mess and what he tried to *DO* about it, Palast had a pretty good early grasp on what had gone down. So now, with Spitzer poking his head up from the underground of "healing his family," at this most compelling of moments, it's probably worthwhile for Americans to screw their heads on straight and forget the details of the hooker, and look at what Spitzer was working on when he was taken down. We might all find ourselves wanting to thank the egotistical crime fighter who can't keep it in his pants.

I am no apologist for breaking the law, and usually it's the highest and mightiest that fall the hardest. But when the mainstream is showing us the shiny

object, we must resist the temptation to succumb to our base natures and try to see the bigger picture. ***There was never a real case against Eliot Spitzer, and no charges were filed. The release of embarrassing personal information was at the discretion of the Bush Administration's Justice Department.***

Why was this information released? It wasn't that he was a crusader against such crimes, because many who have been caught were exactly the same and their information has been kept quiet. It wasn't that the press is all so great in their investigative journalism; either...because we know they're loathe to get off their asses if they can just read a talking point; as is evidenced by the reportage on this case.

***Palast: Not all crimes lead to federal bust or even public exposure. It's up to something called "prosecutorial discretion."***

Funny thing, this 'discretion.' For example, Senator David Vitter, Republican of Louisiana, paid Washington DC prostitutes to put him in diapers (ewww!), yet the Senator was not exposed by the US prosecutors busting the pimp-ring that pampered him.

Naming and shaming and ruining Spitzer – rarely done in these cases - was made at the 'discretion' of Bush's Justice Department... Or maybe we should say, 'indiscretion.'

***Bush's Justice Department.***

It's clear to me that all things being equal, this was at the very least, not a transsexual streetwalker a la Hugh Grant, and it was all very ho-hum and quiet. So, whatever the problem that leads to this sort of behavior, I don't want to know about it...it's personal, so just walk on by...nothing to see here.

Welcome back Eliot Spitzer. I hope we hear more from you very soon...your voice is needed in this matter. View this story online at:

<http://www.alternet.org/bloggers/http://brilliantatbreakfast.blogspot.com/132547/>

### **INTERESTING HISTORY From Caryl & Richard Retelling of: "A Golden Oldie"**

The US standard railroad gauge (distance between the rails) is 4 feet, 8.5 inches. That's an exceedingly odd number... Why was that gauge used? Because that's the way they built them in England, and English expatriates built the US railroads.

Why did the English build them like that? Because the first rail lines were built by the same people who built the pre-railroad tramways, and that's the gauge they used.

Why did 'they' use that gauge then? Because the people who built the tramways used the same jigs and tools that they used for building wagons, which used that wheel spacing.

Why did the wagons have that particular odd wheel spacing? Well, if they tried to use any other spacing, the wagon wheels would break on some of the old, long distance roads in England, because that's the spacing of the wheel ruts.

So who built those old rutted roads? Imperial Rome built the first long distance roads in Europe (and England) for their legions. The roads have been used ever since.

***And the ruts in the roads?***

Roman war chariots formed the initial ruts, which everyone else had to match for fear of destroying their wagon wheels. Since the chariots were made for Imperial Rome, they were all alike in the matter of wheel spacing. Therefore the United States standard railroad gauge of 4 feet, 8.5 inches is derived from the original specifications for an Imperial Roman war chariot. Bureaucracies live forever. So the next time you are handed a specification/procedure/process and wonder 'What horse's ass came up with it?', you may be exactly right... Imperial Roman army chariots were made just wide enough to accommodate the rear ends of two war horses. (Two horse's asses.) Now, the twist to the story:

When you see a Space Shuttle sitting on its launch pad, there are two big booster rockets attached to the sides of the main fuel tank. These are solid rocket boosters, or SRB's. The SRB's are made by Thiokol at their factory in Utah...The engineers who designed the SRB's would have preferred to make them a bit fatter, but the SRB's had to be shipped by train from the factory to the launch site. The railroad line from the factory happens to run through a tunnel in the mountains, and the SRB's had to fit through that tunnel. The tunnel is slightly wider than the railroad track, and the railroad track, as you now know, is about as wide as two horses' behinds.

So, a major Space Shuttle design feature of what is arguably the world's most advanced transportation system was determined over two thousand years ago by the width of a horse's ass. And you thought

being a horse's ass wasn't important? Ancient horse's asses control almost everything... **and so today, Horses' Asses are controlling everything else via unexpected consequences.**

## **FROM THE EDITOR / News from frontiers helps to ensure science's future**

April 11th, 2009; Vol.175 #8 (p. 26) Science News  
Tom Siegfried, Editor in Chief

In this issue (Pg. 12) we report the winners of the 2009 Intel Science Talent Search, or STS, a program of Society for Science & the Public, which also publishes *Science News*. From its inception in 1942, STS has recognized the best and brightest of the nation's high school seniors. Almost 140,000 students have entered the competition. Of the 2,720 finalists, seven have won Nobel prizes, at least 10 have been named MacArthur Fellows and 30 elected to the National Academy of Sciences. Year after year, STS students exhibit intellectual tenacity and scientific sophistication suggesting that the scientific future isn't as bleak as it sometimes appears.

Yet the success of STS students doesn't quite eliminate all cause for concern. While science no longer gets bashed quite as badly in Washington these days, it is still getting bashed pretty badly in the media or rather by the media's owners. In recent years, newspapers, magazines and other media have been drastically diminishing their attention to science coverage. Newspaper science reporters are more endangered than black rhinos or giant pandas.

The *Los Angeles Times* and *Newsday* have dismantled their once-sizable staffs of expert science journalists. In February the *Boston Globe* closed its science and health section. Recently CNN disbanded its science unit, dismissing one of America's preeminent TV science journalists, Miles O'Brian. One newsmagazine, having cut some of its best science writers, now runs stories on its website provided the government, disguised as news. At a science journalism awards ceremony, at the American Association for the Advancement of Science meeting last month in Chicago, the winners in the newspaper category both noted that they no longer had jobs.

All of this raises the issue of where future Participants in the Science Talent Search will encounter the inspiration to pursue the great unanswered questions that science still poses.

From their school textbooks? Right. For science to flourish in the future. young minds need to be exposed drama and excitement of science – a it can only be conveyed in news dispatches from the frontiers. If there's no more science news, there will be a lot less interest in pursuing science generated among the nation's youth.

Fortunately, there is still *Science News*, and there is some comfort in that. Nevertheless it should still be a great concern that there is less and less science news everywhere else. -- *Tom Siegfried*

## **Urban heat**

Cities sizzle as more people move in

By Sid Perkins

In life, as in boxing, the combined effects of a one-two punch are often more devastating than either blow alone. Imagine, then, the devastation from a triple whammy that city dwellers might suffer this century as three unfavorable trends converge to afflict an already warming world.

First, there's temperature. According to the Intergovernmental Panel on Climate Change, Earth's average global temperature has risen about 0.74 degrees Celsius in the past century (SN: 2/10/07, p. 83), an increase almost certainly linked to the rising concentrations of carbon dioxide and other heat-trapping greenhouse gases that human activities have released into Earth's atmosphere. IPCC scientists suggest this warming trend will continue, and indeed accelerate: In the next 20 years, average global temperature will rise another 0.4 degrees C or so, they estimate.

Then, there's population growth. Now home to more than 6.6 billion people, Earth will see its population increase by about 25 percent, or 1.65 billion, by the year 2030 (SN: 10/13/07, p. 235). Even with substantial increases in energy efficiency, this dramatically larger population will likely trigger a rise in total energy consumption, further boosting emissions of greenhouse gases.

Third, there's urbanization. Much of the world's population growth in coming decades will occur within cities, where residents are exposed to warmer-than-average conditions due to the "urban heat island" effect. People living in large, well-developed areas typically experience temperatures several degrees warmer than do residents of the rural areas nearby.

The confluence of these trends could create a "perfect storm" that places urban dwellers at increased environmental risk, says Walt Dabberdt,

president of the American Meteorological Society in 2008. Besides the risk from rising sea levels — much of the projected population increases will be in coastal cities — urban dwellers could be exposed to more-frequent heat waves, higher levels of pollution and a myriad of health concerns (SN: 7/3/04, p. 10).

Possibly of more importance, much of the population growth will result in urban sprawl in what are now smaller metropolitan areas — a trend that will lead to dramatically larger numbers of people living within urban heat islands.

Future changes in climate, as well as the effects of those changes on regional and local weather, must be an integral part of urban planning, Dabberdt notes. The way urban heat islands affect climate overall is also important: If more people move to places that require increasing amounts of air conditioning, even more greenhouse gases will be emitted.

“Cities are major contributors to anthropogenic climate change,” says Dabberdt, who is also the Boulder, Colo.-based chief science officer for Vaisala Corp., an international manufacturer of weather-monitoring systems and instruments. Overall, he says, urban areas are directly or indirectly responsible for about 80 percent of the emissions of planet-warming greenhouse gases such as carbon dioxide. While many of those emissions are produced in the cities by industrial activity or vehicles, others are generated in coal-fired power plants that are far from the cities but are still driven by urban demand for power.

The topic of urban heat occupied many researchers who gathered in January for the 2009 annual meeting of the American Meteorological Society, held appropriately enough in Phoenix, the site of many recent studies of the urban heat island effect. While some scientists are studying how to minimize the temperature-boosting effects of urban heat islands, others are studying how urban dwellers can substantially reduce the amount of greenhouse gases that are emitted in the first place.

### **From farm to suburb**

People have been living in increasingly large settlements ever since they gave up the hunter-gatherer lifestyle and began to cultivate the land. As agriculture became more efficient, urban populations could grow — a trend that accelerated with the Industrial Revolution and is continuing today as technology allows an ever-smaller fraction

of the population to feed everyone else, says Kai N. Lee, a political scientist at the David and Lucile Packard Foundation in Los Altos, Calif.

For example, in 1740, about two-thirds of the labor force in England and Wales — the birthplace of the Industrial Revolution — worked in agriculture. A century later, as labor-saving machines proliferated, that fraction had fallen to less than one-quarter, and England was exporting surplus food to boot, Lee notes. Today, in developed nations, less than 5 percent of the population engages in agriculture, he says.

As that proportion has fallen, the percentage of urban dwellers has risen, Lee said at the AMS meeting. In 1800, only about 2 percent of the world’s population lived in cities. In 2007, for the first time, that fraction rose above 50 percent, and it’s poised to grow even more. While in raw numbers the world’s rural population is now at its peak and will probably decline slightly in coming years, urban population will continue to grow at a brisk pace. According to estimates by United Nations demographers, more than 60 percent of the world’s population will live in urban areas by 2030.

Most of that growth will take place in rapidly developing nations such as China and India and in regions such as Sub-Saharan Africa, which is already home to more urban dwellers than the combined populations of the United States and Canada, says Lee.

And the bulk of urban growth — which by 2030 will tally about 1.3 million people per week worldwide — will occur in cities that now hold less than 500,000 people. That trend will expose increasing numbers of people to urban-accentuated heat: While recent research suggests that the urban heat islands in large, long-established cities haven’t strengthened in recent decades (SN Online: “Don’t blame the cities,” 9/5/08), temperature differences between urban and rural areas in rapidly developing regions such as eastern China have increased substantially as its cities have sprawled and developed.

### **Cooking by day and night**

In one sense, urban heat islands have been around as long as urban areas have: They just started out small and grew as cities did. Buildings and pavement typically are made of materials that have a lower albedo — that is, they absorb more of the sun’s radiation than does the natural landscape — and, during the daytime, reach higher equilibrium temperatures than surrounding objects do. At night,

the buildings and streets release much of that heat. The boost in both daytime and nighttime temperatures raises the average temperature in the city.

Another often unrecognized factor that boosts urban temperatures is the proliferation of impervious surfaces, says David J. Sailor, a mechanical engineer at Portland State University in Oregon. As the proportion of rain-shedding surfaces such as roofs, pavement, sidewalks and streets goes up, the water that previously would have soaked into the ground — and later would have soaked up heat as it evaporated — simply drains away into sewers or streams (SN: 9/4/04, p. 152). Areas swaddled with impervious surfaces, in essence, heat up because the ground has lost its ability to sweat.

The size, shape and arrangement of buildings, particularly in a downtown core dense with skyscrapers, can also influence urban temperatures, Sailor said at the AMS meeting. If the heat-soaked facade of a tall building can't "see the sky" at night — in other words, if it is surrounded by other tall buildings — any heat it gives off at night ends up warming nearby buildings rather than radiating back into space.

Finally, says Sailor, human activity generates immense quantities of heat. Burning a kilogram of gasoline generates about 45 million joules of energy, enough to melt 60 kilograms of ice and bring it to boiling. So, each car on the road with moderate gas mileage — say, 10 kilometers per liter or 24 miles per gallon — releases enough heat to melt about 4.5 kilograms, or a 10-pound bag, of ice for every kilometer it travels.

Much of the energy used in buildings — for lighting, heating and producing hot water, for example — eventually makes its way into the environment as heat.

As a rough guide, Sailor notes, one-third of the anthropogenic heat contribution to an urban heat island comes from transportation, one-third comes from buildings and one-third stems from industrial processes. Nevertheless, all cities are different: The heat island in Houston, for example, is substantially aggravated by the large number of nearby oil refineries.

Although urban heat islands are nothing new, scientists haven't conducted many detailed investigations of the phenomenon, says Brent Hedquist, an urban climatologist at Arizona State

University in Tempe. In April 2008, he and his colleagues used portable weather stations and thermal imaging cameras to carry out a round-the-clock study in downtown Phoenix. Some studies, Hedquist says, have shown that the core of that city, one of the fastest growing urban areas in the nation, is on average between 7 and 11 degrees Celsius warmer than the surrounding countryside.

A first look at the Hedquist team's field data qualitatively confirms what many lab studies might suggest: Facades of dense concrete and brick, some of which reached temperatures of 45°C, or 113°F, during the day, retained heat well into the night, while glass and metal cooled rather quickly after the sun went down. The details of that warm-up and cool-down, however, will be the topic of intense analyses. "The situation downtown is very complex," Hedquist notes, with daytime heat absorption and nighttime heat loss depending on factors such as the angle at which the sun strikes building facades, the distance between the buildings and the speed and direction of prevailing winds.

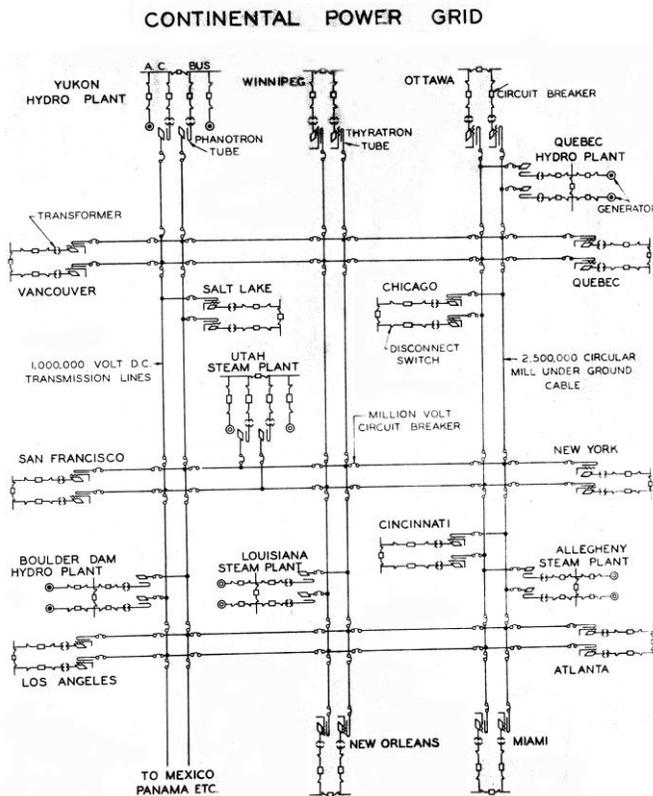
By combining the data gleaned downtown with some gathered by helicopter over the city at large, Hedquist and his colleagues intend to construct detailed computer models of the region's landscape and how it responds to heat. Future studies, he says, will enable the team to assess how widespread changes in land cover — adding trees or installing permeable pavements, for example — might affect the size and strength of the region's urban heat island.

In the 1920's Technocracy Inc. drew up this design concept for a 1 million volt direct current (DC) continental power grid. At the time those who had proposed it said that "we don't need it". Today the necessity is clear.

This ability to transmit power to and from anywhere on the North American Continent, would make possible the most efficient transmission of future alternative power, by the use of varied power sources... ranging from: geothermal, to offshore tidal power as well as solar power from the desert southwest or wind power from various prime locations throughout the Continent.

Today our piecemeal power system in the U.S. continues to build polluting coal fired plants because power [at this time} is not available easily from elsewhere.

Proofs of global climate change are reported daily in the news. This is an onrushing disaster... An intelligent solution would be for the planned reduction of power consumption. High voltage DC power lines could be buried in concrete trenches next to existing road and freeways. This design concept makes it possible for complete elimination of the necessity for the use of fossil fuels for Continental power.



March/April 2009

<http://www.technologyreview.com/blog/arxiv/23309/>

### TR10: Liquid Battery

**Donald Sadoway conceived of a novel battery that could allow cities to run on solar power at night.**

By Kevin Bullis

Without a good way to store electricity on a large scale, solar power is useless at night. One promising storage option is a new kind of battery made with all-liquid active materials... The battery is unlike any other. The electrodes are molten metals, and the electrolyte that conducts current between them is a molten salt. This results in an unusually resilient device that can quickly absorb large amounts of electricity. The electrodes can operate at electrical currents "tens of times higher than any [battery] that's ever been measured," says Donald Sadoway, a materials chemistry professor

at MIT and one of the battery's inventors. What's more, the materials are cheap, and the design allows for simple manufacturing.

The first prototype consists of a container surrounded by insulating material. The researchers add molten raw materials: antimony on the bottom, an electrolyte such as sodium sulfide in the middle, and magnesium at the top. Since each material has a different density, they naturally remain in distinct layers, which simplifies manufacturing. The container doubles as a current collector, delivering electrons from a power supply, such as solar panels, or carrying them away to the electrical grid to supply electricity to homes and businesses.

As power flows into the battery, magnesium and antimony metal are generated from magnesium antimonide dissolved in the electrolyte. When the cell discharges, the metals of the two electrodes dissolve to again form magnesium antimonide, which dissolves in the electrolyte, causing the electrolyte to grow larger and the electrodes to shrink (see above).

Sadoway envisions wiring together large cells to form enormous battery packs. One big enough to meet the peak electricity demand in New York City--about 13,000 megawatts--would fill nearly 60,000 square meters. Charging it would require solar farms of unprecedented size, generating not only enough electricity to meet daytime power needs but enough excess power to charge the batteries for nighttime demand. The first systems will probably store energy produced during periods of low electricity demand for use during peak demand, thus reducing the need for new power plants and transmission lines.

Many other ways of storing energy from intermittent power sources have been proposed, and some have been put to limited use. The liquid battery has the advantage of being cheap, long-lasting, and (unlike options such as pumping water) useful in a wide range of places. "No one had been able to get their arms around the problem of energy storage on a massive scale for the power grid," says Sadoway. "We're literally looking at a battery capable of storing the grid."

Since creating the initial prototypes, researchers have switched the metals and salts used; it wasn't possible to dissolve magnesium antimonide in the electrolyte at high concentrations, so the first prototypes were too big to be practical. (Sadoway won't identify the new materials but says they work along the same principles.) The team hopes that a commercial version of the battery will be available in five years.

## New Data Show Rapid Arctic Ice Decline

Tuesday 07 April 2009

by: Juliet Eilperin and Mary Beth Sheridan

[original @ The Washington Post](#)

**Proportion of thicker, more-persistent winter cover is the lowest on record.**

The satellite data released by NASA and the National Snow and Ice Data Center show that the maximum extent of the 2008-2009 winter sea ice cover was the fifth-lowest since researchers began collecting such information 30 years ago. The past six years have produced the six lowest maximums in that record, and the new data show that the percentage of older, thicker and more persistent ice shrank to its lowest level ever, at just 9.8 percent of the winter ice cover.

"We're seeing an ice cover that's younger and that's thinner as we head into summer," Walt Meier, a scientist at the National Snow and Ice Data Center, said in a telephone news conference. "It's been a pretty sharp decline."

The new evidence - including satellite data showing that the average multiyear wintertime sea ice cover in the Arctic in 2005 and 2006 was nine feet thick, a significant decline from the 1980s - contradicts data cited in widely circulated reports by Washington Post columnist George F. Will that sea ice in the Arctic has not significantly declined since 1979.

Scientists have begun debating how soon the Arctic will lose its summer ice altogether, with some saying it could happen as early as 2015. White House science adviser John P. Holdren told the crowd at the State Department that the total disappearance of sea ice in the Arctic "may be far, far closer" than scientists thought just a few years ago.

Meier said the gradual loss of ice is already transforming the region. "There's already impacts, in terms of the climate, in terms of the people," he said.

The loss of sea ice in the Arctic will not directly raise global sea levels, researchers said, but will contribute to an overall ocean warming that could erode the Greenland ice sheet, which would affect sea levels. The disappearance of the polar ice cap could also affect global ocean circulation patterns, and its melting has already imperiled native species such as the polar bear.

Norway's foreign minister, Jonas Gahr Stoere, painted a stark picture of the climate change in the Arctic and Antarctic regions. "The ice is melting," Stoere said. "We should all be worried."

Edited by Margaret Mathers  
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## Getting a Death Grip on Memory

Friday 10 April 2009

by: Norman Solomon, t r u t h o u t | Perspective

A headline in The New York Times announced a few days ago: "Brain Researchers Open Door to Editing Memory." This news ran above the fold on the front page... "Suppose scientists could erase certain memories by tinkering with a single substance in the brain," the article began... **Big deal. American media outlets have been pulling off such feats for a long time...** The scientists trying to learn how to wipe out "specific types of memory" are lagging way behind... Don't need to remember the vast quantities of napalm, Agent Orange and cluster bombs that the US military dropped on Vietnam, Laos and Cambodia in the 1960's and 1970's? **Or the continuing realities of burn victims, dioxin poisoning and unexploded warheads?...** Don't care to recall the Pentagon's estimate that the Gulf War in early 1991 killed 100,000 Iraqi people during a six-week period? Forget about it! That's what selective memory is for... Recollect how the US government trained and armed President Reagan's beloved "freedom fighters" in Afghanistan - including the likes of Osama bin Laden and other fundamentalist mujahedeen - for their insurgency against the Soviet occupiers in the 1980's? **Rather not remember how those "freedom fighters" became "terrorists"?... Hate that particular gray? Then wash it away!...** Dominant media have blotted out countless painful memories - national or personal - "The greatest triumphs of propaganda have been accomplished, not by doing something, but by refraining from doing," Aldous Huxley observed. "Great is truth, but still greater, from a practical point of view, is silence about truth." And, of equal relevance to the brave new world of US mass media in 2009: "The propagandist's purpose is to make one set of people forget that certain other sets of people are human." **This April issue of The Progressive Magazine 1909-2009 presents a lists of themes & people expressing it's continuity of concern - Sadly, this history is silent in regards' to Howard Scott & Technocracy . In the May 2009 Trendevents we will provide historical proof of Technocracy's analysis & synthesis. Just look at the state of our Continent, the World... A hell of a Future to pass to our inheritors!**

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