# 1

#### Obama is winning but it will be very close and it’s reversible

**Blumenthal, 10/11/12 -** senior polling editor of the Huffington Post and the founding editor of Pollster.com (Mark, Huffington Post, “2012 Polls Show Romney Gaining, But Key Swing States Still Tip To Obama” <http://www.huffingtonpost.com/2012/10/11/2012-polls_n_1957189.html?utm_hp_ref=@pollster>)

With less than four weeks remaining in the race for president, a batch of new polls confirms that Republican nominee Mitt Romney has gained ground since last week's debate, but shows him continuing to lag behind President Barack Obama by narrow margins in some of the key swing states that will decide the election.

The polls also show that Romney has improved his image as a leader and increased enthusiasm among his supporters, while continuing to trail on some of voters' top issues.

Six new statewide polls were released early Thursday morning by two prominent polling partnerships. NBC News, The Wall Street Journal and Marist College reported new surveys of Florida, Ohio and Virginia, and CBS News, The New York Times and Quinnipiac University produced new polls of Colorado, Virginia and Wisconsin.

These new surveys are closely watched partly because they probe attitudes beyond the horserace and partly because, unlike many other state-level surveys, they use live interviewers to call voters over both landline and cellular phones. This is a critical factor, given that a third of adults have only wireless service and roughly half of adults receive all or almost all of their calls via cell phone.

Five of the six new polls showed single-digit gains for Romney, but while the margins were mostly close, Obama retained at least a nominal advantage in four of the six.

In Ohio, arguably the most crucial of the battleground states, Marist's poll gave Obama a six percentage point lead (51 to 45 percent). That is slightly better than a CNN/ORC International survey conducted earlier in the week that showed Obama leading by four and significantly better than a series of automated polls showing one-point margins favoring either candidate.

NBC News noted that the new Marist poll featured an 11-point party identification advantage for Democrats, up from a five-point advantage on its last survey, and suggested that early voting may account for the change. "One-in-five respondents (18 percent), said they have already voted," according to the NBC report, "and, of those, almost two-thirds (63 percent) said they voted for Obama."

The HuffPost Pollster tracking model, which combines data from all available polls, both statewide and national, to provide an estimate for each state, shows Obama holding a roughly three percentage point lead in Ohio.

Both Marist and Quinnipiac reported results for Virginia, but they differed on the candidates' standings. Quinnipiac gives Obama a five percentage point lead (51 to 46 percent), while Marist finds a one-point edge for Romney (48 to 47 percent). Three recent automated, recorded voice polls tended to agree more with the Marist result, showing findings ranging from a three-point Romney lead to a three-point deficit.

The HuffPost Pollster tracking model shows a virtual tie in Virginia (Romney 47.3 percent, Obama 47.2 percent, as of this writing).

In Florida, the Marist poll gives Obama a one-point edge (48 to 47 percent). Once again, that result falls in the middle of a range of results reported by other polls this week, although automated polls by Rasmussen Reports and We Ask America gave Romney a narrow edge.

The Pollster tracking model estimate for Florida combines all of this data to give Romney an advantage of just under one percentage point (47.9 to 47.3 percent).

Collectively, the data tell us that despite Romney's recent gains, the contests remain competitive in two critical states.

In Colorado, the Quinnipiac survey gives Romney a one point edge (48 to 47 percent). Once again, the new result falls in the middle of three other recent Colorado surveys ranging from a four-point Obama lead to a four-point deficit. The Pollster tracking model combines to give Romney an advantage of less than one percent (47.5 to 47.0 percent).

The numbers have been better for Obama in Wisconsin, where the new Quinnipiac survey gives him a three-point advantage (50 to 47 percent), a point better than the two-point Obama leads on two recent automated polls by Rasmussen Reports and the Democratic party affiliated firm Public Policy Polling (PPP).

The Pollster tracking model estimate for Wisconsin currently gives Obama a roughly three-point lead (49.3 to 46.1 percent).

#### Obama’s energy policies reflect a balance that will maximize Democratic turnout – deviations in either direction risk alienating key supporters

**Schnur, 4/9/**12 - director of the Jesse M. Unruh Institute of Politics at the University of Southern California (Dan, “The President, Gas Prices and the Pipeline”,

<http://campaignstops.blogs.nytimes.com/2012/04/09/the-president-gas-prices-and-the-keystone-pipeline/>)

Like every president seeking re-election, Barack Obama walks the fine line every day between the discordant goals of motivating his party’s strongest loyalists and reaching out to swing voters for their support. A few weeks ago, that pathway took him to a tiny town in Oklahoma, where, caught between the anti-drilling demands of the environmental community and the thirst for more affordable gasoline from unions, business owners and drivers, the president announced his support for building half of an oil pipeline.

The economic impact of rising energy prices in itself is considerable, but the psychological toll on voters is just as significant, as tens of millions of motorists are reminded by large signs on almost every street corner of the financial pain of filling their gas tanks. Obama and his political lieutenants are acutely aware that this growing frustration has the potential to complicate an election year that otherwise seems to be shifting in the incumbent’s favor.

As a result, Obama has been hitting the energy issue hard in recent weeks, at least as hard as a candidate can hit when forced to navigate between two almost mutually exclusive political priorities. The result is a president who talks forcefully of the benefits of wind and solar power while also boasting about the amount of oil the nation produces under his leadership.

There are times when this gets slightly uncomfortable. Obama recently called for increased exploration along the Atlantic Coast but stopped short of calling for expanded drilling in that region. This is the energy policy equivalent of admitting to an experiment with marijuana but not inhaling.

Where the issue becomes more tangible and therefore trickier for Obama is when the multiple choices become binary. The debate over the proposed XL Keystone Pipeline that would transport Canadian oil through the nation’s heartland to the Gulf of Mexico crystallizes the choices involved and forces a shades-of-gray conversation into starker hues of black and white.

Obama recognizes that the devoted environmentalists who represent a critical portion of the Democratic party base need some motivation to turn out for him in the fall. But he also understands that centrist voters who support him on a range of other domestic and foreign policy matters could be lured away by a Republican opponent who either promises relief at the gas pump or who can lay blame at the White House doorstep for those higher prices. Even more complicated is the role of organized labor, which has poured immense amounts of support into Obama’s re-election but also prioritizes the job-creation potential of the pipeline.

The result of these competing political and policy pressures brought Obama to Ripley, Okla., where he tried to satisfy the needs of these various audiences without alienating any of them. First, the president endorsed the southern portion of the Keystone project in order to relieve the glut of domestically drilled oil that is now unable to make it to refineries near the Gulf of Mexico in a timely manner. This had the effect of irritating his environmental allies but failed to mollify the project’s advocates, who pointed out that the review process that the president called for was already underway.

He then reiterated the administration’s antipathy toward the northern section of the pipeline, which would allow Canadian-drilled oil to be transported into this country. This provided some comfort to drilling opponents, but infuriated both the pro-oil forces and the Canadian government. The most likely outcome is that Canada will still build a pipeline, but rather one that goes westward to the Pacific Ocean north of the United States border and then ships Canadian oil to China instead of into this country.

Even in deep-blue California, where Obama wins hypothetical general election match ups against the Republican candidates by margins approaching voice vote, this is an issue that points to potential difficulties for the president’s re-election campaign. Californians who swooned for Obama in 2008, and who seem poised for a re-swoon this fall, told a recent USC Dornsife/LA Times statewide poll that they were dissatisfied with the president’s handling of the issue of the cost of gasoline by a 29-62 margin. California’s unemployment rate remains around 11 percent, but the state’s residents still give Obama positive marks on his work on job creation, the economy and taxes. They approve of his work on health care and by even larger margins on women’s health issues. But highway-dependent West Coasters, even while they advocate for broader use of solar, wind and other alternative energies, don’t like $4 per gallon gasoline and they will like paying $5 per gallon even less.

Obama won’t actually lose California in November, of course. Gas prices would have to hit $10 a gallon for Mitt Romney to win the state this fall. And the same poll shows that voters blame oil companies, rather than either the president or Congress, for those high prices. However, the dissatisfaction that emanates from even a heavily Democratic patch of electoral turf such as California carries much more significant consequences in Ohio, Florida and other swing states. For the time being, Obama is gambling that directing popular anger toward the oil companies — a convenient villain if there ever was one — will allow him to keep the price of gasoline from becoming a roadblock for his campaign.

But if gas prices keep rising and voter unhappiness continues to build, look for the administration to find a way to accelerate the review process that would allow the northern leg of Keystone to move forward more quickly. Obama has been careful not to come out in absolute opposition to the pipeline, but only to call for a more meticulous examination of its possible environmental impact. A more closely competitive election than what is now expected, though, could easily lead the president to decide that his administration’s review has been quite thorough enough and that the time for additional drilling has arrived.

An energy strategy that Obama now refers to as an “all of the above” approach is unlikely to turn into a “drill, baby drill” refrain between now and November. But maintaining a balance between dissatisfied but docile environmentalists on one hand and drivers whose unhappiness stops just short of violence on the other will be a key to his re-election. If his poll margins begin to narrow, a somewhat longer pipeline than the one he has already endorsed could become a very tempting insurance policy.

#### Small shifts can swing the election

Silver, 12 (Nate, 5/15, chief pollster for New York Times’ 538 election polling center. Regarded as top-level pollster based on distinct mathematical methods, http://fivethirtyeight.blogs.nytimes.com/2012/05/15/a-30000-foot-view-on-the-presidential-race/)

The last thing to remember is that when an election is quite close, it does not take very much to shift the race from one candidate being a 60/40 favorite to it being about even.

At the betting market Intrade, Mr. Obama’s odds of re-election have [consistently been around 60 percent](http://www.intrade.com/v4/markets/contract/?contractId=743474). While, on the one hand, it is good not to overreact to new data at this early stage of the race, it is also worth remembering that even a one-point shift in a president’s approval ratings, or a modest change in the economic forecasts, can move a president’s re-election odds at the margin.

#### Romney would support an Israeli strike on Iran

Robert W. Merry 8-1-2012; editor of The National Interest and the author of books on American history and foreign policyRomney Edges U.S. toward War with Iran http://nationalinterest.org/commentary/romney-edges-us-toward-war-iran-7275

The major newspapers all understood that GOP presidential candidate Mitt Romney’s expressions in Jerusalem last weekend were important, which is why they played the story on page one. But only the New York Times captured the subtle significance of what he said. The paper’s coverage, by Jodi Rudoren and Ashley Parker, reported that Romney sought to adhere to the code that says candidates shouldn’t criticize the president on foreign soil. “But,” they added, “there were subtle differences between what he said—and how he said it—and the positions of his opponent.” Most significantly, while Obama talks about stopping Iran from obtaining nuclear weapons, Israel insists Tehran should be prevented from having even the capacity to develop nuclear weapons. This means no nuclear development even for peaceful purposes. Romney embraced the Israeli language. In doing so, he nudged his nation closer to war with Iran. Based on Israeli prime minister Benjamin Netanyahu’s oft-repeated expressions, he clearly seems bent on attacking Iran to destroy or delay its nuclear program and, if possible, undermine the Iranian regime. And he wants America at his side when he does it. Obama has been seeking to dissuade Israel from contemplating such an assault in order to give the president’s austere sanctions regimen a chance to work. But what does he mean by “a chance to work?” If he means a complete capitulation by Iran, he’s dreaming, of course. History tells us that nations don’t respond to this kind of pressure by accepting humiliation. That’s the lesson of Pearl Harbor, as described in my commentary in these spaces. Many close observers of the Iran drama believe there may be an opportunity for a negotiated outcome that allows Iran to enrich uranium to a limited extent—say, 5 percent—for peaceful purposes. Iran insists, and most experts agree, that the Non-Proliferation Treaty allows such enrichment for energy production. In any event, numerous signatories to the NPT do in fact maintain limited enrichment programs for peaceful ends. Obama seems torn between pursuing such an outcome and embracing the Israeli position, which demands that Iran foreswear all enrichment and any peaceful nuclear development. In last spring’s Istanbul meeting between Iran and the so-called P5+1 group (the United States, Britain, France, China, Russia and Germany), there seemed to be a genuine interest on the part of those six nations to explore an outcome that would allow for some enrichment by Iran. Five weeks later in Baghdad, the P5+1 group seemed to backtrack and insist upon zero enrichment. Talks are ongoing but only among low-level technical people; any serious negotiations are on hold pending the election. Thus Obama has managed to maintain his flexibility during the delicate campaign period. But now we have Romney in Israel essentially telling the people there that they need fear no ambivalence on his part. If elected, he will embrace the Netanyahu position, which is designed to ensure the collapse of any negotiations attending anti-Iran sanctions, which Netanyahu already has labeled a failure. “We have to be honest,” he said over the weekend, during Romney’s visit, “and say that the sanctions and diplomacy so far have not set back the Iranian program by one iota.” That’s the view that Romney subtly embraced in Jerusalem.

#### Great power war

Trabanco 2009 – Independent researcher of geopolitical and military affairs (1/13/09, José Miguel Alonso Trabanco, “The Middle Eastern Powder Keg Can Explode at Anytime,” http://www.globalresearch.ca/index.php?context=va&aid=11762)

In case of an Israeli and/or American attack against Iran, Ahmadinejad's government will certainly respond. A possible countermeasure would be to fire Persian ballistic missiles against Israel and maybe even against American military bases in the regions. Teheran will unquestionably resort to its proxies like Hamas or Hezbollah (or even some of its Shiite allies it has in Lebanon or Saudi Arabia) to carry out attacks against Israel, America and their allies, effectively setting in flames a large portion of the Middle East. The ultimate weapon at Iranian disposal is to block the Strait of Hormuz. If such chokepoint is indeed asphyxiated, that would dramatically increase the price of oil, this a very threatening retaliation because it will bring intense financial and economic havoc upon the West, which is already facing significant trouble in those respects. In short, the necessary conditions for a major war in the Middle East are given. Such conflict could rapidly spiral out of control and thus a relatively minor clash could quickly and dangerously escalate by engulfing the whole region and perhaps even beyond. There are many key players: the Israelis, the Palestinians, the Arabs, the Persians and their respective allies and some great powers could become involved in one way or another (America, Russia, Europe, China). Therefore, any miscalculation by any of the main protagonists can trigger something no one can stop. Taking into consideration that the stakes are too high, perhaps it is not wise to be playing with fire right in the middle of a powder keg.

# 2

**Wind power expansion would shift natural gas to transportation and massively reduce oil demand**

**TGCO** 20**10**; Texas Gulf Coast Online, Wind Power Plan Could Solve Oil Crisis http://www.texasgulfcoastonline.com/News/tabid/86/ctl/ArticleView/mid/466/articleId/106/Wind-Power-Plan-Could-Solve-Oil-Crisis.aspx

**If the United States takes advantage of the so-called "wind corridor**," stretching from the Canadian border to West Texas, **energy from wind turbines built there could supply 20 percent or more of the nation's power**. **Power from thousands of wind turbines that would line the corridor could be distributed throughout the country via electric power transmission lines and could fuel power plants in large population hubs. Fueling these plants with wind power would then free up the natural gas historically used to power them, and would mean that natural gas could replace foreign oil as fuel for motor vehicles**. **Using natural gas for transportation needs could replace one-third of the United States' imported oil** and would save more than $230 billion a year. As imports grow and world prices rise, the amount of money we send to foreign nations every year is soaring. At current oil prices, we will send $700 billion dollars out of the country this year alone. Projected over the next 10 years the cost will be $10 trillion. America uses a lot of oil, every day 85 million barrels of oil are produced around the world and 21 million of those are used here in the United States. That's 25% of the world's oil demand used by just 4% of the world's population. World oil production peaked in 2005. Despite growing demand and an unprecedented increase in prices, oil production has fallen over the last three years. Oil is getting more expensive to produce, harder to find and there just isn't enough of it to keep up with demand. The simple truth is that cheap and easy oil is gone. A 2005 Stanford University study found that **there is enough wind power worldwide to satisfy global demand 7 times over, even if only 20% of wind power could be captured**. Building wind facilities in the corridor that stretches from the Texas panhandle to North Dakota could produce 20% of the electricity for the United States at a cost of $1 trillion. It would take another $200 billion to build the capacity to transmit that energy to cities and towns. It's a one-time cost and compared to the $700 billion we spend on foreign oil every year, it's a bargain. **Building new wind generation facilities** and better utilizing our natural gas resources **can replace more than one-third of our foreign oil imports in 10 years**. The benefits for the Texas economy and real estate values on the coast are enormous - and the entire country will benefit from lower gas prices.

**High prices are key to the Russian economy and domestic stability**

Michael **Schuman** 7-5-20**12** ; writes about Asia and global economic issues as a correspondent for TIME in Hong Kong. B.A. in Asian history and political science from the University of Pennsylvania and a master of international affairs from Columbia; “Why Vladimir Putin Needs Higher Oil Prices” http://business.time.com/2012/07/05/why-vladimir-putin-needs-higher-oil-prices/

But Vladimir Putin is not one of them. **The economy that the Russian President has built not only runs on oil, but runs on oil priced extremely high. Falling oil prices means rising problems for Russia – both for the strength of its economic performance, and possibly, the strength of Putin himself.** Despite the fact that Russia has been labeled one of the world’s most promising emerging markets, often mentioned in the same breath as China and India, the Russian economy is actually quite different from the others. While India gains growth benefits from an expanding population, Russia, like much of Europe, is aging; while economists fret over China’s excessive dependence on investment, Russia badly needs more of it. Most of all, **Russia is little more than an oil state in disguise**. **The country is the largest producer of oil in the world** (yes, bigger even than Saudi Arabia), **and Russia’s dependence on crude has been increasing**. **About a decade ago, oil and gas accounted for less than half of Russia’s exports; in recent years, that share has risen to two-thirds**. **Most of all, oil provides more than half of the federal government’s revenues. What’s more, the economic model Putin has designed in Russia relies heavily not just on oil, but high oil prices**. **Oil lubricates the Russian economy by making possible the increases in government largesse that have fueled Russian consumption**. Budget spending reached 23.6% of GDP in the first quarter of 2012, up from 15.2% four years earlier. What that means is Putin requires a higher oil price to meet his spending requirements today than he did just a few years ago. Research firm Capital Economics figures that the government budget balanced at an oil price of $55 a barrel in 2008, but that now it balances at close to $120. Oil prices today have fallen far below that, with Brent near $100 and U.S. crude less than $90. **The farther oil prices fall, the more pressure is placed on Putin’s budget, and the harder it is for him to keep spreading oil wealth to the greater population through the government**. **With a large swath of the populace angered by his re-election to the nation’s presidency in March, and protests erupting on the streets of Moscow, Putin can ill-afford a significant blow to the economy, or his ability to use government resources to firm up his popularity.** That’s why **Putin hasn’t been scaling back even as oil prices fall**. His government is earmarking $40 billion to support the economy, if necessary, over the next two years. He does have financial wiggle room, even with oil prices falling. Moscow has wisely stashed away petrodollars into a rainy day fund it can tap to fill its budget needs. But **Putin doesn’t have the flexibility he used to have. The fund has shrunk**, from almost 8% of GDP in 2008 to a touch more than 3% today. **The package**, says Capital Economics, **simply highlights the weaknesses of Russia’s economy:** This cuts to the heart of a problem we have highlighted before – namely that Russia is now much more dependent on high and rising oil prices than in the past… The fact that the share of ‘permanent’ spending (e.g. on salaries and pensions) has increased…creates additional problems should oil prices drop back (and is also a concern from the perspective of medium-term growth)…The present growth model looks unsustainable unless oil prices remain at or above $120pb.

**Russian economic collapse causes global nuclear war**

Steven **David**, January/February 19**99**;Professor of International Relations and Associate Dean of Academic Affairs at the Johns Hopkins University, FOREIGN AFFAIRS, **,** http://www.foreignaffairs.org/19990101faessay955/steven-r-david/saving-america-from-the-coming-civilwars.html

**I**f internal war does strike Russia, economic deterioration will be a prime cause. From 1989 to the present, the GDP has fallen by 50 percent. In a society where, ten years ago, unemployment scarcely existed, it reached 9.5 percent in 1997 with many economists declaring the true figure to be much higher. Twenty-two percent of Russians live below the official poverty line (earning less than $ 70 a month). Modern Russia can neither collect taxes (it gathers only half the revenue it is due) nor significantly cut spending. Reformers tout privatization as the country's cure-all, but in a land without well-defined property rights or contract law and where subsidies remain a way of life, the prospects for transition to an American-style capitalist economy look remote at best. As the massive devaluation of the ruble and the current political crisis show, Russia's condition is even worse than most analysts feared. If conditions get worse, even the stoic Russian people will soon run out of patience.  A future conflict would quickly draw in Russia's military. In the Soviet days civilian rule kept the powerful armed forces in check. But with the Communist Party out of office, what little civilian control remains relies on an exceedingly fragile foundation -- personal friendships between government leaders and military commanders. Meanwhile, the morale of Russian soldiers has fallen to a dangerous low. Drastic cuts in spending mean inadequate pay, housing, and medical care. A new emphasis on domestic missions has created an ideological split between the old and new guard in the military leadership, increasing the risk that disgruntled generals may enter the political fray and feeding the resentment of soldiers who dislike being used as a national police force. Newly enhanced ties between military units and local authorities pose another danger. Soldiers grow ever more dependent on local governments for housing, food, and wages. Draftees serve closer to home, and new laws have increased local control over the armed forces. Were a conflict to emerge between a regional power and Moscow, it is not at all clear which side the military would support.  Divining the military's allegiance is crucial, however, since the structure of the Russian Federation makes it virtually certain that regional conflicts will continue to erupt. Russia's 89 republics, krais, and oblasts grow ever more independent in a system that does little to keep them together. As the central government finds itself unable to force its will beyond Moscow (if even that far), power devolves to the periphery. With the economy collapsing, republics feel less and less incentive to pay taxes to Moscow when they receive so little in return. Three-quarters of them already have their own constitutions, nearly all of which make some claim to sovereignty. Strong ethnic bonds promoted by shortsighted Soviet policies may motivate non-Russians to secede from the Federation. Chechnya's successful revolt against Russian control inspired similar movements for autonomy and independence throughout the country. If these rebellions spread and Moscow responds with force, **civil war is likely**.  Should Russia succumb to internal war, the consequences for the United States and Europe will be severe. **A major power** like Russia -- even though in decline -- **does not suffer civil war quietly or alone**. An embattled **Russia**n Federation might provoke **opportunistic attacks from enemies such as China.** Massive flows of refugees would pour into central and western Europe. Armed struggles in Russia could easily spill into its neighbors. Damage from the fighting, particularly attacks on nuclear plants, would poison the environment of much of Europe and Asia. Within Russia, the consequences would be even worse. Just as the sheer brutality of the last Russian civil war laid the basis for the privations of Soviet communism, a second civil war might produce another horrific regime.

# 3

#### Expanding a production tax credit incentivizes overproduction – this will overload the electricity grid, causing blackouts and increasing electricity prices

**Michaels, 08** - professor of economics at California State University and a senior fellow at the Institute for Energy Research. (Robert, “A Federal Renewable Electricity Requirement: What’s Not to Like?,” 11/13, <http://cato.org/pubs/pas/pa-627.pdf>)

Over the past 20 years, markets for “whole- sale” power have grown in scope and competi-tiveness. Instead of relying only on generation that they own, to varying degrees utilities everywhere can now obtain power by contracts with other generation owners (including non- utilities and industrial cogenerators). Utilities can also often use regional energy markets in which day-ahead and hourly prices equate supply and demand.

The case for competitive contracting and markets in electricity is the same as else- where—competition motivates the efficient use of resources, the efficient planning of investments for the future, and rewards inno- vation. Electricity markets, however, are con-strained by operating considerations. The production of power in an interconnected grid must equal its load at all times. Since a mismatch (in either direction) lasting only a single second can bring regional blackouts, the operator must have reserves available that can be brought on line quickly, and have units operating that can follow second-by- second changes in load.

Further, transmission constraints in elec- tricity differ in important ways from those in other networks. Unlike water or gas, power flows along individual AC lines follow physi-cal laws and cannot be directly controlled by the system operator. Instead the operator (often a computer algorithm) must some- times operate high cost generators in partic-ular locations in order to maintain regional balance and neither overload nor destabilize (underload) individual lines.

These technological requirements mean that the scope of power markets and the behav-ior of their participants must be constrained to maintain reliability. If there are no transmis- sion constraints and generators may be started and stopped on a moment’s notice, the least- cost production mix will ensure that those units with the lowest marginal costs will oper- ate before those with higher costs, a phenome- non known in the field as “dispatch by merit order.” A single utility that owned and operat- ed all of the generation in a control area would dispatch by merit order, and a competitive market where generators bid in their power at marginal cost would behave similarly. Security constraints, however, mean that strict merit order dispatch is impossible in both cases. Dispatch is also complicated by different “ramp rates” at which the outputs of different types of generators can be changed. Nuclear and coal units have low operating costs, but their output can not be altered quickly enough to match unexpected changes in load. Gas- fired units have higher operating costs, but the need to “follow” unexpected load changes will mean that some must operate even if lower marginal cost coal units are available. Hydro- electric power burns no fuel and renews itself with the seasons, but it does have a marginal opportunity cost—using part of a limited reser- voir at one date means that less will be available on others when it might be more valuable. In practice, hydro in the west is valuable for “shaping” power over the day to minimize the costs of bringing gas-fired units up to meet peaks and turning them down as demand falls in the evening.

Whether the system is centrally dispatched or market-based, a renewable—like hydro—can improve reliability and reduce operating costs. Renewables like biomass and geothermal may be base-loaded and integrated into either a market or a centralized system like conven-tional plants. Intermittent renewables, as we have seen, can bring operating problems to centralized systems if they are a large enough component of resources. They also, however, can constrain the use of markets.

The simple fact that wind units have a seeming marginal cost of zero (and that their output is not storable) does not unambigu- ously imply that they are beneficial.129 As not-ed above, for efficient operation, the net income to the producer of a wind-generated energy must equal the difference between the cost of the power it replaces and the increased costs of maintaining reliability that its inter- mittency imposes. As also noted above, this figure can become negative when wind looms large enough, meaning that the system’s avoidable costs would be minimized if the units were disconnected. In the absence of some method for assessing the wind’s actual contribution in real time, wind units will always bid into the market (at a zero price) while operating costs are higher than other- wise. The ancillary services will be priced at their scarcity value, but if wind is not, market prices will induce overinvestment in wind and require that more, rather than less, fuel be burned. Adding a production tax credit increases the distortion.

#### It could overload the entire grid

**Rutgers News, 08** (“Sustainable Energy Must Be Integrated Into Existing Power Grid, Says Rutgers–Camden Finance Scholar,” 11/18, <http://news.rutgers.edu/medrel/news-releases/2008/11/sustainable-energy-m-20081118/>)

CAMDEN --  Engineers and entrepreneurs are rushing to explore alternative sources of efficient and renewable energy in New Jersey and elsewhere in the country. A Rutgers School of Business—Camden professor has strong words of caution as projects involving wind farms and photovoltaic cells proliferate.

With the electric-power industry poised for its most dramatic changes in decades, too little thought is being devoted to coordinating these piecemeal initiatives, warns [Richard Michelfelder](http://business.camden.rutgers.edu/FacultyStaff/Directory/michelfelder.htm) in a recent edition of The Electricity Journal, the leading policy journal for the electric industry.

The consequence, he fears, might well be a disastrous overload of the nation’s electrical grid.

An assistant professor of finance at the Rutgers School of Business—Camden and former president and CEO of Quantum Consulting Inc., a national public utilities consulting firm based in Berkeley, Cal., Michelfelder comes to his assessment after a quarter-century in the energy-technology industry.

“When you start adding random assets to the grid, you also add the possibility of disruptions in the coordination of the flow of electricity,” says Michelfelder.

#### The collapse of the electricity grid will send us back to the stone age – the economy would be destroyed

**Rifkin, 2** - the founder and president of the Foundation on Economic Trends, Fellow at the Wharton School’s Executive Education Program (Jeremy, The Hydrogen Economy: The Creation of the World-Wide Energy Web and the Redistribution of Power on Earth, p.163-164 ) // SM

It is understandable that we would be unmindful of the critical role that oil plays in feeding our families, because the process of growing food is so removed in time and place from our urban lives. The same holds true for the electricity that we have come to rely on to maintain our daily routines. The electrical grid is the central nervous system that coordinates a densely populated urban existence. Without electrical power, urban life would cease to exist, the information age would become a faded memory, and industrial production would grind to a halt. The fastest way to ensure the collapse of the modern era would be to pull the plug and turn off the flow of electricity. Light, heat, and power would all stop. Civilization as we know it would come to an end.

# 4

#### The United States federal government should fully fund the construction of ten super chimneys.

**Super chimneys solve global warming through air convection and cloud formation**

**Pesochinsky, 08** (Michael, engineer. “How the super-chimney will cool the atmosphere” <http://www.superchimney.org/atmosphere.html>)

The super-chimney will cool the Earth atmosphere by facilitating the heat exchange, and this is the most important aspect of the super-chimney. If we think of Global Warming, we should understand that the phenomenon is caused not by the planet receiving more heat but rather by increasing the heat capacity of the atmosphere due to the greenhouse gases. Respectively, the super-chimney will change the amount of heat exhaled by the planet. It will accelerate the rate of the heat exchange in atmosphere, which will result in the reduction of the Earth atmosphere temperature. There are three cooling mechanisms for air: convection, conduction and radiation. Without getting into fine details, for our planet it means the following: the planet at large receives and looses energy only via radiation, thus radiation actually is deciding factor on how much heat the planet receives. As for the air processes within the atmosphere, convection and conduction are the two determinative powers. Normally, heat radiation comes from sun and then it is partially absorbed by the atmosphere while it travels through. Then the heat radiation is partially absorbed by the planet surface. The other part of heat radiation is reflected back into space. The reflected heat travels back through the atmosphere and naturally, part of it is again absorbed by the atmosphere. The super-chimney will facilitate air convection by bringing masses of warm air at high altitude, resulting in the warm air coming out of the super-chimney exit. When the heat from the air radiates out it will be already at high altitude thus the amount of energy reabsorbed by the atmosphere will be less, because there will be a thinner layer of air for heat to travel through. Therefore, more heat will be leaving the atmosphere, thus, reducing the atmosphere temperature. Additionally, as it was explained above, the super-chimney will create rain and clouds. Clouds will be reflecting some sunlight thus, additionally cooling the atmosphere by reducing the total amount of sun radiation received by the planet. According to the calculations, it will take 10 super-chimneys to offset the heat surplus in the Earth Atmosphere, which causes Global Warming. (See Attachment A: Calculations). The calculations do not take into account that the super-chimney will cause extensive cloud formations, which will increase the amount of sun radiation reflected back into space. Thus, we will need fewer than 10 super-chimneys to offset the effects of Global Warming.

# 5

**The United States federal government ought to substantially make available a production tax credit for systems referenced in United States Code Title 42, Chapter 100, § 9210(2) that is diminishing only as said systems improve in price and performance as per our Jenkins evidence.**

#### Temporary, diminishing incentives are vital to inducing competition, technological innovation and ending subsidy dependence

**Jenkins, 12** – Director of Energy and Climate Policy at the Breakthrough Institute (Jesse, Congressional Testimony before the Senate Committee on Energy and Natural Resources, 5/22, <http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=31b79a1a-83a0-4ae6-8c80-30fe754ad0ea>)

Recognizing that investment horizons, technology development cycles, and market conditions vary across advanced energy technology segments, precise policy mechanisms will likely differ from sector to sector. Yet whether through production or investment subsidies, consumer rebates, market-­‐creating regulations or standards, or other market incentives, we recommend that any advanced energy deployment subsidies meet the following policy design criteria. Reformed policies should:

1. ESTABLISH A COMPETITIVE MARKET. Deployment policies should create market opportunities for advanced clean energy technologies while fostering competition between technology firms.

2. DRIVE COST REDUCTIONS AND PERFORMANCE IMPROVEMENTS. Deployment policies should create market incentives and structures that demand and reward continual improvement in technology performance and cost.

3. PROVIDE TARGETED AND TEMPORARY SUPPORT FOR MATURING TECHNOLOGIES. Deployment policies must not operate in perpetuity, but rather should be terminated if technology segments either fail to improve in price and performance or become competitive without subsidy.

4. REDUCE SUBSIDY LEVELS IN RESPONSE TO CHANGING TECHNOLOGY COSTS. Deployment incentives should decline as technologies improve in price and performance to both conserve limited taxpayer and consumer resources and provide clear incentives for continued technology improvement.

5. AVOID TECHNOLOGY LOCK-OUT AND PROMOTE A DIVERSE ENERGY PORTFOLIO. Deployment incentives should be structured to create market opportunities for energy technologies at different levels of maturity, including new market entrants, to ensure that each has a chance to mature while allowing technologies of similar maturity levels to compete amongst themselves.

6. PROVIDE SUFFICIENT BUSINESS CERTAINTY. While deployment incentives should be temporary, they must still provide sufficient certainty to support key business decisions by private firms and investors.

7. MAXIMIZE THE IMPACT OF TAXPAYER RESOURCES AND PROVIDE READY ACCESS TO AFFORDABLE PRIVATE CAPITAL. Deployment incentives should be designed to avoid creating unnecessarily high transaction costs while opening up clean tech investment to broader private capital markets.

#### Conditioning new incentives on price competition solves the aff better and avoids our disads

**Hayward, 10** – resident scholar at the American Enterprise Institute (Steven, “Post-Partisan Power: How a Limited and Direct Approach to Energy Innovation Can Deliver Clean, Cheap Energy, Economic Productivity and National Prosperity”, October, <http://thebreakthrough.org/blog/Post-Partisan%20Power.pdf>)

The government has a long history of successfully driving innovation and price declines in emerging technologies by acting directly as a demanding customer to spur the early commercialization and largescale deployment of cutting-edge technologies. From radios and microchips to lasers and camera lenses, the federal government, in particular the DOD, has helped catalyze the improvement of countless innovative technologies and supported the emergence of vibrant American industries in the process. 67

Yet today’s mess of open-ended energy subsidies reward production of more of the same product, not innovation. The federal government showers subsidies across many energy options, from oil and coal to ethanol and wind power. None of these efforts, however, are designed or optimized to drive and reward innovation and ensure the prices of these technologies fall over time, making the subsidies effectively permanent. This must change.

Competitive Deployment Incentives

The current energy subsidy and deployment framework should be turned on its head. Government investments succeed not when they are blanket subsidies but rather when they are narrowly targeted to specific outcomes, such as developing computers to allow for rocket systems, building a communications network to survive a nuclear attack, or creating increasingly efficient and powerful jet engines. These public investments paid off handsomely in personal computers, the Internet, and gas turbines used in both commercial air travel as well as modern natural gas power plants. 68

In an era of expanding federal debt, across-the-board energy subsidy reform should be pursued. Incentives for energy technology deployment should be targeted and disciplined. Technologies should receive competitive deployment incentives only to the extent that they are becoming cheaper in unsubsidized terms over time.

The strategy that we propose would be aimed at low-carbon technologies that, at a minimum, satisfy the following criteria:

 The technology has been demonstrated and has proven technical feasibility at commercial scale;

 Is currently priced above normal market rates and is locked out of markets by more mature,

entrenched technology competitors;

 Has potential for significant and sustained cost and performance improvements during deployment

and scale-up;

#Has strong prospects for significant market penetration once the technology reaches competitive

prices.

Targeted and competitive deployment incentives could be created for various classes of energy technologies to ensure that each has a chance to mature. Incentive levels should fall at regular intervals, terminating if the technology class either fails to improve in price or reaches cost parity in the absence of any further incentives.

Structured in this manner, reformed national energy deployment incentives will not select winners and losers, nor will it create permanently subsidized industries. These public investments will instead provide opportunity for all emerging low-carbon energy technologies to demonstrate progress toward competitive costs while increasing the rate at which early-stage clean and affordable energy technologies are commercialized.

#### The CP prevents the collapse of the energy bubble – avoids economic collapse

**Swezey, 11** – project director for The Breakthrough Institute (Devon, “Clean Tech Sector Heading for a Major Crash” 7/11, <http://blacklistednews.com/?news_id=14600&print=1>)

The global clean energy industry is set for a major crash. The reason is simple. Clean energy is still much more expensive and less reliable than coal or gas, and in an era of heightened budget austerity the subsidies required to make clean energy artificially cheaper are becoming unsustainable.

Clean tech crashes are nothing new. The U.S. wind energy industry has collapsed three times before, first in the mid 1990s and most recently in 2002 and 2004 when Congress failed to extend the tax credit that made it profitable. But the impact and magnitude of the coming clean tech crash will far outstrip those of past years.

As part of its effort to combat the economic recession, the federal government pumped nearly $80 billion in direct investment and tax credits into the clean energy sector, catalyzing an unprecedented industry expansion. Solar energy, for example, grew 67% in the United States in 2010. The U.S. wind energy industry also experienced unprecedented growth as a result of the generous Section 1603 clean energy stimulus program. The industry grew by 40% and added 10 GW of new turbines in 2009. Yet many of the federal subsidies that have driven such rapid growth are set to expire in the next few years, and clean energy remains unable to compete without them.

The crash won't be limited to the United States. In many European countries, clean energy subsidies have become budget casualties as governments attempt to curb mounting deficits. Spain, Germany, France, Italy and the Czech Republic have all announced cuts to clean energy subsidies.

Such cuts are not universal, however. China, flush with cash, is bucking the trend, committing $760 billion over 10 years for clean energy projects. China is continuing to invest in low-carbon energy as a way of meeting its voracious energy demand, diversifying its electricity supply, and alleviating some of the negative health consequences of its reliance on fossil energy.

If U.S. and European clean energy markets collapse while investment continues to ramp up in China, the short-term consequences will likely be a migration of much of the industry to Asia. As we wrote in our 2009 report, "Rising Tigers, Sleeping Giant," this would have significant economic consequences for the United States, as the jobs, revenues and other benefits of clean tech growth accrue overseas.

In the long-term, however, clean energy must become much cheaper and more reliable if it is to widely displace fossil fuels on the scale of national economies and become a commercially viable industry.

Breaking the Boom-Bust Cycle

Why is the United States still locked in this self-perpetuating boom-bust cycle in clean energy? The problem, according to a new essay by energy experts David Victor and Kassia Yanosek in this week's Foreign Affairs, is that our system of clean energy subsidization is jury-rigged to support the deployment of only the least-risky and most mature clean energy technologies, while lacking clear incentives for continual innovation that could make clean energy competitive on cost with conventional energy sources. Rather, we should "invest in more innovative technologies that stand a better chance of competing with conventional energy sources over the long haul." According to Victor and Yanosek, nearly seven-eighths of global clean energy investment goes toward deploying existing technologies that aren't competitive without subsidy, while only a small share goes to encouraging innovation in existing technologies or developing new ones.

This must change. Rather than simply subsidize production of current technologies, we need a comprehensive energy innovation strategy to develop, manufacture, and deploy riskier but more promising clean energy technologies that may eventually compete with fossil energy at scale. Instead of rewarding companies for building the same product, we should reward companies who continuously improve designs and cut costs over time.

Such a federal strategy will require major federal investments, but of a different kind than the subsidies that have driven the clean tech industry in years past. For starters, we must dramatically ramp up funding for early-stage clean energy research and development. A growing bipartisan group of think tanks and business leaders have pushed an investment of at least $15 billion annually in energy R&D, up from its current $4 billion level.

Targeted funding is needed to solve technology challenges and ensure that innovative technologies can develop and improve. One key program that helps fulfill this need is ARPA-E, which funds a portfolio of innovative technology companies and helps connect them with private investors. But ARPA-E's budget has continually been under assault in budget negotiations, hampering its ability to catalyze innovation in the energy sector and limiting its impact.

We also need to invest in cutting-edge advanced manufacturing capabilities and shared technology infrastructure that would help U.S. companies cut costs and improve manufacturing processes. As the President's Council of Advisors on Science and Technology wrote in a report released last week, manufacturing is vital to innovation, "because of the synergies created by locating production processes and design processes near to each other." Furthermore, bringing down manufacturing costs, such as by supporting shared infrastructure for small firms, or offering financing for the adoption of innovative technologies in manufacturing, will be a key component of reducing the costs of new clean energy innovations.

Lastly, the nation's hodgepodge of energy deployment subsidies is in dire need of reform. As Breakthrough and colleagues wrote in "Post-Partisan Power," we need an energy deployment regime that demands and rewards innovation, rather than just supporting more of the same. Brookings' Mark Muro (a co-author or PPP) expands, "targeted and competitive deployment incentives could be created for various classes of energy technologies that would ensure that each has a chance to mature even as each is challenged to innovate and locate price declines." Rather than create permanently subsidized industries, such investments would "provide the opportunity for opportunity for all emerging low-carbon energy technologies to demonstrate progress toward competitive costs," while speeding commercialization.

It is clear that the current budgetary environment in the United States presents challenges to the viability of the fast-growing clean energy industry. But it also presents an opportunity. By repurposing existing clean energy policies and investing in clean energy innovation, the United States can be the first country to make clean energy cheap and reliable, a distinction that is sure to bring major economic benefits in a multi-trillion dollar energy market.

#### Competitiveness prevents great power war

**Baru 9** - Visiting Professor at the Lee Kuan Yew School of Public Policy in Singapore (Sanjaya, “Year of the power shift?,” http://www.india-seminar.com/2009/593/593\_sanjaya\_baru.htm

**T**here is no doubt that economics alone will not determine the balance of global power, but there is no doubt either that economics has come to matter for more.

The management of the economy, and of the treasury, has been a vital aspect of statecraft from time immemorial. Kautilya’s *Arthashastra* says, ‘From the strength of the treasury the army is born. …men without wealth do not attain their objectives even after hundreds of trials… Only through wealth can material gains be acquired, as elephants (wild) can be captured only by elephants (tamed)… A state with depleted resources, even if acquired, becomes only a liability.’4 Hence, economic policies and performance do have strategic consequences.5

In the modern era, the idea that strong economic performance is the foundation of power was argued most persuasively by historian Paul Kennedy. ‘Victory (in war),’ Kennedy claimed, ‘has repeatedly gone to the side with more flourishing productive base.’6 Drawing attention to the interrelationships between economic wealth, technological innovation, and the ability of states to efficiently mobilize economic and technological resources for power projection and national defence, Kennedy argued that nations that were able to better combine military and economic strength scored over others.

‘The fact remains,’ Kennedy argued, ‘that all of the major shifts in the world’s *military-power* balance have followed alterations in the *productive* balances; and further, that the rising and falling of the various empires and states in the international system has been confirmed by the outcomes of the major Great Power wars, where victory has always gone to the side with the greatest material resources.’7

**I**n Kennedy’s view the geopolitical consequences of an economic crisis or even decline would be transmitted through a nation’s inability to find adequate financial resources to simultaneously sustain economic growth and military power – the classic ‘guns vs butter’ dilemma.

Apart from such fiscal disempowerment of the state, economic under-performance would also reduce a nation’s attraction as a market, a source of capital and technology, and as a ‘knowledge power’. As power shifted from Europe to America, so did the knowledge base of the global economy. As China’s power rises, so does its profile as a ‘knowledge economy’.

Impressed by such arguments the China Academy of Social Sciences developed the concept of Comprehensive National Power (CNP) to get China’s political and military leadership to focus more clearly on economic and technological performance than on military power alone in its quest for Great Power status.8

While China’s impressive economic performance and the consequent rise in China’s global profile has forced strategic analysts to acknowledge this link, the recovery of the US economy in the 1990s had reduced the appeal of the Kennedy thesis in Washington DC. We must expect a revival of interest in Kennedy’s arguments in the current context.

**A** historian of power who took Kennedy seriously, Niall Ferguson, has helped keep the focus on the geopolitical implications of economic performance. In his masterly survey of the role of finance in the projection of state power, Ferguson defines the ‘square of power’ as the tax bureaucracy, the parliament, the national debt and the central bank. These four institutions of ‘fiscal empowerment’ of the state enable nations to project power by mobilizing and deploying financial resources to that end.9

Ferguson shows how vital sound economic management is to strategic policy and national power. More recently, Ferguson has been drawing a parallel between the role of debt and financial crises in the decline of the Ottoman and Soviet empires and that of the United States of America. In an early comment on the present financial crisis, Ferguson wrote:

‘We are indeed living through a global shift in the balance of power very similar to that which occurred in the 1870s. This is the story of how an over-extended empire sought to cope with an external debt crisis by selling off revenue streams to foreign investors. The empire that suffered these setbacks in the 1870s was the Ottoman empire. Today it is the US… It remains to be seen how quickly today’s financial shift will be followed by a comparable geopolitical shift in favour of the new export and energy empires of the east. Suffice to say that the historical analogy does not bode well for America’s quasi-imperial network of bases and allies across the Middle East and Asia. Debtor empires sooner or later have to do more than just sell shares to satisfy their creditors*. …*as in the 1870s the balance of financial power is shifting. Then, the move was from the ancient Oriental empires (not only the Ottoman but also the Persian and Chinese) to Western Europe. Today the shift is from the US – and other western financial centres – to the autocracies of the Middle East and East Asia.’10

An economic or financial crisis may not trigger the decline of an empire. It can certainly speed up a process already underway. In the case of the Soviet Union the financial crunch caused by the Afghan war came on top of years of economic under-performance and the loss of political legitimacy of the Soviet state. In a democratic society like the United States the political legitimacy of the state is constantly renewed through periodic elections. Thus, the election of Barack Obama may serve to renew the legitimacy of the state and by doing so enable the state to undertake measures that restore health to the economy. This the Soviet state was unable to do under Gorbachev even though he repudiated the Brezhnev legacy and distanced himself from it.

Hence, one must not become an economic determinist and historic parallels need not always be relevant. Politics can intervene and offer solutions. Political economy and politics, in the form of Keynesian economics and the ‘New Deal’, did intervene to influence the geopolitical implications of the Great Depression. Whether they will do so once again in today’s America remains to be seen.

# Warming

**Durban already happened – proves they’ll fail**

**Electrical grid is 30% of emissions**

**Wind PTC won’t pass in the squo – Romney galvanized Republicans against it**

**NYT 9/20**/12 ("Tax Credit in Doubt, Wind Power Industry Is Withering" http://www.nytimes.com/2012/09/21/business/energy-environment/as-a-tax-credit-wanes-jobs-vanish-in-wind-power-industry.html?pagewanted=all&\_r=0)

Similar cuts are happening throughout the American wind sector, which includes hundreds of manufacturers, from multinationals that make giant windmills to smaller local manufacturers that supply specialty steel or bolts. In recent months, companies have announced almost 1,700 layoffs.

At its peak in 2008 and 2009, the industry employed about 85,000 people, according to the American Wind Energy Association, the industry’s principal trade group.

About 10,000 of those jobs have disappeared since, according to the association, as wind companies have been buffeted by weak demand for electricity, stiff competition from cheap natural gas and cheaper options from Asian competitors. Chinese manufacturers, who can often underprice goods because of generous state subsidies, have moved into the American market and have become an issue in the larger trade tensions between the countries. In July, the United States Commerce Department imposed tariffs on steel turbine towers from China after finding that manufacturers had been selling them for less than the cost of production.

And now, on top of the business challenges, the industry is facing a big political problem in Washington: the Dec. 31 expiration of a federal tax credit that makes wind power more competitive with other sources of electricity.

The tax break, which costs about $1 billion a year, has been periodically renewed by Congress with support from both parties. This year, however, it has become a wedge issue in the presidential contest. President Obama has traveled to wind-heavy swing states like Iowa to tout his support for the subsidy. Mitt Romney, the Republican nominee, has said he opposes the wind credit, and that has galvanized Republicans in Congress against it, perhaps dooming any extension or at least delaying it until after the election despite a last-ditch lobbying effort from proponents this week.

Opponents argue that the industry has had long enough to wean itself from the subsidy and, with wind representing a small percentage of total electricity generation, the taxpayers’ investment has yielded an insufficient return.

“Big Wind has had extension after extension after extension,” said Benjamin Cole, a spokesman for the American Energy Alliance, a group partly financed by oil interests that has been lobbying against the credit in Washington. “The government shouldn’t be continuing to prop up industries that never seem to be able to get off their training wheels.”

But without the tax credit in place, the wind business “falls off a cliff,” said Ryan Wiser, a staff scientist at Lawrence Berkeley National Laboratory who studies the market potential of renewable electricity sources.

The industry’s precariousness was apparent a few weeks ago at the Gamesa factory, as a crew loaded the guts of the company’s newest model of the component, a device known as a nacelle, into its fiberglass shell. Only 50 completed nacelles awaited pickup in a yard once filled with three times as many, most of the production line stood idle, and shelves rated to hold 7,270 pounds of parts and equipment lay bare.

**Rising CO2 is key to rice yields—this solves famine, fresh water availability, and biodiversity**

**IDSO 2010** (Unclear which ones, but they are all esteemed scientists with PhDs, “Rice Production and the Looming Water Crisis,” May 19, http://www.co2science.org/articles/V13/N20/B2.php)

Shimono et al. write that "by 2050, the world's population will have increased by about 37%, from the current level of 6.7 billion to an estimated 9.2 billion (UN, 2009), with a corresponding increase in global food demand." They also state that "about 0.6 billion Mg of rice is produced annually from an area of 1.5 million km2, making rice one of the most important crops for supporting human life," especially, as noted by Pritchard and Amthor (2005), since it supplies the planet's human population with an estimated 20% of their energy needs (on a caloric basis) and 14% of their protein requirements (on a weight basis). Within this context, the six scientists further note that "rice production depends heavily on water availability," stating that "irrigated lowlands account for 55% of the total area of harvested rice and typically produce two to three times the crop yield of rice grown under non-irrigated conditions (IRRI, 2002)." And because the demand for ever greater quantities of water will continue to rise, due to our need to adequately feed our growing numbers, they conclude that "efficient use of water will thus be essential for future rice production." What was done In an attempt to determine how the agricultural enterprise may be impacted in this regard by the ongoing rise in the air's CO2 content, the Japanese researchers conducted a two-year free-air CO2 enrichment or FACE study in fields at Shizukuishi, Iwate (Japan) to learn how elevated CO2 may reduce crop water use via its impact on the leaf stomatal conductance (gs) of three varieties of rice (Oryza sativa L.): early-maturing Kirara397, intermediate-maturing Akitakomachi, and latest-maturing Hitomebore. What was learned In response to the 53% increase in daytime atmospheric CO2 concentration employed in their experiments, Shimono et al. report that "the reduction in gs due to elevated CO2 was similar across measurements, averaging around 20% in the morning, 24% around noon and 23% in the afternoon across all growth stages." And they add that "there was no significant CO2 x cultivar interaction." What it means With the concomitant increase in grain yield that also results from atmospheric CO2 enrichment (see Rice in the Plant Growth Data section of our website), it should be apparent to all that a continuation of the historical and still-ongoing rise in the air's CO2 content will play a major role in enabling us to meet our food needs at the mid-point of the current century, without having to lay claim to all of the planet's remaining fresh water resources and much of its undeveloped land and thereby driving many of the species with which we share the terrestrial biosphere to extinction for lack of land and water to meet their needs, as is also explained in greater detail in several of the items we have archived under the heading of Food in our Subject Index.

**Solves Asian famine**

**IDSO 2004** (Sherwood, Craig, Keith, Carbon Science Magazine, Jan 13. “Atmospheric CO2 Enrichment: Boosting Rice Yields of Asia.” http://www.co2science.org/articles/N2/B2.php)

“On the basis of both area and tonnage harvested,” according to the authors, “Oryza sativa L. (rice) is the most important crop in Asia, providing a significant proportion of the people’s dietary needs (Alexandratos, 1995).” Hence, they say that “in view of the expected growth in Asia’s population, there is a need to determine how the predicted increase in the levels of atmospheric CO2 will affect rice yield.” What was done In order to determine the interactive effects of elevated CO2 and nitrogen (N) availability on the grain yield of rice crops grown under temperate flooded paddy conditions, Kim et al. grew rice crops from the seedling stage to maturity at atmospheric CO2 concentrations of ambient and ambient plus 200 ppm using FACE technology and three levels of applied nitrogen – low (LN, 4 v N M-2), medium (MN, 8 and 9 g N m-2), and high (HN, 15 g N m-2) – for three cropping seasons (1998-2000) What was learned The authors report that “the yield response to elevated CO2 in crops supplied with MN (+14.6$) or HN (+15.2%) was about twice that of crops supplied with LN (+7.4%), “confirming the importance of N availability to the response of rice to atmospheric CO2 enrichment previously determined by Kim et al. (2001) and Kobaysahi et al. (2001). What it means In terms of the more common increase in CO2 concentration used to express plant responses to atmospheric CO2 enrichment, i.e., 300ppm, the results of Kim et al. suggest we could likely expect something on the order of a 22% increase in rice yields for the MN treatment, which they say is “similar to that recommended to local farmers.” Such a yield increase courtesy of the ongoing rise in the air’s CO2 content would go a long way towards helping the people of Asia meet the future dietary needs of their expanding population.

**The impact is billions of deaths, war, and poverty**

**CANTRELL 2002** (Ronals, General Director of the International Rice Research Institute, Economic Perspectives, May http://usinfo.state.gov/journals/ites/0502/ijee/rice.htm)

What's so special about rice production? Put simply, no other economic activity feeds so many people, supports so many families, is so crucial to the development of so many nations, and has more impact on so much of our environment. Rice production feeds almost half the planet each day, provides most of the main income for millions of poor rural households, can topple governments, and covers 11 percent of the earth's arable area. But there is something else about rice that many may see as even more impressive and important. That is the enormous success we have had in using rice to improve the lives of world's poor and deprived. By providing rice farmers with options and new technologies -- and so helping them boost production -- extraordinary things have been achieved. In much of Asia, plentiful, cheap rice has been the propelling force behind the region's economic, political, and social stability. Rice has kept the continent nourished, employed, and peaceful. THE ASIAN MIRACLE The true Asian miracle hasn't been stunning economic development; it's been keeping people fed and societies stable. This vast continent grows -- and eats -- more than 90 percent of all the world's rice on more than 250 million tiny farms, with most Asians eating rice two or three times a day. Half of every harvest never even leaves the farm: it feeds the family that planted it. Hundreds of millions of poor people spend half to three-fourths of their incomes on rice -- and nothing else. For these people, rice anchors their precarious lives.

**Nuke war**

**KNIGHT RIDDER 2000** (“Top administration officials warn stakes for U.S. are high in Asian conflicts”, 3-11)

Few if any experts think China and Taiwan, North Korea and South Korea, or India and Pakistan are spoiling to fight. But even a minor miscalculation by any of them could destabilize Asia, jolt the global economy and even start a nuclear war. India, Pakistan and China all have nuclear weapons, and North Korea may have a few, too. Asia lacks the kinds of organizations, negotiations and diplomatic relationships that helped keep an uneasy peace for five decades in Cold War Europe. "Nowhere else on Earth are the stakes as high and relationships so fragile," said Bates Gill, director of northeast Asian policy studies at the Brookings Institution, a Washington think tank. "We see the convergence of great power interest overlaid with lingering confrontations with no institutionalized security mechanism in place. There are elements for potential disaster."

#### Warming’s irreversible

**Solomon et al ‘10** Susan Solomon et. Al, Chemical Sciences Division, Earth System Research Laboratory, National Oceanic and Atmospheric Administration, Ph.D. in Climotology University of California, Berkeley, Nobel Peace Prize Winner, Chairman of the IPCC, Gian-Kasper Plattner, Deputy Head, Director of Science, Technical Support Unit Working Group I, Intergovernmental Panel on Climate Change Affiliated Scientist, Climate and Environmental Physics, Physics Institute, University of Bern, Switzerland, John S. Daniel, research scientist at the National Oceanic and Atmospheric Administration (NOAA), Ph.D. in physics from the University of Michigan, Ann Arbor, Todd J. Sanford, Cooperative Institute for Research in Environmental Science, University of Colorado Daniel M. Murphy, Chemical Sciences Division, Earth System Research Laboratory, National Oceanic and Atmospheric Administration, Boulder Gian-Kasper Plattner, Deputy Head, Director of Science, Technical Support Unit Working Group I, Intergovernmental Panel on Climate Change, Affiliated Scientist, Climate and Environmental Physics, Physics Institute, University of Bern, Switzerland Reto Knutti, Institute for Atmospheric and Climate Science, Eidgenössiche Technische Hochschule Zurich and Pierre Friedlingstein, Chair, Mathematical Modelling of Climate Systems, member of the Science Steering Committee of the Analysis Integration and Modeling of the Earth System (AIMES) programme of IGBP and of the Global Carbon Project (GCP) of the Earth System Science Partnership (ESSP) (Proceedings of the National Academy of the Sciences of the United States of America, "Persistence of climate changes due to a range of greenhouse gases", October 26, 2010 Vol 107.43: 18354-18359)

Carbon dioxide, methane, nitrous oxide, and other greenhouse gases increased over the course of the 20th century due to human activities. The human-caused increases in these gases are the primary forcing that accounts for much of the global warming of the past fifty years, with carbon dioxide being the most important single radiative forcing agent (1). Recent studies have shown that the human-caused warming linked to carbon dioxide is nearly irreversible for more than 1,000 y, even if emissions of the gas were to cease entirely (2–5). The importance of the ocean in taking up heat and slowing the response of the climate system to radiative forcing changes has been noted in many studies (e.g., refs. 6 and 7). The key role of the ocean’s thermal lag has also been highlighted by recent approaches to proposed metrics for comparing the warming of different greenhouse gases (8, 9). Among the observations attesting to the importance of these effects are those showing that climate changes caused by transient volcanic aerosol loading persist for more than 5 y (7, 10), and a portion can be expected to last more than a century in the ocean (11–13); clearly these signals persist far longer than the radiative forcing decay timescale of about 12–18 mo for the volcanic aerosol (14, 15). Thus the observed climate response to volcanic events suggests that some persistence of climate change should be expected even for quite short-lived radiative forcing perturbations. It follows that the climate changes induced by short-lived anthropogenic greenhouse gases such as methane or hydrofluorocarbons (HFCs) may not decrease in concert with decreases in concentration if the anthropogenic emissions of those gases were to be eliminated. In this paper, our primary goal is to show how different processes and timescales contribute to determining how long the climate changes due to various greenhouse gases could be expected to remain if anthropogenic emissions were to cease. Advances in modeling have led to improved AtmosphereOcean General Circulation Models (AOGCMs) as well as to Earth Models of Intermediate Complexity (EMICs). Although a detailed representation of the climate system changes on regional scales can only be provided by AOGCMs, the simpler EMICs have been shown to be useful, particularly to examine phenomena on a global average basis. In this work, we use the Bern 2.5CC EMIC (see Materials and Methods and SI Text), which has been extensively intercompared to other EMICs and to complex AOGCMs (3, 4). It should be noted that, although the Bern 2.5CC EMIC includes a representation of the surface and deep ocean, it does not include processes such as ice sheet losses or changes in the Earth’s albedo linked to evolution of vegetation. However, it is noteworthy that this EMIC, although parameterized and simplified, includes 14 levels in the ocean; further, its global ocean heat uptake and climate sensitivity are near the mean of available complex models, and its computed timescales for uptake of tracers into the ocean have been shown to compare well to observations (16). A recent study (17) explored the response of one AOGCM to a sudden stop of all forcing, and the Bern 2.5CC EMIC shows broad similarities in computed warming to that study (see Fig. S1), although there are also differences in detail. The climate sensitivity (which characterizes the long-term absolute warming response to a doubling of atmospheric carbon dioxide concentrations) is 3 °C for the model used here. Our results should be considered illustrative and exploratory rather than fully quantitative given the limitations of the EMIC and the uncertainties in climate sensitivity. Results One Illustrative Scenario to 2050. In the absence of mitigation policy, concentrations of the three major greenhouse gases, carbon dioxide, methane, and nitrous oxide can be expected to increase in this century. If emissions were to cease, anthropogenic CO2 would be removed from the atmosphere by a series of processes operating at different timescales (18). Over timescales of decades, both the land and upper ocean are important sinks. Over centuries to millennia, deep oceanic processes become dominant and are controlled by relatively well-understood physics and chemistry that provide broad consistency across models (see, for example, Fig. S2 showing how the removal of a pulse of carbon compares across a range of models). About 20% of the emitted anthropogenic carbon **remains in the atmosphere for** many **thousands of years** (with a range across models including the Bern 2.5CC model being about 19 4% at year 1000 after a pulse emission; see ref. 19), until much slower weathering processes affect the carbonate balance in the ocean (e.g., ref. 18). Models with stronger carbon/climate feedbacks than the one considered here could display larger and more persistent warmings due to both CO2 and non-CO2 greenhouse gases, through reduced land and ocean uptake of carbon in a warmer world. Here our focus is not on the strength of carbon/climate feedbacks that can lead to differences in the carbon concentration decay, but rather on the factors that control the climate response to a given decay. The removal processes of other anthropogenic gases including methane and nitrous oxide are much more simply described by exponential decay constants of about 10 and 114 y, respectively (1), due mainly to known chemical reactions in the atmosphere. In this illustrative study, we do not include the feedback of changes in methane upon its own lifetime (20). We also do not account for potential interactions between CO2 and other gases, such as the production of carbon dioxide from methane oxidation (21), or changes to the carbon cycle through, e.g., methane/ozone chemistry (22). Fig. 1 shows the computed future global warming contributions for carbon dioxide, methane, and nitrous oxide for a midrange scenario (23) of projected future anthropogenic emissions of these gases to 2050. Radiative forcings for all three of these gases, and their spectral overlaps, are represented in this work using the expressions assessed in ref. 24. In 2050, the anthropogenic emissions are stopped entirely for illustration purposes. The figure shows nearly irreversible warming for at least 1,000 y due to the imposed carbon dioxide increases, as in previous work. **All published studies to date**, which use multiple EMICs and one AOGCM, show largely irreversible warming due to future carbon dioxide increases (to within about 0.5 °C) on a timescale of at least 1,000 y (3–5, 25, 26). Fig. 1 shows that the calculated future warmings due to anthropogenic CH4 and N2O also persist notably longer than the lifetimes of these gases. The figure illustrates that emissions of key non-CO2 greenhouse gases such as CH4 or N2O could lead to warming that both temporarily exceeds a given stabilization target (e.g., 2 °C as proposed by the G8 group of nations and in the Copenhagen goals) and remains present longer than the gas lifetimes even if emissions were to cease. A number of recent studies have underscored the important point that reductions of non-CO2 greenhouse gas emissions are an approach that can indeed reverse some past climate changes (e.g., ref. 27). Understanding how quickly such reversal could happen and why is an important policy and science question. Fig. 1 implies that the use of policy measures to reduce emissions of short-lived gases will be less effective as a rapid climate mitigation strategy than would be thought if based only upon the gas lifetime. Fig. 2 illustrates the factors influencing the warming contributions of each gas for the test case in Fig. 1 in more detail, by showing normalized values (relative to one at their peaks) of the warming along with the radiative forcings and concentrations of CO2 , N2O, and CH4 . For example, about two-thirds of the calculated warming due to N2O is still present 114 y (one atmospheric lifetime) after emissions are halted, despite the fact that its excess concentration and associated radiative forcing at that time has dropped to about one-third of the peak value.

#### No extinction – empirically denied

**Carter 11–** Robert, PhD, Adjuct Research Fellow, James Cook University, Craig Idso, PhD, Chairman at the Center for the Study of Carbon Dioxide and Global Change, Fred Singer, PhD, President of the Science and Environmental Policy Project, Susan Crockford, evolutionary biologist with a specialty in skeletal taxonomy , paleozoology and vertebrate evolution, Joseph D’Aleo, 30 years of experience in professional meteorology, former college professor of Meteorology at Lyndon State College, Indur Goklany, independent scholar, author, and co-editor of the Electronic Journal of Sustainable Development, Sherwood Idso, President of the Center for the Study of Carbon Dioxide and Global Change, Research Physicist with the US Department of Agriculture, Adjunct Professor in the Departments of Geology, Botany, and Microbiology at Arizona State University, Bachelor of Physics, Master of Science, and Doctor of Philosophy, all from the University of Minnesota, Madhav Khandekar, former research scientist from Environment Canada and is an expert reviewer for the IPCC 2007 Climate Change Panel, Anthony Lupo, Department Chair and Professor of Atmospheric Science at the University of Missouri, Willie Soon, astrophysicist at the Solar and Stellar Physics Division of the Harvard-Smithsonian Center for Astrophysics, Mitch Taylor (Canada) (March 8th, “[Surviving](file:///C%3A%5CUsers%5CMarc%5CDesktop%5CSurviving) the Unpreceented Climate Change of the IPCC” <http://www.nipccreport.org/articles/2011/mar/8mar2011a5.html>) Jacome

On the other hand, they indicate that some biologists and climatologists have pointed out that "many of the predicted increases in climate have happened before, in terms of both magnitude and rate of change (e.g. Royer, 2008; Zachos *et al*., 2008), and yet biotic communities have remained remarkably resilient (Mayle and Power, 2008) and in some cases thrived (Svenning and Condit, 2008)." But they report that those who mention these things are often "placed in the 'climate-change denier' category," although the purpose for pointing out these facts is simply to present "a sound scientific basis for understanding biotic responses to the magnitudes and rates of climate change predicted for the future through using the vast data resource that we can exploit in fossil records." Going on to do just that, Willis *et al*. focus on "intervals in time in the fossil record when atmospheric CO2 concentrations increased up to 1200 ppm, temperatures in mid- to high-latitudes increased by greater than 4°C within 60 years, and sea levels rose by up to 3 m higher than present," describing studies of past biotic responses that indicate "the scale and impact of the magnitude and rate of such climate changes on biodiversity." And what emerges from those studies, as they describe it, "is evidence for rapid community turnover, migrations, development of novel ecosystems and thresholds from one stable ecosystem state to another." And, most importantly in this regard, they report "there is very little evidence for broad-scale extinctions due to a warming world." In concluding, the Norwegian, Swedish and UK researchers say that "based on such evidence we urge some caution in assuming broad-scale extinctions of species will occur due solely to climate changes of the magnitude and rate predicted for the next century," reiterating that "the fossil record indicates remarkable biotic resilience to wide amplitude fluctuations in climate.

#### There are multiple Feedbacks:

#### Second is M screw – co2 solves methane emissions which cause warming

**Carter 1-10 –** Robert, PhD, Adjuct Research Fellow, James Cook University, Craig Idso, PhD, Chairman at the Center for the Study of Carbon Dioxide and Global Change, Fred Singer, PhD, President of the Science and Environmental Policy Project, Susan Crockford, evolutionary biologist with a specialty in skeletal taxonomy , paleozoology and vertebrate evolution, Joseph D’Aleo, 30 years of experience in professional meteorology, former college professor of Meteorology at Lyndon State College, Indur Goklany, independent scholar, author, and co-editor of the Electronic Journal of Sustainable Development, Sherwood Idso, President of the Center for the Study of Carbon Dioxide and Global Change, Research Physicist with the US Department of Agriculture, Adjunct Professor in the Departments of Geology, Botany, and Microbiology at Arizona State University, Bachelor of Physics, Master of Science, and Doctor of Philosophy, all from the University of Minnesota, Madhav Khandekar, former research scientist from Environment Canada and is an expert reviewer for the IPCC 2007 Climate Change Panel, Anthony Lupo, Department Chair and Professor of Atmospheric Science at the University of Missouri, Willie Soon, astrophysicist at the Solar and Stellar Physics Division of the Harvard-Smithsonian Center for Astrophysics, Mitch Taylor (Canada) (January 2012, “Environmental Stresses and Plant Methane Emissions”http://www.nipccreport.org/articles/2012/jan/10jan2012a4.html) Jacome

Concluding from a review of the scientific literature that "aerobic CH4 [methane] emissions from plants may be affected by O2 stress or any other stress leading to ROS [reactive oxygen species] production," authors Wang *et al*. (2009) sought to determine whether physical injury would also affect CH4 emissions from plants. Their work revealed that "physical injury (cutting) stimulated CH4 emissions from fresh twigs of *Artemisia* species under aerobic conditions," and that "more cutting resulted in more CH4 emissions," as did hypoxia in both cut and uncut *Artemisia frigida* twigs.

In discussing their findings, and those of previous studies that suggest, in their words, "that a variety of environmental stresses stimulate CH4 emission from a wide variety of plant species," Wang *et al*. concluded that "global change processes, including climate change, depletion of stratospheric ozone, increasing ground-level ozone, spread of plant pests, and land-use changes, could cause more stress in plants on a global scale, potentially stimulating more CH4 emission globally," while further concluding that "the role of stress in plant CH4 production in the global CH4 cycle could be important in a changing world."

Several things "could" be important in this regard, but the ongoing rise in the air's CO2 content is hard at work *countering* stress-induced CH4 emissions. Environmental stresses of all types do indeed generate highly-reactive oxygenated compounds that damage plants, but atmospheric CO2 enrichment typically boosts the production of antioxidant enzymes that *scavenge* and *detoxify* those highly-reactive oxygenated compounds. Thus, it can be appreciated that the historical rise in the air's CO2 content should have gradually been *alleviating* the level of stress experienced by Earth's plants; and this phenomenon should have been gradually *reducing* the rate at which the planet's vegetation releases CH4 to the atmosphere. In addition, it should have been doing it at *an accelerating rate* commensurate with the accelerating rate of the upward trend in the air's CO2 content.

Wang *et al*.'s way of thinking therefore suggests that the air's CH4 concentration should be *rising ever faster*, as "global change processes" lead to more plant stress, more ROS production in plants, and more CH4 emissions from Earth's vegetation, whereas a conflicting hypothesis suggests that the air's CH4 concentration should be *rising ever slower*, as higher concentrations of atmospheric CO2 lead to less plant stress, more antioxidants that scavenge and detoxify ROS in plants, and less CH4 emissions from Earth's vegetation.

So which view is winning? A quick glance at the atmosphere's recent methane history - shown below - provides the answer.

*Figure 1. Trace gas mole fractions of methane (CH4) as measured at Mauna Loa, Hawaii. Adapted from Schnell and Dlugokencky (2008).*

As can be seen from this figure, the rate of increase in atmospheric methane abundance has steadily declined since the late 1980s, with near-zero increase from 1999 through the end of the record. Is the ongoing rise in the air's CO2 content responsible for knocking its biggest greenhouse-gas competitor (other than water vapor) entirely out of the picture with respect to *future* global warming? Or, will further increases in CO2 emissions actually cause the atmosphere's methane concentration to *decline* and thereby begin to counteract its (CO2's) *own* warming effect. Only time will tell.

#### Third are Natural Aerosols

**Carter 11**, Robert, PhD, Adjuct Research Fellow, James Cook University, Craig Idso, PhD, Chairman at the Center for the Study of Carbon Dioxide and Global Change, Fred Singer, PhD, President of the Science and Environmental Policy Project, Susan Crockford, evolutionary biologist with a specialty in skeletal taxonomy , paleozoology and vertebrate evolution, Joseph D’Aleo, 30 years of experience in professional meteorology, former college professor of Meteorology at Lyndon State College, Indur Goklany, independent scholar, author, and co-editor of the Electronic Journal of Sustainable Development, Sherwood Idso, President of the Center for the Study of Carbon Dioxide and Global Change, Research Physicist with the US Department of Agriculture, Adjunct Professor in the Departments of Geology, Botany, and Microbiology at Arizona State University, Bachelor of Physics, Master of Science, and Doctor of Philosophy, all from the University of Minnesota, Madhav Khandekar, former research scientist from Environment Canada and is an expert reviewer for the IPCC 2007 Climate Change Panel, Anthony Lupo, Department Chair and Professor of Atmospheric Science at the University of Missouri, Willie Soon, astrophysicist at the Solar and Stellar Physics Division of the Harvard-Smithsonian Center for Astrophysics, Mitch Taylor (Canada) [“Climate Change Reconsidered 2011 Interim Report,” September, Science and Environmental Policy Project, Center for the Study of Carbon Dioxide and Global Change, Published by The Heartland Institute]

In a contemporaneous study of aerosols, Carslaw et al. (2010) write, ―the natural environment is a major source of atmospheric aerosols, including dust, secondary organic material from terrestrial biogenic emissions, carbonaceous particles from wildfires, and sulphate from marine phytoplankton dimethyl sulphide emissions.‖ These aerosols ―have a significant effect on many components of the Earth system, such as the atmospheric radiative balance and photosynthetically available radiation entering the biosphere, the supply of nutrients to the ocean, and the albedo of snow and ice. With this background in mind, the authors reviewed ―the impact of these natural systems on atmospheric aerosols based on observations and models, including the potential for long term changes in emissions and feedbacks on climate.‖ Based on their review, the seven scientists report, ―the number of drivers of change is very large and the various systems are strongly coupled,‖ noting ―there have therefore been very few studies that integrate the various effects to estimate climate feedback factors.‖ However, they add, ―available observations and model studies suggest that the regional radiative perturbations are potentially several watts per square meter due to changes in these natural aerosol emissions in a future climate,‖ which is **equivalent to the magnitude of climate forcing projected** to result from increases in greenhouse gases but typically of the opposite sign.

**Feedbacks happen:**

#### Feedbacks are the only thing that matter – co2’s effect itself is small – negative feedbacks outweigh

**De Freitas 11** – associate professor in the school of environment at the University of Auckland, (Chris, 1-4 http://www.nzherald.co.nz/nz/news/article.cfm?c\_id=1&objectid=10697845)

The degree of warming directly caused by the extra carbon dioxide is, by itself, relatively small. This is not controversial. What is controversial is whether this initial change will trigger further climate changes that would be large or damaging. Debate focuses on climate feedbacks that may or may not suppress, perpetuate or amplify an initial change caused by increasing concentrations of greenhouse gases. A doubling of carbon dioxide, by itself, adds only about one degree Celsius to greenhouse warming. Computer climate models project more warming because the modellers build in feedbacks from water vapour and clouds that amplify the initial change. These are the so called positive feedbacks. For example, higher temperature would mean more evaporation globally, which in turn means more heat-trapping water vapour is put into the atmosphere leading to even higher temperatures. On the other hand, negative feedbacks might prevail. For example, more water vapour in the atmosphere could lead to greater cloud cover. Clouds reflect the heat from the Sun and cool the Earth, offsetting the initial rise in global temperature. The role of negative feedback processes are played down by global warming alarmists, whereas sceptics point to the four-billion-year-old global climate record that shows runaway global cooling or warming has never occurred because negative feedbacks regulate the global climate system. It is important to consider the above in the proper context. Change is a constant feature of climate, even through recent human history. During the Medieval Warm Period, from 900 to 1200AD, the Vikings sailed in Arctic waters that by 1700 had turned to permanent sea ice, and farmed in Greenland soil in a climate that soon became too cold for agriculture. The Medieval Warm Period was followed by the Little Ice Age which ended around 1850. It in turn was followed by another warm period. The hottest year since 1850 was 1998. In the nine years since 2002 average annual global temperature has not risen. Most people are surprised to hear that no one has uncovered any empirical real-world evidence that humans are causing dangerous global warming. Finding this evidence is crucial, since scientific issues are resolved by observations that support a theory or hypothesis. They are not resolved by ballot.

# Economy

**Farrell evidence isn’t qualified – doesn’t cite any studies and he doesn’t have qualifications**

No evidence that says wind is specifically key

#### PTC extension won’t save the wind industry – capacity is already outstripping demand

EILPERIN 9/21/12 (Juliet; Washington Post, “Tempest Brews Over Tax Credit for Wind Power,” l/n)

Even if the tax credit is extended, it's unclear whether the wind industry will rebound right away. A June Congressional Research Service report noted that there has been a rush to install wind before the tax benefit expires, and "all projections reviewed for this report expect annual U.S. wind turbine demand to be less than the existing turbine manufacturing capacity - approximately 13 [gigawatts] per year."

#### **Wind decline inevitable – electricity demand, natural gas prices, and foreign competition**

CARDWELL 9/21/12 (Diane; International Herald Tribune, “U.S. Wind Industry Fading Fast,” l/n)

Last month, Gamesa, a major maker of components for wind turbines, completed the first significant order of its latest invention: a camper-size box that can capture the energy of slow winds, potentially opening up new parts of the country to wind power.

But by the time the last of the devices, worth more than $1.25 million, had been hitched to a rail car, Gamesa had all but shut down its factory here and furloughed 92 of the workers who made them.

''We are all really sad,'' said Miguel Orobiyi, 34, who had worked as a mechanical assembler at the Gamesa plant for nearly five years. ''I hope they call us back, because they are really, really good jobs.''

Similar cutbacks are happening throughout the American wind sector, which includes hundreds of manufacturers, from multinationals that make giant windmills to smaller local manufacturers that supply specialty steel or bolts. In recent months, companies have announced almost 1,700 layoffs.

At its peak in 2008 and 2009, the industry employed about 85,000 people, according to the American Wind Energy Association, the industry's principal trade group.

Many of those jobs have disappeared as wind companies have been buffeted by weak demand for electricity, stiff competition from low-cost natural gas and lower-cost options from Asian competitors. Chinese manufacturers, who can often underprice goods because of generous state subsidies, have moved into the American market and have become an issue in the larger trade tensions between the two countries. In July, the U.S. Commerce Department imposed tariffs on steel turbine towers from China after finding that manufacturers had been selling them for less than the cost of production.

#### Manufacturing sector is overwhelmingly powerful now – international data proves

Mark Perry (professor of economics at the University of Michigan, Flint, is also a visiting scholar at the American Enterprise Institute) February 25, 2011 “The Truth About U.S. Manufacturing “ http://online.wsj.com/article/SB10001424052748703652104576122353274221570.html.html

Is American manufacturing dead? You might think so reading most of the nation's editorial pages or watching the endless laments in the news that "nothing is made in America anymore," and that our manufacturing jobs have vanished to China, Mexico and South Korea. Yet the empirical evidence tells a different story—of a thriving and growing U.S. manufacturing sector, and a country that remains by far the world's largest manufacturer. This is a particularly sensitive topic in my hometown of Flint, Mich., where auto-plant closings have meant lost jobs and difficult transitions for the displaced. But while it's true that the U.S. has lost more than seven million manufacturing jobs since the late 1970s, our manufacturing output has continued to expand. International data compiled by the United Nations on global output from 1970-2009 show this success story. Excluding recession-related decreases in 2001 and 2008-09, America's manufacturing output has continued to increase since 1970. In every year since 2004, manufacturing output has exceeded $2 trillion (in constant 2005 dollars), twice the output produced in America's factories in the early 1970s. Taken on its own, U.S. manufacturing would rank today as the sixth largest economy in the world, just behind France and ahead of the United Kingdom, Italy and Brazil. In 2009, the most recent full year for which international data are available, our manufacturing output was $2.155 trillion (including mining and utilities). That's more than 45% higher than China's, the country we're supposedly losing ground to. Despite recent gains in China and elsewhere, the U.S. still produced more than 20% of global manufacturing output in 2009. The truth is that America still makes a lot of stuff, and we're making more of it than ever before. We're merely able to do it with a fraction of the workers needed in the past. Consider the incredible, increasing productivity of America's manufacturing workers: The average U.S. factory worker is responsible today for more than $180,000 of annual manufacturing output, triple the $60,000 in 1972. Increases in productivity are a direct result of capital investments in productivity-enhancing technology, such as GM's next generation Ecotec engine. These increases are a direct result of capital investments in productivity-enhancing technology, which last year helped boost output to record levels in industries like computers and semiconductors, medical equipment and supplies, pharmaceuticals and medicine, and oil and natural-gas equipment.

#### The U.S. isn’t the global leader in wind and hasn’t been for some time

WISER and BOLINGER ’12 (Ryan and Mark; Lawrence Berkeley National Laboratory, “2011 Wind Technologies Market Report,” August, <http://www1.eere.energy.gov/wind/pdfs/2011_wind_technologies_market_report.pdf>)

The United States Remained the Second Largest Market in Annual and Cumulative Wind Power Capacity Additions, but Was Well Behind the Market Leaders in Wind Energy Penetration. After leading the world in annual wind power capacity additions from 2005 through 2008, the U.S. has now – for three years – been second to China, comprising roughly 16% of global installed capacity in 2011, up slightly from 13% in 2010, but down substantially from 26-30% from 2007 through 2009. In terms of cumulative capacity, the U.S. also remained the second leading market, with nearly 20% of total global wind power capacity. A number of countries are beginning to achieve relatively high levels of wind energy penetration in their electricity grids: end-of-2011 wind power capacity is estimated to supply the equivalent of roughly 29% of Denmark’s electricity demand, 19% of Portugal’s, 19% of Spain’s, 18% of Ireland’s, and 11% of Germany’s. In the United States, the cumulative wind power capacity installed at the end of 2011 is estimated, in an average year, to equate to roughly 3.3% of the nation’s electricity demand.

#### **Wind is an insignificant source of manufacturing employment**

PLATZER ’11 (Michaela D.; Specialist in Industrial Organization and Business – Congressional Research Service, “U.S. Wind Turbine Manufacturing: Federal Support for an Emerging Industry,” 9/23, <http://www.fas.org/sgp/crs/misc/R42023.pdf>)

In 2010, the wind turbine manufacturing sector supported an estimated 20,000 manufacturing jobs nationwide. This was only about one-fourth of U.S. employment related to wind energy manufacturing. The majority (some 60%) of the 75,000 full-time workers employed directly and indirectly in the wind power industry at the end of 2010 worked in finance and consulting services, contracting and engineering services, and transportation and logistics.80 About 3,500 jobs were in construction and 4,000 were in operations and maintenance. The number of manufacturing jobs has been relatively flat over the past three years, even as total employment in wind energy declined, according to figures from AWEA (see Figure 4). 81

Wind turbine manufacturing is responsible for a very small share of the 11.5 million domestic manufacturing jobs in 2010, well under 1%. It seems unlikely, even given a substantial increase in U.S. manufacturing capacity, that wind turbine manufacturing will become a major source of manufacturing employment. In 2008, the U.S. Department of Energy forecast that if wind power were to provide 20% of the nation’s electrical supply in 2030, U.S. turbine assembly and component plants could support roughly 32,000 full-time manufacturing workers in 2026.82 AWEA’s more optimistic projection is that the wind industry could support three to four times as many manufacturing workers as at present if a long-term stable policy environment were in place, which implies a total of 80,000 jobs.83 Further employment growth in the sector is likely to depend not only upon future demand for wind energy, but also on corporate decisions about where to produce towers, blades, nacelles, and their most sophisticated components, such as gearboxes, bearings, and generators.

No impact to the economy 08 recession proves

Barnett 09, senior managing director of Enterra Solutions LLC and a contributing editor/online columnist for Esquire magazine, columnist for World Politics Review, (Thomas P.M. “The New Rules: The Good News on the Global Financial Downturn,” World Politics Review, 5/25/09 <http://dan92024.blogstream.com/v1/date/200905.html>)

When the global financial crisis struck roughly a year ago, the blogosphere was ablaze with all sorts of scary predictions of, and commentary regarding, ensuing conflict and wars -- a rerun of the Great Depression leading to world war, as it were. -- surprisingly led Now, as global economic news brightens and recovery by China and emerging markets -- is the talk of the day, it's interesting to look back over the past year and realize how globalization's first truly worldwide recession has had virtually no impact whatsoever on the international security landscape.

None of the more than three-dozen ongoing conflicts listed by GlobalSecurity.org can be clearly attributed to the global recession. Indeed, the last new entry (civil conflict between Hamas and Fatah in the Palestine) predates the economic crisis by a year, and three quarters of the chronic struggles began in the last century. Ditto for the 15 low-intensity conflicts listed by Wikipedia (where the latest entry is the Mexican "drug war" begun in 2006). Certainly, the Russia-Georgia conflict last August was specifically timed, but by most accounts the opening ceremony of the Beijing Olympics was the most important external trigger (followed by the U.S. presidential campaign) for that sudden spike in an almost two-decade long struggle between Georgia and its two breakaway regions.

Looking over the various databases, then, we see a most familiar picture: the usual mix of civil conflicts, insurgencies, and liberation-themed terrorist movements. Besides the recent Russia-Georgia dust-up, the only two potential state-on-state wars (North v. South Korea, Israel v. Iran) are both tied to one side acquiring a nuclear weapon capacity -- a process wholly unrelated to global economic trends.

And with the United States effectively tied down by its two ongoing major interventions (Iraq and Afghanistan-bleeding-into-Pakistan), our involvement elsewhere around the planet has been quite modest, both leading up to and following the onset of the economic crisis: e.g., the usual counter-drug efforts in Latin America, the usual military exercises with allies across Asia, mixing it up with pirates off Somalia's coast). Everywhere else we find serious instability we pretty much let it burn, occasionally pressing the Chinese -- unsuccessfully -- to do something. Our new Africa Command, for example, hasn't led us to anything beyond advising and training local forces.

So, to sum up:

•No significant uptick in mass violence or unrest (remember the smattering of urban riots last year in places like Greece, Moldova and Latvia?);

•The usual frequency maintained in civil conflicts (in all the usual places);

•Not a single state-on-state war directly caused (and no great-power-on-great-power crises even triggered);

•No great improvement or disruption in great-power cooperation regarding the emergence of new nuclear powers (despite all that diplomacy);

•A modest scaling back of international policing efforts by the system's acknowledged Leviathan power (inevitable given the strain); and

•No serious efforts by any rising great power to challenge that Leviathan or supplant its role. (The worst things we can cite are Moscow's occasional deployments of strategic assets to the Western hemisphere and its weak efforts to outbid the United States on basing rights in Kyrgyzstan; but the best include China and India stepping up their aid and investments in Afghanistan and Iraq.)

Sure, we've finally seen global defense spending surpass the previous world record set in the late 1980s, but even that's likely to wane given the stress on public budgets created by all this unprecedented "stimulus" spending. If anything, the friendly cooperation on such stimulus packaging was the most notable great-power dynamic caused by the crisis.

Can we say that the world has suffered a distinct shift to political radicalism as a result of the economic crisis?

Indeed, no. The world's major economies remain governed by center-left or center-right political factions that remain decidedly friendly to both markets and trade. In the short run, there were attempts across the board to insulate economies from immediate damage (in effect, as much protectionism as allowed under current trade rules), but there was no great slide into "trade wars." Instead, the World Trade Organization is functioning as it was designed to function, and regional efforts toward free-trade agreements have not slowed.

Can we say Islamic radicalism was inflamed by the economic crisis?

If it was, that shift was clearly overwhelmed by the Islamic world's growing disenchantment with the brutality displayed by violent extremist groups such as al-Qaida. And looking forward, austere economic times are just as likely to breed connecting evangelicalism as disconnecting fundamentalism.

At the end of the day, the economic crisis did not prove to be sufficiently frightening to provoke major economies into establishing global regulatory schemes, even as it has sparked a spirited -- and much needed, as I argued last week -- discussion of the continuing viability of the U.S. dollar as the world's primary reserve currency. Naturally, plenty of experts and pundits have attached great significance to this debate, seeing in it the beginning of "economic warfare" and the like between "fading" America and "rising" China. And yet, in a world of globally integrated production chains and interconnected financial markets, such "diverging interests" hardly constitute signposts for wars up ahead. Frankly, I don't welcome a world in which America's fiscal profligacy goes undisciplined, so bring it on -- please!

Add it all up and it's fair to say that this global financial crisis has proven the great resilience of America's post-World War II international liberal trade order.

Do I expect to read any analyses along those lines in the blogosphere any time soon?

Absolutely not. I expect the fantastic fear-mongering to proceed apace. That's what the Internet is for.

**Economic collapse does not lead to war**

**a.) History**

**Ferguson 06—**prof of history, Harvard and Senior Fellow at Stanford’s Hoover Institution (Niall, “The Next War of the World,” September/October 2006, http://www.realclearpolitics.com/articles/2006/09/the\_next\_war\_of\_the\_world.html)

Nor can economic crises explain the bloodshed. What may be the most familiar causal chain in modern historiography links the Great Depression to the rise of fascism and the outbreak of World War II. But that simple story leaves too much out. Nazi Germany started the war in Europe only after its economy had recovered. Not all the countries affected by the Great Depression were taken over by fascist regimes, nor did all such regimes start wars of aggression. In fact, no general relationship between economics and conflict is discernible for the century as a whole. Some wars came after periods of growth, others were the causes rather than the consequences of economic catastrophe, and some severe economic crises were not followed by wars.

b.) Studies

Miller 2k – economist, adjunct professor in the University of Ottawa’s Faculty of Administration, consultant on international development issues, former Executive Director and Senior Economist at the World Bank (Morris, Winter, Interdisciplinary Science Reviews, Vol. 25, Iss. 4, “Poverty as a cause of wars?”)

The question may be reformulated. Do wars spring from a popular reaction to a sudden economic crisis that exacerbates poverty and growing disparities in wealth and incomes? Perhaps one could argue, as some scholars do, that it is some dramatic event or sequence of such events leading to the exacerbation of poverty that, in turn, leads to this deplorable denouement. This exogenous factor might act as a catalyst for a violent reaction on the part of the people or on the part of the political leadership who would then possibly be tempted to seek a diversion by finding or, if need be, fabricating an enemy and setting in train the process leading to war. According to a study undertaken by Minxin Pei and Ariel Adesnik of the Carnegie Endowment for International Peace, there would not appear to be any merit in this hypothesis. **After studying ninety-three episodes of economic crisis in twenty-two countries** in Latin America and Asia in the years since the Second World War they concluded that:19 Much of the **conventional wisdom** about the political impact of economic crises may be wrong ... The severity of economic crisis - as measured in terms of inflation and negative growth - bore no relationship to the collapse of regimes ... (or, in democratic states, rarely) to an outbreak of violence ... In the cases of dictatorships and semidemocracies, the ruling elites responded to crises by increasing repression (thereby using one form of violence to abort another).

No risk of an impact – stability and cooperation will only increase

Barnett 09, senior managing director of Enterra Solutions LLC and a contributing editor/online columnist for Esquire magazine, columnist for World Politics Review, (Thomas P.M. “The New Rules: The Good News on the Global Financial Downturn,” World Politics Review, 5/25/09 <http://dan92024.blogstream.com/v1/date/200905.html>)

When the global financial contagion kicked in last fall, the blogosphere was quick to predict that a sharp uptick in global instability would soon follow. While we're not out of the woods yet, it's interesting to note just how little instability -- and not yet a single war -- has actually resulted from the worst global economic downturn since the Great Depression.

Run a Google search for "global instability" and you'll get 23 million hits. But when it comes to actual conflicts, the world is humming along at a level that reflects the steady decline in wars -- by 60 percent -- that we've seen since the Cold War's end. As George Mason University's Center for Systemic Peace (CSP) notes, that trend applies within the Muslim world, too, so even America's "war on terror" has not quite lived up to the pessimists' expectations.

Wikipedia's page for "ongoing conflicts" cites a whopping seven wars with annual death rates of 1,000-plus. And they're all familiar situations:

Arabs-Israel, Somalia, Afghanistan, Pakistan, Iraq, Sudan and Mexico. None have been helped by the financial crisis, but all predate it. Iraq's internal situation has actually improved, despite slumping oil revenue. And as for fears that Mexico might soon become a "failed state," that government's recent response to the swine flu indicates otherwise.

The CSP's database lists only three new conflicts since 2008 -- Russia-Georgia, Kenya and southern Sudan. None can be blamed on the global economy. Meanwhile, Colombia's internal security has improved dramatically, and Sri Lanka's stubborn separatist movement just collapsed.

Yes, we suffer from Somali piracy, and American and Chinese subs continue their cat-and-mouse games off China's otherwise quiet coast. Still, many expected more from a financial panic that, according to the IMF, erased roughly 6 percent of global GDP: Beijing and Washington locking horns, for instance, instead of letting Taiwan negotiate peace with the mainland.

But disappointment abounds for the doom-and-gloomers:

- Instead of coming apart at the seams, China implemented a stimulus package that seems to be working at home and abroad (see America's construction industry exports). Beijing's flagship companies have exploited the crisis for the extraordinary buying opportunities it has created, locking in long-term commodity and energy contracts in exchange for much-needed cash. Meanwhile its central bank has swapped $100 billion worth of currency with major trade partners.

- Asia's big powers should be at each other's throats over sea-based energy deposits, or at least over North Korea. And yet recently we've witnessed the first China-Japan-South Korea summit, followed soon after by the creation of a $120-billion liquidity fund to help out their smaller neighbors.

- India's Congress Party just won a decisive victory in national elections, allowing it to rule without relying on anti-globalizing elements like its native Communist party. Expect another young Gandhi to champion India's next round of reforms.

- The EU definitely regrets its fast integration of all those now-shaky Eastern European economies. And yet, as Washington Post economic columnist Steve Pearlstein recently noted, ". . . the real story in Europe may be how firmly market liberalization seems to have taken hold. Not only have there been few, if any, calls for renationalizations, but some countries are still moving toward privatization and reregulation. Instances of protectionism are outweighed by the examples of cross-border mergers and acquisitions that have been accepted as a matter of course . . ."

- In the Middle East, the Arab world's biggest state, Egypt, remains committed to opening up its state-heavy economy even more, while Arab sovereign wealth funds continue their aggressive investment in Africa, where China and India's portfolios also grow.- In Latin America, market-friendly forces (e.g., Brazil's Lula) are gaining steam, while market-hostile ones (e.g., Venezuela's Chávez) lose traction.

- Even "axis of diesel" Russia has quieted down considerably over the past nine months, with Vladimir Putin's hand-picked successor, Dmitry Medvedev, slowly emerging as a force of level-headed moderation.

Add it all up and it's clear that assessments such as "the world is in chaos" -- a David Rothkopf beauty -- just don't fly. Periodic riots do not an Armageddon make.

Instead, this crisis has elicited unprecedented cooperation among the world's great powers on both coordinated stimulus spending and making intermarket financial flows more transparent (keep an eye on the IMF). It's also triggered awareness of the need for an additional global reserve currency to help the euro balance the dollar (a convertible renminbi would help).

**The US isn’t key to the global economy – other nations will fill in**

**Merrill Lynch ‘6**

[Major US Financial Firm. “US Downturn Won’t Derail World Economy” [www.ml.com](http://www.ml.com) 9/18/6 //GBS-JV]

A sharp slowdown in the U.S. economy in 2007 is unlikely to drag the rest of the global economy down with it, according to a research report by Merrill Lynch’s (NYSE: MER) global economic team. The good news is that there are strong sources of growth outside the U.S. that should prove resilient to a consumer-led U.S. slowdown. Merrill Lynch economists expect U.S. GDP growth to slow to 1.9 percent in 2007 from 3.4 percent in 2006, but non-U.S. growth to decline by only half a percent (5.2 percent versus 5.7 percent). Behind this decoupling is higher non-U.S. domestic demand, a rise in intraregional trade and supportive macroeconomic policies in many of the world’s economies. Although some countries appear very vulnerable to a U.S. slowdown, one in five is actually on course for faster GDP growth in 2007. Asia, Japan and India appear well placed to decouple from the United States, though Taiwan, Hong Kong and Singapore are more likely to be impacted. European countries could feel the pinch, but rising domestic demand in the core countries should help the region weather the storm much better than in previous U.S. downturns. In the Americas, Canada will probably be hit, but Brazil is set to decouple.

#### Expanding U.S. wind subsidies undermines Chinese wind competitiveness

**Chhabara 8** (Rajesh, Climate Change Corp, “Who’ll Solve the Wind Turbine Supply Crisis?” 4/29/8, http://www.climatechangecorp.com/content.asp?contentid=5344)

In April this year, China set a massive target of expanding wind power capacity to 100,000MW by 2020, from the current 5,600MW. Previously, in 2006, China passed the Renewable Energy Law, which requires power grid companies to buy the entire output of registered renewable energy producers in their areas. The National Development and Reform Commission (NDRC), China’s top industry planning body, sets the purchase price.

CLSA Research estimates that the US, Europe and China will be spending about $150 billion on wind projects in the next five years.

US dithers, China surges ahead

In the US, an unstable regulatory regime is one factor hindering turbine production.

Sporadic tax breaks for renewable energy projects, usually on a year-to-year basis, have discouraged US manufacturers from scaling up. Congress, for example, has stalled the extension of PTCs beyond the end of 2008.

In the past, when tax credits lapsed the demand for wind turbines came crashing down the following year. If the trend is repeated this time, it may actually result in overcapacity of turbine manufacturing in the US, at least for the domestic market.

 Yet energy analysts say that if the US market slows down due to lack of tax breaks, China will more than compensate.

In the short term, massive demand from China may further tighten turbine supply, but expanding local production should ease the global crunch within a couple of years. Today, the Chinese market is dominated by the top three foreign manufacturers, Vestas, GE Wind and Gamesa, who enjoy a combined market share of 47%. However, this is set to change.
Zhang Guobao, vice president of China’s NDRC, says: “We are planning several measures to support the wind power industry including localisation of equipment production.” According to the Global Wind Energy Council (www.worldenergy.org), China will become the top wind turbine manufacturer by 2009.

To encourage production, China increased tariffs on imported wind turbines in May, while slashing import taxes on components. The latter incentive, to help Chinese firms compete internationally for scarce parts, will put pressure on the industry in the rest of the world. But, again, this is a short-term problem. Government rules already require that turbines have at least 70% domestically produced components. As a result, leading manufacturers have been setting up factories in China.

As things presently stand, most Chinese manufacturers can produce only smaller turbines, up to 1MW. Chinese firms are trying to overcome this weakness by licensing agreements and joint ventures with western companies.

Goldwind, China’s largest wind turbine maker, raised $245 million through an Initial Public Offer (IPO) early this year to fund a huge expansion. LM Glassfiber of Denmark, which has a cooperation agreement with Goldwind, opened its second turbine blade factory in China in October last year.
Other major Chinese turbine makers – Sinovel, Windey, Dongfang, MingYang and HEC – are also expanding capacities and shopping for joint ventures and licensing agreements with global players.

China High, the country’s largest manufacturer of gearboxes – the most critical and complex part in a wind turbine – plans a four-fold increase in production in the next two years. The company is aiming to become one of the top three global manufacturers of gearboxes, with half of revenue coming from exports.
China High, which already supplies to GE, REpower, Nordex and Goldwind, raised $272 million through an IPO to fund massive expansion. The company is raising another $250 million through convertible bonds and plans to buy a special-steel plant to secure supplies and reduce costs. Special steel accounts for half the cost of gearboxes.
Among the foreign players, Germany’s Nordex – the fourth largest wind turbine maker in China – announced in November that it would quadruple production capacity to 800MW by 2011 to meet growing demand.
Currently, MingYang is China’s only turbine exporter. But in the next three to five years, the number of exporters is likely to grow as other firms aggressively expand and acquire technology. Foreign manufacturers may be scaling up their production in China, but in the longer term it is the emergence of Chinese turbine and component manufacturers that will probably change the global landscape of wind power.

Response from the big players

With over 8,000 parts required to make a wind turbine, requiring a large network of reliable suppliers, component supply is creating the most problematic bottleneck for turbine makers. In order to meet increasing demand, leading players are rushing to beef up their supplies by setting up new plants, signing long-term contracts with suppliers and even making acquisitions.

#### Chinese wind competitiveness is vital to eliminating poverty and unemployment – the size of the market will determine the success of these efforts

**Wang, 05** – Michigan State University (Joy, Wind Power in China: Social Acceptability and Development of a Domestic Manufacturing Industry”, http://forestry.msu.edu/China/New%20Folder/Joy\_Wind.pdf)

China does not necessarily require the development of its own domestic wind industry and market, but from the successes of various other countries utilizing wind power, it seems such development is key to the success of wind energy within a country.

“All leading turbine manufacturers are from countries with significant domestic wind power development, and most all have been very successful in their home markets…the size of the home market is a key determinant of global success in wind turbine manufacturing. Moreover,…the top 5 countries in terms of installed capacity are also home to 9 of the top 10 wind companies globally” (Lewis & Wiser, 2005, p. 58).

The wind power market and domestic turbine manufacturers support each other. To form a strong market, a government can formulate incentives for industry to become involved. “Companies facing unstable markets are less willing to spend money on R&D and product development” (Lewis & Wiser, p. 58). With a more stable wind market, more investor interest could be gathered, and more spending on long term manufacturing R&D could be stimulated.

2. Decrease costs to further the market

A domestic wind industry can lower costs and further the market. “As the market has grown, wind power has shown a dramatic fall in cost. Production costs have fallen by up to 50% over 15 years” (BTM Consult, 2005, p. 10). Wind turbines hold about 75% of the total cost of an onshore wind project (BTM Consult, 2005,). With localized production, not only would less be spent on transportation, labor costs would also be much cheaper in China than abroad. A significant savings could be realized in turbine production, bettering the economics and feasibility of large-scale utilization of wind energy in China.

3. Better accessibility to best available wind technology

With its booming economy and strong desire to prove itself, China is demanding better products with its increasing wealth. The wind industry will be no different. If no domestic turbine manufacturers develop cutting-edge technology, any technology China receives will be second rate. Products are likely tested intensely before placement on the global market, where their performance reflects upon the manufacturing company. All commercially sold turbines will generally be reliable, with the newest technology in continued research and testing.

If China relies on non-domestic wind turbine manufacturers to supply its wind power generation facilities, it cannot expect the best technology to enter its borders first. So far, the largest installation in China to date is 1.5MW at the Nanhui and Chongming wind farms in Shanghai by General Electric (GE Wind), while the largest wind turbine installation to date has been 300 MW in the United States (BTM Consult, 2005), 200 times larger. Higher turbine capacities will transform to land savings since more electricity is generated per turbine. With limited arable land, it would make sense for China to search for better and larger turbines to reduce land requirements for the same amount of generated electricity.

4. Opportunity to demonstrate technological prowess

With its economic rise, China has shown an increasing desire to prove itself. The 2003 launch of China’s first manned rocket demonstrates its drive to push domestic technology to further limits. The successful rocket launching caused a swell of national pride. A show of local technological prowess in wind energy could cause a similar effect (Lewis & Wiser, 2005), while also offering a relatively new global industry in which to make a presence. From this aspect, it is not surprising to see China’s desire to have its own domestic wind power industry.

5. Alleviate power shortages in areas of need

Wind power could be used to alleviate brown-outs and other electricity shortages in the more affluent east coast. Near the time of Wallace’s paper (1997), over 20 million households in the heavily populated areas were without electricity. With the largest wind resources located along the southeastern coast and an intense appetite for energy in the same region, it is likely wind power can help alleviate the lacking electricity supply there.

6. Employment opportunities

The creation of a domestic wind power market and industry could generate employment opportunities in both urban and rural areas. A strong domestic market and wind turbine manufacturing industry will create a demand and supply for wind power. By having a local manufacturing base, China could mobilize significant numbers of its currently unemployed

masses. In 2003, 8 million urban people registered unemployment. Once the numbers of unregistered urban unemployed is considered, the total could further increase. From 1998-2003, unemployment grew at an annual rate of 5.6% (“China Statistical,” 2004). With almost 60% of China’s 2003 population located in rural areas (“China Statistical,” 2004), the total unemployed number could be significantly larger. Wind Force 12 estimates that 444,000 individuals will be occupied in the Chinese wind power industry in 2020 (2005).

7. Poverty alleviation

Though the demand for electricity may be greatest along the coast, the wind turbine manufacturers may be elsewhere. Strategically placed manufacturers throughout rural China could provide higher paying work, alleviating poverty. The 2003 per capita net income of rural households in the 12 western provinces was 1966¥, less than 75% of the national per capital rural net income (“China Statistical,” 2004).

8. Catalyst for further infrastructure development

A domestic wind industry could provide an additional catalyst for the development of efficient transportation systems in which to transport wind related turbines. Factories in rural locations would not necessarily be distanced from the final product destination. With 23.9% of the national energy industry located in the 12 western provinces (“China Statistical,” 2004), a well-established energy transmission infrastructure must already exist. Much of China’s wind resources also are in the area. Not only will manufacturers to realize financial savings by being geographically closer to more final product destinations, the location of wind power manufacturers there could also stimulate the improvement and adaptation of existing infrastructure to suit new needs. This possibility might require large financial resources, but the reaped benefits might justify further exploration.

9. Environmental benefits

Other environmental benefits can be realized through localized production outside of the clean energy turbines produce. If turbine manufacturers locate to more rural areas, resident income and standard of living will increase. Farmland might be less stressed, as income no longer relies singly on the land’s goods. Grasslands could benefit similarly as flock size decrease when factory work is obtained. From such possibilities, wind energy could potentially benefit soil stability. As school fees become more affordable, educational levels will increase. Higher educational attainment could increase environmental consciousness and also lessen environmental degradation.

#### failure to deal with increasing unrest over living standards will collapse the CCP

**Pethokoukis 12-1-**08 (James, US News, “Bad Economy Could Cause China Crackup” <http://www.usnews.com/blogs/capital-commerce/2008/12/1/bad-economy-could-cause-china-crackup.html?s_cid=etRR-0126>)

I have written a series of blog posts warning about the geopolitical and economic fallout of a sharp slowdown in China's economy. Simply put: Slower growth could lead to dangerous political instability. The sole source of the authoritarian government's legitimacy has been its ability to deliver an even-rising standard of living for more than a generation. Don't believe me? Here is what President Jintao Hu said over the weekend at a party meeting:

*“In this coming period, we will starkly confront the effects of the sustained deepening of the international financial crisis and pressure as global economic growth clearly slows. ... Whether we can turn this pressure into momentum, turn challenges into opportunities, and maintain steady and relatively fast economic development is a test of our Party's capacity to govern.”*

This is why China has been hesitant to allow any dramatic appreciation by the yuan vs. the dollar. To the extent that a stronger currency slows the economy, the ruling Communist Party views a rapid yuan appreciation as an existential threat. This what journalist Will Hutton, author of *The Writing on the Wall: Why We Must Embrace China as a Partner or Face It as an Enemy*, [told me early last year](http://www.usnews.com/usnews/biztech/articles/070105/5china.htm):

*"Unrest is growing even under current conditions. Such a rapid appreciation of the yuan over a short period could be a tipping point for a wave of unrest, which could threaten the regime's stability. The party leadership sees the demand for fast yuan appreciation as an act of economic warfare. In these terms, you can see why. ... The World Bank estimates that if China's growth rate fell by just 2 percent, up to 60 percent of China's bank loans would become nonperforming–so threatening both China's and, via Hong Kong, Asia's financial system. The flow of saving to finance the U.S.'s deficit would dry up, probably forcing U.S. interest rates up–so worsening the economic slowdown. ... There is the risk of a credit crunch forced by the banking system being overwhelmed by nonperforming loans. ... The risk of political instability is low, but it exists."*

Me: Let's remember that China a) has been -- along with America -- one of the primary engines of global economic growth as well as buy of U.S. bonds, and b) has nuclear weapons. While no freedom-loving member of Western Civilization has any love for the current despotic regime, neither do we want to see political and economic chaos in China. Fun China Fact: Back in the 1990s, Pentagon analysts thought a bad economy could result in the fall of the Communists from power and the political dissolution of the country into maybe a dozen smaller nations. Hey, have fun, Hillary!

**Chinese instability leads to World War III**

**Plate 2003** (Tom, Professor at UCLA, The Straits Times, June 28, L/N)

But, while China's prosperity may be good for Americans, is it necessarily the same for the totalitarians running China? After all, having created a runaway economic elephant, will the Communist Party leaders be able to stay in the saddle? Before long, the Chinese middle class alone may approach the size of the entire population of America. It will want more freedom, not less – bet on it. But imagine a China disintegrating – on its own, without neo-conservative or Central Intelligence Agency prompting, much less outright military invasion – because the economy (against all predictions) suddenly collapses. That would knock Asia into chaos. A massive flood of refugees would head for Indonesia and other places with poor border controls, which don't want them and can't handle them; some in Japan might lick their lips at the prospect of World War II Revisited and look to annex a slice of China. That would send Singapore and Malaysia – once occupied by Japan – into nervous breakdowns. Meanwhile, India might make a grab for Tibet, and Pakistan for Kashmir. Then you can say hello to World War III, Asia-style. That's why wise policy encourages Chinese stability, security and economic growth – the very direction the White House now seems to prefer.

**No China war**

**a.) Demographic Reasons**

**Macdonald, 5/11** – US Institute of Peace (11, Bruee W., Testimony before the U.S.-China Economic and Security Review Commission on The Implications of China’s Military and Civil Space Programs, pdf)

In the face of this growing Chinese military space challenge, it is easy to assume the worst about Chinese intentions. China seeks to be able to prevail militarily at some point in the future should conflict come, but they see the United States as militarily superior to them and thus would be unlikely to consciously provoke any military conflict. While we should guard against a worst case, we should not treat it as a given. I do not believe China or the PLA is spoiling for a fight with the United States – China has come too far to want to place their substantial economic achievements at risk unless they faced an extraordinary threat to their national security. In addition, China faces serious demographic realities over the next couple of decades, where their ratio of workers to retirees will shrink substantially (the result of their one- child policy), which further underscores China’s need for stability and continued economic growth for years to come. China also has additional needs, and vulnerabilities:

• Growing environmental problems and water shortages with no obvious solutions that are growing

irritants to the public;

• A relentless search for new sources of manufacturing inputs;

• An increasingly restive working class that is making new demands for higher wages and political

freedoms;

• A non-democratic one-party system that leaves its senior leadership constantly looking over its

shoulder at possible challenges to its authority, especially in the aftermath of the “Arab Spring”;

• Growing citizen anger against corruption and cronyism that seems impossible for the CCP to root

out; and many more.

These factors are reasons why China is probably not looking for war with the United States, though they

also could inadvertently become factors in China’s stumbling into a conflict they would ordinarily not want, through miscalculation or distraction.

b.) US Diplomacy

Zhang **11** – Associate Professor of Political Science and Director of the Center for Asia Pacific Studies at Lingnan University, Hong Kong (Baohui, March/April, "The Security Dilemma in the U.S.-China Military Space Relationship,")

As Kevin Narizny points out in his study of grand strategy, political turnover in the executive office often leads to dramatic shifts in state behavior. In particular, changes in control of government from one party to another can lead states to redefine their strategic goals and the means of promoting them. 40 The profound and ongoing strategic adjustment by the Obama administration has indeed borne out this argument. The much-maligned grand strategy of primacy and unilateralism has given way to a new stance that emphasizes strategic restraint and multilateral diplomacy. Smart power, rather than military preponderance, is now seen by many as the best way to pursue U.S. interests in the world. The current strategic adjustment by the U.S. has significantly lowered China’s traditional concern about the threat posed by a hegemonic America. China’s foreign policy analysts have reached a consensus that the U.S. has suffered a significant relative decline and is in the process of strategic retreat. 41 As a result, the old hegemonic system is believed to have disintegrated. This new perception of the U.S. position in the world has also led the PLA to reassess the likelihood of war between the two countries. Some Chinese military strategists now believe that the relative decline of the U.S. has critically affected the ability and will of the American military to engage in major foreign wars. Lei Sihai, a strategist with a PLA background, claims that “the military capability of the U.S. has declined significantly and it is no longer capable of launching major wars.” 42 Major General Jin Yinan, a strategist at the PLA National Defense University, has suggested that **the rise of China and the relative decline of the U.S. have made a war scenario between them very unlikely**. 43 Thus, the strategic landscape between China and the U.S., as seen by Chinese experts from both civilian and military backgrounds, has shifted because of changes in American grand strategy and military strategy. This change in perception has relaxed Chinese concerns about national security. It marks a significant turnaround from China’s view of the American threat from the mid-1990s to the U.S. invasion of Iraq in 2003, when the American pursuit of hegemony was seen as the greatest threat in China’s strategic environment. After U.S. Secretary of Defense Robert Gates announced major changes in the Pentagon’s 2010 budget, including cancelling the procurement of F-22 fighters and key missile defense programs, one PLA strategist characterized these adjustments as “a comprehensive rethinking about U.S. geopolitical strategies.” As the analysis emphasizes, “Gates’s and Obama’s thinking no longer shows aggressiveness. Instead, they seek a new security framework through accommodation. These significant adjustments in U.S. military strategies, especially the decisions to cut missile defense and stop procurement of F-22 fighters, which are directed mainly against China and Russia, should be welcomed. They are conducive for relaxing relations among great powers and reducing their strategic misunderstanding.” 44 Moreover, Chinese experts have taken keen notice of the new space policy of the Obama administration, which opposes deployment of weapons in space and is willing to explore international agreements on the issue. As observed by a recent PLA analysis, “Obama’s willingness to reach an international treaty banning space-based weapons and to establish a global cooperative mechanism will have positive impacts on the world’s efforts for space arms control and prevention of an arms race.” 45