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Government energy policy is coercive

Bradley, CEO and founder – Institute for Energy Research, 3/1/’13

(Robert, “Big-Picture Policy: Talking Points for Economic Liberty (energy included),” <http://www.masterresource.org/2013/03/big-picture-liberty/#more-24526>)

“[T]here are, at bottom, basically two ways to order social affairs. Coercively, through the mechanisms of the state … and voluntarily, through the private interaction of individuals and associations…. Civil society is based on reason, eloquence, and persuasion, which is to say voluntarism. Political society, on the other hand, is based on force.” - Edward Crane (quotation), founder, Cato Institute The worldview for entrusting consenting adults with energy is, broadly speaking, libertarian. Consumers are more knowledgeable than government agents on what (energy) products are most valuable in terms of convenience, price, and reliability. And as experience has shown time and again, politicizing energy creates problems rather than solves them. Restated, there is government **failure is the** **quest to** **address alleged market failures.** Obama’s GOVERNMENT Arguments about energy also apply to health care, money and banking, and other pillars of the modern economy. And so the science of liberty is at the center of the debate writ large. And it is at odds with President Obama’s out-of-the-closet Big Government model as stated in his second inaugural address. After paying lip service to the American ideals of freedom and the pursuit of happiness, Obama stated: But we have always understood that when times change, so must we; that fidelity to our founding principles requires new responses to new challenges; that preserving our individual freedoms ultimately requires collective action. [1] Is Obama talking about civil society, that huge engine of goodness and progress standing between the “selfish” individual and “good” government? Hardly! He assumes, fallaciously, that economic freedom is the enemy of broad-based progress (including for those most vulnerable to poverty through no fault of their own). He assumes, romantically, that government redistribution can take care of the indigent and elevate the masses. Sadly, the end state of this implemented philosophy is a growing nation of dependents (including business cronies) and of planners/regulators–and a shrinking productive class. The powerful third force of civil society, as Edward Crane has noted over the decades, falls prey to political society.

#### Moral side constraint

**Petro**, Wake Forest Professor in Toledo Law Review, **1974**

(Sylvester, Spring, page 480)

However, one may still insist, echoing Ernest Hemingway - "I believe in only one thing: liberty." And it is always well to bear in mind David Hume's observation: "**It is seldom that liberty of any kind is lost all at once**." Thus, **it is unacceptable to say that the invasion of one aspect of freedom is of no import because there have been invasions of so many other aspects. That road leads to chaos, tyranny, despotism, and the end of all human aspiration**. Ask Solzhenitsyn. Ask Milovan Dijas. In sum, if one believed in freedom as a supreme value and the proper ordering principle for any society aiming to maximize spiritual and material welfare, then **every invasion of freedom must be emphatically identified and resisted with undying spirit**.

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#### Financial incentives include funding and loan guarantees; aff is a non-financial incentive

Czinkota et al, 9 **-** Associate Professor at the McDonough School of Business at Georgetown University (Michael, Fundamentals of International Business, p. 69 – google books)

Incentives offered by policymakers to facilitate foreign investments are mainly of three types: fiscal, financial, and nonfinancial. **Fiscal incentives** are specific tax measures designed to attract foreign investors. They typically consist of special depreciation allowances, tax credits or rebates, special deductions for capital expenditures, tax holidays, and the reduction of tax burdens. **Financial incentives** offer special funding for the investor by providing, for example, land or buildings, loans, and loan guarantees. **Nonfinancial incentives** include guaranteed government purchases; special protection from competition through tariffs, import quotas, and local content requirements, and investments in infrastructure facilities.

#### Voting issue for ground and competitive equity—allowing procurement blows the lid off of available mechanisms for each of the six energies

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#### Aff must specify their agent---vital to education on energy issues

Annual Review of Energy 76

(Energy Regulation: A Quagmire for Energy Policy Annual Review of Energy, Vol. 1: 715-725, November, http://www.annualreviews.org/doi/abs/10.1146/annurev.eg.01.110176.003435 )

The ultimate effectiveness of any policy is largely dependent on the individual efficacy and coordination of the agents or agencies that implement it. There are ample illustrations of the truth of this premise in **the recent attempts by the Administration and Congress to formulate and implement a national energy policy, as a result, that policy, irrespective of any intrinsic soundness, could inevitably become trapped in a quagmire of regulatory policies and practices**. The difficulties that energy policymakers in the United States have experienced in 1974 and 1975 arc in many respects symptomatic of the very problem that they have intended to resolve—the lack of a comprehensive and coordinated national energy policy. Decisions concerning energy supply and general policy that have been made over the years have contributed to the creation of areas of special concern and interest, institutionalized them, and nourished them through dedicated sponsorship by either the Congress, the Executive Branch, the independent federal agencies, or industry. The difficulties that stymied congressional consideration and executive implementation of an effective energy policy in 1974 and the first half of 1975 mirror this state of affairs.

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The United States Federal Government should:

-amend the tax code to include revenue from the generation and sale of electricity produced from small modular reactors as qualifying income for two-tiered Master Limited Partnerships.

-instruct the Nuclear Regulatory Commission to outline and publish streamlined safety and licensing standards for small modular reactors, and should provide necessary technical support and funding for workforce training and retention.

Solves the aff

Freed and Stevens 11

Josh Freed, Vice President of the Third Way Clean Energy Program, and Mae Stevens, Policy Advisor for the Third Way Clean Energy Program, December 2011, A Small Tax Change, Big Clean Energy Results, http://thirdway.org/publications/475

Make a minor tax reform to have a major impact on clean energy. Master Limited Partnerships (“**MLPs**”) **offer a serious opportunity to open new, critically needed streams of capital for clean energy projects**. At their most basic, MLPs are a subset of publicly traded companies that develop and own specific kinds of assets. Under current law, MLPs are generally infrastructure-related and focus on petroleum, natural gas, and coal extraction and transportation. MLPs offer tax benefits and liquidity for investors. Because MLPs are partnerships, the income is taxed only once and is not subject to either federal or state corporate income taxes. (In contrast, publicly traded C corporations like Apple or Ford Motor Company are taxed twice, once at the corporate level and once when investors receive dividend income.) In addition, investors in MLP’s are able to reduce their tax liability because they receive their share of the partnership’s depreciation. Because MLPs are publicly traded, funds can be easily sold and are therefore liquid. As a result, MLPs have access to capital at lower cost—something that capital-intense clean energy projects in the United States need more than ever. These **benefits make MLPs very attractive to** many **investors**. MLPs have been around since 1980 and have played an important role in the development of energy infrastructure in the United States. Following the energy crisis of the 1970’s, Congress sought to increase investment in oil and gas exploration and created the MLP structure specifically to provide tax advantages to investors. Other energy classes were added over time. Between 1994 and 2010, the number of energy MLPs grew by more than a factor of 10.13 The capital raised from those offerings grew by more than 100 fold, from about $2 billion in 1994 to $220 billion in 2010.14 With a compounded annual growth rate of 34.1% over the last 16 years, MLPs have outpaced most other classes of investment.15 **MLPs are exceptionally good at attracting private capital to** oil and gas **energy projects. They could do the same for clean energy.** Open Master Limited Partnerships to clean energy generation projects. The IRS limits use of the MLP structure to businesses that derive, and then pass through, 90% of their income to their investors. In practice, this means that MLPs must be used for mature assets, like oil and gas extraction. The Emergency Economic Stabilization Act of 2008 expanded the definition of income from qualifying sources to include the transportation of ethanol and biodiesel fuel. Clean energy generation projects still do not qualify. There is a simple fix. By amending the Internal Revenue Code Section 7704 (d) to include revenues from the generation and sale of electricity produced from clean energy sources as qualifying income, clean energy projects could qualify as MLPs. **This could bring substantial private capital off the sidelines to finance** these renewable **projects and would level the playing field between competing energy technologies.** Large-scale electricity generation projects with power purchasing agreements (PPAs), including utility-scale solar, geothermal, on and off-shore wind, nuclear and, eventually, carbon capture and storage, could all benefit from this reform. CONCLUSION **In one of the** all-too-**rare instances of bipartisanship** in Washington today, **policymakers from both parties say they support increased** **private sector investment** **in clean energy**. Unfortunately, many of the policy options that Congress could use to help generate this investment are trapped in partisan gridlock. This is costing America the opportunity to compete in the growing global clean energy market. Making a small change in the definition of Master Limited Partnerships could help rectify this problem and get new clean energy projects built.

Licensing reform solves quick SMR development

Spencer, research fellow in nuclear energy – Heritage Foundation, 2/15/’11

(Jack, <http://www.heritage.org/research/reports/2011/02/a-big-future-for-small-nuclear-reactors>)

One of the more talked about highlights of the President’s energy budget is his growing support for small modular reactors (SMRs). This includes $30 million for research and development and $67 million for licensing activities. While the President should be commended for recognizing the potential of SMRs, his approach unfortunately misses the mark. Research and Development, Yes; Commercialization, No The federal government does have a legitimate role to play in providing some basic research and development money to fund projects that may hold potential but are too risky for the private sector. And the President’s nuclear energy budget does provide basic R&D in other accounts such as the Nuclear Energy Enabling Technologies (NEET) program, which is slated to get $97.364 million. NEET is charged with investigating crosscutting technologies with applicability to multiple reactor designs, including small, modular reactors. Indeed, the emergence of SMRs can in part be attributed to basic government R&D. Often ignored, however, is that this research was not focused on commercial energy production but rather on national security requirements. Entrepreneurs and investors took that national security research and spun off commercial enterprises. Today these companies are moving that technology from government labs and into the marketplace. Testament to this progress is that the U.S. Nuclear Regulatory Commission is expecting six advanced reactor design applications to be submitted some time in the next 18–24 months. These include small light water reactors, high-temperature gas-cooled rectors, and liquid-metal-cooled fast reactors. What this all makes clear is that these programs are well beyond the basic R&D stage and into the commercialization process. Thus, providing $30 billion in SMR R&D seems to be simply using taxpayer money to offset the costs of doing business for a handful of companies that have already benefited from significant public investment. Yet many of these companies insist that without such public support, they cannot move forward. Such conclusions are based on one or a combination of three things: The underlying technology is economically dubious. This may well be the case, but is yet unknown. The only way to determine the economic viability of SMRs is to introduce them into the marketplace. Doing so should not, however, be a public policy decision and should instead be left up to the private sector. Companies want subsidies or preferential treatment to increase profits. This too may be accurate, but it should not be sufficient to stop private investment if the underlying economics are credible. And given the significant private investments already made absent specific federal SMR R&D programs, one can conclude that investors are confident in the economic potential of SMRs. Regulatory risk outweighs the potential financial benefit of greater investment. New nuclear designs cannot be introduced into the marketplace without a regulatory framework. **The absence of such a framework makes SMR investment prohibitively risky** without some way to offset that risk, which the federal R&D program would partially do. A lack of research and development or not having a specific Department of Energy (DOE) program dedicated to SMRs is not the problem. Establishing them is merely a symptom of the problem: the absence of a predictable, fair, and efficient regulatory framework to allow the introduction of SMRs into the marketplace. Establishing a Regulatory Framework The Obama budget essentially acknowledged the regulatory problem in his budget, which requests $67 million for DOE to work on licensing technical support for small light water reactors. While the intent is correct, the approach is wrong. The Administration is relying on the same bureaucratic, taxpayer-funded process that is stifling large reactor certification when it should use this opportunity to establish a new, more efficient licensing pathway. Instead of paying for DOE bureaucrats to get in the way of commercial progress, the Administration should commit to ensuring that the U.S. Nuclear Regulatory Commission is fully equipped and prepared to regulate new reactor designs. This should include high-temperature gas-cooled reactors and liquid-metal-cooled fast reactors as well as small light water designs. This would provide a strong regulatory foundation for each of the expected design certification applications. The DOE should have no role in the process. If a company wants to get its reactor design certified for commercial use in the U.S., it should be able to go straight to the NRC for that service. Such an approach would substantially decrease the risk associated with getting designs certified, which in turn would alleviate the need for public support. Then, instead of seeking taxpayer funds to offset regulatory risk, reactor designers could develop investors to support the certification process. Build the Framework and They Will Come Nuclear energy is already clean, safe, and affordable. Introducing small reactors could make it transformational. But the federal government should not drive the process. It should be supported by the market. If the underlying technology is as strong as many of us believe it to be, the federal government needs only to provide a predictable, stable, efficient, and fair regulatory environment. The rest will happen on its own—or it won’t.

Subsidies turn the case

Erwin, reporter – National Defense Magazine, November ‘9

(Sandra I., “Industrial Policy Debate: Should The Pentagon Pick Winners and Losers?” <http://www.nationaldefensemagazine.org/archive/2009/November/Pages/IndustrialPolicyDebateShouldthePentagonPickWinnersandLosers.aspx>)

Industry executives and trade associations have called for the Defense Department to take preemptive action to protect key sectors that are considered of strategic importance to national security. That would require the Pentagon to continue to fund selected research-and-development programs **even if those systems were not likely to be needed in the near future.** Advocates of centrally planned industrial policy contend that unless the Pentagon decides ahead of time what sectors of the industry should be kept alive, budget cutbacks in major weapon systems will jeopardize portions of the industry that, once vanished, cannot easily be reconstituted if the United States needed to mobilize for a major war.

U.S. Code Title 10 requires that the Defense Department consider the industrial implications of its major weapons program decisions, says defense industry analyst Joachim Hofbauer in a Center for Strategic and International Studies report. “Developing and collecting standardized metrics to measure the value of individual defense programs to the industrial base constitutes a crucial prerequisite for complying with this regulation. Yet, today the Department of Defense largely lacks such metrics,” says Hofbauer.

But despite an abundance of laws that require defense industrial planning, the Pentagon historically has shown little appetite for picking winners and losers, and has been more comfortable with a laissez-faire approach.

After the Cold War ended, the Defense Department stepped out of the way and for five years let contractors consolidate at will. The Pentagon finally drew the line in 1997 when it stopped the merger of industry giants Lockheed Martin and Northrop Grumman.

A repeat of the mergers and acquisitions frenzy of the 1990s is improbable, considering how much smaller the industry is now. But the Pentagon still should be prepared to cope with the “industrial consequences” of future budget decisions, says Undersecretary of Defense for Acquisition, Technology and Logistics Ashton Carter. “We’d be fools to not pay attention to that,” he says during a recent Council on Foreign Relations talk in Washington, D.C.

Industrial policy mandates have existed since the 1950s but most administrations have avoided picking winners and losers when budgets have gone south, says Gerald Abbott, directory of industry studies and professor emeritus at the Industrial College of the Armed Forces. “During the Reagan administration there was a time when if you used the word ‘industrial policy’ you got fired,” he says in an interview.

The Pentagon essentially has three choices, Abbott says. It could only award contracts to companies that it wants to keep alive, it could return to the arsenal-style government-owned industry model, or it could treat defense contractors like public utilities by guaranteeing a certain amount of work and returns for investors.

But none of these alternatives is ideal because they lock the government into a corner, says Abbott. “The trouble with industrial planning is that once the government writes up a list, it’s almost impossible to change the darn list.”

A case in point is the U.S. national stockpile of critical materials. “Once you put something in the stockpile it is impossible to get it out even if it is no longer needed,” says Abbott. “**You create a whole bunch of vested interests that want to continue to sell those materials to the government**.”

Another impediment to industrial planning is the power structure in Washington, he says. The largest five companies have far more influence than emerging smaller companies. “So if you did industrial planning you’d protect the old gorillas and not the young startups,” says Abbott. Under that scenario, “How do you encourage new companies with new technologies to enter the game?”

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The fifty states and territories should offer power purchase agreements to companies that generate electricity from small modular reactors in the United States.

States historically incentivize nuclear industry

MarketWatch, 7

(“States Maneuver to Lure New Nuclear Power Plants,” 5/21, http://energyjustice.net/pipermail/nukenet\_energyjustice.net/2007-May/002037.html)

In a positive shift for U.S. power companies planning a new fleet of nuclear facilities, nuclear power has gained popularity in several states as a solution to high power prices and growing demand. Louisiana, Florida, South Carolina and Georgia are offering incentives to develop new nuclear generation, hoping that nuclear power prices will be lower and less volatile than power generated by natural gas. State regulators also hope new nuclear power plants will create jobs and bolster local industry. Nuclear operators say state rules ensuring cost recovery of new plants - particularly pre-construction costs - will likely affect their decisions about where to build new plants. Louisiana and Florida have approved measures that would allow New Orleans-based Entergy Corp. to pass on some pre-construction nuclear plant development costs to their customers, while Georgia regulators are considering a similar move.

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#### Immigration reform passes now but it can be derailed.

Julian Zelizer, CNN Contributor, Ph.D, Princeton University History and Public Affairs Professor, 3/25/13, Seize the immigration deal, www.cnn.com/2013/03/25/opinion/zelizer-immigration-reform/index.html

The stars seem to be aligning for immigration reform. The election of 2012 scared many Republicans into thinking that their increasingly hardline stance on immigration is cutting against big demographic changes. These Republicans fear that they might risk writing themselves off for decades to come, if the GOP loses a vital part of the electorate to Democrats. A growing number of prominent Republicans are coming out in favor of a liberalized immigration policy, including the tea party darlings Sens. Rand Paul and Marco Rubio. During a recent speech to the U.S. Hispanic Chamber of Commerce, Paul said that "immigration reform will not occur until conservative Republicans, like myself, become part of the solution." Democratic Sen. Chuck Schumer of New York announced that an eight-person bipartisan group will soon reach a deal to move forward in the Senate. So it appears that **the opportunity for bold immigration reform has finally arrived**. But as any observer of congressional history knows, nothing is inevitable on Capitol Hill, particularly in the current Congress, where both parties remain extremely polarized and there are high costs for bucking the party orthodoxy. What needs to happen to close a deal? It is instructive to look back at history when Congress passed two landmark civil rights measures: the Civil Rights Act of 1964 and the Voting Rights Act of 1965. Both were highly controversial; but ultimately, they went through as a result of bipartisan deals. Even though Congress is different in this era -- with both parties deeply divided internally and a closed committee system that dampens the power of party leaders to control members -- those historical struggles offer some instructive lessons for today as to how to seize a great opportunity that emerges. The news media have always been a powerful force in our society. At times, they have helped push our political system toward reform. Right now, a new generation of reporters can shine by taking on the biggest stories of the day that would have long-term impact on the direction of our country. This is what happened during the early 1960s, when a young generation of print and television reporters brought the nation vivid reports from the front lines of the civil rights struggle. In those years, reporters covered the brutal clashes that were taking place in southern cities like Birmingham and Selma, Alabama, showing the nation the reality of race relations. When presidential speechwriter Richard Goodwin watched the clashes on his television screen, he instantly understood how the media were transforming the national conversation. He noted, "For a century the violence of oppression had been hidden from the sight of white America. ... But now the simple invention of a cathode ray tube, transforming light into electrons, registering their impact on the magnetic tape, had torn the curtain away. And America didn't like what it saw." Similarly, in the new Internet age that we live in, the media can offer the nation a better understanding of the plight of immigrants who are living in this country and the kinds of problems that legislation can redress. Too often, discussions about immigration have revolved around vague and caricatured images. In the next few months, young and enterprising reporters can help politicians and voters see why the government needs to resolve this issue and how it can best do so. Another important lesson from history is the need to reach out to the other side when a rare opportunity comes along. In the civil rights debate, President Lyndon Johnson depended on the Senate minority leader, Republican Everett Dirksen of Illinois, to deliver the votes needed to end a filibuster in 1964. In order to get Dirksen on his side, Johnson told his administration team and congressional leadership to play to Dirksen's ego and sense of history. The key was to allow Dirksen to shape the bill, within certain parameters, so that he could leave his imprint on the measure. "You get in there to see Dirksen!" Johnson told Sen. Hubert Humphrey, the Democratic whip who was shepherding the bill through the Senate. "You drink with Dirksen! You talk to Dirksen! You listen to Dirksen!" Dirksen made some important changes to the bill during the negotiations but in the end, he delivered over 20 Republican votes, which killed the filibuster. Johnson got what he wanted. President Obama will need to make the same kind of moves, giving Senate Minority Leader Mitch McConnell some kind of a role so that he can buy into the legislation and win some amount of credit for producing a bill. The president will need to do the same in the House, where Speaker John Boehner will play a vital role as he tries to tame the radicals in his caucus. While giving either Republican such a role might frustrate Democrats who feel that their party is in command, the results could be powerful. Immigration rights activists can sit tight as the final months of the debate unfold. For all the talk about bipartisanship in the 1960s, the reality was that bipartisanship was often produced when legislators felt immense pressure from the grass roots. When the Senate debated the civil rights bill in a lengthy filibuster that lasted 60 days in the spring and summer of 1964, civil rights activists -- who had already forced Congress to deal with the issue through a mass march on Washington -- conducted protests in states and districts and gathered in Washington to lobby members. The immigration rights movement has been extremely effective in recent years, and now it must show its chops once again. It must also form alliances with other organizations, such as civil rights and gay rights groups, that have indicated they are willing to enter into a broader coalition to support this cause. The movement needs to work on legislators who are currently on the fence, especially Republicans who are thinking of joining Rubio, Paul and others. The key is to do this without stimulating some kind of backlash in their constituencies. **The moment for an immigration deal has arrived**. The political incentives for saying yes are strong in both parties, and this is an issue that needs a resolution. **The key question will be whether Congress seizes this opportunity** or whether partisanship paralyzes the institution once again, as it has done so many times before.

#### plan destroys Obama’s capital

Nelson and Northey, reporters – E&E, 9/24/’12

(Gabriel and Hannah, “DOE funding for small reactors languishes as parties clash on debt,” <http://www.eenews.net/public/Greenwire/2012/09/24/3>)

It's not just wind and solar projects that are waiting for federal help as **Congress duels over** the importance of **putting taxpayer dollars on the line for** cutting-edge **energy** projects. Some of the nation's largest nuclear power companies are anxious to hear whether they will get a share of a $452 million pot from the Department of Energy for a new breed of reactors that the industry has labeled as a way to lessen the safety risks and construction costs of new nuclear power plants. The grant program for these "small modular reactors," which was announced in January, would mark the official **start** of a major U.S. foray into the technology even as rising construction costs -- especially when compared to natural-gas-burning plants -- cause many power companies to shy away from nuclear plants. DOE received four bids before the May 21 deadline from veteran reactor designers Westinghouse Electric Co. and Babcock & Wilcox Co., as well as relative newcomers Holtec International Inc. and NuScale Power LLC. Now the summer has ended with no announcement from DOE, even though the agency said it would name the winners two months ago. As the self-imposed deadline passed, companies started hearing murmurs that a decision could come in September, or perhaps at the end of the year. To observers within the industry, it seems that election-year calculations may have sidelined the contest."The rumors are a'flying," said Paul Genoa, director of policy development at the Nuclear Energy Institute, in an interview last week. "All we can imagine is that **this is now caught up in politics**, and the campaign has to decide whether these things are good for them to announce, and how." Small modular reactors do not **seem** to be lacking in political support. The nuclear lobby has historically courted both Democrats and Republicans and still sees itself as being in a strong position with key appropriators on both sides of the aisle. Likewise, top energy officials in the Obama administration have hailed the promise of the new reactors, and they haven't shown any signs of a change of heart. DOE spokeswoman Jen Stutsman said last week that the department is still reviewing applications, but she did not say when a decision will be made. "This is an important multiyear research and development effort, and we want to make sure we take the time during the review process to get the decision right," she wrote in an email. That the grants haven't been given out during a taut campaign season, even as President Obama announces **agency actions** ranging from trade cases to creating new national monuments to make the case for his re-election, may be a sign that the reactors are ensnared in a broader feud over energy spending.Grant recipients would develop reactor designs with an eye toward eventually turning those into pilot projects -- and the loan guarantees that these first-of-a-kind nuclear plants are using today to get financing would be blocked under the "No More Solyndras" bill that passed the House last week (Greenwire, Sept. 14). Congress has given the grant program $67 million for fiscal 2012, shy of the amount that would be needed annually to reach full funding. If the "sequester" kicks in at year's end and slashes DOE funding or the balance of power changes in Washington, the amount of money available could dwindle yet again. **Even the staunchest supporters** of the federal nuclear program are acknowledging it is a tough time to promise a $452 million check. Former Sen. Pete Domenici, a New Mexico Republican who pushed for new reactors as chairman of both the Senate Energy and Natural Resources Committee and the Energy and Water Appropriations Subcommittee, said during a brief interview Tuesday that well-designed loan guarantees won't cost too much because they get repaid over time. The cost could be borne by a "tiny little tax" on the nuclear industry, he said. But when it comes to straight-up spending, like the grants that would support getting these cutting-edge reactors ready for their first demonstrations, the solution may not be so clear. While some Republicans remain staunch supporters of funding for the nuclear power industry, there are others who label the government subsidies as a waste of taxpayer dollars. "It's awful hard, with the needs that are out there and the debt that haunts us, to figure out how you're going to establish priorities," said Domenici, who has advocated for the deployment of new nuclear reactors as a fellow at the Bipartisan Policy Center. "I can't stand here and tell you that I know how to do that."

#### That kills Obama’s immigration push

Amy Harder, National Journal, 2/6/13, In Washington, Energy and Climate Issues Get Shoved in the Closet, www.nationaljournal.com/columns/power-play/in-washington-energy-and-climate-issues-get-shoved-in-the-closet-20130206

At a news conference where TV cameras in the back were nearly stacked on top of each other, an influential bipartisan group of five senators introduced legislation late last month to overhaul the nation’s immigration system. The room was so crowded that no open seats or standing room could be found. A week later, one senator, Republican Lisa Murkowski of Alaska, was standing at the podium in the same room to unveil her energy-policy blueprint. There were several open seats and just a few cameras. At least one reporter was there to ask the senator about her position on President Obama’s choice for Defense secretary, former Republican Sen. Chuck Hagel. “I’m doing energy right now,” Murkowski responded. “I’m focused on that.” Almost everyone else on Capitol Hill is focused on something else. Aside from the broad fiscal issues, **Congress and the president are** galvanizing around immigration reform. Four years ago, the White House prioritized health care reform above comprehensive climate-change legislation. The former will go down in history as one of Obama’s most significant accomplishments. The latter is in the perpetual position of second fiddle. “**To everything**,” **Murkowski interjected** fervently **when asked** by National Journal Daily **whether energy** and climate policy **was second to other policies** in Washington’s pecking order. Murkowski, ranking member of the Senate's Energy and Natural Resources Committee, said she hoped the Super Bowl blackout would help the public understand the importance of energy policy. “This issue of **immigration**: Why are we all **focused on that**? Well, it’s because the Republicans lost the election because in part we did not have the Hispanic community behind us,” Murkowski said this week. “What is it that brings about that motivation? Maybe it could be something like a gap in the Super Bowl causes the focus on energy that we need to have. I can only hope.” It will take more than hope. Elections have consequences, but so far the only kind of electoral consequence climate and energy policy has instigated is one that helped some lawmakers who supported cap-and-trade legislation to lose their seats in the 2010 midterm elections. For the pendulum to swing the other way—for lawmakers to lose their seats over not acting on climate and energy policy—seems almost unfathomable right now. Billions of dollars are invested in the fossil-fuel power plants, refineries, and pipelines that the country depends on today. The companies that own this infrastructure have a business interest in keeping things the way they are. Immigration reform doesn’t face such formidable interests invested in the status quo. “They [businesses] have employees—real, visible people—who they value and who they want to make legal as soon as possible,” said Chris Miller, who until earlier this year was the top energy and environment adviser to Senate Majority Leader Harry Reid, D-Nev. On energy and climate-change policy, Miller added, “You’re probably never going to have anything like the fence in the Southwest or the border-control issue that **push**es action and debate **on immigration**, because climate-change impacts will likely continue to be more abstract in the public's mind until those impacts are so crystal-clear it’s too late for us to do anything.” Another, tactical reason helps build momentum on immigration and not on other issues. **Obama can capitalize on immigration** as it becomes more of a wedge issue within the GOP. On energy and climate policy, Obama faces a unified Republican Party. “The president has cracked the code on how to push his agenda items through. He learned from his victories on the payroll tax and the fiscal cliff that the key is to stake out the political high ground on issues that poll in his favor while exploiting the divisions within the GOP,” said a former Republican leadership aide who would speak only on the condition of anonymity. “With this in mind, the next logical place for him to go is immigration. Unlike issues like energy or tax reform where the GOP is united, he can claim a big win on immigration reform while striking a political blow to Republicans.”

#### Immigration reform necessary to sustain the economy and hegemony

Javier Palomarez, Forbes, 3/6/13, The Pent Up Entrepreneurship That Immigration Reform Would Unleash, www.forbes.com/sites/realspin/2013/03/06/the-pent-up-entrepreneurship-that-immigration-reform-would-unleash/print/

The main difference between now and 2007 is that today the role of immigrants and their many contributions to the American economy have been central in the country’s national conversation on the issue. Never before have Latinos been so central to the election of a U.S. President as in 2012. New evidence about the economic importance of immigration reform, coupled with the new political realities presented by the election, have given reform a higher likelihood of passing. As the President & CEO of the country’s largest Hispanic business association, the U.S. Hispanic Chamber of Commerce (USHCC), which advocates for the interests of over 3 million Hispanic owned businesses, I have noticed that nearly every meeting I hold with corporate leaders now involves a discussion of how and when immigration reform will pass. The USHCC has long seen comprehensive immigration reform as an economic imperative, and now the wider business community seems to be sharing our approach. It is no longer a question of whether it will pass. Out of countless conversations with business leaders in virtually every sector and every state, a consensus has emerged: our broken and outdated immigration system hinders our economy’s growth and puts America’s global leadership in jeopardy. Innovation drives the American economy, and without good ideas and skilled workers, our country won’t be able to transform industries or to lead world markets as effectively as it has done for decades. Consider some figures: Immigrant-owned firms generate an estimated $775 billion in annual revenue, $125 billion in payroll and about $100 billion in income. A study conducted by the New American Economy found that over 40 percent of Fortune 500 companies were started by immigrants or children of immigrants. Leading brands, like Google, Kohls, eBay, Pfizer, and AT&T, were founded by immigrants. Researchers at the Kauffman Foundation released a study late last year showing that from 2006 to 2012, one in four engineering and technology companies started in the U.S. had at least one foreign-born founder — in Silicon Valley it was almost half of new companies. There are an estimated 11 million undocumented workers currently in the U.S. Imagine what small business growth in the U.S. would look like if they were provided legal status, if they had an opportunity for citizenship. Without fear of deportation or prosecution, imagine the pent up entrepreneurship that could be unleashed. After all, these are people who are clearly entrepreneurial in spirit to have come here and risk all in the first place. Immigrants are twice as likely to start businesses as native-born Americans, and statistics show that most job growth comes from small businesses. While immigrants are both critically-important consumers and producers, they boost the economic well-being of native-born Americans as well. Scholars at the Brookings Institution recently described the relationship of these two groups of workers as complementary. This is because lower-skilled immigrants largely take farming and other manual, low-paid jobs that native-born workers don’t usually want. For example, when Alabama passed HB 56, an immigration law in 2012 aimed at forcing self-deportation, the state lost roughly $11 billion in economic productivity as crops were left to wither and jobs were lost. Immigration reform would also address another important angle in the debate – the need to entice high-skilled immigrants. Higher-skilled immigrants provide talent that high-tech companies often cannot locate domestically. High-tech leaders recently organized a nationwide “virtual march for immigration reform” to pressure policymakers to remove barriers that prevent them from recruiting the workers they need. Finally, and perhaps most importantly, fixing immigration makes sound fiscal sense. Economist Raul Hinojosa-Ojeda calculated in 2010 that comprehensive immigration reform would add $1.5 trillion to the country’s GDP over 10 years and add $66 billion in tax revenue – enough to fully fund the Small Business Administration and the Departments of the Treasury and Commerce for over two years. As Congress continues to wring its hands and debate the issue, lawmakers must understand what both businesses and workers already know: The American economy needs comprehensive immigration reform.

#### American power solves nuclear war and dampens all conflict

Barnett ‘11

Thomas, American military geostrategist and Chief Analyst at Wikistrat, “The New Rules: Leadership Fatigue Puts U.S., and Globalization, at Crossroads,” <http://www.worldpoliticsreview.com/articles/8099/the-new-rules-leadership-fatigue-puts-u-s-and-globalization-at-crossroads>, AM

Let me be more blunt: As the guardian of globalization, **the U.S. military has been the greatest force for peace the world has ever known**. Had America been removed from the global dynamics that governed the 20th century, the mass murder never would have ended. Indeed, it's entirely conceivable **there would** now **be no** identifiable **human civilization left**, **once nuclear weapons entered the** killing **equation**. But the world did not keep sliding down that path of perpetual war. Instead, America stepped up and changed everything by ushering in our now-**perpetual great-power peace**. We introduced the international liberal trade order known as globalization and played loyal Leviathan over its spread. What resulted was the collapse of empires, an explosion of democracy, the persistent spread of human rights, the liberation of women, the doubling of life expectancy, a roughly 10-fold increase in adjusted global GDP and a profound and persistent reduction in battle deaths from state-based conflicts. That is what American "hubris" actually delivered.

## off

#### Oil prices stable over $100 – key to Russian stability

Adomanis 3/14

(MA-Russian and East European Studies at the University of Oxford, “Crude Oil Is Still Really Expensive, So Russia Will Probably Stay Stable,” <http://www.forbes.com/sites/markadomanis/2013/03/14/crude-oil-is-still-really-expensive-so-russia-will-probably-stay-stable/>)

Judah, like many Russia watchers, highlights the oil price trap as a potential downfall for Putin. As the report says: As a result, the Kremlin now must rely on a much higher oil price in order to balance its budget. In 2007, $40 a barrel would have sufﬁced. By 2012, more than $110 was required. Should the price of oil now fall for any substantial length of time, **Russia could be forced to return to large scale borrowing, even cut beneﬁts or implement some form of austerity, thus** undermining support for the regime in the provinces and among low-wage earners. It is ironic, but **Putin’s support now depends** upon the one thing he cannot control: the price of oil. I fully agree that a substantial and sustained fall in the price of oil would be pretty damaging for Putin, just as a substantial and sustained increase in the yield on Treasury Bills would be a pretty serious problem for the United States or a substantial fall in soy prices would be a serious problem for Brazil. It doesn’t take a rocket scientist to see that a substantial portion of Putin’s popularity rests on dolling out natural resource rents, and if those rents were suddenly to disappear then, yes, the Kremlin would be in real trouble. But you can look at almost any country in the world and imagine a scenario in which the increase or decrease in price of an important commodity or financial instrument would prove ruinous: they key question is how likely such a scenario is. So before we get too caught up in what might happen to Russia when oil prices decline, we should ask ourselves “how likely is it that oil prices are actually going to decline for any length of time?” Based on the available evidence I would say “extremely unlikely.” Consider the following charts. Here’s what has happened to the price for Brent crude since 1988, when Ronald Reagan was still fearlessly leading the free world to victory in the Cold War: The run-up in oil prices since 2000 doesn’t look like a temporary blip or an “accident,” it looks like increasingly expensive oil is just a fact of life for an increasingly dynamic and globalized world economy. So let’s focus on that post 2000 period, a period that, conveniently, coincides with the entirety of Vladimir Putin‘s time atop the Russian state: Since 2000, the only really noteworthy and sustained drop in world oil prices coincided with and was caused by an epochal financial crisis that very nearly crashed the entire global economy. Apart from that, oil prices have either been slowly increasing or holding steady. Indeed ever since oil prices really started to rebound towards the end of 2009 I have heard Russia watchers say “OK, oil is expensive now, and that helps Putin survive. But just wait until the price crashes, which is going to happen any day now!” They said this in 2010. They said this in 2011. They said this in 2012. And they’re saying it now in 2013. I suppose the oil price alarmists will be right at some point, we’re likely to eventually get another global recession that will crash commodity prices, but almost no one takes seriously the idea that commodities, and oil in particular, are just a lot more expensive now than they used to be and that this probably isn’t going to change any time soon. Is Russia’s over-reliance on oil a good thing, or is it somehow praiseworthy? No. If I were running the Kremlin I would be spooked by the increase in the non-oil and gas deficit and the ever rising price per barrel needed to balance the state budget. But the fact that a sustained and sharp decrease in the price of oil would be a disaster for the Kremlin doesn’t mean that such an decrease is any more likely. And if you look at the Energy Information Agency’s short-term price forecasts, the expectation in the short term is for an exceedingly gentle and gradual decline in oil prices to $108 a barrel in 2013 and $101 in 2014, while the long-term reference case is for a sustained and long-term rise in prices. Oil prices that are expected to average out at over $100 a barrel more than a year from now, and which will then begin a gradual rise, hardly seem like a harbinger of doom for the Kremlin. Perhaps I’m small-minded or unimaginative, but it’s very hard for me to conjur a scenario in which Putin’s political position is seriously threatened so long as oil is over $100 a barrel and in which the most likely scenario is for ever-rising price in the future. Could oil doom Putin? Yes. But it seems far more likely that, for better or worse, **it’s going to continue to function as a crutch for Russia’s current regime.**

#### Plan derails that

ANS 12

(“Top 10 Myths about Nuclear Energy” June 27, 2012, Top 10 Myths about Nuclear Energy, <http://www.new.ans.org/pi/resources/myths/>, American Nuclear Society)

Myth # 10: Nuclear energy can't reduce our dependence on foreign oil.

Truth: Nuclear-generated electricity powers electric trains and subway cars as well as autos today. It has also been used in propelling ships for more than 50 years. That use can be increased since it has been restricted by unofficial policy to military vessels and ice breakers. In the near-term, nuclear power can provide electricity for expanded mass-transit and plug-in hybrid cars. Small modular reactors can provide power to islands like Hawaii, Puerto Rico, Nantucket and Guam that currently run their electrical grids on imported oil. In the longer-term, nuclear power can directly reduce our dependence on foreign oil by producing hydrogen for use in fuel cells and synthetic liquid fuels.

#### Causes complete collapse

Whitmore 13

(Brian, Senior Correspondent in RFE/RL's Central Newsroom, covering ... security, energy and military issues and domestic developments in Russia, “After The Storm: Trends To Watch In Russia In 2013”, January 02, 2013, The Power Vertical)

It began with a roar and it ended with a whimper. As 2012 wound down in Russia, the soaring expectations for change that accompanied the civic awakening and mass protests at the year’s dawn had clearly faded. But the social, economic, and political forces that spawned them will continue to shape the landscape well into the new year. A fledgling middle class remains hungry for political change, splits still plague the ruling elite over the way forward, and a fractious opposition movement continues to struggle to find its voice. With the Kremlin unable to decisively squelch the mounting dissent and the opposition unable to topple President Vladimir Putin, Russia has entered an uneasy holding pattern that has the feel of an interlude between two epochs. "I don't think we are at the end of the Putin era, but we are at the beginning of the end," says longtime Russia-watcher Edward Lucas, international editor of the British weekly "The Economist" and author of the recently published book "Deception." With economic headwinds on the horizon, generational conflict brewing, and new political forces developing, Russian society is changing -- and changing rapidly. But the political system remains ossified. So what can we expect in 2013? Below are several trends and issues to keep an eye on in the coming year. The Oil Curse: Energy Prices And The Creaking Welfare State If 2012 was all about politics, 2013 will also be about economics. The Russian economy, the cliche goes, rests on two pillars -- oil and gas. And both will come under increasing pressure as the year unfolds. World oil prices, currently hovering between $90 and $100 per barrel, are expected to be volatile for the foreseeable future. And any sharp drop could prove catastrophic for the Russian economy. Energy experts and economists say Russia's budget will only stay balanced if oil prices remain between $100 and $110 per barrel. Five years ago, the figure needed for a balanced budget was $50 to $55.

#### Extinction

Oliker 2

(Olga and Tanya Charlick-Paley, RAND Corporation Project Air Force, Assessing Russia’s Decline – Trends and Implications for the United States and the U.S. Air Force, RAND)

The preceding chapters have illustrated the ways in which Russia’s decline affects that country and may evolve into challenges and dangers that extend well beyond its borders. The political factors of de- cline may make Russia a less stable international actor and other factors may increase the risk of internal unrest. Together and sepa- rately, they increase the risk of conflict and the potential scope of other imaginable disasters. The trends of regionalization, particu- larly the disparate rates of economic growth among regions com- bined with the politicization of regional economic and military inter- ests, will be important to watch. The potential for locale, or possibly ethnicity, to serve as a rallying point for internal conflict is low at pre- sent, but these factors have the potential to feed into precisely the cycle of instability that political scientists have identified as making states in transition to democracy more likely to become involved in war. These factors also increase the potential for domestic turmoil, which further increases the risk of international conflict, for instance if Moscow seeks to unite a divided nation and/or demonstrate globally that its waning power remains something to be reckoned with. Given Russia’s conventional weakness, an increased risk of conflict carries with it an increased risk of nuclear weapons use, and Russia’s demographic situation increases the potential for a major epidemic with possible implications for Europe and perhaps beyond. The dangers posed by Russia’s civilian and military nuclear weapons complex, aside from the threat of nuclear weapons use, create a real risk of proliferation of weapons or weapons materials to terrorist groups, as well as perpetuating an increasing risk of accident at one of Russia’s nuclear power plants or other facilities. These elements touch upon key security interests, thus raising serious concerns for the United States. A declining Russia increases the likelihood of conflict—internal or otherwise—and the general de- terioration that Russia has in common with “failing” states raises se- rious questions about its capacity to respond to an emerging crisis. A crisis in large, populous, and nuclear-armed Russia can easily affect the interests of the United States and its allies. In response to such a scenario, the United States, whether alone or as part of a larger coalition, could be asked to send military forces to the area in and around Russia. This chapter will explore a handful of scenarios that could call for U.S. involvement. A wide range of crisis scenarios can be reasonably extrapolated from the trends implicit in Russia’s decline. A notional list includes: • Authorized or unauthorized belligerent actions by Russian troops in trouble-prone Russian regions or in neighboring states could lead to armed conflict. • Border clashes with China in the **Russian Far East** or between Russia and Ukraine, the Baltic states, Kazakhstan, or another neighbor could escalate into interstate combat. • Nuclear-armed terrorists based in Russia or using weapons or materials diverted from Russian facilities could threaten Russia, Europe, Asia, or the United States. • Civil war in Russia could involve fighting near storage sites for nuclear, chemical, or biological weapons and agents, risking large-scale contamination and humanitarian disaster. • A nuclear accident at a power plant or facility could endanger life and health in Russia and neighboring states. • A chemical accident at a plant or nuclear-related facility could endanger life and health in Russia and neighboring states. • Ethnic pogroms in south Russia could force refugees into Georgia, Azerbaijan, Armenia, and/or Ukraine. Illustrative Scenarios • Economic and ethnic conflicts in Caucasus could erupt into armed clashes, which would endanger oil and gas pipelines in the region. • A massive ecological disaster such as an earthquake, famine, or epidemic could spawn refugees and spread illness and death across borders. • An increasingly criminalized Russian economy could create a safe haven for crime or even terrorist-linked groups. From this base, criminals, drug traders, and terrorists could threaten the people and economies of Europe, Asia, and the United States. • Accelerated Russian weapons and technology sales or unautho- rized diversion could foster the **proliferation** of weapons and weapon materials to rogue states and nonstate terrorist actors, increasing the risk of nuclear war. This list is far from exhaustive. However significant these scenarios may be, not all are relevant to U.S. military planning. We therefore applied several criteria to the larger portfolio of potential scenarios, with an eye to identifying the most useful for a more detailed discus- sion. First, only those scenarios that involve a reasonable threat to U.S. strategic interests were considered. Second, while it is impor- tant to plan for the unexpected, it is equally crucial to understand the likelihood of various events. We thus included a range of probabili- ties but eliminated those that we considered least plausible. Third, we only chose scenarios for which the Western response would likely be military or would rely on considerable military involvement. Lastly, we wanted to select a variety of situations, ones that created differing imperatives for the U.S. government and its Air Force, rather than scenarios, which, while equal in significance, present fairly similar problems. We therefore offer the following four story- lines as illustrative, if far from exhaustive, of the types of challenges that would be presented by operations on or near Russian territory.

## Solvency

#### SMRs make warming more likely

Arjun Makhijani 10, President of the Institute for Energy & Environmental Research, Ph.D. in engineering (specialization: nuclear fusion) from the University of California at Berkeley; and Michele Boyd, former director of the Safe Energy Program at Physicians for Social Responsibility, September 2010, “Small Modular Reactors,” http://www.psr.org/nuclear-bailout/resources/small-modular-reactors-no.pdf

Efficiency and most renewable technologies are already cheaper than new large reactors. The long time—a decade or more—that it will take to certify SMRs will do little or nothing to help with the global warming problem and will actually complicate current efforts underway. For example, the current schedule for commercializing the above-ground sodium cooled reactor in Japan extends to 2050, making it irrelevant to addressing the climate problem. Relying on assurances that SMRs will be cheap is contrary to the experience about economies of scale and is likely to waste time and money, while creating new safety and proliferation risks, as well as new waste disposal problems.

#### Low gas prices kill SMRs

Rebecca Smith, Wall Street Journal, 1/29/13, Can Gas Undo Nuclear Power?, http://online.wsj.com/article/SB10001424127887323644904578272111885235812.html

Back in the 1950s, nuclear power held out the promise of abundant electricity "too cheap to meter," or almost free. But today, U.S. utilities are encountering something they never expected: Some natural-gas-fired power plants are cheaper to run than nuclear units. And that is leading some companies to consider shuttering their nuclear facilities. In much of the U.S., nuclear plants compete head to head with power plants fueled by natural gas, whose price remains near historic lows. That is giving gas-fired plants a cost advantage over some smaller nuclear plants and plants facing costly repairs. About 40% of U.S. nuclear reactors sell power into deregulated markets, where coal-fired plants are also struggling to compete against natural gas. Among the nuclear plants regarded as vulnerable by UBS UBSN.VX -0.31% Investment Research are Exelon Corp.'s EXC -1.10% 25-year-old Clinton plant in Illinois and its 43-year-old Ginna plant in New York, as well as Entergy Corp.'s ETR -0.79% 40-year-old Vermont Yankee and 38-year-old FitzPatrick plants in Vermont and New York. Plants facing costly repairs include Edison International's EIX -0.87% San Onofre plant in Southern California and Duke Energy Corp.'s DUK -0.31% Crystal River plant in Florida, both of which are currently idled. Some companies have already announced shutdowns. In October, Dominion Energy Resources Inc. said it would retire its Kewaunee nuclear plant in Wisconsin in mid 2013 even though it still has 20 years left on its operating license. Dominion said it would be cheaper to meet its contractual obligations to nearby utilities with electricity bought on the open market than getting it from Kewaunee, which Dominion bought in 2005. Exelon plans to shut down its Oyster Creek plant in New Jersey in 2019, 10 years before its license expires. An Exelon spokesman said the Chicago-based utility company "has no plans to shut down any other plants based on current market conditions." Exelon operates 17 nuclear reactors, or about 20% of U.S. nuclear capacity. A spokesman for Entergy, which operates 12 nuclear reactors, said the company doesn't talk about the financial performance of individual plants. "While short-term prices may be challenging," he said, "it is our point of view that, left alone, power markets will recover." Low electricity prices benefit energy consumers, but they're hard on those selling electricity. Small nuclear plants make less electricity than big plants, so their relatively high overhead is harder to cover when electricity prices drop. Fixed costs run about $15,000 per megawatt of capacity for modern gas plants, about $30,000 for coal plants and $90,000 for nuclear plants, according to federal estimates. Nuclear plants also spend heavily on security and other safeguards, and their equipment costs are higher than those for other kinds of generating plants because they handle radioactive material and operate at extreme temperatures. Though fuel costs have been rising for nuclear plants, fuel isn't a big factor in their expenses. But at gas plants, fuel is the biggest single expense, and its cost has been plunging. For the U.S. as a whole, average spot prices for natural gas fell 31% in 2012, to $2.77 per million British thermal units from $4.02, according to the federal Energy Information Administration. When market prices for electricity were higher, nuclear plants could cover their overhead costs and still make a lot of money because they typically ran all the time, shutting down only every 18 months to take on fresh fuel. But lower electricity prices are squeezing them. Nuclear output is already showing signs of weakness, logging a 2.5% decline in the first 11 months of 2012 compared with a year earlier. Output from plants fired by natural gas jumped almost 24%, according to the EIA.

#### No nuclear exports

NEI, Nuclear Energy Institute, Winter ‘12

(“U.S. Nuclear Export Rules Hurt Global Competitiveness,” <http://www.nei.org/resourcesandstats/publicationsandmedia/insight/insightwinter2012/us-nuclear-export-rules-hurt-global-competitiveness/>)

Today, U.S. dominance of the global nuclear power market has eroded as suppliers from other countries **compete aggressively against American exporters.** U.S. suppliers confront competitors that benefit from various forms of state promotion and also must contend with a U.S. government that has not adapted to new commercial realities. The potential is tremendous—$500 billion to $740 billion in international orders over the next decade, representing tens of thousands of potential American jobs, according to the U.S. Department of Commerce. With America suffering a large trade deficit, nuclear goods and services represent a market worth aggressive action. However, antiquated U.S. government approaches to nuclear exports are challenging U.S. competitiveness in the nuclear energy market. New federal support is needed if the United States wants to reclaim dominance in commercial nuclear goods and services—and create the jobs that go with them. “The U.S. used to be a monopoly supplier of nuclear materials and technology back in the ’50s and ’60s,” said Fred McGoldrick, former director of the Office of Nonproliferation and Export Policy at the State Department. “That position has eroded to the point where we’re a minor player compared to other countries.” America continues to lead the world in technology innovation and know-how. So what are the issues? And where is the trade? Effective coordination among the many government agencies involved in nuclear exports would provide a boost to U.S. suppliers. “Multiple U.S. agencies are engaged with countries abroad that are developing nuclear power, from early assistance to export controls to trade finance and more,” said Ted Jones, director for supplier international relations at NEI. The challenge is to create a framework that allows commercial nuclear trade to grow while ensuring against the proliferation of nuclear materials. “To compete in such a situation, an ongoing dialogue between U.S. suppliers and government needs to be conducted and U.S. trade promotion **must be coordinated at the highest levels**,” Jones said. Licensing U.S. Exports Jurisdiction for commercial nuclear export controls is divided among the Departments of Energy and Commerce and the Nuclear Regulatory Commission and has not been comprehensively updated to coordinate among the agencies or to reflect economic and technological changes over the decades. The State Department also is involved in international nuclear commerce. It negotiates and implements so-called “123 agreements” that allow for nuclear goods and services to be traded with a foreign country. The federal agencies often have different, conflicting priorities, leading to a lack of clarity for exporters and longer processing times for export licenses.“The U.S. nuclear export regime is the **most complex and restrictive in the world** and the least efficient,” said Jones. “Furthermore, it is poorly focused on items and technologies that pose little or no proliferation concern. By trying to protect too much, we risk diminishing the focus on sensitive technologies and handicapping U.S. exports.” A case in point is the Energy Department’s Part 810 regulations. While 123 agreements open trade between the United States and other countries, Part 810 regulates what the United States can trade with another country. For certain countries, **it can take more than a year to obtain “specific authorizations”** to export nuclear items. Because other supplier countries authorize exports to the same countries with fewer requirements and delays, the Part 810 rules translate into a significant competitive disadvantage for U.S. suppliers. Today, 76 countries require a specific authorization, but DOE has proposed almost doubling that number—to include for the first time countries that have never demonstrated a special proliferation concern, that are already part of the global nuclear supply chain, and that plan new nuclear infrastructure. The proposed Part 810 rule would do nothing to reduce lengthy license processing times, said Jones. Other nuclear supplier countries impose strict guidelines on their licensing agencies for timely processing of applications. Equivalent licenses must be processed in fewer than nine months in France, fewer than 90 days in Japan and 15 days in South Korea. One possible solution, said McGoldrick, would be to set similar deadlines for issuance of licenses. U.S. agencies “could have deadlines set forth in the new [Part 810] regulations, which would give the relevant government agencies specified times in which to act on a license. Time could be exceeded only under certain circumstances,” said McGoldrick. Instituting Same Rules for Everyone At stake is not just the nation’s manufacturing base, but thousands of jobs. In 2008, all exports supported more than 10 million jobs, according to “The Report to the President on the National Export Initiative.” One of the report’s recommendations was to expand opportunities for U.S. commercial nuclear exports.

No commercialization.

Magwood, commissioner – NRC, 7/14/’11

(William, “ECONOMICS AND SAFETY OF MODULAR REACTORS; COMMITTEE: SENATE APPROPRIATIONS; SUBCOMMITTEE: ENERGY AND WATER DEVELOPMENT,” CQ Congressional Testimony)

That is not to say that SMRs are a new idea. The conceptual benefits of small reactors have been the subject of discussion and analysis for decades, and all the potential benefits I've mentioned have been considered in the past. The potential advantages of smaller reactors prompted the government to provide considerable financial support for the development of the mid- size, passive-safety reactors in the 1990s and to encourage the pursuit of the pebble-bed modular reactor in the early years of this century. Both efforts proved unable to overcome the economic realities of building and operating nuclear power plants realities that tend to penalize small reactors and reward larger designs. Thus, instead of the AP-600 and 500 megawatt Simplified Boiling Water Reactor of the early 1990s, the market pushed vendors to increase the size of their designs; today, vendors offer Generation III+ technologies based on those smaller systems the 1100 megawatt AP- 1000 and the 1600 megawatt Economic Simplified Boiling Water Reactor.2 Around the turn of the century, both DOE and industry became interested in the Pebble Bed Modular Reactor, or PBMR. This was a small, high-temperature gas-cooled reactor with a generating capacity of about 165 megawatts. This technology captured considerable media attention after U.S. companies became involved in an effort to build a commercial pilot in South Africa. However, as the high costs of the project became apparent, commercial participants began to peel away and eventually the South African project was abandoned. All small reactor technologies of the past failed to find a way to overcome the fact that the infrastructure required to safely operate a nuclear power reactor of any size is considerable. Tons of steel and concrete are needed to construct containment buildings. Control rod drives, steam generators, and other key systems are **hugely expensive** to design and build. A larger plant with greater electric generating capacity simply has an inherently superior opportunity to recover these large up-front costs over a reasonable period. So why is today different from yesterday? The greatest difference is the fact that the technology has evolved significantly over the years. Having learned lessons from the development of Generation III+ technologies and from the failure of previous small reactors, today's SMR vendors clearly believe they have solved the riddle of small reactor economics. They are presenting novel design approaches that could lead to significant improvements in nuclear safety. For example, design concepts that I have seen thus far further advance the use of passive safety systems, applying gravity, natural circulation, and very large inventories of cooling water to reduce reliance on human intervention during an emergency. SMR designs also apply novel technologies such as integral pressure vessels that contain all major system components and use fewer and smaller pipes and pumps, thereby reducing the potential for a serious loss-of- coolant accident. Very importantly, these new SMRs are much smaller than the systems designed in the 1990s; this choice was made to assure that they could be factory-built and shipped largely intact by rail for deployment. The ability to "manufacture" a reactor rather than "constructing" it on-site could prove to be a major advantage in terms of cost, schedule reliability, and even quality control. But will innovations like these allow this new breed of SMRs to be successful? Maybe. Many years of work remain for SMR vendors to refine their designs and allow for the development of realistic and reliable cost estimates. **This is much the same state of affairs that existed in** the **2002** time frame when DOE launched the Nuclear Power 2010 program to spur the development and certification of Generation III+ designs such as the AP-1000. At that time, the level of design completeness was insufficient to enable vendors to provide utilities with reliable cost and schedule estimates.

No global nuclear expansion

Economist, 3/10/’12

(<http://www.economist.com/node/21549936>)

In any country independent regulation is harder when the industry being regulated exists largely by government fiat. Yet, as our special report this week explains, without governments private companies would simply not choose to build nuclear-power plants. This is in part because of the risks they face from local opposition and changes in government policy (seeing Germany's nuclear-power stations, which the government had until then seen as safe, shut down after Fukushima sent a chilling message to the industry). But it is mostly because reactors are very expensive indeed. Lower capital costs once claimed for modern post-Chernobyl designs have not materialised. The few new reactors being built in Europe are far over their already big budgets. And in America, home to the world's largest nuclear fleet, shale gas has slashed the costs of one of the alternatives; new nuclear plants are likely only in still-regulated electricity markets such as those of the south-east. A technology for a more expensive world For nuclear to play a greater role, either it must get cheaper or other ways of generating electricity must get more expensive. In theory, the second option looks promising: the damage done to the environment by fossil fuels is currently not paid for. Putting a price on carbon emissions that recognises the risk to the climate would drive up fossil-fuel costs. We have long argued for introducing a carbon tax (and getting rid of energy subsidies). But in practice carbon prices are unlikely to justify nuclear. Britain's proposed carbon floor price—the equivalent in 2020 of €30 ($42) a tonne in 2009 prices, roughly four times the current price in Europe's carbon market—is designed to make nuclear investment enticing enough for a couple of new plants to be built. Even so, it appears that other inducements will be needed. There is little sign, as yet, that a price high enough to matter can be set and sustained anywhere. Whether it comes to benefit from carbon pricing or not, nuclear power would be more competitive if it were cheaper. Yet despite generous government research-and-development programmes stretching back decades, this does not look likely. Innovation tends to thrive where many designs can compete against each other, where newcomers can get into the game easily, where regulation is light. Some renewable-energy technologies meet these criteria, and are getting cheaper as a result. But there is no obvious way for nuclear power to do so. Proponents say small, mass-produced reactors would avoid some of the problems of today's behemoths. But for true innovation such reactors would need a large market in which to compete against each other. Such a market does not exist.Nuclear innovation is still possible, but it will not happen apace: whales evolve slower than fruit flies. This does not mean nuclear power will suddenly go away. Reactors bought today may end up operating into the 22nd century, and decommissioning well-regulated reactors that have been paid for when they have years to run—as Germany did—makes little sense. Some countries with worries about the security of other energy supplies will keep building them, as may countries with an eye on either building, or having the wherewithal to build, nuclear weapons. And if the prices of fossil fuels rise and stay high, through scarcity or tax, nuclear may charm again. But the promise of a global transformation is gone.

PPAs specifically fail

Warwick, analyst – Pacific Northwest National Laboratory, April ‘8

(W.M., “Purchasing Renewable Power for the Federal Sector: Basics, Barriers, and Possible Options,” <http://www.pnl.gov/main/publications/external/technical_reports/PNNL-16485.pdf>)

To date, DOD has not used 10 USC 2394 or 10 USC 2922 (a) to enter into long-term power purchase agreements for renewable power. The lack of precedent is a major reason why this authority has not been used. Committing an agency to longer term contracts is **risky and** thus far, **procurement professionals have been reluctant** to do so. Their reasons are many and varied. One of the major stumbling blocks is inherent to the “ideal” renewable power contract model. As discussed, the best terms appear to be available by entering into a contract with a developer needing a power purchase contract to obtain construction financing. In other words, the contract is a promise to provide power from an as yet unbuilt project. There are limits to how far in advance the government can enter into contracts for future delivery of products and services. This also raises questions about how to pick a “winner.” To comply with Federal procurement requirements (10 USC 2922 (a) and 41 USC 253), the procurement should be competitive, which opens the door to offers from proposers and projects that may not be equal. Unfortunately, most procurement professionals feel (and are) unqualified to assess the merits of such proposals. Similarly, the power supply has to be synchronized with the current supplier’s contract termination. What happens if the new provider’s project isn’t operational when the current contract ends? Finally, what is the government cost estimate for a project like this? That requires a projection of future power costs, which does not exist and would be imperfect if it did. Available projections are not site specific enough to answer this question, and none extend out to the 30 plus years needed for the economic analysis. The National Institute of Standards and Technology (NIST) determined that LCC procedures are also inadequate for markets that are as volatile as energy and power markets have been and are likely to be into the future. Similarly, although the renewable power price can be forecasted with some precision, the necessary firming, shaping, and other services cannot. This point can be illustrated using the wind farm example cited previously (Figure 1). Finally, use of 10 USC 2922 (a) requires approval of the Secretary of Defense (SecDef). This means a contract will need to pass up the chain-of-command within a Service, through the Service Secretary, and then on to the SecDef. According to an Army general, decisions for SecDef approval pass through over 20 inboxes before they reach the SecDef. Because energy contracts are often time sensitive (many price offers expire within a day), this process may be too unwieldy to be effective.

## War

#### War is likely

Miller, assistant professor of international security studies – National Defense University, 12/16/’11

(Paul, <http://shadow.foreignpolicy.com/posts/2011/12/16/how_dangerous_is_the_world_part_ii>)

Some scholars are unimpressed with the supposed threats from Russia and China. The end of the Cold War led to a plethora of theories that conventional war was dead, great power conflict was over, competition would take place through trade instead of war, the "end of history" had come, the face of war would be "new" war or a "war amongst the people," while the state was dead and non-state actors would define world politics. These fads have led most commentators to vastly under-appreciate the persistence of the old fashioned, conventional, state-centric threat that has defined world politics for centuries: great power rivalry. Even if the world is changing in the ways the new-fangled theories claim (and I think those changes are overstated), it is changing much more slowly than critics appreciate. Russia and China remain massive, powerful, and hostile to U.S. interests-like they were during the Cold War. The "Cold War," after all, was just a name given to typical great power relations in an atypically bipolar environment. What was unique was not the global-chessboard contest, the mutual suspicion and hostility, and the division of the world into spheres of influence. Those features tend to characterize great power relations in any era of history. What made the Cold War distinct was the presence of only two major powers and the ideological dimension to the contest. In the post-Cold War world, the sharp ideological divide has been dampened, but suspicion and competition among big states remains a permanent and dangerous feature of world politics.

#### Can’t predict blanket peace

Donald **Kagan 99**, Professor of Classics and History at Yale, “Is Major War Obsolete? An Exchange”, Survival, Volume 41, Number 2, Summer 1999, pp. 139-152

But I would go further and would want to say even that very important concession is not sufficient, because the one great truth of history is that there is always one other possibility besides all the ones that you imagine, no matter how clever you are. What usually happens in history is in the category called ‘none of the above’. If one examines the predictions made in the area of international relations over the centuries, most of the time, most of the people get it wrong – even the most learned, experienced and intelligent people. Without going into a long dissertation on chaos theory, it suffices that it has generally happened that wars break out in places where they were never imagined and often for reasons that were not to be anticipated. The same unpredictability applies to other associated historical trends: democracy, for example. When it was invented in Greece around 500BC, democracy really looked like the future. Athenian power became great and Athens became an attractive model. And a number of Greek states – certainly not the majority, but a great many – became democracies. If one lived, say, in 450 or even in 440BC, one might very well have made what would have been an intelligent prediction: that democracy was the road of the future. Then the Athenians lost the Peloponnesian War, and democracy stopped. That was the end of democracy until the American Revolution. It is worthwhile remembering, therefore, that great historical reversals can happen. I don’t argue that a comparable reversal will happen, and it would be a tragedy if it did, but we have to be alert to the possibility. Right now democratic systems have a great deal of appeal, partly on their own merits, but partly because they seem to be winning. And winning systems look great. But if you consider Europe in 1940, and ask yourself what people thought the future was in those days, the answer probably would not have been democracy. Then the Germans lost the war, and the future looked different. There is yet another more critical factor that cannot be taken for granted: the continuous prosperity that underlies the current situation. It is 70 years since the last world-wide depression began. Will this prosperous condition without such world-wide depressions last forever? What will happen if it does not? Europe and the world had troubles in the 1920s, but it took the Great Depression to blow away liberal regimes in Germany and Japan, and to unleash monstrous bellicose forces. Are we sure that would not happen again? Since we cannot be sure that it will not, we must face the real possibility that major war may yet again come into fashion, and that it will take considerable effort, especially by the US, to keep it at bay.

## Warming

#### Aff doesn’t come close to solving

McMartin 13 (Peter, Vancouver Sun Columnist, 3/9/2013, "Global warming’s new frightening deadline", www.vancouversun.com/opinion/columnists/Global+warming+frightening+deadline/8071552/story.html)

In April 2009, the science journal Nature published a paper entitled Greenhouse-Gas Emission Targets for Limiting Global Warming to 2 C. Its subject was the end of the modern world. At the time, it attracted little notice. It was a half-dozen pages long. For laymen, its technical content was impenetrable. The purpose of the paper — researched and written by a team of European scientists headed by Malte Meinshausen, a climatologist with Germany’s Potsdam Institute for Climate Impact — was to determine just how much time mankind had left before our burning of fossil fuels would cause catastrophic global warming. The marker for what would be considered “catastrophic” warming was generally agreed to be anything above a rise of two degrees Celsius in global temperature. “More than 100 countries,” the paper noted, (the actual number was 167 countries) “have adopted a global warming limit of 2°C or below (relative to pre-industrial levels) as a guiding principle for mitigation efforts to reduce climate change risks, impacts and damages.” The problem was, no one was exactly sure how much fossil-fuel consumption had already contributed to global warming, or how much fossil fuel mankind could consume without going over the two degrees Celsius marker. Those phenomena needed to be quantified. Meinshausen’s team did just that. It constructed a rigorous model by incorporating hundreds of factors that had never been grouped together before, and then ran them through a thousand different scenarios. The team’s conclusion? Time was perilously short. It found that if we continued at present levels of fossil fuel consumption (and, in fact, consumption has been rising annually), we have somewhere between an 11- to 15-year window to prevent global temperatures from surpassing the two degree Celsius threshold in this century. And the longer we waited, the worse the odds got. To quote from a story on the Meinshausen paper by reporter Katherine Bagley of the non-profit news agency, InsideClimate News: “To have a 50-50 chance of keeping temperature rise below two degrees, humans would have to stick to a carbon budget that allowed the release of no more than 1,437 gigatons of carbon dioxide from 2000 to 2050. “To have an 80-per-cent chance of avoiding that threshold, they would have to follow a stricter budget and emit just 886 gigatons.” To put that in perspective, Meinshausen’s team calculated that the world’s nations had already produced 234 gigatons by 2006. At our present rate, the paper predicted, the world will surpass that 886-gigaton figure by 2024 — or sooner, if annual consumption rates continue to rise as they have. Since the Meinshausen paper was published, several other studies have corroborated its findings. The math in them comes to basically the same conclusion. “Yes, I use Meinshausen’s study,” wrote Prof. Mark Jaccard, environmental economist at Simon Fraser University, in an email. “But I also use about five others that basically say the same thing. The reason they all say the same thing is because the math is trivial — no independent analysts dispute it. “This is not groupthink,” Jaccard wrote. “Even when we bring in vice-presidents from oil and coal companies to be parts of the study groups, they quietly agree. When you are sitting in a meeting at Stanford (University) with top researchers — and away from your marketing department — it is pretty hard to sustain the myths that ‘business-as-usual’ is OK.” Prof. Thomas Pederson, executive director of the Pacific Institute for Climate Solutions, and former dean of science at the University of Victoria, noted in an email that “the study was conducted by one of the best teams of climate scientists in the world.” “Given continuing acceleration of emissions globally,” Pederson wrote, “we’re on or near the worst-case track that Meinshausen et al. modelled, and that puts us on a probable course for several degrees of planetary warming by the end of this century. In a word, that will be disastrous.” An even more alarming assessment comes from University of B.C. Prof. William Rees, originator of the “ecological footprint” concept. “I haven’t read this particular study,” Rees wrote, “but it sounds about right. If I recall, the United Kingdom’s Tyndall Centre (for Climate Change Research) suggests that a 90-per-cent reduction in carbon emissions from high income countries may be necessary. “In any event, various authors don’t believe we have any hope of cutting greenhouse gases sufficiently in time to avoid a two Celsius degree increase in mean global temperature since to date, no serious steps have been taken to wean the world off fossil fuels.” What would serious steps entail? According to the Meinshausen paper, up to 80 per cent of our known reserve of fossil fuels will have to stay in the ground. “The carbon budget implied by the 2 C limit,” Jaccard wrote, “means that we cannot be making new investments that expand the carbon polluting infrastructure. “This means no expansion of oilsands, no new pipelines (like Keystone and Northern Gateway) and no expansion of coal mines and coal ports. “This does not mean shutting down the oilsands. It does not mean shutting coal mines. These will continue to operate for decades. But you cannot be expanding carbon polluting production and also prevent 2 C or even 4 C temperature increase. The industry knows this, but prefers its ads telling us about the jobs and revenue from expanding the polluting infrastructure.” But the remedies needed, Rees suggested, might have to be even more draconian than that. “Even the International Energy Agency and the World Bank have recently conceded that even if present agreed-upon policies were implemented, the world is likely headed to four Celsius degrees warming by the end of the century. This would render much of the most heavily populated parts of the earth uninhabitable ...”

CO2 key to avert the coming ice age—causes extinction

Rawls, board of directors – The Stanford Review, editor and climate science writer – Error Theory, 11/28/’8

(Alec, “An economic analysis of the external value of CO2 shows an unambiguously high positive value: we should be encouraging, not deterring, CO2 emissions,” http://errortheory.blogspot.com/2008/11/my-comment-on-epas-proposed-rulemaking.html)

1. From our current warm-earth conditions, additional greenhouse gases have little capacity to cause additional warming, but could have substantial capacity to mitigate cooling.

Briefly, pretty much all the heat trapping work that CO2 can do is already being done by the CO2 already in the atmosphere, and by the much more abundant water vapor, which traps most of the wavelengths of infrared that CO2 does. The warmer the Earth is, the more water vapor there is an atmosphere, and the more irrelevant additional CO2 becomes.

The situation changes dramatically as the Earth cools. A colder atmosphere does not hold as much water vapor, leaving more heat trapping work for CO2 to do. The colder the climate becomes, the more we rely on CO2 to provide the greenhouse warming that keeps the earth from becoming an ice ball. **A doubling of the tiny CO2 component the atmosphere has only a tiny warming effect when the Earth is already warm, but has a magnified warming effect when the Earth turns cold.** Good stuff. Sitting on what may be the brink of the next Little Ice Age, we should be trying to raise the floor on the likely cooling by pumping out CO2.

In sum, CO2 presents little downside risk (only a tiny warming effect in the event that natural variation continues in the warming direction), but a relatively large upside risk (possibly significant raising of the floor on global cooling, in the event that natural variation heads in the cooling direction).

2. Warming appears to be self-limiting. Cooling is not (at least not until we are buried under mountains of ice).

A couple different physical processes are at work here. Roy Spencer theorizes that the increasing efficiency of the rain cycle as temperatures warm constitutes a natural thermostat. The more efficient rain cycle means that precipitation more completely removes moisture from the air. These efficient cloudbursts open up a column of dry air in the sky through which the heat produced by precipitation (opposite of the cold produced by evaporation) escapes into space. The warmer the earth gets, the more efficient the rain cycle, the more heat gets vented through cloudbursts, making warming self-limiting.

In contrast , the geological record proves that cooling is not self-limiting, as the Earth regularly descends into hundred thousand year-long ice ages. One of the lopsided mechanisms at work is the albedo effect. Cooling causes increased snow cover, which reflects away more sunlight than bare ground or open ocean does. This causes more cooling, causing snow and ice to grow still further, etcetera.

What makes the albedo effect lopsided in its operation is the fact that as snow and ice descend to lower latitudes, the change in territory covered grows rapidly. Also, the lower latitudes recieve sunlight more directly than the higher latitudes do, so when sun gets reflected away from the lower latitudes, more energy is lost per square mile of snow and ice than at higher latitudes. Cooling causes snow and ice to descend towards the temperate regions, where most of the earth's landmass resides. Thus relatively direct sunlight gets bounced away from progressively larger swaths of the earth's surface, causing the marginal albedo effect to grow rapidly.

By the same token, the marginal albedo effect shrinks as the earth warms. Starting from a warm period like the present, warming causes our relatively mild ice and snow coverage to retreat towards higher latitudes. The amount of territory involved keeps getting smaller, and it only recieves sunlight at a shallow angle anyway, so that the marginal decrease in albedo keeps getting smaller.

3. Specific to this point in time, the likely direction of natural temperature variation is very lopsided in the cooling direction.

Solar activity was at “grand maximum” levels from 1940 to 2000, and ALL the geological evidence points to solar activity is the primary driver of global climate. (There is literally NO evidence that global climate change has EVER been driven by CO2, unless you go way back to before there was plant life to suck the CO2 out of the atmosphere. We know in theory that marginal changes in CO2 should have SOME warming effect, but they are apparently too small to detect.)

From this “grand maximum” level of solar activity, there was nowhere to go but down, and if the past is any guide, that meant it was going to get cold, which is just what is happening. Since 2000 solar activity has dropped off dramatically, with the transition from solar cycle 23 to solar cycle 24 now dawdling along in an extended solar minimum. Concomitantly, global temperatures stopped rising in 1998, and fell dramatically last year.

Solar cycle 24 still could fire up strong, in which case the expected global cooling could be put off, but in all likelihood it is coming. Solar activity has nowhere to go but down from its recent high levels, and all the evidence says that the result is going to be a period of global cooling.

In an expected value calculation, that boost to the likelihood of cooling gets applied as a weighting factor to the extra high value of CO2 in the event of a cooling episode. Warming is more important the cooler gets, and the amount of warming work that CO2 does increase is the cooler it gets (and the less water vapor there is in the atmosphere).

In short, all of these different lopsided risk profiles are getting multiplied together to create a super lopsided risk profile, where down side risks are tiny while upside risks are relatively huge. They still aren’t big, because CO2 effects in general are small. But in relative terms they are gigantic, implying that **the positive net external value of CO2 is unambiguously positive.**

Actually there aren't ANY effects that have a negative value, given that a modicum of warming is a benefit, even if natural temperature variation is already headed in the warming direction. Unless warming has somehow gotten out of control, warming is good. The more the better. We have NEVER had too much warming. Since the claim that warming HAS somehow gotten out of control are based on the most blatant statistical fraud, is no reason to get any weight to that radical idea.

Not that CO2 has to be all benefits and no costs in order for it to have been unambiguously positive value. That only requires that the benefits unambiguously outweigh the costs. The actual result is turns out to go even further. There are no costs. CO2 is nothing but benefits. And we can throw in a few more too, like the fact that CO2 is plant food. A doubling of CO2 has substantial effect positive affect on agricultural productivity. That the EPA, and governments all over the world, are looking at CO2 as a pollutant that needs to be dramatically suppressed is truly a form of madness.

Disregard for truth creates divorce from reality

That's the theme of this blog. Error theory examines the consequences of failure to think straight, which usually is driven, not by an inability to think straight, but from attempts to gain advantage by avoiding or suppressing inconvenient truths. The global warming alarmists are an extreme example. All of these trained climatologists (those who got their funding from Al Gore) have managed to convince themselves that human economic activity is such a threat to the environment that anything they can do to stop it, no matter how dishonest, is justified. Their conviction that shutting off the oil economy is necessary for saving the natural world natural world has nothing to do with global temperature, which was just a convenient pretext.

The consequence is that by not caring about the truth, they have become divorced from reality. They are committing the greatest scientific fraud in history, and pursuing a course that is utterly destructive to both mankind and the environment.

Global cooling is not just destructive to humanity, but if it proceeds very far, will dramatically shrink the planet’s living space for all of us: plants, animals and humanity. We should be doing everything we can to counter that eventuality, and one of the things we can do, which will do no harm in the event that natural variation turns in the other direction, is to keep on pumping out the CO2.

No food impact

Allouche, research Fellow – water supply and sanitation @ Institute for Development Studies, frmr professor – MIT, ‘11

(Jeremy, “The sustainability and resilience of global water and food systems: Political analysis of the interplay between security, resource scarcity, political systems and global trade,” Food Policy, Vol. 36 Supplement 1, p. S3-S8, January)

The question of resource scarcity has led to many debates on whether scarcity (whether of food or water) will lead to conflict and war. The underlining reasoning behind most of these discourses over food and water wars comes from the Malthusian belief that there is an imbalance between the economic availability of natural resources and population growth since while food production grows linearly, population increases exponentially. Following this reasoning, neo-Malthusians claim that finite natural resources place a strict limit on the growth of human population and aggregate consumption; if these limits are exceeded, social breakdown, conflict and wars result. Nonetheless, it seems that most empirical studies do not support any of these neo-Malthusian arguments. Technological change and greater inputs of capital have dramatically increased labour productivity in agriculture. More generally, the neo-Malthusian view has suffered because during the last two centuries humankind has breached many resource barriers that seemed unchallengeable.

Lessons from history: alarmist scenarios, resource wars and international relations

In a so-called age of uncertainty, a number of alarmist scenarios have linked the increasing use of water resources and food insecurity with wars. The idea of water wars (perhaps more than food wars) is a dominant discourse in the media (see for example Smith, 2009), NGOs (International Alert, 2007) and within international organizations (UNEP, 2007). In 2007, UN Secretary General Ban Ki-moon declared that ‘water scarcity threatens economic and social gains and is a potent fuel for wars and conflict’ (Lewis, 2007). Of course, this type of discourse has an instrumental purpose; security and conflict are here used for raising water/food as key policy priorities at the international level.

In the Middle East, presidents, prime ministers and foreign ministers have also used this bellicose rhetoric. Boutrous Boutros-Gali said; ‘the next war in the Middle East will be over water, not politics’ (Boutros Boutros-Gali in Butts, 1997, p. 65). The question is not whether the sharing of transboundary water sparks political tension and alarmist declaration, but rather to what extent water has been a principal factor in international conflicts. The evidence seems quite weak. Whether by president Sadat in Egypt or King Hussein in Jordan, none of these declarations have been followed up by military action.

The governance of transboundary water has gained increased attention these last decades. This has a direct impact on the global food system as water allocation agreements determine the amount of water that can used for irrigated agriculture. The likelihood of conflicts over water is an important parameter to consider in assessing the stability, sustainability and resilience of global food systems.

None of the various and extensive databases on the causes of war show water as a casus belli. Using the International Crisis Behavior (ICB) data set and supplementary data from the University of Alabama on water conflicts, Hewitt, Wolf and Hammer found only seven disputes where water seems to have been at least a partial cause for conflict (Wolf, 1998, p. 251). In fact, about 80% of the incidents relating to water were limited purely to governmental rhetoric intended for the electorate (Otchet, 2001, p. 18).

As shown in The Basins At Risk (BAR) water event database, more than two-thirds of over 1800 water-related ‘events’ fall on the ‘cooperative’ scale (Yoffe et al., 2003). Indeed, if one takes into account a much longer period, the following figures clearly demonstrate this argument. According to studies by the United Nations Food and Agriculture Organization (FAO), organized political bodies signed between the year 805 and 1984 more than 3600 water-related treaties, and approximately 300 treaties dealing with water management or allocations in international basins have been negotiated since 1945 (FAO, 1978 and FAO, 1984).

The fear around water wars have been driven by a Malthusian outlook which equates scarcity with violence, conflict and war. There is however no direct correlation between water scarcity and transboundary conflict. Most specialists now tend to agree that the major issue is not scarcity per se but rather the allocation of water resources between the different riparian states (see for example Allouche, 2005, Allouche, 2007 and [Rouyer, 2000] ). Water rich countries have been involved in a number of disputes with other relatively water rich countries (see for example India/Pakistan or Brazil/Argentina). The perception of each state’s estimated water needs really constitutes the core issue in transboundary water relations. Indeed, whether this scarcity exists or not in reality, perceptions of the amount of available water shapes people’s attitude towards the environment (Ohlsson, 1999). In fact, some water experts have argued that scarcity drives the process of co-operation among riparians (Dinar and Dinar, 2005 and Brochmann and Gleditsch, 2006).

In terms of international relations, the threat of water wars due to increasing scarcity does not make much sense in the light of the recent historical record. Overall, the water war rationale expects conflict to occur over water, and appears to suggest that violence is a viable means of securing national water supplies, an argument which is highly contestable.

The debates over the likely impacts of climate change have again popularised the idea of water wars. The argument runs that climate change will precipitate worsening ecological conditions contributing to resource scarcities, social breakdown, institutional failure, mass migrations and in turn cause greater political instability and conflict (Brauch, 2002 and Pervis and Busby, 2004). In a report for the US Department of Defense, Schwartz and Randall (2003) speculate about the consequences of a worst-case climate change scenario arguing that water shortages will lead to aggressive wars (Schwartz and Randall, 2003, p. 15). Despite growing concern that climate change will lead to instability and violent conflict, the evidence base to substantiate the connections is thin ( [Barnett and Adger, 2007] and Kevane and Gray, 2008).

CO2 key to food

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(S. Fred, Robert M. and Craig, “Climate Change Reconsidered,” 2011 Interim Report of the Nongovernmental Panel on Climate Change)

Regarding the first of these requirements, Tilman et al. note that in many parts of the world the historical rate of increase in crop yields is declining, as the genetic ceiling for maximal yield potential is being approached. This observation, in their words, ―highlights the need for efforts to steadily increase the yield potential ceiling.‖ With respect to the second requirement, they indicate, ―without the use of synthetic fertilizers, world food production could not have increased at the rate it did [in the past] and more natural ecosystems would have been converted to agriculture.‖ Hence, they state the solution ―will require significant increases in nutrient use efficiency, that is, in cereal production per unit of added nitrogen, phosphorus,‖ and so forth. Finally, as to the third requirement, Tilman et al. remind us ―water is regionally scarce,‖ and ―many countries in a band from China through India and Pakistan, and the Middle East to North Africa either currently or will soon fail to have adequate water to maintain per capita food production from irrigated land.‖ Increasing crop water use efficiency, therefore, is also a must. Although the impending biological crisis and several important elements of its potential solution are thus well defined, Tilman et al. (2001) noted ―even the best available technologies, fully deployed, cannot prevent many of the forecasted problems.‖ This was also the conclusion of Idso and Idso (2000), who stated that although ―expected advances in agricultural technology and expertise will significantly increase the food production potential of many countries and regions,‖ these advances ―will not increase production fast enough to meet the demands of the even faster-growing human population of the planet.‖ Fortunately, we have a powerful ally in the ongoing rise in the air‘s CO2 content that can provide what we can‘t. Since atmospheric CO2 is the basic ―food of essentially all plants, the more of it there is in the air, the bigger and better they grow. For a nominal doubling of the air‘s CO2 concentration, for example, the productivity of Earth‘s herbaceous plants rises by 30 to 50 percent (Kimball, 1983; Idso and Idso, 1994), and the productivity of its woody plants rises by 50 to 80 percent or more (Saxe et al. 1998; Idso and Kimball, 2001). Hence, as the air‘s CO2 content continues to rise, the land use efficiency of the planet will rise right along with it. In addition, atmospheric CO2 enrichment typically increases plant nutrient use efficiency and plant water use efficiency. Thus, with respect to all three of the major needs identified by Tilman et al. (2002), increases in the air‘s CO2 content pay huge dividends, helping to increase agricultural output without the taking of new land and water from nature. Many other researchers have broached this subject. In a paper recently published in the Annual Review of Plant Biology, three scientists associated with the Institute of Genomic Biology at the University of Illinois at Urbana-Champaign (USA) write that meeting the global increase in agricultural demand during this century ―is predicted to require a doubling of global production,‖ but ―the world has limited capacity to sustainably expand cropland,‖ and this capacity is actually ―shrinking in many developed countries.‖ Thus, Zhu et al. (2010) state, ―meeting future increases in demand will have to come from a near doubling of productivity on a land area basis,‖ and they conclude ―a large contribution will have to come from improved photosynthetic conversion efficiency,‖ estimating ―at least a 50% improvement will be required to double global production.‖ The researchers‘ reason for focusing on photosynthetic conversion efficiency derives from the experimentally observed facts that increases in the atmosphere‘s CO2 concentration increase the photosynthetic rates of nearly all plants, and those rate increases generally lead to equivalent—or only slightly smaller—increases in plant productivity on a land area basis. That provides a solid foundation for their enthusiasm in this regard. In their review of the matter, however, they examine the prospects for boosting photosynthetic conversion efficiency in an entirely different way: genetically, without increasing the air‘s CO2 content. ―Improving photosynthetic conversion efficiency will require,‖ the three scientists state, ―a full suite of tools including breeding, gene transfer, and synthetic biology in bringing about the designed alteration to photosynthesis.‖ For some of these ―near-term‖ endeavors, they indicate ―implementation is limited by technical issues that can be overcome by sufficient investment,‖ meaning they can ―be bought.‖ But several ―mid-term‖ goals could take 20 years or more to achieve; and they state ―even when these improvements are achieved, it may take an additional 10–20 years to bring such innovations to farms in commercial cultivars at adequate scale.‖ And if that is not bad enough, they say of still longer-term goals that ―too little of the science has been undertaken to identify what needs to be altered to effect an increase in yield,‖ while in some cases they acknowledge that what they envision may not even be possible, as in developing a form of RuBisCO that exhibits a significant decrease in oxygenation activity, or in designing C3 crops to utilize the C4 form of photosynthetic metabolism. Clearly, we do not have the time to gamble on our ability to accomplish what needs to be done in order to forestall massive human starvation of global dimensions within the current century. Therefore—in addition to trying what Zhu et al. suggest—we must rely on the ―tested and true: the CO2-induced stimulation of plant photosynthesis and crop yield production. And all we need to do in this regard is to refrain from interfering with the natural evolution of the Industrial Revolution, which is destined to be carried for some time yet on the backs of fossil-fuel-driven enterprises that can provide the atmosphere with the extra carbon dioxide that will be needed to provide the extra increase in crop growth that may mean the difference between global food sufficiency and human starvation on a massive scale a mere few decades from now. Another take on the matter has been provided by Hanjra and Qureshi (2010). They begin their treatment of the subject by quoting Benjamin Franklin‘s well-known homily, ―When the well is dry, we know the worth of water,‖ and they write we ―must not lose sight of surging water scarcity.‖ Noting ―population and income growth will increase the demand for food and water,‖ they contend ―irrigation will be the first sector to lose water, as water competition by non-agricultural uses increases and water scarcity intensifies.‖ As ―increasing water scarcity will have implications for food security, hunger, poverty, and ecosystem health and services,‖ they report ―feeding the 2050 population will require some 12,400 km3 of water, up from 6800 km3 used today.‖ This huge increase, they continue, ―will leave a water gap of about 3300 km3 even after improving efficiency in irrigated agriculture, improving water management, and upgrading of rainfed agriculture,‖ as per the findings of de Fraiture et al. (2007), Molden (2007), and Molden et al. (2010). This water deficiency, according to Hanjra and Qureshi, ―will lead to a food gap unless concerted actions are taken today.‖ Some of the measures they propose are to conserve water and energy resources, develop and adopt climate-resilient crop varieties, modernize irrigation, shore up domestic food supplies, reengage in agriculture for further development, and reform the global food and trade markets. To achieve these goals, they write, ―unprecedented global cooperation is required,‖ which by the looks of today‘s world is an exceedingly remote possibility. What, then, can we do to defuse the ticking time-bomb of this looming food and water crisis? One option is to do nothing: don‘t mess with the normal, unforced evolution of civilization‘s means of acquiring energy. This is because on top of everything else we may try to do to conserve both land and freshwater resources, we will still fall short of what is needed to be achieved unless the air‘s CO2 content rises significantly and thereby boosts the water use efficiency of Earth‘s crop plants and that of the plants that provide food and habitat for what could be called ―wild nature,‖ enabling both sets of plants to produce more biomass per unit of water used. To ensure this happens, we will need all of the CO2 that will be produced by the burning of fossil fuels, until other forms of energy truly become more cost-efficient than coal, gas, and oil. In fact, these other energy sources will have to become much more cost-efficient before fossil fuels are phased out, because the positive externality of the CO2-induced increase in plant water use efficiency provided by the steady rise in the atmosphere‘s CO2 concentration due to the burning of fossil fuels will be providing a most important service in helping us feed and sustain our own species without totally decimating what yet remains of wild nature. In yet another paper to address this important issue—this one published in the Journal of Proteome Research—Sarkar et al. (2010) write, ―increasing population and unsustainable exploitation of nature and natural resources have made ‗food security‘ a burning issue in the 21st century,‖ echoing the sentiments expressed by Farrell (2009), who noted ―the alarming increase in biofuel production, the projected demand for livestock products, and the estimated food to feed the additional 700 million people who will arrive here by 2016, will have unprecedented consequences,‖ among which are likely to be that ―arable land, the environment, water supply and sustainability of the agricultural system will all be affected,‖ and not in a positive way. Furthermore, when the human population of the globe reaches 8.7–11.3 billion by the year 2050 (Bengtsson et al., 2006), the situation will become truly intolerable, unless something is done, far in advance of that date, to mitigate the situation dramatically. Thus, as Sarkar et al. suggest, ―a normal approach for any nation/region is to strengthen its agricultural production for meeting future demands and provide food security.‖ But a major difficulty, which could spoil mankind‘s ability to do so, is the ongoing rise in the atmosphere‘s ozone concentration. This is the subject of Sarkar et al.‘s new paper. In a study designed to elucidate the many ways in which ozone (O3) is harmful to plants, the eight researchers grew two high-yielding cultivars (Sonalika and HUW 510) of wheat (Triticum aestivum L.) outdoors at the Agriculture Research Farm of India‘s Banaras Hindu University. This was done within open-top chambers maintained at the ambient O3 concentration and at elevated O3 concentrations of 25 percent and 50 percent above ambient during the peak O3 period of the day (10:00 to 15:00 hours local time) for a total of 50 days, during which time they measured numerous responses of the plants to the two levels of ozone enrichment. Sarkar et al. determined, among several other things, that the moderate increases in the air‘s O3 concentration resulted in higher foliar injury, a reduction in photosynthetic efficiency, induced inhibition in photochemical efficacy of photosystem II, lowered concentrations of photosynthetic pigments and proteins, and what they describe as ―drastic reductions‖ in RuBisCO large and small subunits, while noting major leaf photosynthetic proteins and important energy metabolism proteins were also ―drastically reduced.‖ Discussing the results, the scientists from India, Japan, and Nepal remark that anthropogenic activities have made ozone a ―major environmental pollutant of our time,‖ while noting some are predicting it to be an even ―greater problem for the future.‖ Adding this dilemma to the problem of feeding the world over the next few decades and beyond makes humanity‘s future look incredibly bleak. Thus, Sarkar et al. suggest we focus on ―engineering crops for future high O3,‖ concentrating on maintaining ―effective stomatal conductance of plants which can avoid O3 entry but not hamper their productivity.‖ We agree. But not knowing to what extent we will be successful in this endeavor, we also need to do something we know will work: allowing the air‘s CO2 content to rise, unimpeded by the misguided efforts of those who would curtail anthropogenic CO2 emissions in the guise of fighting what they claim is anthropogenic-induced global warming. This contention is largely theoretical and wholly unproven, but we know, as a result of literally hundreds, if not thousands, of real-world experiments, that atmospheric CO2 enrichment increases both the productivity and water-use efficiency of nearly all plants, and that it often more than compensates for the negative effects of O3 pollution. Introducing another review of food security studies pertinent to the challenge of feeding 9 billion people just four decades from now, Godfray et al. (2010) note ―more than one in seven people today still do not have access to sufficient protein and energy from their diet and even more suffer some form of micronutrient malnourishment,‖ citing the FAO (2009). Although ―increases in production will have an important part to play‖ in correcting this problem and keeping it from worsening in the future, mankind ―will be constrained by the finite resources provided by the earth‘s lands, oceans and atmosphere,‖ This set of difficulties they describe at the end of their review as constituting a ―perfect storm.‖ In considering ways to mitigate these problems, the first question they ask is: ―How can more food be produced sustainably?‖ They state the primary solution to food shortages of the past was ―to bring more land into agriculture and to exploit new fish stocks,‖ but they note there is precious little remaining of either of these pristine resources. Thus, they conclude ―the most likely scenario is that more food will need to be produced from the same or less land.‖ As they suggest, ―we must avoid the temptation to sacrifice further the earth‘s already hugely depleted biodiversity for easy gains in food production, not only because biodiversity provides many of the public goods upon which mankind relies, but also because we do not have the right to deprive future generations of its economic and cultural benefits.‖ And, we might add, because we should be enlightened enough to realize we have a moral responsibility to drive no more species to extinction than we already have sent to that sorry state. So how can these diverse requirements all be met simultaneously? A clue comes from Godfray et al.‘s statement that ―greater water and nutrient use efficiency, as well as tolerance of abiotic stress, are likely to become of increasing importance.‖ And what is there that can bring about these changes in mankind‘s crops? You guessed it: carbon dioxide. Rising concentrations of atmospheric CO2 increase the photosynthetic prowess of essentially all of the Earth‘s plants, while generally reducing the rate at which they transfer water from the soil to the air. In addition, more CO2 in the air tends to enhance the efficiency with which plants utilize nutrients in constructing their tissues and producing the edible portions that we and all of Earth‘s animals depend upon for our very existence. Focusing on the water scarcity aspect of the food shortage problem, Kummu et al. (2010) write, ―due to the rapidly increasing population and water use per capita in many areas of the world, around one third of the world‘s population currently lives under physical water scarcity (e.g. Vorosmarty et al., 2000; Alcamo et al., 2003; Oki and Kanae, 2006).‖ But despite the large number of water scarcity studies conducted over the years, ―no global assessment is available of how this trend has evolved over the past several centuries to millennia.‖ Thus they conducted a study covering AD 0 to 2005. This analysis was carried out for ten different time slices, defined as those times at which the human population of the globe was approximately double the population of the previous time slice. Global population data for these analyses were derived from the 5‘ latitude x 5‘ longitude-resolution global HYDE dataset of Klein Goldewijk (2005) and Klein Goldewijk et al. (2010), while evaluation of water resources availability over the same period was based on monthly temperature and precipitation output from the climate model ECBilt-CLIO-VECODE, as calculated by Renssen et al. (2005). After completing these assessments, the four researchers found ―moderate water shortage first appeared around 1800, but it commenced in earnest from about 1900, when 9% of the world population experienced water shortage, of which 2% was under chronic water shortage (<1000 m3/capita/year).‖ Thereafter, from 1960 onwards, they write, ―water shortage increased extremely rapidly, with the proportion of global population living under chronic water shortage increasing from 9% (280 million people) in 1960 to 35% (2300 million) in 2005.‖ And currently, they continue, ―the most widespread water shortage is in South Asia, where 91% of the population experiences some form of water shortage,‖ while ―the most severe shortage is in North Africa and the Middle East, where 77% and 52% of the total population lives under extreme water shortage (<500 m3/capita/year), respectively.‖ To alleviate these freshwater shortages, Kummu et al. state measures generally have been taken to increase water availability, such as building dams and extracting groundwater. But they note ―there are already several regions in which such measures are no longer sufficient, as there is simply not enough water available in some regions.‖ In addition, they observe, ―this problem is expected to increase in the future due to increasing population pressure (e.g. United Nations, 2009), higher welfare (e.g. Grubler et al., 2007) [and] production of water intensive biofuels (e.g. Varis, 2007, Berndes, 2008).‖ Hence, they conclude there will be an increasing need for many nonstructural measures, the first and foremost of which they indicate to be ―increasing the efficiency of water use.‖ This characteristic of nearly all of Earth‘s plants is almost universally promoted by atmospheric CO2 enrichment.

#### No oceans impact

Hofmann, Professor of Ecology, Evolution and Marine Biology – University of California Santa Barbara et al., ‘11

(Gretchen E., “High-Frequency Dynamics of Ocean pH: A Multi-Ecosystem Comparison,” *PLoS ONE* Vol. 6, No. 12)

Since the publication of two reports in 2005–2006 [1], [2], the drive to forecast the effects of anthropogenic ocean acidification (OA) on marine ecosystems and their resident calcifying marine organisms has resulted in a growing body of research. Numerous laboratory studies testing the effects of altered seawater chemistry (low pH, altered pCO2, and undersaturation states - Ω - for calcium carbonate polymorphs) on biogenic calcification, growth, metabolism, and development have demonstrated a range of responses in marine organisms (for reviews see [3]–[8]). However, the emerging picture of biological consequences of OA – from data gathered largely from laboratory experiments – is not currently matched by equally available environmental data that describe present-day pH exposures or the natural variation in the carbonate system experienced by most marine organisms. Although researchers have documented variability in seawater carbonate chemistry on several occasions in different marine ecosystems (e.g., [9]–[15]), this variation has been under-appreciated in these early stages of OA research.

Recently, a deeper consideration of ecosystem-specific variation in seawater chemistry has emerged (e.g., [16]–[18]), one that is pertinent to the study of biological consequences of OA. Specifically, assessments of environmental heterogeneity present a nuanced complement to current laboratory experiments. The dynamics of specific natural carbonate chemistry on local scales provide critical context because outcomes of experiments on single species are used in meta-analyses to project the overall biological consequences of OA [7], [19], to forecast ecosystem-level outcomes [20], and ultimately to contribute to policy decisions [21] and the management of fisheries [22], [23]. As noted earlier [24], natural variability in pH is seldom considered when effects of ocean acidification are considered. Natural variability may occur at rates much higher than the rate at which carbon dioxide is decreasing ocean pH, about −0.0017 pH/year [25], [26]. This ambient fluctuation in pH may have a large impact on the development of resilience in marine populations, or it may combine with the steady effects of acidification to produce extreme events with large impacts [24]. In either case, understanding the environmental variability in ocean pH is essential.

Although data on the natural variation in the seawater CO2 system are emerging, nearly all high-resolution (e.g. hourly) time series are based on pCO2 sensors, with comparatively few pH time series found in the literature. From a research perspective, the absence of information regarding natural pH dynamics is a critical data gap for the biological and ecological arm of the multidisciplinary investigation of OA. Our ability to understand processes ranging from physiological tolerances to local adaptation is compromised. Specifically, laboratory experiments to test tolerances are often not designed to encompass the actual habitat exposure of the organisms under study, a critical design criterion in organismal physiology that also applies to global change biology [27]–[29]. It is noted that neither pH nor pCO2 alone provide the information sufficient to fully constrain the CO2 system, and while it is preferred to measure both, the preference for measuring one over the other is evaluated on a case-by-case basis and is often dictated by the equipment available.

In this light, data that reveal present-day pH dynamics in marine environments and therefore ground pH levels in CO2 perturbation experiments in an environmental context are valuable to the OA research community in two major ways. First, estimates of organismal resilience are greatly facilitated. Empiricists can contextualize lab experiments with actual environmental data, thereby improving them. Notably, the majority of manipulative laboratory experiments in OA research (including our own) have been parameterized using pCO2 levels as per the IPCC emission scenario predictions [30]. One consequence of this practice is that organisms are potentially tested outside of the current exposure across their biogeographic range, and tolerances are not bracketed appropriately. This situation may not be a lethal issue (i.e. negating all past observations in experiments where environmental context was not known); however, the lack of information about the ‘pH seascape’ may be translated through these organismal experiments in a manner that clouds the perspective of vulnerability of marine ecosystems. For example, recent data on the heterogeneity of pH in coastal waters of the Northeastern Pacific [31], [32] that are characterized by episodic upwelling has caused biologists to re-examine the physiological tolerances of organisms that live there. Specifically, resident calcifying marine invertebrates and algae are acclimatized to existing spatial and temporal heterogeneity [17], [18], and further, populations are likely adapted to local to regional differences in upwelling patterns [33].

Secondly, in addition to improving laboratory experiments, data regarding the nature of the pH seascape also facilitate hypothesis-generating science. Specifically, heterogeneity in the environment with regard to pH and pCO2 exposure may result in populations that are acclimatized to variable pH or extremes in pH. Although this process has been highlighted in thermal biology of marine invertebrates [34], such insight is not available with regard to gradients of seawater chemistry that occur on biogeographic scales. With that said, recent field studies have demonstrated that natural variation in seawater chemistry does influence organismal abundance and distribution [16], [35], [36]. With our newfound access to pH time series data, we can begin to explore the biophysical link between environmental seawater chemistry and resilience to baseline shifts in pH regimes, to identify at-risk populations as well as tolerant ones. Additionally, the use of sensors in the field can identify hidden patterns in the CO2 system, revealing areas that are refugia to acidification or carbonate undersaturation; such knowledge could enable protection, management, and remediation of critical marine habitats and populations in the future.

The recent development of sensors for in situ measurements of seawater pH [37], [38] has resulted in the ability to record pH more readily in the field in a manner that can support biological and ecological research. Since 2009, the Martz lab (SIO) has constructed 52 “SeaFET” pH sensors for 13 different collaborators (see http://martzlab.ucsd.edu) working in a broad range of settings. Using subsamples of data from many of these sensors, here we examine signatures of pH heterogeneity, presenting time series snapshots of sea-surface pH (upper 10 m) at 15 locations, spanning various overlapping habitat classifications including polar, temperate, tropical, open ocean, coastal, upwelling, estuarine, kelp forest, coral reef, pelagic, benthic, and extreme. Naturally, at many sites, multiple habitat classifications will apply. Characteristic patterns observed in the 30-day snapshots provide biome-specific pH signatures. This comparative dataset highlights the heterogeneity of present-day pH among marine ecosystems and underscores that contemporary marine organisms are currently exposed to different pH regimes in seawater that are not predicted until 2100.

Results

Overall, the patterns of pH recorded at each of the 15 deployment sites (shown in Figure 1, Table 1) were strikingly different. Figure 2 presents the temporal pattern of pH variation at each of these sites, and, for the sake of comparison, these are presented as 30-day time series “snapshots.” Note that all deployments generated >30 days of data except for sensors 3, 4, and 13, where the sensors were deliberately removed due to time constraints at the study sites. Though the patterns observed among the various marine ecosystems are driven by a variety of oceanographic forcing such as temperature, mixing, and biological activity, we do not provide a separate analysis of controlling factors on pH at each location. Each time series was accompanied by a different set of ancillary data, some rich with several co-located sensors, others devoid of co-located sensors. Given these differences in data collection across sites, here we focus on the comparative pH sensor data as a means to highlight observed pH variability and ecosystem-level differences between sites. For purposes of comparison, the metrics of variability presented here are pH minima, maxima, range, standard deviation, and rate of change (see Table 2). The rate presented in Table 2 and Figure 3 represents a mean instantaneous rate of change in pH hr−1, where a rate was calculated for each discrete time step as the absolute value of pH difference divided by the length of time between two adjacent data points.

In terms of general patterns amongst the comparative datasets, the open ocean sites (CCE1 and Kingman Reef) and the Antarctic sites (Cape Evans and Cindercones) displayed the least variation in pH over the 30-day deployment period. For example, pH range fluctuated between 0.024 to 0.096 at CCE1, Kingman Reef, Cape Evans, and Cindercones (Figure 2A, B and Table 2). In distinct contrast to the stability of the open ocean and Antarctic sites, sensors at the other five site classifications (upwelling, estuarine/near-shore, coral reef, kelp forest, and extreme) captured much greater variability (pH fluctuations ranging between 0.121 to 1.430) and may provide insight towards ecosystem-specific patterns. The sites in upwelling regions (Pt. Conception and Pt. Ano Nuevo, Figure 2C), the two locations in Monterey Bay, CA (Figure 2D), and the kelp forest sites (La Jolla and Santa Barbara Mohawk Reef, Figure 2F) all exhibited large fluctuations in pH conditions (pH changes>0.25). Additionally, at these 6 sites, pH oscillated in semi-diurnal patterns, the most apparent at the estuarine sites. The pH recorded in coral reef ecosystems exhibited a distinct diel pattern characterized by relatively consistent, moderate fluctuations (0.1<pH change<0.25; Figure 2E). At the Palmyra fore reef site, pH maxima occurred in the early evening (~5:00 pm), and pH minima were recorded immediately pre-dawn (~6:30 am). On a fringing reef site in Moorea, French Polynesia, a similar diel pattern was observed, with pH maxima occurring shortly after sunset (~7:30 pm) and pH minima several hours after dawn (~10:00 am). Finally, the greatest transitions in pH over time were observed at locations termed our “Extreme” sites - a CO2 venting site in Italy (site S2 in ref. [36]) and a submarine spring site in Mexico. For these sites, the patterns were extremely variable and lacked a detectable periodicity (Figure 2G).

The sites examined in this study do not comprehensively represent pH variability in coastal ecosystems, partly because we focused on surface epipelagic and shallow benthic pH variability. Many organisms that may be impacted by pH variability and ocean acidification reside at intermediate (>10 m) to abyssal depths. Notable regimes missing from Figure 2 include seasonally stratified open ocean locations that exhibit intense spring blooms; the equatorial upwelling zone; other temperate (and highly productive) Eastern Continental Boundary upwelling areas; subsurface oxygen minimum zones and seasonal dead zones; and a wide variety of unique estuarine, salt marsh, and tide pool environments. Spring bloom locations exhibit a marked increase in diel pCO2 variability during the peak bloom with a coincident drawdown similar in magnitude but opposite in sign to the upwelling signals shown in Figure 2 [39]. Equatorial upwelling locations undergo significant stochastic variability, as observed by pCO2 sensors in the TAO array (data viewable at http://www.pmel.noaa.gov/). Intertidal vegetated and tide pool habitats may exhibit major pH fluctuations due to macrophyte or animal respiratory cycles [15], while CO2 production in oxygen minimum zones can reduce pH to a limit of about 7.4 [40].

Due to local temperature differences, variable total alkalinity, and seasonal differences between deployment dates at each site, a comparison of average pH across the datasets would be somewhat misleading. However, some information can be gleaned from an examination of the averages: the overall binned average of all 15 mean values in Table 1 is 8.02±0.1. This pH value is generally in agreement with the global open ocean mean for 2010 of 8.07, a value generated by combining climatology data for temperature, salinity, phosphate, silicate [41]–[43], total alkalinity [44], and pCO2 [45] for the year 2000, corrected to 2010 using the average global rise of 1.5 µatm pCO2 yr−1. Rather than make a point-by-point comparison of the mean pH of each dataset, we focus instead on the differences in observed variability amongst the sites. For this analysis, summary statistics of the comparative datasets were ranked in order to examine the range of variability across all 15 sites (Fig. 3).

Discussion

Collected by 15 individual SeaFET sensors in seven types of marine habitats, data presented here highlight natural variability in seawater pH. Based on Figure 3, it is evident that regions of the ocean exhibit a continuum of pH variability. At sites in the open ocean (CCE-1), Antarctica, and Kingman reef (a coastal region in the permanently stratified open Pacific Ocean with very low residence times, and thus representative of the surrounding open ocean water), pH was very stable (SD<0.01 pH over 30 days). Elsewhere, pH was highly variable across a range of ecosystems where sensors were deployed. The salient conclusions from this comparative dataset are two-fold: (1) most non-open ocean sites are indeed characterized by natural variation in seawater chemistry that can now be revealed through continuous monitoring by autonomous instrumentation, and (2) in some cases, seawater in these sites reaches extremes in pH, sometimes daily, that are often considered to only occur in open ocean systems well into the future [46]. Admittedly, pH is only part of the story with regard to the biological impacts of OA on marine organisms. However, continuous long-term observations provided by sensors such as the SeaFET are a great first step in elucidating the biophysical link between natural variation and physiological capacity in resident marine organisms.

In the end, knowledge of spatial and temporal variation in seawater chemistry is a critical resource for biological research, for aquaculture, and for management efforts. From a biological perspective, the evolutionary history of the resident organisms will greatly influence the adaptation potential of organisms in marine populations. Thus, present-day natural variation will likely shape capacity for adaptation of resident organisms, influencing the resilience of critical marine ecosystems to future anthropogenic acidification. Below we discuss the comparative SeaFET-collected data and, where applicable, the biological consequences of the temporal heterogeneity that we found in each of the marine ecosystems where sensors were deployed.

As the most stable area, the open ocean behaves in a predictable way and generally adheres to global models attempting to predict future CO2 conditions based on equilibration of the surface ocean with a given atmospheric pCO2 (e.g. [47]). This can be shown with longer-term pH records obtained with SeaFET sensors, which are available at the CCE-1 mooring (Fig. 4). The ambient pH values for this open ocean location can be predicted to better than ±0.02 from the CO2-corrected climatology mentioned above; pH has dropped by about 0.015 units since 2000. At CCE-1, the annual carbonate cycle followed the sea surface temperature cycle, and pH was driven mostly by changes in the temperature dependence of CO2 system thermodynamics (Figure 4). SeaFET observations at CCE-1 agree with the climatology to +0.017±0.014 pH units, with episodic excursions from the climatology but a general return to the climatological mean. Although the annual cycle in the open ocean is somewhat predictable, it is notable that even at these seemingly stable locations, climatology-based forecasts consistently underestimate natural variability. Our observations confirm an annual mean variability in pH at CCE-1 of nearly 0.1, suggest an inter-annual variability of ~0.02 pH, and capture episodic changes that deviate from the climatology (Figure 4). Similar underestimates of CO2 variability were observed at nine other open ocean locations, where the Takahashi pCO2 climatology overlaps PMEL moorings with pCO2 sensors (not shown). Thus, on both a monthly (Fig. 2) and annual scale (Fig. 4), even the most stable open ocean sites see pH changes many times larger than the annual rate of acidification. This natural variability has prompted the suggestion that “an appropriate null hypothesis may be, until evidence is obtained to the contrary, that major biogeochemical processes in the oceans other than calcification will not be fundamentally different under future higher CO2/lower pH conditions” [24].

Similarly, the sensors deployed on the benthos in the Antarctic (Cindercones and Cape Evans, Figure 2B) recorded relatively stable pH conditions when compared to other sites in the study. Very few data exist for the Southern Ocean; however, open-water areas in this region experience a strong seasonal shift in seawater pH (~0.3–0.5 units) between austral summer and winter [48], [49] due to a decline in photosynthesis during winter and a disequilibrium of air-sea CO2 exchange due to annual surface sea ice and deep water entrainment [50]. Given the timing of deployment of our sensor in McMurdo Sound (austral spring: October–November), the sensor did not capture the change in seawater chemistry that might have occurred in the austral winter [49]. In general, due to sea ice conditions, observations from the Southern Ocean are limited, with water chemistry data falling into two categories: (1) discrete sampling events during oceanographic cruises (e.g. US Joint Global Ocean Flux Study, http://www1.whoi.edu/) and (2) single-point measurements from locations under sea ice [49], [51], [52]. Biologically speaking, the Southern Ocean is a region expected to experience acidification and undersaturated conditions earlier in time than other parts of the ocean [47], and calcifying Antarctic organisms are thought to be quite vulnerable to anthropogenic OA given the already challenging saturation states that are characteristic of cold polar waters [53]–[56]. Short-term CO2 perturbation experiments have shown that Antarctic calcifying marine invertebrates are sensitive to decreased saturation states [51], [57], although the number of species-level studies and community-level studies are very limited. The Western Antarctic Peninsula and the sub-Antarctic islands will experience pronounced increases in temperature [54] and could consequently undergo more variation and/or undersaturation given the increased potential for biological activity. Importantly, depending on the patterns of seasonally-dependent saturation state that will be revealed with improved observations [58], Antarctic organisms may experience more variation than might be expected, a situation that will influence their resilience to future acidification.

Three other types of study sites – the coastal upwelling, kelp forest and estuarine/near-shore sites – all exhibited variability due to a combination of mixing, tidal excursions, biological activity, and variable residence time (Fig. 2). Although these sites are all united by fairly obvious heterogeneity in pH, organisms living in these areas encounter unique complexities in seawater chemistry that will influence their physiological response, resilience, and potential for adaptation.

Typically, estuarine environments have riverine input that naturally creates very low saturation states [59]–[61]. Seawater chemistry conditions in these areas often shift dramatically, challenging biogenic calcification by resident organisms. Additionally, these species must also tolerate abiotic factors that interact with pH, such as temperature [62]. Two sensors in the Monterey Bay region, L1 (at the mouth of Elkhorn Slough) and L20 (~2 km seaward and north of L1), recorded rapid changes in pH. However, as opposed to riverine input, the low pH fluctuations observed here are likely due to isopycnal shoaling or low CO2 water that is pulsing up to the near shore on internal tides. These locations may also experience high river run-off in the rainy season, but such conditions were not reflected in the time series shown in Fig. 2.

Organisms living in upwelling regions may be acclimatized and adapted to extremes in seawater chemistry; here, deep CO2-enriched waters reach the surface and may shoal onto the benthos on the continental shelf [31], [32]. Data collected from our upwelling sites support the patterns found by cruise-based investigations; pH fluctuations were often sharp, and large transitions of up to ~0.35 pH units occurred over the course of days (Fig. 2). Laboratory studies on calcifying marine invertebrates living in upwelling regions suggest that these organisms maintain function under such stochastic conditions. However, overall performance may be reduced, suggesting that these species are indeed threatened by future acidification [17], [18], [63].

For kelp forests, although there is less influence from riverine inputs, pH variation is quite dynamic at these sites in the coastal California region (Fig 2; [18]). Patterns here are likely driven by fluctuations in coastal upwelling, biological activity, currents, internal tides, seasonally shoaling isopleths, as well as the size of the kelp forest, which may influence residence times via reduced flow. Kelps may respond positively to increased availability of CO2 and HCO3−, which may allow for reduced metabolic costs and increased productivity [64]. Increased kelp production may elevate pH within the forest during periods of photosynthesis, causing wider daily fluctuations in pH, though this is speculative at this time. As a result, kelp forests, particularly those of surface canopy forming species such as Macrocystis pyrifera, may contain a greater level of spatial heterogeneity in terms of the pH environment; vertical gradients in pH may form due to enhanced levels of photosynthesis at shallower depths. Such gradients may increase the risk of low pH exposure for benthic species while buffering those found within the surface canopy. Kelp forests provide habitat to a rich diversity of organisms from a wide range of calcifying and non-calcifying taxa [65]. As with organisms from the other coastal locations (estuarine and upwelling), the biota living within kelp forest environments are most likely acclimatized to this degree of natural variation. However, continued declines in oxygenation and shoaling of hypoxic boundaries observed in recent decades in the southern California bight [66], [67] are likely accompanied by a reduction in pH and saturation state. Thus, pH exposure regimes for the coastal California region's kelp forest biota may be changing over relatively short time scales. Over longer temporal scales as pH and carbonate saturation levels decrease, the relative abundances of these species may change, with community shifts favoring non-calcified species, as exemplified by long-term studies in intertidal communities by Wootton et al. [15].

For all the marine habitats described above, one very important consideration is that the extreme range of environmental variability does not necessarily translate to extreme resistance to future OA. Instead, such a range of variation may mean that the organisms resident in tidal, estuarine, and upwelling regions are already operating at the limits of their physiological tolerances (a la the classic tolerance windows of Fox – see [68]). Thus, future acidification, whether it be atmospheric or from other sources, may drive the physiology of these organisms closer to the edges of their tolerance windows. When environmental change is layered upon their present-day range of environmental exposures, they may thereby be pushed to the “guardrails” of their tolerance [20], [68].

In contrast to more stochastic changes in pH that were observed in some sites, our coral reef locations displayed a strikingly consistent pattern of diel fluctuations over the 30-day recording period. Similar short-term pH time series with lower daily resolution [69], [70] have reported regular diel pH fluctuation correlated to changes in total alkalinity and oxygen levels. These environmental patterns of pH suggest that reef organisms may be acclimatized to consistent but moderate changes in the carbonate system. Coral reefs have been at the center of research regarding the effects of OA on marine ecosystems [71]–[73]. Along with the calcification biology of the dominant scleractinian corals and coralline algae, the biodiversity on coral reefs includes many other calcifying species that will likely be affected [74]–[77]. Across the existing datasets in tropical reef ecosystems, the biological response of calcifying species to variation in seawater chemistry is complex (see [78]) –all corals or calcifying algal species will not respond similarly, in part because these calcifying reef-builders are photo-autotrophs (or mixotrophs), with algal symbionts that complicate the physiological response of the animal to changes in seawater chemistry.

Finally, the “Extreme” sites in our comparative dataset are of interest in that the low pH levels observed here represent a natural analogue to OA conditions in the future, demonstrating how the abundance and distribution of calcifying benthic organisms, as well as multi-species assemblages, can vary as a function of seawater chemistry [16], [35], [36], [79]. The variability in seawater pH was higher at both the groundwater springs off the coast of Mexico and the natural CO2 vents off the coast of Italy than at any of the other sensor locations. Offshore of Puerto Morelos, Mexico (and at other sites along the Mesoamerican Reef), natural low-saturation (Ω~0.5, pH 6.70–7.30, due to non-ventilated, high CO2, high alkalinity groundwater) submarine springs have been discharging for millennia. Here, variability in pH is due to long-term respiration driving a low ratio of alkalinity to dissolved inorganic carbon in effluent ground water. These sites provide insight into potential long-term responses of coral backreef ecosystems to low saturation conditions [79]. Unlike Puerto Morelos, the variability of pH at volcanic CO2 vents at Ischia, Italy is almost purely abiotically derived, due entirely to CO2 venting and subsequent mixing. This site in the Mediterranean Sea hosts a benthic assemblage that reflects the impacts of OA on rocky reef communities [16], [36].

Overall, the ‘extreme’ systems provide an opportunity to examine how variability in pH and extreme events (sensu [80]) affects ecological processes. Knowledge of this biophysical link is essential for forecasting ecological responses to acidification in ecosystems with sharp fluctuations in pH, such as upwelling or estuarine environments. Despite reductions in species richness, several calcifying organisms are found in low pH conditions close to the vents [16] and the springs [79]. The persistence of calcifying organisms at these extreme sites, where mean pH values are comparable to those that have reduced organism performance in laboratory experiments (i.e., pHT 7.8; reviewed in [16]), suggest that long exposures to such variability in pH, versus a consistently low-pH environment, could play an important role in regulating organism performance. Variability in pH could potentially promote acclimatization or adaptation to acidification through repeated exposure to low pH conditions [24]; alternatively, transient exposures to high pH conditions could buffer the effects of acidification by relieving physiological stress. Thus, the ecological patterns coupled with the high fluctuations in pH at the extreme sites highlight the need to consider carbonate chemistry variability in experiments and models aimed at understanding the impacts of acidification.

#### No plankton impact

Idso, director of envt science – Peabody Energy, PhD Geography – ASU, Idso, professor – Maricopa County Community College, and Idso, PhD botany – ASU, ‘12

(Craig, Sherwood, and Keith, “The Effects of Dramatic Climate Change on Marine Planktonic Microbes: A History Lesson,” *CO2 Science* Vol. 15, No. 21, May)

Reference

Cermeño, P. 2011. Marine planktonic microbes survived climatic instabilities in the past. Proceedings of the Royal Society B 279: 474-479.

Background

To emphasize the significance of the little critters, the author begins his paper on marine planktonic microbes by stating that "micro-organisms dominate terrestrial, aquatic and aerial ecosystems and largely rule our planet's life by playing pivotal roles in global biogeochemical cycles," citing the writings of Staley and Fuhrman (2002) and Falkowski et al. (2008), while declaring that as a result of these facts, "life on earth is microbe dependent."

What was done

Cermeño used records of climatic variability and microfossil data covering the past 65 million years, which were obtained from the world's oceans, to "explore the linkage between the rate of climate change and the probability of extinction, origination and net diversification of marine planktonic diatoms and calcareous nannoplankton," analyzing the evolutionary dynamics of the two phytoplankton groups throughout the 65-million-year period of study and comparing the results with the climate change record.

What was learned

The Spanish researcher says his findings demonstrate that "the probability of extinction of microbial plankton species did not increase during periods of enhanced climatic instability over the past 65 million years." In fact, he says that this results show that "exceptional climatic contingencies, such as those occurring across the Late Palaeocene-Eocene and the Eocene-Oligocene boundary transitions, caused substantial morphological diversification."

What it means

In summing up his findings and their significance to the concerns of our day, Cermeño concludes his analysis by stating that "to the extent that contemporaneous trends in climate change have analogies with the climates of the geological period analyzed here, my results suggest that these microbial plankton groups will persist in the future ocean, perhaps even expanding their ranges of morphological diversity."

**No extinction**

Easterbrook 3(Gregg, senior fellow at the New Republic, “We're All Gonna Die!”, <http://www.wired.com/wired/archive/11.07/doomsday.html?pg=1&topic=&topic_set>=)

If we're talking about doomsday - the end of human civilization - many scenarios simply don't measure up. A single nuclear bomb ignited by terrorists, for example, would be awful beyond words, but life would go on. People and machines might converge in ways that you and I would find ghastly, but from the standpoint of the future, they would probably represent an adaptation. Environmental collapse might make parts of the globe unpleasant, but considering that the biosphere has survived ice ages, it wouldn't be the final curtain. Depression, which has become 10 times more prevalent in Western nations in the postwar era, might grow so widespread that vast numbers of people would refuse to get out of bed, a possibility that Petranek suggested in a doomsday talk at the Technology Entertainment Design conference in 2002. But Marcel Proust, as miserable as he was, wrote *Remembrance of Things Past* while lying in bed.

Environment is improving - more growth is key

Lomborg 11

Bjorn Lomborg, directs the Copenhagen Consensus Center and is the author of The Skeptical Environmentalist and Cool It, Newsweek, June 12, 2011, "A Roadmap for the Planet", http://www.thedailybeast.com/newsweek/2011/06/12/bjorn-lomborg-explains-how-to-save-the-planet.html#

Climate alarmists and campaigning environmentalists argue that the industrialized countries of the world have made sizable withdrawals on nature’s fixed allowance, and unless we change our ways, and soon, we are doomed to an abrupt end. Take the recent proclamation from the United Nations Environment Program, which argued that governments should dramatically cut back on the use of resources. The mantra has become commonplace: our current way of living is selfish and unsustainable. We are wrecking the world. We are gobbling up the last resources. We are cutting down the rainforest. We are polluting the water. We are polluting the air. We are killing plants and animals, destroying the ozone layer, burning the world through our addiction to fossil fuels, and leaving a devastated planet for future generations. In other words, humanity is doomed. It is a compelling story, no doubt. It is also fundamentally wrong, and the consequences are severe. Tragically, exaggerated environmental worries—and the willingness of so many to believe them—could ultimately prevent us from finding smarter ways to actually help our planet and ensure the health of the environment for future generations. Because, our fears notwithstanding, we actually get smarter. Although Westerners were once reliant on whale oil for lighting, we never actually ran out of whales. Why? High demand and rising prices for whale oil spurred a search for and investment in the 19th-century version of alternative energy. First, kerosene from petroleum replaced whale oil. We didn’t run out of kerosene, either: electricity supplanted it because it was a superior way to light our planet. For generations, we have consistently underestimated our capacity for innovation. There was a time when we worried that all of London would be covered with horse manure because of the increasing use of horse-drawn carriages. Thanks to the invention of the car, London has 7 million inhabitants today. Dung disaster averted. In fact, would-be catastrophes have regularly been pushed aside throughout human history, and so often because of innovation and technological development. We never just continue to do the same old thing. We innovate and avoid the anticipated problems. Think of the whales, and then think of the debate over cutting emissions today. Instead of singlemindedly trying to force people to do without carbon-emitting fuels, we must recognize that we won’t make any real progress in cutting CO2 emissions until we can create affordable, efficient alternatives. We are far from that point today: much-hyped technologies such as wind and solar energy remain very expensive and inefficient compared with cheap fossil fuels. Globally, wind provides just 0.3 percent of our energy, and solar a minuscule 0.1 percent. Current technology is so inefficient that, to take just one example, if we were serious about wind power, we would have to blanket most countries with wind turbines to generate enough energy for everybody, and we would still have the massive problem of storage. We don’t know what to do when the wind doesn’t blow. Making the necessary breakthroughs will require mass improvements across many technologies. The sustainable response to global warming, then, is one that sees us get much more serious about investment into alternative-energy research and development. This has a much greater likelihood of leaving future generations at least the same opportunities as we have today. Because what, exactly, is sustainability? Fourteen years ago, the United Nations World Commission on Environment and Development report “Our Common Future,” chaired by Gro Harlem Brundtland, provided the most-quoted definition. Sustainable development “meets the needs of the present without compromising the ability of future generations to meet their own needs.” The measure of success, then, is whether or not we give future generations the same opportunities that we have had. This prompts the question: have we lived unsustainably in the past? In fact, by almost any measure, humans have left a legacy of increased opportunity for their descendants. And this is true not just for the rich world but also for developing countries. In the last couple of hundred years we have become much richer than in all previous history. Available production per capita—the amount that an average individual can consume—increased eightfold between 1800 and 2000. In the past six decades, poverty has fallen more than in the previous 500 years. This decade alone, China will by itself lift 200 million individuals out of poverty. While one in every two people in the developing world was poor just 25 years ago, today it is one in four. Although much remains to be done, developing countries have become much more affluent, with a fivefold increase in real per capita income between 1950 and today. But it’s not just about money. The world has generally become a much better educated place, too. Illiteracy in the developing world has fallen from about 75 percent for the people born in the early part of the 1900s to about 12 percent among the young of today. More and more people have gained access to clean water and sanitation, improving health and income. And according to the U.N. Food and Agriculture Organization, the percentage of undernourished people in the developing world has dropped from more than 50 percent in 1950 to 16 percent today. As humans have become richer and more educated, we have been able to enjoy more leisure time. In most developed countries, where there are available data, yearly working hours have fallen drastically since the end of the 19th century: today we work only about half as much as we did then. Over the last 30 years or so, total free time for men and women has increased, thanks to reductions in workload and housework. Globally, life expectancy today is 69. Compare this with an average life span of 52 in 1960, or of about 30 in 1900. Advances in public health and technological innovation have dramatically lengthened our lives. We have consistently achieved these remarkable developments by focusing on technological innovation and investment designed to create a richer future. And while major challenges remain, the future appears to hold great promise, too. The U.N. estimates that over this century, the planet’s human inhabitants will become 14 times richer and the average person in the developing world a whopping 24 times richer. By the end of the century, the U.N. estimates we will live to be 85 on average, and virtually everyone will read, write, and have access to food, water, and sanitation. That’s not too shabby. Rather than celebrating this amazing progress, many find it distasteful. Instead of acknowledging and learning from it, we bathe ourselves in guilt, fretting about our supposed unsustainable lives. Certainly many argue that while the past may have improved, surely it doesn’t matter for the future, because we are destroying the environment! But not so fast. In recent decades, air quality in wealthy countries has vastly improved. In virtually every developed country, the air is more breathable and the water is more drinkable than they were in 1970. London, renowned for centuries for its infamous smog and severe pollution, today has the cleanest air that it has had since the Middle Ages. Today, some of the most polluted places in the world are the megacities of the developing world, such as Beijing, New Delhi, and Mexico City. But remember what happened in developed countries. Over a period of several hundred years, increasing incomes were matched by increasing pollution. In the 1930s and 1940s, London was more polluted than Beijing, New Delhi, or Mexico City are today. Eventually, with increased affluence, developed countries gradually were better able to afford a cleaner environment. That is happening already today in some of the richest developing countries: air-pollution levels in Mexico City have been dropping precisely because of better technology and more wealth. Though air pollution is by far the most menacing for humans, water quality has similarly been getting better. Forests, too, are regrowing in rich countries, though still being lost in poor places where slash-and-burn is preferable to starvation.

#### Adaptation and migration solve

Ian **Thompson et al. 9**, Canadian Forest Service, Brendan Mackey, The Australian National University, The Fenner School of Environment and Society, College of Medicine, Biology and Environment, Steven McNulty, USDA Forest Service, Alex Mosseler, Canadian Forest Service, 2009, Secretariat of the Convention on Biological Diversity “Forest Resilience, Biodiversity, and Climate Change” Convention on Biological Diversity

 While resilience can be attributed to many levels of organization of biodiversity, the genetic composition of species is the most fundamental. Molecular genet- ic diversity within a species, species diversity within a forested community, and community or ecosystem diversity across a landscape and bioregion represent expressions of biological diversity at different scales. The basis of all expressions of biological diversity is the genotypic variation found in populations. The individuals that comprise populations at each level of ecological organization are subject to natural se- lection and contribute to the adaptive capacity or re- silience of tree species and forest ecosystems (Mull- er-Starck et al. 2005). Diversity at each of these levels has fostered natural (and artificial) regeneration of forest ecosystems and facilitated their adaptation to dramatic climate changes that occurred during the quaternary period (review by: DeHayes et al. 2000); this diversity must be maintained in the face of antici- pated changes from anthropogenic climate warming. Genetic diversity (e.g., additive genetic variance) within a species is important because it is the basis for the natural selection of genotypes within popu- lations and species as they respond or adapt to en- vironmental changes (Fisher 1930, Pitelka 1988, Pease et al. 1989, Burger and Lynch 1995, Burdon and Thrall, 2001, Etterson 2004, Reusch et al. 2005, Schaberg et al. 2008). The potential for evolutionary change has been demonstrated in numerous long- term programmes based on artificial selection (Fal- coner 1989), and genetic strategies for reforestation in the presence of rapid climate change must focus on maintaining species diversity and genetic diversi- ty within species (Ledig and Kitzmiller 1992). In the face of rapid environmental change, it is important to understand that the genetic diversity and adap- tive capacity of forested ecosystems depends largely on in situ genetic variation within each population of a species (Bradshaw 1991). Populations exposed to a rate of environmental change exceeding the rate at which populations can adapt, or disperse, may be doomed to extinction (Lynch and Lande 1993, Burger and Lynch 1995). Genetic diversity deter- mines the range of fundamental eco-physiological tolerances of a species. It governs inter-specific competitive interactions, which, together with dispersal mechanisms, constitute the fundamental de- terminants of potential species responses to change (Pease et al. 1989, Halpin 1997). In the past, plants have responded to dramatic changes in climate both through adaptation and migration (Davis and Shaw 2001). The capacity for long-distance migration of plants by seed dispersal is particularly important in the event of rapid environmental change. Most, and probably all, species are capable of long-distance seed disper- sal, despite morphological dispersal syndromes that would indicate morphological adaptations primarily for short-distance dispersal (Cwyner and MacDon- ald 1986, Higgins et al. 2003). Assessments of mean migration rates found no significant differences be- tween wind and animal dispersed plants (Wilkinson 1997, Higgins et al. 2003). Long-distance migration can also be strongly influenced by habitat suitabil- ity (Higgins and Richardson 1999) suggesting that rapid migration may become more frequent and vis- ible with rapid changes in habitat suitability under scenarios of rapid climate change. The discrepancy between estimated and observed migration rates during re-colonization of northern temperate forests following the retreat of glaciers can be accounted for by the underestimation of long-distance disper- sal rates and events (Brunet and von Oheimb 1998, Clark 1998, Cain et al. 1998, 2000). Nevertheless, concerns persist that potential migration and ad- aptation rates of many tree species may not be able to keep pace with projected global warming (Davis 1989, Huntley 1991, Dyer 1995, Collingham et al. 1996, Malcolm et al. 2002). However, these models refer to fundamental niches and generally ignore the ecological interactions that also govern species dis- tributions.

# 2NC

# CP

## NRC Solvency

NRC license reform is necessary and sufficient

Freed, director – Third Way Clean Energy Program, ‘10

(Josh, "Thinking Small On Nuclear Power", content.thirdway.org/publications/340/Third\_Way\_Idea\_Brief\_-\_Thinking\_Small\_On\_Nuclear\_Power.pdf)

**THE PROBLEM**¶ We don’t have sufficient clean energy technologies to meet our baseload electricity and manufacturing energy needs. Currently, 50% of electricity in the United States comes from coal,3 with few clean alternatives for baseload energy. Moreover, almost 100% of the heat that drives manufacturing processes is supplied by fossil fuels,4 and no clean energy option currently exists. Unless new, clean technologies are brought on-line to supply small-scale baseload electricity and industrial process heat, we won’t be able to achieve a comprehensive shift to clean energy.¶ Our baseload clean power options are one-size-fits-all.¶ Nuclear power is the **sole carbon-free electricity source** that is both scalable and capable of meeting baseload power needs. But the only reactors now on the market are large enough to generate power for 750,000-1.2 million households.5 These reactors work very well for the larger electric utilities that own them, as well as for the small utilities and coops that partner with them, and they enable producers to benefit from the distribution of large amounts of power across the grid.¶ Large reactors are a critical clean energy solution for much of the nation, which is densely populated and has heavy and growing demand for electricity. They are not always the best option for smaller power producers, which provide electricity to over 41 million consumers in the United States, and each serves only several thousand customers.6 Small utilities and military bases do not always have the demand for electricity, the capital, the access to water, or the available land to build a new nuclear power plant. Without another baseload electricity option, these utilities or other electricity producers **have little choice but to rely on fossil fuels**.¶ We have no clean energy source to supply manufacturing process heat. Manufacturing is a heat-intensive process requiring a lot of generated energy; consider the image of the smelting process used in the steel industry.7 Similar quantities of heat are needed for the production of plastics or other chemical manufacturing, or the forging of molten metal into component parts of automobiles, building structures, and windmills.¶ Yet despite the ubiquity of energy-intensive industries, we currently have no clean energy source deployed that can supply direct heat for industrial processes.¶ Instead, manufacturers are left to choose among fossil fuels which generate high emissions and air pollution and are susceptible to commodity price fluctuations. Such price fluctuations not only deny industry stable or predictable energy costs, they also raise the danger of domestic companies being undercut by foreign competitors whose governments subsidize fossil fuels.¶ THE SOLUTION¶ Help bring small, modular nuclear reactors to market.¶ The imperative of creating more diverse clean energy applications has spawned the design of several small reactor technologies which will enable a wide range of new clean energy uses. Known as SMRs, they vary between 1/20th and 1/4th the size of large reactors.8 There are two streams of development on SMRs—those based on the same concept as existing large light water reactors, and advanced reactors of varying design intended to provide new kinds of capabilities.¶ Light water SMRs have the scale and flexibility to provide a range of amounts of baseload power. They can incrementally expand capacity at an existing power plant or add new capacity at U.S. military installations that need independence from the grid.9 SMRs are financially viable for many utilities, with costs in the hundreds-of-millions of dollars per reactor.10 Because of the power conversion system of these reactors, they can be cost-effectively cooled by air rather than water. As a result, SMRs can supply cheaper baseload clean energy to arid cities in the West, like Denver or Las Vegas.11 And because they can fit into a small structure and be sized to match the capacity of existing electrical infrastructure, **SMRs provide a viable path to retrofitting old power plants with clean energy**.12 Advanced reactors could open the door to intriguing new possibilities. Some advanced SMRs are being designed to supply heat directly to industrial users, as well as electricity.13 **This would enable large manufacturers across industries to replace fossil fuels with clean energy**. Micro-reactors could be used in remote locations or under circumstances where a self-sufficient energy source is needed for a limited period of time. **Others could convert existing nuclear waste into electricity, dramatically reducing problems of waste storage**.14¶ **Support commercialization of SMRs near ready for deployment**.¶ Several U.S. companies are in the advanced stages of developing small reactors that adapt existing technology to produce smaller amounts of baseload electricity.15 **These technologies are nearly ready for deployment.** Final decisions about design, siting, and regulatory approval could be made **within the next five years**.16 The federal government can take several steps to help make this possible.¶ First, **economic barriers to entry must be lowered**. For first movers, costs of licensing, design and regulatory approval will be comparable to those of the larger reactors because existing regulations have not yet been tailored to suit new designs. As the Nuclear Regulatory Commission (NRC) gains expertise in evaluating SMRs, and as economies of scale develop, these costs will decrease. Until this happens, the Department of Energy’s new cost-sharing program for near-term licensing and deployment of light water SMRs will help reduce some of the financial impact.17[i] **The NRC** also **needs to** continue its commitment to allocate sufficient resources and build the expertise necessary to **evaluate and license SMRs in a timely fashion**.¶ The Department of Energy (DOE) and Department of Defense (DOD) can also prime the market pump by serving as a buyer of first-of-a-kind technologies. This could include deploying SMRs on DOE-owned sites, many of which are already zoned to support nuclear power plants,18 and appropriate DOD facilities in the United States. DOD, the largest single energy consumer in the U.S., comprises 78% of federal energy use, and is the most significant energy consumer in several metropolitan areas.19 DOE should also work closely with the private sector to develop standardized designs, with the goal of achieving demonstration and licensing within a decade.20¶ The potential market for SMRs is global. As we note in “Getting Our Share of Clean Energy Trade,” whichever country emerges as the market leader could dominate a good part of the $6 trillion global energy market.21 **The U.S. could seize that mantle and all the jobs and exports that come with it. American reactors could be deployed within a decade domestically**22 **and go global soon after.**

# Solvency

## AT: Warming

#### Not a silver bullet

IEER 10 – Institute for Energy & Environmental Research, 9/29/10, “'Small Modular Reactors' No Panacea for What Ails Nuclear Power,” http://www.prnewswire.com/news-releases/ieerpsr-small-modular-reactors-no-panacea-for-what-ails-nuclear-power-104024223.html

And what about SMRs as some kind of "silver bullet" for averting global warming?

The IEER/PSR fact sheet points out: "Efficiency and most renewable technologies are already cheaper than new large reactors. The long time -- a **decade or more** -- that it will take to certify SMRs will do **little or nothing to help with** the global **warming** problem and will actually **complicate current efforts** underway. For example, the current schedule for commercializing the above-ground sodium cooled reactor in Japan extends to 2050, making it irrelevant to addressing the climate problem. **Relying on assurances that SMRs will be cheap** is **contrary to the experience about economies of scale** and is **likely to waste time and money**, while creating new safety and proliferation risks, as well as new waste disposal problems."

## 2NC Gas

At the plan worst takes forever—means it’s too late to solve warming

WSJ, 2/18/’10

(“Small Reactors Generate Big Hopes”)

Nuclear development moves at a glacial pace. The next wave of large reactors won't begin coming on line until 2016 or 2017, at the earliest. The first certification request for a small reactor design is expected to be Babcock & Wilcox's request in 2012. The first units could come on line after 2018.

#### Won’t be competitive in the future – experts

McMahon, energy contributor – Forbes, 5/23/’12

(Jeff, <http://www.forbes.com/sites/jeffmcmahon/2012/05/23/small-modular-reactors-by-2022-but-no-market-for-them/>)

Small Modular Nuclear Reactors By 2022 -- But No Market For Them The Department of Energy will spend $452 million—with a match from industry—over the next five years to guide two small modular reactor designs through the nuclear regulatory process by 2022. But cheap natural gas could freeze even small nuclear plants out of the energy market well beyond that date. DOE accepted bids through Monday for companies to participate in the Small Modular Reactor program. A number of reactor manufacturers submitted bids, including NuScale Power and a collaboration that includes Westinghouse and General Dynamic. “This would allow SMR technology to overcome the hurdle of NRC certification – the ‘gold standard’ of the international nuclear industry, and would help in the proper development of the NRC’s regulatory framework to deal with SMRs,” according to Paul Genoa, Senior Director of Policy Development at the Nuclear Energy Institute. Genoa’s comments are recorded in a summary released today of a briefing given to Senate staff earlier this month on prospects for small modular reactors, which have been championed by the Obama Administration. DOE defines reactors as SMRs if they generate less than 300 megawatts of power, sometimes as little as 25 MW, compared to conventional reactors which may produce more than 1,000 MW. Small modular reactors can be constructed in factories and installed underground, which improves containment and security but may hinder emergency access. The same summary records doubt that SMRs can compete in a market increasingly dominated by cheap natural gas. Nuclear Consultant Philip Moor told Senate staff that SMRs can compete if natural gas costs $7 to $8 per million BTU—gas currently costs only $2 per MBTU—or if carbon taxes are implemented, a scenario political experts deem unlikely. “Like Mr. Moor, Mr. Genoa also sees the economic feasibility of SMRs as the final challenge. With inexpensive natural gas prices and no carbon tax, **the economics don’t work** in the favor of SMRs,” according to the summary.

#### Newest ev

Michael Lewis, 2/27/13, Are Small Modular Reactors a Better Nuclear Solution, or Just More of the Same? , news.thomasnet.com/green\_clean/2013/02/27/are-small-modular-reactors-a-better-nuclear-solution-or-just-more-of-the-same/

Dr. Arjun Makhijuni is the President of the Institute for Energy and Environmental Research, a non-profit group that has studied nuclear energy and other scientific topics for more than 25 years. Makhijuni is skeptical of SMRs for many reasons. One is economics; he said “it’s nonsense” to think you can build a fleet of SMRs without building an assembly line, and without an immediate demand for SMRs from the U.S., “**it’s going to cost an inordinate amount of money**. “And who is to say people in the U.S. will want these, or people in China? Why would China want our reactors if they can build their own?” The issue of cheap natural gas is one that both B&W and Westinghouse admit is a vexing one; Goosen and Gale agreed that if gas prices stay where they are now, there’s no way nuclear power can compete. Both expect prices to fluctuate and go back up to at least $5-6 per thousand cubic feet.

# Warming

## 2nc warming inevitable

#### Existing carbon triggers the impact

Daniel **Rirdan 12**, founder of The Exploration Company, “The Right Carbon Concentration Target”, June 29, <http://theenergycollective.com/daniel-rirdan/89066/what-should-be-our-carbon-concentration-target-and-forget-politics?utm_source=feedburner&utm_medium=feed&utm_campaign=The+Energy+Collective+%28all+posts%29>

James Hansen and other promi­nent cli­ma­tol­o­gists are call­ing to bring the CO2 atmos­pheric level to 350 parts per million. In fact, an orga­ni­za­tion, 350.org, came around that ral­ly­ing cry. This is far more radical than most politicians are willing to entertain. And it is not likely to be enough. The 350ppm target will not reverse the clock as far back as one may assume. It was in 1988 that we have had these level of car­bon con­cen­tra­tion in the air. But wait, there is more to the story. 1988-levels of CO2 with 2012-levels of all other green­house gases bring us to a state of affairs equiv­a­lent to that around 1994 (2.28 w/m2). And then there are aerosols. There is good news and bad news about them. The good news is that as long as we keep spewing mas­sive amounts of particulate matter and soot into the air, more of the sun’s rays are scattered back to space, over­all the reflec­tiv­ity of clouds increases, and other effects on clouds whose over­all net effect is to cool­ing of the Earth sur­face. The bad news is that once we stop polluting, stop run­ning all the diesel engines and the coal plants of the world, and the soot finally settles down, the real state of affairs will be unveiled within weeks. Once we fur­ther get rid of the aerosols and black car­bon on snow, we may be very well be worse off than what we have had around 2011 (a pos­si­ble addi­tion of 1.2 w/m2). Thus, it is not good enough to stop all green­house gas emis­sions. In fact, it is not even close to being good enough. A carbon-neutral econ­omy at this late stage is an unmit­i­gated disaster. There is a need for a carbon-negative economy. Essentially, it means that we have not only to stop emitting, to the tech­no­log­i­cal extent pos­si­ble, all green­house gases, but also capture much of the crap we have already out­gassed and lock it down. And once we do the above, the ocean will burp its excess gas, which has come from fos­sil fuels in the first place. So we will have to draw down and lock up that carbon, too. We have taken fos­sil fuel and released its con­tent; now we have to do it in reverse—hundreds of bil­lions of tons of that stuff.

#### China outweighs and won’t be influenced by the plan

Harvey, environment reporter – the Guardian, 11/9/’11

(Fiona, <http://www.guardian.co.uk/environment/2011/nov/09/fossil-fuel-infrastructure-climate-change>)

Birol also warned that China – the world's biggest emitter – would have to take on a much greater role in combating climate change. For years, Chinese officials have argued that the country's emissions per capita were much lower than those of developed countries, it was not required to take such stringent action on emissions. But the IEA's analysis found that within about four years, China's per capita emissions were likely to exceed those of the EU.

In addition, by 2035 at the latest, China's cumulative emissions since 1900 are likely to exceed those of the EU, which will further weaken Beijing's argument that developed countries should take on more of the burden of emissions reduction as they carry more of the responsibility for past emissions.

In a recent interview with the Guardian recently, China's top climate change official, Xie Zhenhua, called on developing countries to take a greater part in the talks, while insisting that developed countries must sign up to a continuation of the Kyoto protocol – something only the European Union is willing to do. His words were greeted cautiously by other participants in the talks.

Continuing its gloomy outlook, the IEA report said: "There are few signs that the urgently needed change in direction in global energy trends is under way. Although the recovery in the world economy since 2009 has been uneven, and future economic prospects remain uncertain, global primary energy demand rebounded by a remarkable 5% in 2010, pushing CO2 emissions to a new high. Subsidies that encourage wasteful consumption of fossil fuels jumped to over $400bn (£250.7bn)."

Meanwhile, an "unacceptably high" number of people – about 1.3bn – still lack access to electricity. If people are to be lifted out of poverty, this must be solved – but providing people with renewable forms of energy generation is still expensive.

Charlie Kronick of Greenpeace said: "The decisions being made by politicians today risk passing a monumental carbon debt to the next generation, one for which they will pay a very heavy price. What's seriously lacking is a global plan and the political leverage to enact it. Governments have a chance to begin to turn this around when they meet in Durban later this month for the next round of global climate talks."

One close observer of the climate talks said the $400bn subsidies devoted to fossil fuels, uncovered by the IEA, were "staggering", and the way in which these subsidies distort the market presented a massive problem in encouraging the move to renewables. He added that Birol's comments, though urgent and timely, were unlikely to galvanise China and the US – the world's two biggest emittters – into action on the international stage.

"The US can't move (owing to Republican opposition) and there's no upside for China domestically in doing so. At least China is moving up the learning curve with its deployment of renewables, but it's doing so in parallel to the hugely damaging coal-fired assets that it is unlikely to ever want (to turn off in order to) to meet climate targets in years to come."

#### current construction means it will be runaway

Harvey, environment reporter – the Guardian, 11/9/’11

(Fiona, <http://www.guardian.co.uk/environment/2011/nov/09/fossil-fuel-infrastructure-climate-change>)

The world is likely to build so many fossil-fuelled power stations, energy-guzzling factories and inefficient buildings in the next five years that it will become impossible to hold global warming to safe levels, and the last chance of combating dangerous climate change will be "lost for ever", according to the most thorough analysis yet of world energy infrastructure.

Anything built from now on that produces carbon will do so for decades, and this "lock-in" effect will be the single factor most likely to produce irreversible climate change, the world's foremost authority on energy economics has found. If this is not rapidly changed within the next five years, the results are likely to be disastrous.

"The door is closing," Fatih Birol, chief economist at the International Energy Agency, said. "I am very worried – if we don't change direction now on how we use energy, we will end up beyond what scientists tell us is the minimum [for safety]. The door will be closed forever."

If the world is to stay below 2C of warming, which scientists regard as the limit of safety, then emissions must be held to no more than 450 parts per million (ppm) of carbon dioxide in the atmosphere; the level is currently around 390ppm. But the world's existing infrastructure is already producing 80% of that "carbon budget", according to the IEA's analysis, published on Wednesday. This gives an ever-narrowing gap in which to reform the global economy on to a low-carbon footing.

If current trends continue, and we go on building high-carbon energy generation, then by 2015 at least 90% of the available "carbon budget" will be swallowed up by our energy and industrial infrastructure. By 2017, there will be no room for manoeuvre at all – the whole of the carbon budget will be spoken for, according to the IEA's calculations.

Birol's warning comes at a crucial moment in international negotiations on climate change, as governments gear up for the next fortnight of talks in Durban, South Africa, from late November. "If we do not have an international agreement, whose effect is put in place by 2017, then the door to [holding temperatures to 2C of warming] will be closed forever," said Birol.

But world governments are preparing to postpone a speedy conclusion to the negotiations again. Originally, the aim was to agree a successor to the 1997 Kyoto protocol, the only binding international agreement on emissions, after its current provisions expire in 2012. But after years of setbacks, an increasing number of countries – including the UK, Japan and Russia – now favour postponing the talks for several years.

Both Russia and Japan have spoken in recent weeks of aiming for an agreement in 2018 or 2020, and the UK has supported this move. Greg Barker, the UK's climate change minister, told a meeting: "We need China, the US especially, the rest of the Basic countries [Brazil, South Africa, India and China] to agree. If we can get this by 2015 we could have an agreement ready to click in by 2020." Birol said this would clearly be too late. "I think it's very important to have a sense of urgency – our analysis shows [what happens] if you do not change investment patterns, which can only happen as a result of an international agreement."

Nor is this a problem of the developing world, as some commentators have sought to frame it. In the UK, Europe and the US, there are multiple plans for new fossil-fuelled power stations that would contribute significantly to global emissions over the coming decades.

The Guardian revealed in May an IEA analysis that found emissions had risen by a record amount in 2010, despite the worst recession for 80 years. Last year, a record 30.6 gigatonnes (Gt) of carbon dioxide poured into the atmosphere from burning fossil fuels, a rise of 1.6Gt on the previous year. At the time, Birol told the Guardian that constraining global warming to moderate levels would be "only a nice utopia" unless drastic action was taken.

The new research adds to that finding, by showing in detail how current choices on building new energy and industrial infrastructure are likely to commit the world to much higher emissions for the next few decades, blowing apart hopes of containing the problem to manageable levels. The IEA's data is regarded as the gold standard in emissions and energy, and is widely regarded as one of the most conservative in outlook – making the warning all the more stark. The central problem is that most industrial infrastructure currently in existence – the fossil-fuelled power stations, the emissions-spewing factories, the inefficient transport and buildings – is already contributing to the high level of emissions, and will do so for decades. Carbon dioxide, once released, stays in the atmosphere and continues to have a warming effect for about a century, and industrial infrastructure is built to have a useful life of several decades.

Yet, despite intensifying warnings from scientists over the past two decades, the new infrastructure even now being built is constructed along the same lines as the old, which means that there is a "lock-in" effect – high-carbon infrastructure built today or in the next five years will contribute as much to the stock of emissions in the atmosphere as previous generations.

The "lock-in" effect is the single most important factor increasing the danger of runaway climate change, according to the IEA in its annual World Energy Outlook, published on Wednesday.

## AT: Warming Modelling

#### No modeling

Loris 13 (An economist specializing in energy and environmental issues, Nicolas Loris is the Heritage Foundation’s Herbert and Joyce Morgan Fellow., 1/30/2013, "No 'Following the Leader' on Climate Change", www.heritage.org/research/commentary/2013/1/no-following-the-leader-on-climate-change)

In his second inaugural address, President Obama pledged that the United States “will respond to the threat of climate change” and will take the lead for other countries to follow suit. This commitment is a willful rejection of reality. Congress has been unwilling to address climate change unilaterally through legislation. Multilateral attempts become more futile each year as major players, especially developing nations such as China and India, refuse to play ball. And why should they? Developing nations are not going to curb economic growth to solve a theoretical problem when their citizens face far more pressing environmental problems — especially when so many are trapped in grinding poverty and lack access to reliable electricity. This leaves the president with only one option for making good on his pledge: impose costly regulatory actions. This approach would be as pointless as unilateral legislative action. Why? Even accepting as fact the theory that Earth is warming and that carbon dioxide and other greenhouse gas emissions are a warming agent does not make any of the following true: &bull; Man-made emissions are driving climate change and are a negative externality that needs to be internalized. Greenhouse gas emissions are a warming agent. But that fact doesn’t begin to settle the scientific debate about climate change and climate sensitivity — the amount of warming projected from increased greenhouse gas emissions. Moreover, viewing man-made carbon dioxide as a strictly negative externality ignores a lot of peer-reviewed literature that identifies many positive effects (e.g., plant growth, human longevity, seed enrichment and less soil erosion as a result of more robust tree root growth) associated with higher levels of CO2 in the atmosphere. • Earth is cooking at a catastrophic rate. The media breathlessly reported that a recent National Oceanic and Atmospheric Administration’s study found 2012 to be the warmest on record for the continental United States. What they largely failed to report was that, globally, 2012 was only the ninth-warmest in the past 34 years. In fact, average global temperatures have leveled off over the past decade and a half. • Sea levels will rise dramatically, threatening America’s coastlines. The Intergovernmental Panel on Climate Change report, the bible of CO2-reduction proponents, projects sea levels rising 7 inches to 23 inches over the next century. That’s not as alarming as it sounds. Sea level has risen at the lower end of that projection over the past two centuries. • There will be more extreme droughts, heat waves, hurricanes and other natural disasters. Natural disasters (they’re called “natural” for a reason, right?) will occur with or without increased man-made emissions. Having failed repeatedly to win legislation limiting greenhouse gas emissions, the Obama administration appears bent on taking the regulatory route. The Environmental Protection Agency is promulgating stringent emission standards for new power plants that would effectively prohibit construction of coal-fired generators and prematurely shut down existing plants. The EPA also has introduced costly new air-quality standards for hydraulically fractured wells and new fuel-efficiency standards that will make cars and light-duty trucks more expensive, smaller and less safe. Restricting greenhouse gas emissions, whether unilaterally or multilaterally, will impose huge costs on consumers and the U.S. economy as a whole. Congress should exercise its seldom-used muscles as regulatory watchdog to keep regulatory proposals that are not cost-effective from full implementation and reverse the administration’s course on regulating CO2. As for the president’s suggestion that unilateral action by the U.S. will somehow inspire other countries to emulate our example — the repeated failure of U.N. negotiations to produce multilateral climate action demonstrates a near universal disinclination to sacrifice economic growth on the altar of global warming. President Obama should respond to the threat of climate change by acknowledging that the severity of the threat is low and the costs of action are painfully high. And that unilateral action by the United States won’t make a dent in Earth’s temperature anyway.

## 2nc no extinction

#### Warming won’t cause extinction

Barrett, professor of natural resource economics – Columbia University, ‘7

(Scott, Why Cooperate? The Incentive to Supply Global Public Goods, introduction)

First, climate change does not threaten the survival of the human species.5 If unchecked, it will cause other species to become extinction (though biodiversity is being depleted now due to other reasons). It will alter critical ecosystems (though this is also happening now, and for reasons unrelated to climate change). It will reduce land area as the seas rise, and in the process displace human populations. “Catastrophic” climate change is possible, but not certain. Moreover, and unlike an asteroid collision, large changes (such as sea level rise of, say, ten meters) will likely take centuries to unfold, giving societies time to adjust. “Abrupt” climate change is also possible, and will occur more rapidly, perhaps over a decade or two. However, abrupt climate change (such as a weakening in the North Atlantic circulation), though potentially very serious, is unlikely to be ruinous. Human-induced climate change is an experiment of planetary proportions, and we cannot be sur of its consequences. Even in a worse case scenario, however, global climate change is not the equivalent of the Earth being hit by mega-asteroid. Indeed, if it were as damaging as this, and if we were sure that it would be this harmful, then our incentive to address this threat would be overwhelming. The challenge would still be more difficult than asteroid defense, but we would have done much more about it by now.

#### Experts agree

Hsu 10 (Jeremy, Live Science Staff, July 19, pg. <http://www.livescience.com/culture/can-humans-survive-extinction-doomsday-100719.html>)

His views deviate sharply from those of most experts, who don't view climate change as the end for humans. Even the worst-case scenarios discussed by the Intergovernmental Panel on Climate Change don't foresee human extinction. "The scenarios that the mainstream climate community are advancing are not end-of-humanity, catastrophic scenarios," said Roger Pielke Jr., a climate policy analyst at the University of Colorado at Boulder. Humans have the technological tools to begin tackling climate change, if not quite enough yet to solve the problem, Pielke said. He added that doom-mongering did little to encourage people to take action. "My view of politics is that the long-term, high-risk scenarios are really difficult to use to motivate short-term, incremental action," Pielke explained. "The rhetoric of fear and alarm that some people tend toward is counterproductive." Searching for solutions One technological solution to climate change already exists through carbon capture and storage, according to Wallace Broecker, a geochemist and renowned climate scientist at Columbia University's Lamont-Doherty Earth Observatory in New York City. But Broecker remained skeptical that governments or industry would commit the resources needed to slow the rise of carbon dioxide (CO2) levels, and predicted that more drastic geoengineering might become necessary to stabilize the planet. "The rise in CO2 isn't going to kill many people, and it's not going to kill humanity," Broecker said. "But it's going to change the entire wild ecology of the planet, melt a lot of ice, acidify the ocean, change the availability of water and change crop yields, so we're essentially doing an experiment whose result remains uncertain."

## 2NC Resilient

No extinction - tech has decoupled humanity for the environment

Science Daily 10

Science Daily, reprinted from materials provided by American Institute of Biological Sciences, September 1, 2010, "Human Well-Being Is Improving Even as Ecosystem Services Decline: Why?", http://www.sciencedaily.com/releases/2010/09/100901072908.htm

Global degradation of ecosystems is widely believed to threaten human welfare, yet accepted measures of well-being show that it is on average improving globally, both in poor countries and rich ones. A team of authors writing in the September issue of BioScience dissects explanations for this "environmentalist's paradox." Noting that understanding the paradox is "critical to guiding future management of ecosystem services," Ciara Raudsepp-Hearne and her colleagues confirm that improvements in aggregate well-being are real, despite convincing evidence of ecosystem decline. Three likely reasons they identify -- past increases in food production, technological innovations that decouple people from ecosystems, and time lags before well-being is affected -- provide few grounds for complacency, however. Raudsepp-Hearne and her coauthors accept the findings of the influential Millennium Ecosystem Assessment that the capacity of ecosystems to produce many services for humans is now low. Yet they uncover no fault with the composite Human Development Index, a widely used metric that incorporates measures of literacy, life expectancy, and income, and has improved markedly since the mid-1970s. Although some measures of personal security buck the upward trend, the overall improvement in well-being seems robust. The researchers resolve the paradox partly by pointing to evidence that food production (which has increased globally over past decades) is more important for human well-being than are other ecosystem services. They also establish support for two other explanations: that technology and innovation have decoupled human well-being from ecosystem degradation, and that there is a time lag after ecosystem service degradation before human well-being will be affected.

Humanity will live even with massive bio-d loss

Sagoff 97

Mark Sagoff, U. Maryland School of Public Affairs Institute for Philosophy and Public policy Senior Research Scholar, William and Mary Law Review, March 1997, “INSTITUTE OF BILL OF RIGHTS LAW SYMPOSIUM DEFINING TAKINGS: PRIVATE PROPERTY AND THE FUTURE OF GOVERNMENT REGULATION: MUDDLE OR MUDDLE THROUGH? TAKINGS JURISPRUDENCE MEETS THE ENDANGERED SPECIES ACT”, 38 Wm and Mary L. Rev. 825, Lexis

Although one may agree with ecologists such as Ehrlich and Raven that the earth stands on the brink of an episode of massive extinction, it may not follow from this grim fact that human beings will suffer as a result. On the contrary, skeptics such as science writer Colin Tudge have challenged biologists to explain why we need more than a tenth of the 10 to 100 million species that grace the earth. Noting that "cultivated systems often out-produce wild systems by 100-fold or more," Tudge declared that "the argument that humans need the variety of other species is, when you think about it, a theological one." n343 Tudge observed that "the elimination of all but a tiny minority of our fellow creatures does not affect the material well-being of humans one iota." n344 This skeptic challenged ecologists to list more than 10,000 species (other than unthreatened microbes) that are essential to ecosystem productivity or functioning. n345 "The human species could survive just as well if 99.9% of our fellow creatures went extinct, provided only that we retained the appropriate 0.1% that we need." n346 [\*906] The monumental Global Biodiversity Assessment ("the Assessment") identified two positions with respect to redundancy of species. "At one extreme is the idea that each species is unique and important, such that its removal or loss will have demonstrable consequences to the functioning of the community or ecosystem." n347 The authors of the Assessment, a panel of eminent ecologists, endorsed this position, saying it is "unlikely that there is much, if any, ecological redundancy in communities over time scales of decades to centuries, the time period over which environmental policy should operate." n348 These eminent ecologists rejected the opposing view, "the notion that species overlap in function to a sufficient degree that removal or loss of a species will be compensated by others, with negligible overall consequences to the community or ecosystem." n349 Other biologists believe, however, that species are so fabulously redundant in the ecological functions they perform that the life-support systems and processes of the planet and ecological processes in general will function perfectly well with fewer of them, certainly fewer than the millions and millions we can expect to remain even if every threatened organism becomes extinct. n350 Even the kind of sparse and miserable world depicted in the movie Blade Runner could provide a "sustainable" context for the human economy as long as people forgot their aesthetic and moral commitment to the glory and beauty of the natural world. n351 The Assessment makes this point. "Although any ecosystem contains hundreds to thousands of species interacting among themselves and their physical environment, the emerging consensus is that the system is driven by a small number of . . . biotic variables on whose interactions the balance of species are, in a sense, carried along." n352 [\*907] To make up your mind on the question of the functional redundancy of species, consider an endangered species of bird, plant, or insect and ask how the ecosystem would fare in its absence. The fact that the creature is endangered suggests an answer: it is already in limbo as far as ecosystem processes are concerned. What crucial ecological services does the black-capped vireo, for example, serve? Are any of the species threatened with extinction necessary to the provision of any ecosystem service on which humans depend? If so, which ones are they? Ecosystems and the species that compose them have changed, dramatically, continually, and totally in virtually every part of the United States. There is little ecological similarity, for example, between New England today and the land where the Pilgrims died. n353 In view of the constant reconfiguration of the biota, one may wonder why Americans have not suffered more as a result of ecological catastrophes. The cast of species in nearly every environment changes constantly-local extinction is commonplace in nature-but the crops still grow. Somehow, it seems, property values keep going up on Martha's Vineyard in spite of the tragic disappearance of the heath hen. One might argue that the sheer number and variety of creatures available to any ecosystem buffers that system against stress. Accordingly, we should be concerned if the "library" of creatures ready, willing, and able to colonize ecosystems gets too small. (Advances in genetic engineering may well permit us to write a large number of additions to that "library.") In the United States as in many other parts of the world, however, the number of species has been increasing dramatically, not decreasing, as a result of human activity. This is because the hordes of exotic species coming into ecosystems in the United States far exceed the number of species that are becoming extinct. Indeed, introductions may outnumber extinctions by more than ten to one, so that the United States is becoming more and more species-rich all the time largely as a result of human action. n354 [\*908] Peter Vitousek and colleagues estimate that over 1000 non-native plants grow in California alone; in Hawaii there are 861; in Florida, 1210. n355 In Florida more than 1000 non-native insects, 23 species of mammals, and about 11 exotic birds have established themselves. n356 Anyone who waters a lawn or hoes a garden knows how many weeds desire to grow there, how many birds and bugs visit the yard, and how many fungi, creepy-crawlies, and other odd life forms show forth when it rains. All belong to nature, from wherever they might hail, but not many homeowners would claim that there are too few of them. Now, not all exotic species provide ecosystem services; indeed, some may be disruptive or have no instrumental value. n357 This also may be true, of course, of native species as well, especially because all exotics are native somewhere. Certain exotic species, however, such as Kentucky blue grass, establish an area's sense of identity and place; others, such as the green crabs showing up around Martha's Vineyard, are nuisances. n358 Consider an analogy [\*909] with human migration. Everyone knows that after a generation or two, immigrants to this country are hard to distinguish from everyone else. The vast majority of Americans did not evolve here, as it were, from hominids; most of us "came over" at one time or another. This is true of many of our fellow species as well, and they may fit in here just as well as we do. It is possible to distinguish exotic species from native ones for a period of time, just as we can distinguish immigrants from native-born Americans, but as the centuries roll by, species, like people, fit into the landscape or the society, changing and often enriching it. Shall we have a rule that a species had to come over on the Mayflower, as so many did, to count as "truly" American? Plainly not. When, then, is the cutoff date? Insofar as we are concerned with the absolute numbers of "rivets" holding ecosystems together, extinction seems not to pose a general problem because a far greater number of kinds of mammals, insects, fish, plants, and other creatures thrive on land and in water in America today than in prelapsarian times. n359 The Ecological Society of America has urged managers to maintain biological diversity as a critical component in strengthening ecosystems against disturbance. n360 Yet as Simon Levin observed, "much of the detail about species composition will be irrelevant in terms of influences on ecosystem properties." n361 [\*910] He added: "For net primary productivity, as is likely to be the case for any system property, biodiversity matters only up to a point; above a certain level, increasing biodiversity is likely to make little difference." n362 What about the use of plants and animals in agriculture? There is no scarcity foreseeable. "Of an estimated 80,000 types of plants [we] know to be edible," a U.S. Department of the Interior document says, "only about 150 are extensively cultivated." n363 About twenty species, not one of which is endangered, provide ninety percent of the food the world takes from plants. n364 Any new food has to take "shelf space" or "market share" from one that is now produced. Corporations also find it difficult to create demand for a new product; for example, people are not inclined to eat paw-paws, even though they are delicious. It is hard enough to get people to eat their broccoli and lima beans. It is harder still to develop consumer demand for new foods. This may be the reason the Kraft Corporation does not prospect in remote places for rare and unusual plants and animals to add to the world's diet. Of the roughly 235,000 flowering plants and 325,000 nonflowering plants (including mosses, lichens, and seaweeds) available, farmers ignore virtually all of them in favor of a very few that are profitable. n365 To be sure, any of the more than 600,000 species of plants could have an application in agriculture, but would they be preferable to the species that are now dominant? Has anyone found any consumer demand for any of these half-million or more plants to replace rice or wheat in the human diet? There are reasons that farmers cultivate rice, wheat, and corn rather than, say, Furbish's lousewort. There are many kinds of louseworts, so named because these weeds were thought to cause lice in sheep. How many does agriculture really require? [\*911] The species on which agriculture relies are domesticated, not naturally occurring; they are developed by artificial not natural selection; they might not be able to survive in the wild. n366 This argument is not intended to deny the religious, aesthetic, cultural, and moral reasons that command us to respect and protect the natural world. These spiritual and ethical values should evoke action, of course, but we should also recognize that they are spiritual and ethical values. We should recognize that ecosystems and all that dwell therein compel our moral respect, our aesthetic appreciation, and our spiritual veneration; we should clearly seek to achieve the goals of the ESA. There is no reason to assume, however, that these goals have anything to do with human well-being or welfare as economists understand that term. These are ethical goals, in other words, not economic ones. Protecting the marsh may be the right thing to do for moral, cultural, and spiritual reasons. We should do it-but someone will have to pay the costs. In the narrow sense of promoting human welfare, protecting nature often represents a net "cost," not a net "benefit." It is largely for moral, not economic, reasons-ethical, not prudential, reasons- that we care about all our fellow creatures. They are valuable as objects of love not as objects of use. What is good for [\*912] the marsh may be good in itself even if it is not, in the economic sense, good for mankind. The most valuable things are quite useless.

## Ag

#### Adaptation means no catastrophic impact to warming

Kenny 12 [April 9, 2012, Charles, senior fellow at the Center for Global Development, a Schwartz fellow at the New America Foundation, and author, most recently, of Getting Better: Why Global Development Is Succeeding and How We Can Improve the World Even More., “Not Too Hot to Handle,” http://www.foreignpolicy.com/articles/2012/04/09/not\_too\_hot\_to\_handle?print=yes&hidecomments=yes&page=full]

But for all international diplomats appear desperate to affirm the self-worth of pessimists and doomsayers worldwide, it is important to put climate change in a broader context. It is a vital global issue -- one that threatens to slow the worldwide march toward improved quality of life. Climate change is already responsible for more extreme weather and an accelerating rate of species extinction -- and may ultimately kill off as many as 40 percent of all living species. But it is also a problem that we know how to tackle, and one to which we have some time to respond before it is likely to completely derail progress. And that's good news, because the fact that it's manageable is the best reason to try to tackle it rather than abandon all hope like a steerage class passenger in the bowels of the Titanic.

Start with the economy. The Stern Review, led by the distinguished British economist Nicholas Stern, is the most comprehensive look to date at the economics of climate change. It suggests that, in terms of income, greenhouse gasses are a threat to global growth, but hardly an immediate or catastrophic one. Take the impact of climate change on the developing world. The most depressing forecast in terms of developing country growth in Stern's paper is the "A2 scenario" -- one of a series of economic and greenhouse gas emissions forecasts created for the U.N.'s Intergovernmental Panel on Climate Change (IPCC). It's a model that predicts slow global growth and income convergence (poor countries catching up to rich countries). But even under this model, Afghanistan's GDP per capita climbs sixfold over the next 90 years, India and China ninefold, and Ethiopia's income increases by a factor of 10. Knock off a third for the most pessimistic simulation of the economic impact of climate change suggested by the Stern report, and people in those countries are still markedly better off -- four times as rich for Afghanistan, a little more than six times as rich for Ethiopia.

It's worth emphasizing that the Stern report suggests that the costs of dramatically reducing greenhouse-gas emissions is closer to 1 (or maybe 2) percent of world GDP -- in the region of $600 billion to $1.2 trillion today. The economic case for responding to climate change by pricing carbon and investing in alternate energy sources is a slam dunk. But for all the likelihood that the world will be a poorer, denuded place than it would be if we responded rapidly to reduce greenhouse gases, the global economy is probably not going to collapse over the next century even if we are idiotic enough to delay our response to climate change by a few years. For all the flooding, the drought, and the skyrocketing bills for air conditioning, the economy would keep on expanding, according to the data that Stern uses.

And what about the impact on global health? Suggestions that malaria has already spread as a result of climate change and that malaria deaths will expand dramatically as a result of warming in the future don't fit the evidence of declining deaths and reduced malarial spread over the last century. The authors of a recent study published in the journal Nature conclude that the forecasted future effects of rising temperatures on malaria "are at least one order of magnitude smaller than the changes observed since about 1900 and about two orders of magnitude smaller than those that can be achieved by the effective scale-up of key control measures." In other words, climate change is and will likely remain a small factor in the toll of malaria deaths into the foreseeable future.

What about other diseases? Christian Zimmermann at the University of Connecticut and Douglas Gollin at Williams evaluate the likely impact of a 3-degree rise in temperatures on tropical diseases like dengue fever, which causes half a million cases of hemorrhagic fever and 22,000 deaths each year. Most of the vectors for such diseases -- mosquitoes, biting flies, and so on -- do poorly in frost. So if the weather stays warmer, these diseases are likely to spread. At the same time, there are existing tools to prevent or treat most tropical diseases, and Zimmerman and Gollin suggest "rather modest improvements in protection efficacy could compensate for the consequences of climate change." We can deal with this one.

It's the same with agriculture. Global warming will have many negative (and a few positive) impacts on food supply, but it is likely that other impacts -- both positive, including technological change, and negative, like the exhaustion of aquifers-- will have far bigger effects. The 2001 IPCC report suggested that climate change over the long term could reduce agricultural yields by as much as 30 percent. Compare that with the 90 percent increase in rice yields in Indonesia between 1970 and 2006, for example.

Again, while climate change will make extreme weather events and natural disasters like flooding and hurricanes more common, the negative effect on global quality of life will be reduced if economies continue to grow. That's because, as Matthew Kahn from Tufts University has shown, the safest place to suffer a natural disaster is in a rich country. The more money that people and governments have, the more they can both afford and enforce building codes, land use regulations, and public infrastructure like flood defenses that lower death tolls.

Let's also not forget how human psychology works. Too many environmentalists suggest that dealing with climate change will take immediate and radical retooling of the global economy. It won't. It is affordable, practical, and wouldn't take a revolution. Giving out the message that the only path to sustainability will require medieval standards of living only puts everyone else off. And once you've convinced yourself the world is on an inevitable course to disaster if some corner of the U.S. Midwest is fracked once more or India builds another three coal-fueled power plants, the only logical thing to do when the fracking or the building occurs is to sit back, put your Toms shoes on the couch, and drink micro-brewed herbal tea until civilization collapses. Climate change isn't like that -- or at the very least, isn't like that yet.

So, if you're really just looking for a reason to strap on the "end of the world is nigh" placards and go for a walk, you can find better excuses -- like, say, the threat of global thermonuclear war or a rogue asteroid. The fight to curb greenhouse gas emissions is one for the hard-nosed optimist.

## AT: Ocean Acidification

#### No risk of catastrophic acidification.

Christopher Monckton, 2010. Chief Policy Advisor—Science and Public Policy Institute, former Special Advisor to UK Prime Minister Thatcher. “ANSWERS TO A FISHERMAN’S TESTIMONY ABOUT OCEAN ACIDIFICATION”, 4-28, <http://scienceandpublicpolicy.org/images/stories/papers/originals/answers_to_fishermans_testimony.pdf>.

Ocean acidification is real. It has been documented by researchers all over the world and there is no doubt that the pH of the ocean is dropping, becoming more acidic. There is no evidence whatsoever that the oceans have become “more acidic”. The oceans are in fact pronouncedly alkaline, and will remain so however much CO2 we add to the atmosphere. The pH or acid-base index is neutral at a value of 7; acid below 7; alkaline (also known as “base”) above The oceans are currently at a pH of 7.9-8.No serious scientist suggests that the oceans will become acid: at worst, they will come a little closer to neutrality. To put this in context, ordinary rainwater is acid, with a pH of 5.There is not the slightest danger that the oceans will become acid at all, yet alone as acid as harmless rainwater. The reason is that the oceans run over rocks, which react chemically with seawater to keep it firmly alkaline. Nor is it at all clear that “the pH of the ocean is dropping”. At most, the pH may have fallen by 0.1 acid-base units over the past century, but we do not know for sure because no comprehensive, worldwide measurements have ever been taken by a single research project, and there were certainly far too few measurements a century ago to provide a reliable baseline from which any such conclusion can be drawn. What is certain is that even a shift of as little as 0.1 acid-base units cannot have been caused by the change in CO2 concentration, because in the past 250 years we have added only 0.19% to the partial pressure of CO2 already pre-existing in the oceans. This is too little to make any measurable difference to the acid-base balance of the oceans.

#### Meta-analysis confirms acidification has only minor effects. And experiments OVERESTIMATE the effects by ignoring adaptation and community effects.

Iris Hendriks et al, 2010. C.M. Duarte, and M. Alvarez, Department of Global Change Research—Mediterranean Institute of Advanced Studies, “Vulnerability of marine biodiversity to ocean acidification: A meta-analysis,” Estuarine, Coastal and Shelf Science 86(2), January.

The meta-analysis of our database, **which includes 372 published experimental evaluations with control values** assembled from literature (Supplementary information Table S1), confirmed that acidification effects differed considerably across taxonomic groups and functions, but that **the magnitude of the changes were, overall, modest for acidification levels within ranges expected during this century**. Acidification does not occur in isolation, but in concert with other challenges such as warming, eutrophication, and increased UV radiation. There are, however, few studies examining the interactive effect of acidification and other direct or indirect results of global change, which may aggravate the effect of ocean acidification on marine organisms. This analysis suggests that marine biota do not respond uniformly to ocean acidification. Some experiments report significant impacts for vulnerable taxa at pCO2 values expected within the 21st century, **but there was no consistent evidence that suggests biological rates,** apart from calcification for one functional group, the bivalves**, might be significantly suppressed** across the range of pCO2 anticipated for the 21st century. Some organisms, particularly autotrophs, even showed enhanced growth under elevated pCO The data do suggest that calcification rate, the most sensitive process responding directly to ocean acidification (Gattuso et al., 1998 J.P. Gattuso, M. Frankignoulle, I. Bourrge, S. Romaine and R.W. Buddemeier, Effect of calcium carbonate saturation of seawater on coral calcification, Global and Planetary Change 18 (1998), pp. 37–4Article | PDF (107 K) | View Record in Scopus | Cited By in Scopus (153)[Gattuso et al., 1998], [Gazeau et al., 2007], [Leclercq et al., 2000] and [Riebesell et al., 2000]), will decline by, on average, 25% at elevated pCO2 values of 731–759 ppmv. These values will be reached within the 21st century (IPCC, 2007). However, the 25% decline in biological calcification rates at elevated pCO2 values of approximately 750 ppmv is likely to be an upper limit, considering that all experiments involve the abrupt exposure of organisms to elevated pCO2 values, while the gradual increase in pCO2 that is occurring in nature may allow **adaptive and selective processes to operate** (Widdicombe et al., 2008). These gradual changes take place on the scale of decades, permitting adaptation of organisms even including genetic selection. Short-term experimental results are likely to overestimate the impacts of acidification rates on marine organisms. The ambition and sophistication of experimental approaches need be expanded, to assess complex communities, rather than single species, and to assess responses to enhanced CO2 over long terms. Such long-term experiments to observe community responses to long-term exposure to enhanced CO2 have been successfully conducted for terrestrial systems. Experiments comparable to those conducted on land (e.g. Hättenschwiler et al., 2003), should be planned and conducted. The only such experiment so far available is the Biosphere 2 experiment, where responses of coral-reef communities included in the “ocean” biome of the Biosphere 2 facility were assessed (Atkinson et al., 1999). Also important, most experiments assessed organisms in isolation, rather than whole communities, whereas **the responses within the community may buffer the impacts.** For instance, seagrass photosynthetic rates may increase by 50% with increased CO2, which may deplete the CO2 pool, maintaining an elevated pH that may protect associated calcifying organisms from the impacts of ocean acidification.

## at: phytoplankton

#### Warming helps phytoplankton

Singer, PhD physics – Princeton University and professor of environmental science – UVA, consultant – NASA, GAO, DOE, NASA, Carter, PhD paleontology – University of Cambridge, adjunct research professor – Marine Geophysical Laboratory @ James Cook University, and Idso, PhD Geography – ASU, ‘11

(S. Fred, Robert M. and Craig, “Climate Change Reconsidered,” 2011 Interim Report of the Nongovernmental Panel on Climate Change)

Renaudie et al. (2010) conducted a quantitative micropalaeontological analysis of siliceous phytoplankton remains found in a sediment core extracted from the seabed at an ocean depth of 2,549 meters at ODP Site 1260 (~9.2°N, 54.65°W) on the Demerara Rise, which is a continental shelf located off the coast of Surinam, focusing on a 200,000-year period of warmth during the Eocene between approximately 40.0 and 40.2 million years ago. According to the five French scientists, their results indicated ―the pre-warming flora, dominated by cosmopolitan species of the diatom genus Triceratium, was replaced during the warming interval by a new and more diverse assemblage, dominated by Paralia sulcata (an indicator of high productivity) and two endemic tropical species of the genus Hemiaulus.‖ In addition, they state ―the critical warming interval was characterized by a steady increase in tropical species of the genus Hemiaulus.‖ They also state ―the microflora preserved above the critical interval was once again of low diversity and dominated by various species of the diatom genus Hemiaulus.‖ Renaudie et al.‘s findings establish that warmer is better, a maxim exemplified in the current case by (1) the greater productivity of the tropical ocean during the warmer period and (2) the ocean‘s continuous upward trend in the diversity of phytoplanktonic species throughout the period of warming.

# 1NR

## **warming outweighs**

Star 9, University of Sydney, 8/2/09, (Stephen Starr and Peter King, , “Nuclear suicide”, Sunday, 02 August 2009, http://www.sciencealert.com.au/opinions/20090208-19496.html)

##### But there is little evidence yet that either the government or the Commission is fully alert to the most momentous truth of the present era: Our **best science** **now predicts** that nuclear arsenals are fundamentally incompatible with continued human existence. It is **imperative that the message coming from scientists in the US, Russia and elsewhere** about the environmental consequences of nuclear war be included in the general debate about the control and abolition of nuclear weapons. Unfortunately, the **nuclear weapon states apparently remain** oblivious to the **climatic**, **ecological** and **biological** consequences of nuclear war. No "environmental impact statement" has ever been created for the US or Russian nuclear weaponry, which is one of the reasons why there still are 22,000 intact nuclear weapons in their deployed and reserve arsenals. However, **new peer-reviewed studies** done at **several US universities** predict the **detonation of even a tiny fraction** of the global nuclear arsenal will result in major changes in the **global climate** and massive destruction of the stratospheric ozone layer (which protects the Earth from **deadly UV light**). Even a "regional" nuclear conflict between India and Pakistan, fought with 100 Hiroshima-size weapons, is predicted to loft five million tons of **smoke above cloud level**; there it would block about 10 per cent of **warming sunlight** from reaching the surface of the Northern Hemisphere. This would produce average surface temperatures colder than any experienced for the last 1000 years. The smoke would **remain in the stratosphere for more than a decade** and seriously impact global climate. It would probably be too cold to grow wheat in Canada for several years; grain exports would likely cease from grain-exporting nations .and **global nuclear famine** would result, Within a few years, most of the already-hungry **human** **populations could perish**, and the **populations of any nation** dependent upon grain imports would be at risk.

## **overview**

#### **Conceded internal link to the economy—Nuclear war and their defense doesn’t apply**

Harris and Burrows ‘9

(Mathew, PhD European History at Cambridge, counselor in the National Intelligence Council (NIC) and Jennifer, member of the NIC’s Long Range Analysis Unit “Revisiting the Future: Geopolitical Effects of the Financial Crisis” <http://www.ciaonet.org/journals/twq/v32i2/f_0016178_13952.pdf>, AM)

Of course, the report encompasses more than economics and indeed believes the future is likely to be the result of a number of intersecting and interlocking forces. With so many possible permutations of outcomes, each with ample Revisiting the Future opportunity for unintended consequences, there is a growing sense of insecurity. Even so, history may be more instructive than ever. While we continue to believe that the Great Depression is not likely to be repeated, the lessons to be drawn from that period include the harmful effects on fledgling democracies and multiethnic societies (think Central Europe in 1920s and 1930s) and on the sustainability of multilateral institutions (think League of Nations in the same period). There is no reason to think that this would not be true in the twenty-first as much as in the twentieth century. For that reason, the ways in which the potential for greater conflict could grow would seem to be even more apt in a constantly volatile economic environment as they would be if change would be steadier. In surveying those risks, the report stressed the likelihood that terrorism and nonproliferation will remain priorities even as resource issues move up on the international agenda. Terrorism’s appeal will decline if economic growth continues in the Middle East and youth unemployment is reduced. For those terrorist groups that remain active in 2025, however, the diffusion of technologies and scientific knowledge will place some of the world’s most dangerous capabilities within their reach. Terrorist groups in 2025 will likely be a combination of descendants of long established groups\_inheriting organizational structures, command and control processes, and training procedures necessary to conduct sophisticated attacks\_and newly emergent collections of the angry and disenfranchised that become self-radicalized, particularly in the absence of economic outlets that would become narrower in an economic downturn. The most dangerous casualty of any economically-induced drawdown of U.S. military presence would almost certainly be the Middle East. Although Iran’s acquisition of nuclear weapons is not inevitable, worries about a nuclear-armed Iran could lead states in the region to develop new security arrangements with external powers, acquire additional weapons, and consider pursuing their own nuclear ambitions. It is not clear that the type of stable deterrent relationship that existed between the great powers for most of the Cold War would emerge naturally in the Middle East with a nuclear Iran. Episodes of low intensity conflict and terrorism taking place under a nuclear umbrella could lead to an unintended escalation and broader conflict if clear red lines between those states involved are not well established. The close proximity of potential nuclear rivals combined with underdeveloped surveillance capabilities and mobile dual-capable Iranian missile systems also will produce inherent difficulties in achieving reliable indications and warning of an impending nuclear attack. The lack of strategic depth in neighboring states like Israel, short warning and missile flight times, and uncertainty of Iranian intentions may place more focus on preemption rather than defense, potentially leading to escalating crises. 36 Types of conflict that the world continues to experience, such as over resources, could reemerge, particularly if protectionism grows and there is a resort to neo-mercantilist practices. Perceptions of renewed energy scarcity will drive countries to take actions to assure their future access to energy supplies. In the worst case, this could result in interstate conflicts if government leaders deem assured access to energy resources, for example, to be essential for maintaining domestic stability and the survival of their regime. Even actions short of war, however, will have important geopolitical implications. Maritime security concerns are providing a rationale for naval buildups and modernization efforts, such as China’s and India’s development of blue water naval capabilities. If the fiscal stimulus focus for these countries indeed turns inward, one of the most obvious funding targets may be military. Buildup of regional naval capabilities could lead to increased tensions, rivalries, and counterbalancing moves, but it also will create opportunities for multinational cooperation in protecting critical sea lanes. With water also becoming scarcer in Asia and the Middle East, cooperation to manage changing water resources is likely to be increasingly difficult both within and between states in a more dog-eat-dog world.

#### Solves warming

**Herman and Smith ‘10**, \*founder of a immigration and business law firm in Cleveland, Ohio which serves a global clientele in over 10 languages, \*veteran journalist who covers international cultures and immigration issues for the Cleveland Plain Dealer (Richard and Robert, “Why Immigrants Can Drive the Green Economy,” Immigration Policy Center, 2010, <http://immigrationpolicy.org/perspectives/why-immigrants-can-drive-green-economy>)

It should come as no surprise that immigrants will help drive the green revolution. America’s young scientists and engineers, especially the ones drawn to emerging industries like alternative energy, tend to speak with an accent. The 2000 Census found that immigrants, while accounting for 12 percent of the population, made up nearly half of the all scientists and engineers with doctorate degrees. Their importance will only grow. Nearly 70 percent of the men and women who entered the fields of science and engineering from 1995 to 2006 were immigrants. Yet, the connection between immigration and the development and commercialization of alternative energy technology is rarely discussed. Policymakers envision millions of new jobs as the nation pursues renewable energy sources, like wind and solar power, and builds a smart grid to tap it. But Dan Arvizu, the leading expert on solar power and the director of the National Renewable Energy Laboratory of the U.S. Department of Energy in Golden, Colorado, warns that much of the clean-technology talent lies overseas, in nations that began pursuing alternative energy sources decades ago. Expanding our own clean-tech industry will require working closely with foreign nations and foreign-born scientists, he said. Immigration restrictions are making collaboration difficult. His lab’s efforts to work with a Chinese energy lab, for example, were stalled due to U.S. immigration barriers. “We can’t get researchers over here,” Arvizu, the son of a once-undocumented immigrant from Mexico, said in an interview in March 2009, his voice tinged with dismay. “It makes no sense to me. We need a much more enlightened approach.” Dr. Zhao Gang, the Vice Director of the Renewable Energy and New Energy International Cooperation Planning Office of the Ministry of Science and Technology in China, says that America needs that enlightenment fast. “The Chinese government continues to impress upon the Obama administration that immigration restrictions are creating major impediments to U.S.-China collaboration on clean energy development,” he said during a recent speech in Cleveland. So what’s the problem? Some of it can be attributed to national security restrictions that impede international collaboration on clean energy. But Arvizu places greater weight on immigration barriers, suggesting that national secrecy is less important in the fast-paced world of green-tech development. “We are innovating so fast here, what we do today is often outdated tomorrow. Finding solutions to alternative energy is a complex, global problem that requires global teamwork,” he said. We need an immigration system that prioritizes the attraction and retention of scarce, high-end talent needed to invent and commercialize alternative energy technology and other emerging technologies. One idea we floated by Arvizu was a new immigrant “Energy Scientist Visa,” providing fast-track green cards for Ph.D.s with the most promising energy research, as reviewed by a panel of top U.S. scientists. Arvizu enthusiastically responded, “Wow, that’s a brilliant idea.” As the recent submission of the Startup Visa Act bill suggests, there’s really no shortage of good ideas of leveraging immigration to jumpstart the economy. The challenge is getting the American people to understand that high-skill immigration creates jobs, that the current system is broken, and that action is required now.

#### Key to biotech

**Dahms 3**, executive director of the California State University System Biotechnology Program (CSUPERB); chair of the Workforce Committee, Biotechnology Industry Organization; and a member of the ASBMB Education and Professional Development Committee, (A. Stephen, “ Foreign Scientists Seen Essential to U.S. Biotechnology,” in Pan-Organizational Summit on the U.S. Science and Engineering Workforce: Meeting Summary, National Academy of Sciences, <http://www.ncbi.nlm.nih.gov/bookshelf/picrender.fcgi?book=nap10727&blobtype=pdf>)

The scarcity of skilled technicians is seen by the biotechnology industry in the U.S. and Canada as one of its most serious challenges. The success of this industry is dependent on the quality of its workforce, and the skills and talents of highly trained people are recognized as one of the most vital and dynamic sources of competitive advantage. The U.S. biotechnology industry workforce has been growing 14 to 17 percent annually over the last six years and is now over 190,000 and conservatively estimated to reach 500,000 by 2012. Despite efforts by the industry to encourage U.S. institutions to increase the production of needed specialists, a continual shortfall in the needed expertise requires access to foreign workers. Foreign workers with unique skills that are scarce in the U.S. can get permission to stay in the U.S. for up to six years under the H1B classification, after which they can apply for permanent resident status. There are currently over 600,000 foreign workers in this category across all industries, and they are critical to the success and global competitiveness of this nation. Of these H-1B visa holders, 46 percent are from India and 10 percent are from China, followed in descending order by Canada, Philippines, Taiwan, Korea, Japan, U.K., Pakistan, and the Russian Federation. Our annual national surveys have demonstrated that between 6 and 10 percent of the biotechnology workforce have H-1B visas. The constant shortfall in specialized technical workers that has been experienced by the biotechnology industry over the past six years has been partially alleviated by access to talented individuals from other nations. However, the industry’s need is sufficient to justify a 25 percent increase in H-1Bs in 2004. Biotechnology industry H-1B visa holders are mainly in highly sought after areas such as analytical chemistry, instrumentation specialization, organic synthesis, product safety and surveillance, clinical research/biostatistics, bio/pharm quality, medicinal chemistry, product scale-up, bioinformatics and applied genomics, computer science, cheminformatics, pharmacokinetics, and pharmacodynamics. Forty percent of H-1B foreign workers are at the Ph.D. level, 35 percent M.S., 20 percent B.S., and 5 percent M.D. In comparison, the U.S. biotechnology industry technical workforce is estimated to be 19 percent Ph.D., 17 percent M.S., 50 percent B.S., and 14 percent combined voc-ed/ community college trained. These and other survey data by industry human resource groups clearly show that the H-1B worker skills match the most pressing employment needs of the biotechnology industry. The data demonstrate that maintaining a reasonably-sized H-1B cap is critical to the industry. Although the national annual H-1B visa cap was raised from 115,000 to 195,000 in the 106th Congress via S. 2045, the cap has already been exceeded. The increased cap remains in effect until 2003 and efforts are under way to ensure that it remains high. The Third Annual National Survey of H-1Bs in the biotechnology industry found that 80 percent are from U.S. universities, and 85 percent of those eventually get green cards. Companies now spend, on average, $10,200 in processing fees and legal expenses to obtain each green card, an estimated cost to the industry of more than $150 million over the past 5 years. In the wake of the 9/11 World Trade Center attacks, debate has been focused on more restrictions on foreign students, a development that would have a severe impact upon the competitiveness of the U.S. biotechnology industry. Clearly, the H-1B route provides a temporary solution to shortages in the national and domestic biotechnology labor pools, shortages mirroring the inadequate production of appropriately trained U.S. nationals by U.S. institutions of higher learning. The reality is that universities have inadequate resources for expanding the training pipeline, particularly in the specialized areas of the research phase of company product development. Efforts should be directed toward influencing greater congressional and federal agency attention to these important topics.

#### Solves bioterror

**Bailey, 1** [Ronald, award-winning science correspondent for Reason magazine and Reason.com, where he writes a weekly science and technology column. Bailey is the author of the book Liberation Biology: The Moral and Scientific Case for the Biotech Revolution (Prometheus, 2005), and his work was featured in The Best American Science and Nature Writing 2004. In 2006, Bailey was shortlisted by the editors of Nature Biotechnology as one of the personalities who have made the "most significant contributions" to biotechnology in the last 10 years. 11/7/1, “The Best Biodefense,” Reason, <http://reason.com/archives/2001/11/07/the-best-biodefense>]

But Cipro and other antibiotics are just a small part of the arsenal that could one day soon be deployed in defending America against biowarfare. Just consider what’s in the pipeline now that could be used to protect Americans against infectious diseases, including bioterrorism. A Pharmaceutical Manufacturers and Research Association survey found 137 new medicines for infectious diseases in drug company research and development pipelines, including 19 antibiotics and 42 vaccines. With regard to anthrax, instead of having to rush a sample to a lab where it takes hours or even days to culture, biotech companies have created test strips using antibody technologies that can confirm the presence of anthrax in 15 minutes or less, allowing decontamination and treatment to begin immediately. Similar test strips are being developed for the detection of smallpox as well. The biotech company EluSys Therapeutics is working on an exciting technique which would "implement instant immunity." EluSys joins two monoclonal antibodies chemically together so that they act like biological double-sided tape. One antibody sticks to toxins, viruses, or bacteria while the other binds to human red blood cells. The red blood cells carry the pathogen or toxin to the liver for destruction and return unharmed to the normal blood circulation. In one test, the EluSys treatment reduced the viral load in monkeys one million-fold in less than an hour. The technology could be applied to a number of bioterrorist threats, such as dengue fever, Ebola and Marburg viruses, and plague. Of course, the EluSys treatment would not just be useful for responding to bioterrorist attacks, but also could treat almost any infection or poisoning. Further down the development road are technologies that could rapidly analyze a pathogen’s DNA, and then guide the rapid synthesis of drugs like the ones being developed by EluSys that can bind, or disable, segments of DNA crucial to an infectious organism's survival. Again, this technology would be a great boon for treating infectious diseases and might be a permanent deterrent to future bioterrorist attacks. Seizing Bayer’s patent now wouldn’t just cost that company and its stockholders a little bit of money (Bayer sold $1 billion in Cipro last year), but would reverberate throughout the pharmaceutical research and development industry. If governments begin to seize patents on the pretext of addressing alleged public health emergencies, the investment in research that would bring about new and effective treatments could dry up. Investors and pharmaceutical executives couldn’t justify putting $30 billion annually into already risky and uncertain research if they couldn’t be sure of earning enough profits to pay back their costs. Consider what happened during the Clinton health care fiasco, which threatened to impose price controls on prescription drugs in the early 1990s: Growth in research spending dropped off dramatically from 10 percent annually to about 2 percent per year. A far more sensible and farsighted way to protect the American public from health threats, including bioterrorism, is to encourage further pharmaceutical research by respecting drug patents. In the final analysis, America’s best biodefense is a vital and profitable pharmaceutical and biotechnology industry.

#### Extinction

Steinbrenner, 97

John Steinbrenner, Senior Fellow – Brookings, Foreign Policy, 12-22-1997, Lexis

Although human pathogens are often lumped with nuclear explosives and lethal chemicals as potential weapons of mass destruction, there is an obvious, fundamentally important difference: Pathogens are alive, weapons are not. Nuclear and chemical weapons do not reproduce themselves and do not independently engage in adaptive behavior; pathogens do both of these things. That deceptively simple observation has immense implications. The use of a manufactured weapon is a singular event. Most of the damage occurs immediately. The aftereffects, whatever they may be, decay rapidly over time and distance in a reasonably predictable manner. Even before a nuclear warhead is detonated, for instance, it is possible to estimate the extent of the subsequent damage and the likely level of radioactive fallout. Such predictability is an essential component for tactical military planning. The use of a pathogen, by contrast, is an extended process whose scope and timing cannot be precisely controlled. For most potential biological agents, the predominant drawback is that they would not act swiftly or decisively enough to be an effective weapon. But for a few pathogens - ones most likely to have a decisive effect and therefore the ones most likely to be contemplated for deliberately hostile use - the risk runs in the other direction. A lethal pathogen that could efficiently spread from one victim to another would be capable of initiating an intensifying cascade of disease that might ultimately threaten the entire world population. The 1918 influenza epidemic demonstrated the potential for a global contagion of this sort but not necessarily its outer limit.

## Border Security

#### Border security won’t kill the bill

Julia Preston, NYTimes, 3/21/13, Officials Concede Failures on Gauging Border Security, www.nytimes.com/2013/03/22/us/officials-still-seek-ways-to-assess-border-security.html?pagewanted=all&\_r=2&

Amid contentious discussions in Congress over immigration, one **point of wide agreement** is that an evaluation of border security will be a central piece of any comprehensive bill. A bipartisan group in the Senate is working to write legislation that includes a “trigger,” which would make the path to citizenship for more than 11 million illegal immigrants in the country contingent on measurable advances in security at the borders.

## Guest Workers

#### Labor negotiations on track now

Carrie Brown, Politico, 3/27/13, dyn.politico.com/printstory.cfm?uuid=5B4EB61E-FD64-4F82-98C4-6E09945FD925

Talks on a new visa program for low-skilled workers are “**back on the right track**” after a dispute over wages stalled progress on a Senate immigration reform bill, the lead union negotiator said Wednesday. Ana Avendaño, immigration director for the AFL-CIO, said negotiations are continuing with a bipartisan group of senators and the U.S. Chamber of Commerce on the outlines of a broad new visa program aimed at balancing the need for foreign workers in low-skilled jobs with the desires of American workers competing for those same jobs. She would not say whether last week’s wage dispute has been resolved. But she suggested that negotiators are moving away from a business-backed proposal to pay the lowest-level wage to many of the new workers. “I can say for almost certain that poverty-level wages will not be codified into statute,” Avendaño said. Blair Latoff Holmes, a Chamber spokeswoman, said the two sides “continue to talk and we **remain hopeful** a deal will be reached.” Labor unions and the Chamber of Commerce have been working for months to reach a deal on the new visa program for low-skilled workers, with the Senate Gang of Eight taking a more direct role in recent weeks to help the two sides reach an agreement. The talks turned heated Friday and spilled into the open as labor and business officials vented their frustrations through the media. The two sides have reached consensus on the scope, size and timing of the program, but worker pay has been a sticking point in completing a deal on the temporary worker program — and the entire bill.

#### Labor compromise likely

Fawn Johnson, National Journal, 3/25/13, Why the Fight Over Work Visas Won't Doom the Immigration Bill, www.nationaljournal.com/congress/why-the-fight-over-work-visas-won-t-doom-the-immigration-bill-20130325

**Make no mistake. The immigration bill** that is being crafted by the “Gang of Eight” senators **will include foreign work visas despite warning from** both **business and labor** that their talks over the issue have broken down. Here’s why. The AFL-CIO, for the first time in its history, has signed off on a work visa program that would allow employers to bring foreign workers into the United States on a temporary basis. Those visas would come with an assurance that the worker would have access to a green card, possibly as soon as one year after coming into the country. But initially, they are temporary visas. “It would be a new kind of work visa program. It would be dual intent,” said AFL-CIO spokesman Jeff Hauser. This is a big deal. Previously, the AFL-CIO opposed any kind of temporary visa program. That intransigence caused a highly public split with the Service Employees International Union in 2007. SEIU was willing to embrace some form of temporary work visas for immigrant labor if the broader immigration bill also legalized the currently undocumented population. Now labor is speaking with one voice. They want legalization for the undocumented population and are willing to allow new foreign workers to come to the country, provided the employers pay them at the same rates they would pay an American worker. The business community has indicated **it can live with those parameters**. The breakdown in talks is about **degrees rather than overall principles**. How much should foreign workers be paid? How should that wage rate calculated, and who decides? The dispute between labor and business over work visas highlights the sensitivity of the effort to reshape an immigration system that doesn't work very well for anybody. Immigration reform is a top priority for President Obama and for Republicans in Congress, who are worried that without an overhaul, the Hispanic population will become permanent Democrats. Obama, just back from a trip to the Middle East, put a spotlight on the issue at a naturalization ceremony for 28 legal immigrants where he urged Congress to press ahead with reform. "The time has come for a comprehensive, sensible immigration reform," he said. "We are making progress but we’ve got to finish the job." The eight Senate negotiators are hoping to unveil a draft of their immigration bill when Congress returns from its break in early April. The Judiciary Committee then will spend several weeks debating it and voting on it, preparing it for the Senate floor--a debate that is also expected to take several weeks. If all goes according to plan, the legislation will receive a final Senate vote in June.

## not involved

Obama’s using capital now—its ensures passage

Gary Martin, Connecticut Post, 3/28/13, Immigration reform gaining support in Congress, www.ctpost.com/local/article/Immigration-reform-gaining-support-in-Congress-4393187.php

A Republican Party in desperate search for relevance to Latino voters. An expanded Democratic advantage in the Senate. A second-term President with his legacy on the line. Does all **that add up to enough to break decades of impasse and produce** comprehensive **immigration** reform? As expectations -- and tensions -- rise, the answer won't be long in coming. A bipartisan bill could be filed in the Senate as early as next week, followed in relatively short order by a House bill, also crafted by a bipartisan group, aiming at a compromise on the key issue of citizenship. The efforts are being applauded by President Barack Obama, who is using every ounce of his political clout to try to get comprehensive reform. Obama said the time has come "to work up the political courage to do what's required to be done." "I expect a bill to be put forward. I expect a debate to begin next month. I want to sign that bill into law as soon as possible," Obama said at a White House naturalization ceremony. In addition to the issue of eventual citizenship for 11 million undocumented immigrants, Congress is expected to address the need for temporary or guest worker programs. Congress last passed comprehensive bipartisan reform legislation in 1986, when President Ronald Reagan signed a law that granted citizenship to several million undocumented immigrants and created a guest worker program. Up until now, Republicans have opposed citizenship programs as an "amnesty" for lawbreakers who entered the country illegally, and labor has chafed at guest worker programs. But Republican losses in the 2012 elections and increased public support for reform have many in the GOP talking compromise. "**If there is one issue** that **the two parties could produce** something meaningful on in this Congress, **it would be immigration**," said Stephen Hess, a political expert at The Brookings Institution. Hess said an eventual bill "will have lots of provisos, and it will go back and forth, but it would be hard not to produce something given the general feeling that something has to be produced." More and more Republicans are moving toward immigration-reform measures as the party seeks to reach out to Latinos, the nation's largest -- and growing -- minority voting bloc. Public opinion is behind them. A recent poll showed 63 percent of Americans supported a path to citizenship for undocumented workers provided they meet certain requirements, according to a survey by the Public Religion Research Institute. Notable Republicans who have recently spoken in favor of compromise on citizenship proposals include Sen. Rand Paul, R-Ky.; former Mississippi Gov. Haley Barbour; and Rep. Paul Ryan, R-Wis. And a March report by the National Republican Committee, considered a "post mortem" on the 2012 elections, recommended the GOP embrace comprehensive immigration reform to shore up its shaky standing with minorities -- Latinos, in particular. Roy Beck, executive director of Numbers USA, which advocates lower numerical numbers on immigration, predicted a majority of Republican senators would oppose citizenship. Groups like Numbers USA are working to hold GOP senators in line. They sent 13,000 emails to Kentucky voters that claimed Paul's position was "more radical and pro-immigration than anything proposed by President Obama." The group has targeted Sen. Lindsey Graham, R-S.C., one of the "Gang of Eight" senators writing the Senate bipartisan bill, as a lawmaker who favors foreign workers over unemployed South Carolinians. Democrats from conservative-leaning states could also feel political heat. Beck said if five to 10 Democrats in the Senate oppose a bill, proponents would need 10 to 15 Republicans to reach the 60 votes needed to cut off debate and vote on legislation. "You do the math," Beck said. In 2007, an effort to cut off debate on a Senate immigration reform bill died on a 46-53 vote. But immigrant reform proponents, such as America's Voice, say there is a "tectonic shift" in the GOP, and the Democrats also have expanded their Senate majority to 53-45, plus two independents who caucus with them. They predict the Senate will muster the votes necessary to pass a reform bill. Still, it won't be easy. "We will have not only a few potholes, but a few near-death experiences along the way," said Frank Sharry, America's Voice executive director.

Progress disproves their non-uniques

Carrie Brown, Politico, 3/29/13, Immigration negotiations head closer to deal, dyn.politico.com/printstory.cfm?uuid=9774E0A0-7A36-400A-BB6A-867D147B8A6C

Senate negotiators moved closer to a bipartisan deal on immigration reform as interest groups and staff awaited sign off Friday from the Gang of Eight on a program for future low-skilled workers.

This **progress is the most positive sign yet** that the **senators will reach their goal** of unveiling a package when they return in early April from a two-week recess.

The visa program was the biggest obstacle in the Senate talks and differences between labor and business over how to craft it put the entire package in limbo just a week ago.

Several sources close to the talks told POLITICO that since the breakdown, labor, business and staff have worked to iron out some of the biggest issues, including wages and whether construction industry workers would be exempt from the program.

Of course, the Gang of Eight members have said that no deal is done until they agree on everything.

Sen. Charles Schumer told reporters in Nogales, Ariz., on Wednesday that the negotiators were on track and had 90 percent agreement on the entire package, which will include a pathway to citizenship and border security.

 “The bottom line is we are very close. I’d say we are 90 percent there,” Schumer said. “We have a few little problems to work on … but we’re very hopeful that we will meet our deadline.”

#### Top of the agenda and passage likely—Obama capital resolving obstacles—Congressional-lead and union cooperation key

Julie Pace, Associated press white house correspondent, 3/27/13, Obama: Immigration bill could pass by summer, www.timesunion.com/news/politics/article/Obama-back-at-forefront-of-immigration-debate-4389183.php

President Barack Obama pressed for swift action on a sweeping immigration bill Wednesday, saying last-minute obstacles are "resolvable" and predicting Congress could pass historic legislation by the end of the summer. In back-to-back interviews with Spanish-language television networks, Obama repeatedly voiced confidence in a bipartisan Senate group that appears to be on the cusp of unveiling a draft bill. And he said that while he is still prepared to step in with his own bill if talks break down, he doesn't expect that step to be necessary. "If we have a bill introduced at the beginning of next month as these senators indicate it will be, then I'm confident that we can get it done certainly before the end of the summer," Obama told Telemundo. While overhauling the nation's patchwork immigration laws is a top second term priority for the president, he has ceded the negotiations almost entirely to Congress. He and his advisers have calculated that a bill crafted by Capitol Hill stands a better chance of winning Republican support than one overtly influenced by the president. In his interviews Wednesday, Obama tried to stay out of the prickly policy issues that remain unfinished in the Senate talks, though he said a split between business and labor on wages for new low-skilled workers was unlikely to "doom" the legislation. "This is a resolvable issue," he said. The president also spoke Wednesday with Univision. His interviews followed a citizenship ceremony conducted Monday at the White House where he pressed Congress to "finish the job" on immigration, an issue that has vexed Washington for years. The president made little progress in overhauling the nation's fractured immigration laws in his first term, but he redoubled his efforts after winning re-election. The November contest also spurred some Republicans to drop their opposition to immigration reform, given that Hispanics overwhelmingly backed Obama. In an effort to keep Republicans at the negotiation table, Obama has stayed relatively quiet on immigration over the last month. He rolled out his immigration principles during a January rally in Las Vegas and made an impassioned call for overhauling the nation's laws during his early February State of the Union address, then purposely handed off the effort to lawmakers. The president has, however, privately called members of the Senate working group, and the administration is providing technical support to the lawmakers. The Gang of Eight is expected to unveil its draft bill when Congress returns from a two-week recess the week of April 8. Obama and the Senate group are in agreement on some core principles, including a pathway to citizenship for most of the 11 million illegal immigrants already in the country, revamping the legal immigration system and holding businesses to tougher standards on verifying their workers are in the country legally. But they're at odds over key issues. The Senate group wants the citizenship pathway to be contingent on securing the border, something Obama opposes. The president has also sidestepped the contentious guest-worker issue, which contributed to derailing immigration talks in 2007. The U.S. Chamber of Commerce and the AFL-CIO have reached significant agreements on a new visa program that would bring up to 200,000 lower-skilled workers to the country each year. But they reached a stalemate Friday over wages for the workers, with the labor union pushing for higher wages than the chamber has agreed to so far. Since then, talks have resumed and negotiators are "back on the right track," Ana Avendano, a lead AFL-CIO negotiator, said Wednesday. Avendano declined to offer specifics but said the chamber had moved off what she termed its insistence on "poverty-level wages" for the new workers. "We're very hopeful that we're moving," Avendano told reporters after a briefing for congressional staff on temporary-worker programs. While **Obama tries to keep the pressure on lawmakers** this week, four members of the Senate immigration group toured Arizona's border with Mexico to inspect the conditions there. Arizona's Republican Sens. John McCain and Jeff Flake were joined by Democratic Sens. Chuck Schumer of New York and Michael Bennet of Colorado for the border tour.

## Executive Action solves

#### Obama won’t do major immigration changes through XOs

Mark Krikorian, National Review Online, 8/15/12, The president’s unconstitutional DREAM amnesty gets rolling., cis.org/OpedsandArticles/DREAM-Amnesty-Begins-Krikorian-National-Review

The president knows what he’s doing is unconstitutional. We don’t have to read his mind to know this — he’s said it repeatedly. In July of last year, he told the National Council of La Raza, “The idea of doing things on my own is very tempting, I promise you, not just on immigration reform. But that’s not how our system works. That’s not how our democracy functions.” In September he told some journalists: I just have to continue to say this notion that somehow I can just change the laws unilaterally is just not true. We are doing everything we can administratively. But the fact of the matter is there are laws on the books that I have to enforce. And I think there’s been a great disservice done to the cause of getting the DREAM Act passed and getting comprehensive immigration passed by perpetrating the notion that somehow, by myself, I can go and do these things. It’s just not true.

#### Only Congressional action provides a pathway to citizenship

USCIS, US Citizenship and Immigration Service, 2013, Frequently Asked Questions, [www.uscis.gov/portal/site/uscis/menuitem.eb1d4c2a3e5b9ac89243c6a7543f6d1a/?vgnextchannel=3a4dbc4b04499310VgnVCM100000082ca60aRCRD&vgnextoid=3a4dbc4b04499310VgnVCM100000082ca60aRCRD](http://www.uscis.gov/portal/site/uscis/menuitem.eb1d4c2a3e5b9ac89243c6a7543f6d1a/?vgnextchannel=3a4dbc4b04499310VgnVCM100000082ca60aRCRD&vgnextoid=3a4dbc4b04499310VgnVCM100000082ca60aRCRD)

Q8: Does deferred action provide me with a path to permanent residence status or citizenship? A8: No. Deferred action is a form of prosecutorial discretion that does not confer lawful permanent resident status or a path to citizenship. Only the Congress, acting through its legislative authority, can confer these rights.

#### That means no bill

Elizabeth Dwoskin, 1/21/13, A Hard Line on Immigration Reform Lurks in Obama's Inaugural Speech, www.businessweek.com/articles/2013-01-21/the-hard-line-on-immigration-hidden-in-obamas-inaugural-speech

But that’s not the way it’s going to happen. What Obama didn’t say in his speech, and the thing Republicans will latch onto in the days ahead, is that he wants to tie the popular idea of raising visas for skilled workers to making broader changes in immigration laws—to which that Republicans strongly object. Last week, administration officials—speaking anonymously, of course—”leaked” to reporters some of the details of Obama’s immigration plan. For the first time, the White House made clear that the president won’t agree to raise the visa caps for highly skilled immigrants unless it’s part of an overall reform plan that includes a path to citizenship for many of the estimated 11 million immigrants living illegally in the U.S.

## Berger/no spillover

#### GOP backlash overwhelms political incentives for passage

Josh Kraushaar, National Journal, 2/28/13, President Obama’s Losing Hand on the Sequester Fight, www.nationaljournal.com/columns/against-the-grain/president-obama-s-losing-hand-on-the-sequester-fight-20130228

Obama has a lot more to gain politically on immigration and gun control -- winning long-term issues for Democrats -- and there’s plenty of evidence that congressional Democrats and Republicans are (gasp!) working together to forge bipartisan agreement. On gun control, liberal Sen. Chuck Schumer of New York and conservative Sen. Tom Coburn of Oklahoma are negotiating a possible deal that would expand background checks for gun sales, with signs that some of the Senate Republican Caucus would be on board. On immigration, Republican leaders are all but begging for a deal so they can improve their outreach with Hispanics well before the 2016 presidential election. Passing bipartisan immigration reform and some gun-control measures would provide Obama with a long-term legacy and provide Democrats with twin political victories of their own heading into the midterms. But these issues also hang at the mercy of congressional Republicans, who don’t have much goodwill with this White House. **Poisoning the well** on a sequester fight **focuses on the short game instead of the long**. Picking fights with Bob Woodward underscores how much this White House has gambled on the issue, and how much it has to lose. Already, Democrats are concerned there’s no backup plan on gun control if the Schumer-Coburn negotiations break down. **Reaching a deal on immigration**, meanwhile, **relies on winning over some skeptical House Republicans**, whom the president has been relentlessly bashing in this sequester fight. What’s ironic is that the much-maligned Congress is actually pretty close on crafting bipartisan legislation on long-intractable subjects of gun control and immigration. But it’s the White House, with the political attention span of a cable news cycle, that is risking losing it all for betting Obama will come out ahead in this messy fiscal fight.

## Link

SMRs face massive political pushback – costs capital

Tom Tanton, principal of T2 & Associates, a California-based energy technology and policy consulting group, 11 [“DOE Promotes Small Nuclear Reactors,” Heartland, August 29, http://news.heartland.org/newspaper-article/2011/08/29/doe-promotes-small-nuclear-reactors]

Department of Energy officials are promoting small modular reactors (SMR) as a way to reinvigorate U.S. nuclear technology. The federal government is likely to be the first domestic buyer of such technology, reducing the typical financing risk associated with anything nuclear. DOE and other agencies can then use the new reactors to help meet President Obama's goal of cutting the federal government's greenhouse gas emissions by 28 percent over the next decade. ¶ Government Investors¶ The federally owned Tennessee Valley Authority (TVA), the nation’s largest public utility, has signed a letter of intent to become the nation’s first electricity provider to build small modular reactors. Spokesmen for TVA and Babcock & Wilcox Nuclear Energy subsidiary Generation mPower in Charlotte, North Carolina said the letter signed in late May outlines plans for building up to six of the mini reactors at the authority’s vacant Clinch River site west of Knoxville. There is a long way to go before actual construction, however.¶ The reactors are smaller versions of nuclear power plants and generate less power. They can be assembled in factories rather than on-site, and are generally safer. They are essentially more modern versions of the reactors used on nuclear submarines for more than four decades. The Department of Energy (DOE) has plans to invest more than $450 million in developing two designs for the small reactors, a move officials hope will spur companies to build “off-the-shelf” reactors that could become a cost-effective alternative to other forms of energy.¶ But funding for the program is in doubt and faces congressional pushback. Obstacles include a rebound of antinuclear public sentiment in the aftermath of Japan's Fukushima power plant crisis, an uncertain federal budget, and the politically loaded question of where to store (or to reprocess) spent nuclear fuel. ¶ SMR Advantages¶ Support for small nuclear reactors centers on practicality, electric grid stability, and economics. ¶ "These small reactors make a lot of sense since many components, if not the entire reactor, would be factory-built [providing economies of scale],” said Herbert Inhaber, president of Risk Concepts in Las Vegas. “Nuclear also has the advantage of not being intermittent in energy supply, in contrast to some of the ideas being pushed by the Department of Energy."¶ Sustainable-energy researcher George Taylor agreed.¶ “DOE officials are undoubtedly correct about the game-changing potential of SMRs. Mass production of low-cost, sustainable sources of electricity could change the future of the world economy as much as assembly lines once changed the course of transportation.… SMRs can offer not only dramatic reductions in cost and construction time, but increase the margin of safety as well.” said Taylor. ¶ Government Picking Winners¶ “The downside of DOE’s proposal is that the government will pick winners and losers,” Taylor warned. “Of the many competing proposals which have been advanced by both industry and venture capital, DOE will spend $450 million to back two, thereby probably condemning the rest to oblivion before they ever complete a prototype.”

Plan gets linked to Obama

Jeff McMahon, Contributor, 12 [“Small Modular Nuclear Reactors By 2022 -- But No Market For Them,” Forbes, May 13, http://www.forbes.com/sites/jeffmcmahon/2012/05/23/small-modular-reactors-by-2022-but-no-market-for-them/]

DOE accepted bids through Monday for companies to participate in the Small Modular Reactor program. A number of reactor manufacturers submitted bids, including NuScale Power and a collaboration that includes Westinghouse and General Dynamic.¶ “This would allow SMR technology to overcome the hurdle of NRC certification – the ‘gold standard’ of the international nuclear industry, and would help in the proper development of the NRC’s regulatory framework to deal with SMRs,” according to Paul Genoa, Senior Director of Policy Development at the Nuclear Energy Institute.¶ Genoa’s comments are recorded in a summary released today of a briefing given to Senate staff earlier this month on prospects for small modular reactors, which have been championed by the Obama Administration.

New nuclear production causes massive political backlash and saps capital – any evidence pre 2011 is irrelevant

Alex Trembath, Policy Fellow in AEL’s New Energy Leaders Project, 11 [“Nuclear Power and the Future of Post-Partisan Energy Policy,” Lead Energy, Feb 4, http://leadenergy.org/2011/02/the-nuclear-option-in-a-post-partisan-approach-on-energy/]

Nuclear power is unique among clean energy technologies in that Democrats tend to be more hesitant towards its production than Republicans. Indeed, it has a reputation for its appeal to conservatives -Senators Kerry, Graham and Lieberman included provisions for nuclear technology in their ultimately unsuccessful American Power Act (APA) with the ostensible goal of courting Republican support. The urgency with which Democrats feel we must spark an energy revolution may find a perfect partner with Republicans who support nuclear power. But is there anything more than speculative political evidence towards its bipartisan viability?¶ If there is one field of the energy sector for which **certainty of political will** **and government policy is essential**, it is nuclear power. High up front costs for the private industry, extreme regulatory oversight and public wariness necessitate a committed government partner for private firms investing in nuclear technology. In a new report on the potential for a “nuclear renaissance,” Third Way references the failed cap-and-trade bill, delaying tactics in the House vis-a-vis EPA regulations on CO₂, and the recent election results to emphasize the difficult current political environment for advancing new nuclear policy. The report, “The Future of Nuclear Energy,” makes the case for political certainty:¶ “It is difficult for energy producers and users to estimate the relative price for nuclear-generated energy compared to fossil fuel alternatives (e.g. natural gas)–an essential consideration in making the major capital investment decision necessary for new energy production that will be in place for decades.”¶ Are our politicians willing to match the level of certainty that the nuclear industry demands? Lacking a suitable price on carbon that may have been achieved by a cap-and-trade bill removes one primary policy instrument for making nuclear power more cost-competitive with fossil fuels. The impetus on Congress, therefore, will be to shift from demand-side “pull” energy policies (that increase demand for clean tech by raising the price of dirty energy) to supply-side “push” policies, or industrial and innovation policies. Fortunately, there are signals from political and thought leaders that a package of policies may emerge to incentivize alternative energy sources that include nuclear power.¶ One place to start is the recently deceased American Power Act, addressed above, authored originally by Senators Kerry, Graham and Lieberman. Before its final and disappointing incarnation, the bill included provisions to increase loan guarantees for nuclear power plant construction in addition to other tax incentives. Loan guarantees are probably the most important method of government involvement in new plant construction, given the high capital costs of development. One wonders what the fate of the bill, or a less ambitious set of its provisions, would have been had Republican Senator Graham not abdicated and removed any hope of Republican co-sponsorship.¶ But **that was last year. The** **changing of the guard in Congress makes this a whole different game**, and the once feasible support for nuclear technology on either side of the aisle must be reevaluated. A New York Times piece in the aftermath of the elections forecast **a difficult road ahead for nuclear energy policy**, but did note Republican support for programs like a waste disposal site and loan guarantees.¶ Republican support for nuclear energy has roots in the most significant recent energy legislation, the Energy Policy Act of 2005, which passed provisions for nuclear power with wide bipartisan support. Reaching out to Republicans on policies they have supported in the past should be a goal of Democrats who wish to form a foundational debate on moving the policy forward. There are also signals that key Republicans, notably Lindsey Graham and Richard Lugar, would throw their support behind a clean energy standard that includes nuclear and CCS.¶ Republicans in Congress will find intellectual support from a group that AEL’s Teryn Norris coined “innovation hawks,” among them Steven Hayward, David Brooks and George Will. Will has been particularly outspoken in support of nuclear energy, writing in 2010 that “it is a travesty that the nation that first harnessed nuclear energy has neglected it so long because fads about supposed ‘green energy’ and superstitions about nuclear power’s dangers.”¶ The extreme reluctance of Republicans to cooperate with Democrats over the last two years is only the first step, as any legislation will have to overcome Democrats’ traditional opposition to nuclear energy. However, here again there is reason for optimism. Barbara Boxer and John Kerry bucked their party’s long-time aversion to nuclear in a precursor bill to APA, and Kerry continued working on the issue during 2010. Jeff Bingaman, in a speech earlier this week, reversed his position on the issue by calling for the inclusion of nuclear energy provisions in a clean energy standard. The Huffington Post reports that “the White House reached out to his committee [Senate Energy] to help develop the clean energy plan through legislation.” This development in itself potentially mitigates two of the largest obstacle standing in the way of progress on comprehensive energy legislation: lack of a bill, and lack of high profile sponsors. Democrats can also direct Section 48C of the American Recovery and Reinvestment Act of 2009 towards nuclear technology, which provides a tax credit for companies that engage in clean tech manufacturing.¶ Democrats should not give up on their policy goals simply because they no longer enjoy broad majorities in both Houses, and Republicans should not spend all their time holding symbolic repeal votes on the Obama Administration’s accomplishments. The lame-duck votes in December on “Don’t Ask, Don’t Tell,” the tax cut deal and START indicate that at least a few Republicans are willing to work together with Democrats in a divided Congress, and that is precisely what **nuclear energy** needs moving forward. It **will require an aggressive push from the White House**, and a concerted effort from both parties’ leadership, but the road for forging bipartisan legislation is not an impassable one.

## Winners win

#### Wins don’t spillover—capital is finite and decreases—prioritizing it is key to 100-day agenda success

David Schultz, professor at Hamline University School of Business, 1/22/13, Obama's dwindling prospects in a second term, www.minnpost.com/community-voices/2013/01/obamas-dwindling-prospects-second-term

Four more years for Obama. Now what? What does Barack Obama do in his second term and what can he accomplish? Simply put, his options are limited and the prospects for major success quite limited. Presidential power is the power to persuade, as Richard Neustadt famously stated. Many factors determine presidential power and the ability to influence including personality (as James David Barber argued), attitude toward power, margin of victory, public support, support in Congress, and one’s sense of narrative or purpose. Additionally, presidential power is temporal, often greatest when one is first elected, and it is contextual, affected by competing items on an agenda. All of these factors affect the political power or capital of a president. Presidential power also is a finite and generally decreasing product. The first hundred days in office – so marked forever by FDR’s first 100 in 1933 – are usually a honeymoon period, during which presidents often get what they want. FDR gets the first New Deal, Ronald Reagan gets Kemp-Roth, George Bush in 2001 gets his tax cuts. Presidents lose political capital, support But, over time, presidents lose political capital. Presidents get distracted by world and domestic events, they lose support in Congress or among the American public, or they turn into lame ducks. This is the problem Obama now faces. Obama had a lot of political capital when sworn in as president in 2009. He won a decisive victory for change with strong approval ratings and had majorities in Congress — with eventually a filibuster margin in the Senate, when Al Franken finally took office in July. Obama used his political capital to secure a stimulus bill and then pass the Affordable Care Act. He eventually got rid of Don’t Ask, Don’t Tell and secured many other victories. But Obama was a lousy salesman, and he lost what little control of Congress that he had in the 2010 elections.

#### Even if a confrontational strategy is key, that doesn’t mean the plan’s singular win spills-over—it’s more likely to undermine Obama’s careful strategy on that issue

Ryan Lizza, 1/7/13, Will Hagel Spike the G.O.P.’s Fever?, www.newyorker.com/online/blogs/newsdesk/2013/01/how-much-will-the-nomination-of-chuck-hagel-hurt-obamas-second-term-agenda.html

But Obama’s victory has made almost no difference in changing the psychology or incentives of the members of the G.O.P. who matter most: the House Republicans. The idea that a bloc of conservative, mostly Southern, Republicans would start to coöperate with the President on issues like tax policy and immigration may have rested on a faulty assumption. The past few weeks of fiscal-cliff drama have taught us that “breaking the fever” was the wrong metaphor. There is no one event—even the election of a President—that can change a political party overnight. Congress is a co-equal branch of government, and House Republicans feel that they have as much of a mandate for their policies as Obama does for his. Shouldn’t House Republicans care that their views on Obama’s priorities, like tax cuts for the rich and immigration, helped cost Romney the White House and will make it difficult for their party’s nominee to win in 2016? In the abstract, many do, but that’s not enough to change the voting behavior of the average House Republican, who represents a gerrymandered and very conservative district. A better metaphor for the coming battles with Congress may be what Woody Hayes, the college-football coach, famously called “three yards and a cloud of dust”: a series of grinding plays where small victories are earned only after lots of intense combat. While the fiscal-cliff showdown demonstrated that there’s potential for bipartisan deal-making in the Senate, passing any Obama priority through the House of Representatives is nearly impossible unless the political pressure is extremely intense. The fiscal-cliff bill passed the House only when Speaker John Boehner’s members realized that their only alternative was blowing up the settlement negotiated by Joe Biden and Mitch McConnell—and accepting all the blame and consequences. That episode offers the White House a general template for the coming fights over spending, immigration, and gun control—three issues where there is very little consensus between Obama and most House Republicans. Deals will have to be negotiated in the Senate and gain the imprimatur of some high-profile Republicans. Then a pressure campaign will have to be mounted to convince Boehner to move the legislation to the floor of the House under rules that allow it to pass with mostly Democratic votes. It’s easier to see how this could happen with the coming budgetary issues, which have deadlines that force action, than for the rest of Obama’s agenda, which is more likely than not to simply die in the House.

#### Err neg:

#### A. Winners win is a naïve media narrative

Jackie Calmes, NYTimes, 11/12/12, In Debt Talks, Obama Is Ready to Go Beyond Beltway, mobile.nytimes.com/2012/11/12/us/politics/legacy-at-stake-obama-plans-broader-push-for-budget-deal.xml

That story line, stoked by Republicans but shared by some Democrats, holds that Mr. Obama is too passive and deferential to Congress, a legislative naïf who does little to nurture personal relationships with potential allies in short, not a particularly strong leader. Even as voters re-elected Mr. Obama, those who said in surveys afterward that strong leadership was the most important quality for a president overwhelmingly chose Mr. Romney. George C. Edwards III, a leading scholar of the presidency at Texas A & M University who is currently teaching at Oxford University, dismissed such criticisms as shallow and generally wrong. Yet Mr. Edwards, whose book on Mr. Obama's presidency is titled "Overreach," said, "He didn't understand the limits of what he could do." "They thought they could continuously create opportunities and they would succeed, and then there would be more success and more success, and we'd build this advancing-tide theory of legislation," Mr. Edwards said. "And that was very naïve, very silly. Well, they've learned a lot, I think." "Effective leaders," he added, "exploit opportunities rather than create them." The budget showdown is an opportunity. But like many, it holds risks as well as potential rewards. "This election is the second chance to be what he promised in 2008, and that is to break the gridlock in Washington," said Kenneth M. Duberstein, a Reagan White House chief of staff, who voted for Mr. Obama in 2008 and later expressed disappointment. "But it seems like this is a replay of 2009 and 2010, when he had huge majorities in the House and Senate, rather than recognizing that 'we've got to figure out ways to work together and it's not just what I want.' " For now, at least, Republican lawmakers say they may be open to raising the tax bill for some earners. "We can increase revenue without increasing the tax rates on anybody in this country," said Representative Tom Price, Republican of Georgia and a leader of House conservatives, on "Fox News Sunday." "We can lower the rates, broaden the base, close the loopholes." The challenge for Mr. Obama is to use his postelection leverage to persuade Republicans or to help Speaker John A. Boehner persuade Republicans that a tax compromise is in their party's political interest since most Americans favor compromise and higher taxes on the wealthy to reduce annual deficits. Some of the business leaders the president will meet with on Wednesday are members of the new Fix the Debt coalition, which has raised about $40 million to urge lawmakers and their constituents to support a plan that combines spending cuts with new revenue. That session will follow Mr. Obama's meeting with labor leaders on Tuesday. His first trip outside Washington to engage the public will come after Thanksgiving, since Mr. Obama is scheduled to leave next weekend on a diplomatic trip to Asia. Travel plans are still sketchy, partly because his December calendar is full of the traditional holiday parties. Democrats said the White House's strategy of focusing both inside and outside of Washington was smart. "You want to avoid getting sucked into the Beltway inside-baseball games," said Joel Johnson, a former adviser in the Clinton White House and the Senate. "You can still work toward solutions, but make sure you get out of Washington while you are doing that." The president must use his leverage soon, some Democrats added, because it could quickly wane as Republicans look to the 2014 midterm elections, when the opposition typically takes seats from the president's party in Congress.

# 2NR

## bioterrorism likely

#### Highly likely – terrorist pursuit, lack of preparation and insecure bio-labs

Lambrecht 9 Bill, Post-Dispatch Washington Bureau Chief, 9-11, Talent keeps focus on terror, http://www.stltoday.com/stltoday/news/stories.nsf/politics/story/65FEB96462BF4CEC8625762D007F8D95?OpenDocument

This week, Talent was back in front of the cameras in Washington as part of a new effort to hasten preparations for what Talent's commission believes is the probability of another terrorist attack.

Last December, amid little fanfare, Talent's panel reached a frightening conclusion: "The commission believes that unless the world community acts decisively and with great urgency, it is more likely than not that a weapon of mass destruction will be used in a terrorist attack somewhere in the world by the end of 2013."

The weapon most likely to be used? A biological agent such as a virus, bacteria or disease-casusing toxin, the commission concluded.

Spelling out the threat at a news conference this week, Talent described the horrific scenario of a pickup truck blowing anthrax around the perimeter of Fourth of July celebrations in St. Louis.

"You're talking about killing a minimum of tens of thousands of people," he said.

READINESS STRESSED

National security has often become a partisan issue in recent years, but Talent says politics play no role in the mission of his panel: identifying threats and recommending ways to avoid them. Since early 2008, he has worked closely with the commission's chairman, former Sen. Bob Graham, a Florida Democrat. Last week, Talent stood alongside Sen. Joseph Lieberman, an Independent from Connecticut, to promote Lieberman's legislation, which aims to prepare for a biological attack.

In an interview, Talent explained why he believes that a biological attack is possible, if not **probable**. Terrorism is all but certain to continue, Talent said, pointing to intelligence obtained after 9/11 showing that al-Qaida is seeking destructive weapons.

"If you are ruthless enough, this is what you will gravitate to," he said. "It is perfectly logical that they will be trying to get this kind of weaponry."

Talent said his intention is not to frighten people, although his commission surely does so with its sobering possibilities.

"There are hundreds of thousands of people around the world trying to stop this," he said.

Talent argues for a much more focused effort by the government to get ready for an attack. After the new administration took power, he and Graham pushed to have Vice President Joe Biden put in charge of White House preparation. Graham said this week that they had received "no definite response to the request."

There is much to be done. For instance, the Government Accountability Office — the investigative arm of Congress — produced the eye-opening conclusion a year ago that two of the five American labs containing the world's most dangerous biological agents and disease pathogens had a "significant lack" of security.

## at: mueller

#### He has no data and only addresses attacks in the US

Jessica Stern 6, Lecturer in Public Policy at Harvard's John F. Kennedy School of Government, “Are We Safe Yet”, September 7, <http://www.foreignaffairs.com/discussions/roundtables/are-we-safe-yet>

I have four main problems with his argument, however. First, in evaluating the terrorist threat, we need to be concerned about not just the strikes that terrorists have managed to carry out, but also those they might be preparing or plotting. As Mueller suggests, we should indeed be skeptical consumers of the government's claims regarding sleeper cells and thwarted plots. But his claim that there are no or almost no terrorists within the United States is based on no sounder informational basis that the opposite claims of government officials.

Second, we need to be concerned about terrorist strikes around the globe, not just in the United States -- and the picture there is not reassuring. The most accurate and up-to-date figures for international terrorist incidents make it clear that such attacks have risen every year since 2001, and have increased sharply in the three years since the United States invaded Iraq. The most recent State Department report on the subject includes attacks in Iraq, which previous reports had largely excluded and which inflates the numbers somewhat. But even leaving Iraq out of the picture, it would be hard to defend the view that terrorism has been vanquished. And data collected by the private organization MIPT show a similar upward trend.

## AT counterforce

Counter-target is counter-value

Edward Corcoran, Senior Fellow on national security issues at GlobalSecurity, 11-29-2005, “Strategic nuclear Weapons and Deterrence,” Global Security, http://www.globalsecurity.org/wmd/library/report/2005/sndeterrence.htm

The presence of highly survivable mobile systems (including bombers on alert and nuclear-armed submarines) has essentially erased the distinction between countervalue and counterforce targeting. A counterforce strike by either adversary could destroy most of the opponent’s nuclear weapon systems, while still causing a staggering number of casualties – perhaps some 10 million deaths. But the opponent’s remaining systems would be more than sufficient to destroy the initiating nation – obviously in a countervalue strike since a counterforce strike no longer would make any sense. The originator would then have little choice but to respond. Such an exchange of countervalue attacks would kill some 50 million people in each country – a number basically impossible to comprehend -- and completely devastate the infrastructure and economy. This would be the realization of the Mutually Assured Destruction (MAD) with which we have lived with for a number of decades. A counterforce attack, no matter how effective, would essentially be committing national suicide. Although counterforce targeting was initially developed as a way of minimizing damage to both the country attacked and the home country, the development of survivable systems has eliminated this distinction. Counterforce strategies now significantly increase the number of weapons on alert and provide a hair trigger potential. But they do not offer any additional protection. War is avoided because both states recognize that MAD still exists, that the initiating state would ultimately be devastated. This is no more than what countervalue targeting offered to start with, at much lower force levels and much lower potential for disaster from faulty warnings.

## AT X-O

#### Obama’s policy—he’ll only go through Congress

Angie Holan, 5/5/11, Obama meets with Hispanic leaders to plot new strategy on immigration reform, [www.politifact.com/truth-o-meter/promises/obameter/promise/288/provide-a-path-to-citizenship-for-undocumented-imm/](http://www.politifact.com/truth-o-meter/promises/obameter/promise/288/provide-a-path-to-citizenship-for-undocumented-imm/)

In recent weeks, **Obama has hosted** three separate **meetings on immigration reform**, primarily with people who support his views on the matter. Representatives have included mayors, police chiefs, business executives, religious leaders, celebrities and members of the Congressional Hispanic Caucus. The statements from the White House after each meeting have echoed similar themes: that Obama would like fix the broken immigration system; that he was disappointed that DREAM Act (see update below) failed to pass last year; that he was working to improve the border enforcement and the legal immigration system; and that immigration reform requires legislative action via Congress.

#### XO can’t solve the impact

Ben Winograd, Immigration Impact, 8/15/12, Busting Myths About Deferred Action , immigrationimpact.com/2012/08/15/busting-myths-about-deferred-action/

Myth: Deferred action is “amnesty.” As we explained on Monday, deferred action is not “amnesty.” Recipients of deferred action are neither placed on a path to citizenship nor given any formal immigration status. Even though the government has temporarily pledged not to deport them, and they are considered to be lawfully present, they have no legal “right” to remain in the country. They cannot sponsor family members to come to the United States; may not travel abroad without receiving advance permission from the government; and do not receive a “green card.” Myth: Deferred action provides “immunity” from deportation. Many commentators have said that recipients of deferred action will receive “immunity” from deportation, implying that the government may not revoke the protection. In truth, deferred action is a purely discretionary form of relief that can be rescinded at any time by this or any future administration. Myth: Deferred action will allow undocumented immigrants to get jobs that could have gone to unemployed natives. Most of the immigrants who are currently or potentially eligible for deferred action are still in school (K-12) and will not be competing for jobs against anyone. In fact, only around half a million are not currently in school, which amounts to between 0.3% and 0.5% of the total U.S. workforce. Moreover, the DACA initiative will enable more undocumented youth to go to college and then to join the labor force as skilled workers. And economists have found that highly educated immigrant workers are not in job competition with the vast majority of native-born workers.