# 1NC

## 1

#### Financial incentives must be targeted at energy generation

O’Brien, Minister of State, Department for Energy and Climate Change, UK Parliament, 11/18/’8

(Mike, “Clause 20 — Terms and conditions,” <http://www.theyworkforyou.com/debate/?id=2008-11-18b.159.3>)

I have quite a lot still to say, so I shall try to give as full a reply, and as brief, as possible. Amendment (b) to Lords amendment No. 42 suggests we replace the term "financial incentives" in proposed new subsection (2)(a) with "payment". The use of the term "financial incentives" clarifies that the general purpose of the scheme is to incentivise low-carbon electricity generation through financial incentives, as opposed to other means such as a regulatory obligation or barrier-busting support, such as help with the planning system. We believe that such clarity is helpful in setting out beyond any doubt the primary purpose of the scheme. However, to give additional reassurances about our intentions, I would point to the powers under proposed new subsection (3) that specifies the term "payment" in all the key provisions that will establish the scheme. In others words, it is explicit that we are dealing with payments to small-scale generators. What is proposed will be a real feed-in tariff scheme.

#### R&D isn’t tied to energy production—plan is an indirect incentive

EIA, Energy Information Administration, Office of Energy Markets and End Use, U.S. DOE, ‘92

(“Federal Energy Subsidies: Direct and Indirect Interventions in Energy Markets,” ftp://tonto.eia.doe.gov/service/emeu9202.pdf)

Research and development. The budgetary cost of Government-funded research and development (R&D) is easy to measure. Determining the extent to which Government energy R&D is a subsidy is more problematic: often it takes the form of a direct payment to producers or consumers, but the payment is not tied to the production or consumption of energy in the present. If successful, Federal-applied R&D will affect future energy prices and costs, and so could be considered an indirect subsidy.

#### Vote Neg—tons of bidirectional mechanisms impact energy tech in ways that could increase production—only direct financial disbursements for increased production create a predictable and manageable topic

EIA, Energy Information Administration, Office of Energy Markets and End Use, U.S. DOE, ‘92

(“Federal Energy Subsidies: Direct and Indirect Interventions in Energy Markets,” ftp://tonto.eia.doe.gov/service/emeu9202.pdf)

In some sense, most Federal policies have the potential to affect energy markets. Policies supporting economic stability or economic growth have energy market consequences; so also do Government policies supporting highway development or affordable housing. The interaction between any of these policies and energy market outcomes may be worthy of study. However, energy impacts of such policies would be incidental to their primary purpose and are not examined here. Instead, this report focuses on Government actions whose prima facie purpose is to affect energy market outcomes, whether through financial incentives, regulation, public enterprise, or research and development.

## 2

#### Fusion is a fake cornucopian fantasy that props up productivism

Zehner 12

Green illusions,

Ozzie Zehner is the author of Green Illusions and a visiting scholar at the University of California, Berkeley. His recent publications include public science pieces in Christian Science Monitor, The American Scholar, Bulletin of the Atomic Scientists, The Humanist, The Futurist, and Women’s Studies Quarterly. He has appeared on PBS, BBC, CNN, MSNBC, and regularly guest lectures at universities. Zehner’s research and projects have been covered by The Sunday Times, USA Today, WIRED, The Washington Post, Business Week and numerous other media outlets. He also serves on the editorial board of Critical Environmentalism.

Zehner primarily researches the social, political and economic conditions influencing energy policy priorities and project outcomes. His work also incorporates symbolic roles that energy technologies play within political and environmental movements. His other research interests include consumerism, urban policy, environmental governance, international human rights, and forgeries.

Zehner attended Kettering University (BS -Engineering) and The University of Amsterdam (MS/Drs – Science and Technology Studies). His research was awarded with honors at both institutions. He lives in San Francisco.

Cold Fusion When two light atomic nuclei fuse into one, they release a great deal of heat. Such reactions power the sun. Nevertheless, facilitating this reaction on a smaller scale at a lower temperature to capture the power would be an impressive feat. In fact, there's no plausible explanation for electrochemical cold fusion within the existing laws of physics, but that's only one limitation of this energy generation scheme, and perhaps not the most problematic. The larger hurdle facing cold-fusion researchers is economic. Cold-fusion research funding dried up following embarrassing hoax discoveries in the field, which led remaining researchers to rebrand their work as "low-energy nuclear reactions." The small lingering stream of cold-fusion funding now trickles down to laboratories outside the mainstream. There are a couple more plausible high-temperature fusion proposals—hydrogen bombs work on this principle—but efforts to scale them down for utilities are dreadfully far from commercialization. An international collaborative team, named iter, originally planned to complete a prototype reactor core in 2016, but the project is running over budget and its organizers have pushed back the deadline multiple times. Once completed, scientists plan to take twenty years to study iter's fusion behavior, safety requirements, material characteristics, and related issues before venturing to build a functioning power plant.7 Fusion comes with a myth, too, if somewhat tedious: There's no need to worry about energy consumption or its side effects since fusion will eventually deliver plentiful energy without the headaches. Fusion proponents cough up various time frames for their optimistic scenarios, which usually pool around the thirty-year mark. Unfortunately, expectations for a fusion-powered planet have been thirty years away for quite some time. First in the 1950s, then in the 1960s, the 1970s, the 1980s, the 1990s, the 2000s, and well ... today fusion power is still about thirty years away, as its most staunch supporters will affirm with a straight face. So as a general rule, whenever anyone attempts to defend the existing energy establishment by playing the fusion card, you might choose to disregard anything that thereafter happens to fall out of their mouth. Fusion may be an idea worth researching further, but it is most certainly not a basis for public energy policy today. Anyone who suggests that it is, probably has something up their sleeve. If by some stroke of luck fusion should ever prove to become the cheap and available energy source its proponents insist it will become, you are invited to pull this book from your shelf and drop it in the trash—along with the rest of your nonfiction books. A world with inexpensive and scalable fusion would initiate a reset on every level of human and environmental interaction (along with some unintended consequences to be sure). But for now, please carry on.

#### The system’s nsustainable – debt, offshoring, financialization, eco – only shift from EMPIRE to MULTITUDES averts extinction

Shor 10

<http://www.stateofnature.org/locatingTheContemporary.html>

Fran Shor teaches in the History Department at Wayne State University. He is the author of Dying Empire: US Imperialism and Global Resistance (Routledge 2010).

Attributing the debilitation of the U.S. economy to a mortgage crisis or the collapse of the housing market misses the truly epochal crisis in the world economy and, indeed, in capitalism itself. As economist Michael Hudson contends, "the financial 'wealth creation' game is over. Economies emerged from World War II relatively free of debt, but the 60-year global run-up has run its course. Financial capitalism is in a state of collapse, and marginal palliatives cannot revive it." According to Hudson, among those palliatives is an ironic variant of the IMF strategies imposed on developing nations. "The new twist is a variant on the IMF 'stabilization' plans that lend money to central banks to support their currencies - for long enough to enable local oligarchs and foreign investors to move their savings and investments offshore at a good exchange rate." The continuity between these IMF plans and even the Obama administration's fealty to Wall Street can be seen in the person of Lawrence Summers, now the chief economic advisor to Obama. As further noted by Hudson, "the Obama bank bailout is arranged much like an IMF loan to support the exchange rate of foreign currency, but with the Treasury supporting financial asset prices for U.S. banks and other financial institutions ... Private-sector debt will be moved onto the U.S. Government balance sheet, where "taxpayers" will bear losses." [4] So, here we have another variation of the working poor getting sapped by the economic elite! In fact, one estimate of U.S. federal government support to the elite financial institutions is in the range of $10 trillion dollars, a heist of unimaginable proportions. [5] Given the massive indebtedness of the United States, its reliance of foreign support of that debt by countries like China, which has close to $2 trillion tied up in treasury bills and other investments, a long-term crisis of profitability, overproduction, and offshoring of essential manufacturing, it does not appear that the United States and, perhaps, even the capitalist system can avoid collapse. Certainly, there are Marxist economists and world-systems analysts who are convinced that the collapse is inevitable, albeit it may take several generations to complete. The question becomes whether a dying system can be resuscitated or, if something else can be put in its place. One of the most prominent world systems scholars, Immanuel Wallerstein, puts the long-term crisis of capitalism and the alternatives in the following perspective: Because the system we have known for 500 years is no longer able to guarantee long-term prospects of capital accumulation, we have entered a period of world chaos. Wild (and largely uncontrollable) swings in the economic, political, and military situations are leading to a systemic bifurcation, that is, to a world collective choice about the kind of new system the world will construct over the next fifty years. The new system will not be a capitalist system, but it could be one of two kinds: a different system that is equally or more hierarchical and inequalitarian, or one that is substantially democratic and equalitarian. [6] What Wallerstein overlooks is the possibility that a global crisis of capitalism with its continuous overexploitation and maldistribution of essential resources, such as water, could lead to a planetary catastrophe. [7] While Wallerstein and many of the Marxist critics of capitalism correctly identify the long-term structural crisis of capitalism and offer important insights into the need for more democratic and equalitarian systems, they often fail to realize other critical predicaments that have plagued human societies in the past and persist in even more life-threatening ways today. Among those predicaments are the power trips of civilization and environmental destructiveness. Such power trips can be seen through the sedimentation of power-over in the reign of patriarchal systems and an evolutionary selection for that power-over which contaminates society and social relationships. Certainly, many of those predicaments can also be attributed to a 5000 year history of the intersection of empire and civilization. Anthropologist Kajsa Ekholm Friedman analyzes that intersection and its impact in the Bronze Age as an "imperialist project..., dependent upon trade and ultimately upon war." [8] However, over the long rule of empire and especially within the last 500 years of the global aspirations of various empires, "no state or empire," observes historian Eric Hobsbawm, "has been large, rich, or powerful enough to maintain hegemony over the political world, let alone to establish political and military supremacy over the globe." [9] While war and trade still remain key components of the imperial project today and pretensions for global supremacy persist in the United States, what is just as threatening to the world as we know it is the overexploitation and abuse of environmental resources. Jared Diamond brilliantly reveals how habituated attitudes and values precluded the necessary recognition of environmental degradation which, in turn, led to the collapse of vastly different civilizations, societies, and cultures throughout recorded history. [10] He identifies twelve contemporary environmental challenges which pose grave dangers to the planet and its inhabitants. Among these are the destruction of natural habitats (rainforests, wetlands, etc.); species extinction; soil erosion; depletion of fossil fuels and underground water aquifers; toxic pollution; and climate change, especially attributable to the use of fossil fuels. [11] U.S. economic imperialism has played a direct role in environmental degradation, whether in McDonald's resource destruction of rainforests in Latin America, Coca-Cola's exploitation of underground water aquifers in India, or Union Carbide's toxic pollution in India. Beyond the links between empire and environmental destruction, unless we also clearly understand and combat the connections between empire and unending growth with its attendant "accumulation by dispossession", we may very well doom ourselves to extinction. According to James Gustave Speth, Dean of the Yale School of Forestry and Environmental Studies, the macro obsession with growth is also intimately related to our micro habituated ways of living. "Parallel to transcending our growth fetish," Speth argues, "we must move beyond our consumerism and hyperventilating lifestyles ... This reluctance to challenge consumption has been a big mistake, given the mounting environmental and social costs of American "affluenza," extravagance and wastefulness." [12] Of course, there are significant class and ethnic/racial differences in consumerism and lifestyle in the United States. However, even more vast differences and inequities obtain between the U.S. and the developing world. It is those inequities that lead Eduardo Galeano to conclude that "consumer society is a booby trap. Those at the controls feign ignorance, but anybody with eyes in his head can see that the great majority of people necessarily must consume not much, very little, or nothing at all in order to save the bit of nature we have left." [13] Finally, from Vandana Shiva's perspective, "unless worldviews and lifestyles are restructured ecologically, peace and justice will continue to be violated and, ultimately, the very survival of humanity will be threatened." [14] For Shiva and other global agents of resistance, the ecological and peace and justice imperatives require us to act in the here and now. Her vision of "Earth Democracy" with its emphasis on balancing authentic needs with a local ecology provides an essential guidepost to what we all can do to stop the ravaging of the environment and to salvage the planet. As she insists, "Earth Democracy is not just about the next protest or next World Social Forum; it is about what we do in between. It addresses the global in our everyday lives, our everyday realities, and creates change globally by making change locally." [15] The local, national, and transnational struggles and visions of change are further evidence that the imperial project is not only being contested but also being transformed on a daily basis. According to Mark Engler, "The powerful will abandon their strategies of control only when it grows too costly for them to do otherwise. It is the concerted efforts of people coming together in local communities and in movements spanning borders that will raise the costs. Empire becomes unsustainable ... when the people of the world resist." [16] Whether in the rural villages of Brazil or India, the jungles of Mexico or Ecuador, the city squares of Cochabama or Genoa, the streets of Seattle or Soweto, there has been, and continues to be, resistance around the globe to the imperial project. If the ruling elite and many of the citizens of the United States have not yet accepted the fact that the empire is dying and with it the concentric circles of economic, political, environmental, and civilizational crises, the global multitudes have been busy at work, digging its future grave and planting the seeds for another possible world. [17]

#### Reject the aff’s neoliberal ideology.

#### Energy debates should focus on CRITIQUE of broad structures INSTEAD of producitivist fixes. Our ROLE OF THE BALLOT is best EVEN IF they win some truth claims – we must SHIFT THE FRAME

Zehner 12

Green illusions,

Ozzie Zehner is the author of Green Illusions and a visiting scholar at the University of California, Berkeley. His recent publications include public science pieces in Christian Science Monitor, The American Scholar, Bulletin of the Atomic Scientists, The Humanist, The Futurist, and Women’s Studies Quarterly. He has appeared on PBS, BBC, CNN, MSNBC, and regularly guest lectures at universities. Zehner’s research and projects have been covered by The Sunday Times, USA Today, WIRED, The Washington Post, Business Week and numerous other media outlets. He also serves on the editorial board of Critical Environmentalism. Zehner primarily researches the social, political and economic conditions influencing energy policy priorities and project outcomes. His work also incorporates symbolic roles that energy technologies play within political and environmental movements. His other research interests include consumerism, urban policy, environmental governance, international human rights, and forgeries. Zehner attended Kettering University (BS -Engineering) and The University of Amsterdam (MS/Drs – Science and Technology Studies). His research was awarded with honors at both institutions. He lives in San Francisco.

Since this book represents a critique of alternative energy, it may seem an unlikely manual for alternative-energy proponents. But it is. Building alternative-energy infrastructure atop America's present economic, social, and cultural landscape is akin to building a sandcastle in a rising tide. A taller sand castle won't help. The first steps in this book sketch a partial blueprint for making alternative-energy technologies relevant into the future. Technological development alone will do little to bring about a durable alternative-energy future. Reimagining the social conditions of energy use will. Ultimately, we have to ask ourselves if environmentalists should be involved in the business of energy production (of any sort) while so many more important issues remain vastly underserved. Over the next several decades, it's quite likely that our power production cocktail will look very much like the mix of today, save for a few adjustments in market share. Wind and biofuel generation will become more prevalent and the stage is set for nuclear power as well, despite recent catastrophes. Nevertheless, these changes will occur over time—they will seem slow. Every power production mechanism has side effects and limitations of its own, and a global shift to new forms of power production simply means that humanity will have to deal with new side effects and limitations in the future. This simple observation seems to have gotten lost in the cheerleading for alternative-energy technologies. The mainstream environmental movement should throw down the green energy pom-poms and pull out the bifocals. It is entirely reasonable for environmentalists to criticize fossil-fuel industries for the harms they instigate. It is, however, entirely unreasonable for environmentalists to become spokespeople for the next round of ecological disaster machines such as solar cells, ethanol, and battery-powered vehicles. Environmentalists pack the largest punch when they instead act as power production watchdogs (regardless of the production method); past environmentalist pressures have cleaned the air and made previously polluted waterways swimmable. This watchdog role will be vital in the future as biofuels, nuclear plants, alternative fossil fuels, solar cells, and other energy technologies import new harms and risks. Beyond a watchdog role, environmentalists yield the greatest progress when addressing our social fundamentals, whether by supporting human rights, cleaning up elections, imagining new economic structures, strengthening communities, revitalizing democracy, or imagining more prosperous modes of consumption. Unsustainable energy use is a symptom of suboptimal social conditions. Energy use will come down when we improve these conditions: consumption patterns that lead to debt and depression; commercials aimed at children; lonely seniors stuck in their homes because they can no longer drive; kids left to fend for themselves when it comes to mobility or sexuality; corporate influence trumping citizen representation; measurements of the nation's health in dollars rather than well-being; a media concerned with advertising over insight, and so on. These may not seem like environmental issues, and they certainly don't seem like energy policy issues, but in reality they are the most important energy and environmental issues of our day. Addressing them won't require sacrifice or social engineering. They are congruent with the interests of many Americans, which will make them easier to initiate and fulfill. They are entirely realistic (as many are already enjoyed by other societies on the planet). They are, in a sense, boring. In fact, the only thing shocking about them is the degree to which they have been underappreciated in contemporary environmental thought, sidelined in the media, and ignored by politicians. Even though these first steps don't represent a grand solution, they are necessary preconditions if we intend to democratically design and implement more comprehensive solutions in the future. Ultimately, clean energy is less energy. Alternative-energy alchemy has so greatly consumed the public imagination over recent decades that the most vital and durable environmental essentials remain overlooked and underfunded. Today energy executives hiss silver-tongued fairy tales about clean-coal technologies, safe nuclear reactors, and renewable sources such as solar, wind, and biofuels to quench growing energy demands, fostering the illusion that we can maintain our expanding patterns of energy consumption without consequence. At the same time, they claim that these technologies can be made environmentally, socially, and politically sound while ignoring a history that has repeatedly shown otherwise. If we give in to accepting their conceptual frames, such as those pitting production versus production, or if we parrot their terms such as clean coal, bridge fuels, peacetime atom, smart growth, and clean energy, then we have already lost. We forfeit our right to critical democratic engagement and instead allow the powers that be to regurgitate their own terms of debate into our open upstretched mouths. Alternative-energy technologies don't clean the air. They don't clean the water. They don't protect wildlife. They don't support human rights. They don't improve neighborhoods. They don't strengthen democracy. They don't regulate themselves. They don't lower atmospheric carbon dioxide. They don't reduce consumption. They produce power. That power can lead to durable benefits, but only given the appropriate context. Ultimately, it's not a question of whether American society possesses the technological prowess to construct an alternative-energy nation. The real question is the reverse. Do we have a society capable of being powered by alternative energy? The answer today is clearly no. But we can change that. Future environmentalists will drop solar, wind, biofuels, nuclear, hydrogen, and hybrids to focus instead on women's rights, consumer culture, walkable neighborhoods, military spending, zoning, health care, wealth disparities, citizen governance, economic reform, and democratic institutions. As environmentalists and global citizens, it's not enough to say that we would benefit by shifting our focus. Our very relevance depends on it.

## 3

#### Obama will dominate debt ceiling negotiations now—fiscal cliff fights prove his capital is critical

John Judis, The New Republic, 1/3/13, Obama Wasn't Rolled. He Won!, www.tnr.com/blog/plank/111573/obama-didnt-get-rolled-the-fiscal-cliff-in-fact-he-won

Secondly, Obama scored a major political triumph by getting Republicans to agree to raise back tax rates on the wealthy. Since 1978, Republicans have focused their popular appeal on the premise that cutting taxes on the wealthy – and secondarily everyone else -- will encourage growth. By putting Republicans in a position where, in order to protect tax cuts for the wealthy, they had to risk increasing taxes for everyone by letting the country go over the cliff, Obama and the Democrats robbed them of what has been their defining issue. They are now left with advocating spending cuts, which, as it turns out, are only popular in the abstract.

In negotiating over the fiscal cliff, Obama also did something that he failed to do during the summer of 2011: He campaigned publicly. He framed the issues. He put the Republicans on the defensive in a way that he failed to do during much of his first term. Fifty years ago, perhaps, a Democratic president could have relied on constituent groups, led by the labor movement, to carry the battle for liberal initiatives, but while these groups are important, they don’t carry the same kind of clout they used to. And they don’t have the money to compete with Republican and conservative groups. But the President can command the public’s attention, and Obama did--right up through the final days of voting.

There are arguments to be made about whether Obama got enough from the negotiations. Could he have held out for a $250,000 floor on increased tax rates? Perhaps, but he had to make some concession and he retained the central political principle, while keeping three-fourths of the promised revenue. More important, could Obama have gotten an agreement on the debt ceiling or the sequester instead of postponing these battles? That’s a more serious issue, but my sense is that with Republicans still controlling the House, Obama did not have the power to force Senate and House Republicans into a last minute deal on these issues without making very unfortunate concessions on spending and taxes.

With a new House and Senate, Obama stands a good chance of winning these battles in the months to come -- if he continues to conduct these negotiations as political campaigns and not as backroom Washington affairs. The fiscal cliff deal took tax rates out of the discussion. What’s left are spending cuts. If Obama allows the Republicans and obnoxious groups like Fix the Debt to frame the issues, he’ll be in trouble. And he did seem to fall into this trap briefly when he proposed changing the cost of living index for Social Security. But if he reminds the public that what the Republicans and their allies want to do is cut their Medicare and Social Security, he and the Democrats should be in good shape.

As for the Republicans, the debate over the fiscal cliff, like the debate last year over the debt limit, revealed serious divisions within the party and its rank-and-file that Obama and the Democrats could exploit over the next months. There are at least three different kinds of divisions that have become visible. First is between the Senate and the House. Senate Republicans, who are in a minority, have proven more amenable to compromise on fiscal issues. Unlike most Republican House members, many senators can’t count on being re-elected by solid Republicans majorities. McConnell himself comes from a state where Democrats still hold most of the state offices.

Secondly, there is a regional division in the party between the deep South, which contains many of the diehard House Republicans, and the Republicans from the Northeast, industrial Midwest, and the Far West. In the House vote on the fiscal cliff, Republican House members from the deep South opposed it by 83 to 10, while Republicans from the Northeast favored it by 24 to one, and those from the Far West by 17 to eight. After the Republican leadership refused to bring a Sandy hurricane relief bill to the floor before the end of the session – effectively killing it – New York Republican Peter King called on New York and New Jersey Republicans to withhold donations to the GOP. New Jersey Governor Chris Christe blew his top at the House Republicans.

Third, there is a division among Republican lobbies, political organizations and interest groups that surfaced in the wake of the election and once again this week. It’s not easy to define, but it runs between pro-business conservatives, on the one hand, and the right-wing libertarians of the Tea Party and Club for Growth and their billionaire funders. Grover Norquist and Americans for Tax Reform gave their approval the Senate bill. The Chamber of Commerce grudgingly endorsed the final bill, and the National Federation of Independent Business said the tax provisions were acceptable. The Club for Growth, the Koch Brothers’ Americans for Prosperity, FreedomWorks (which itself has fallen under the sway of its most ideological elements), and the Tea Party Patriots opposed any compromise.

These divisions don’t necessarily augur the kind of formal split that wrecked the Whig Party in the 1850s. Nor do they suggest widespread defection of Republicans into the Democratic Party as happened during the 1930s. There is still far too much distance between, say, McConnell and Democratic Majority Leader Harry Reid. But they do suggest that a process of erosion is under way that will weaken the Republicans’ ability to maintain a united front against Democratic initiatives. That could happen in the debates over the sequester and debt ceiling if Obama and the Democrats make the kind of public fuss that they did over fiscal cliff.

#### Plan causes backlash—political support for fusion funding has evaporated

Broad, 9/29

(NYT Columnist, “So Far Unfruitful, Fusion Project Faces a Frugal Congress,” http://www.nytimes.com/2012/09/30/science/fusion-project-faces-a-frugal-congress.html?\_r=2&pagewanted=all)

For more than 50 years, physicists have been eager to achieve controlled fusion, an elusive goal that could potentially offer a boundless and inexpensive source of energy. To do so, American scientists have built a giant laser, now the size of a football stadium, that takes target practice on specks of fuel smaller than peppercorns. The device has so far cost taxpayers more than $5 billion, making it one of the most expensive federally financed science projects ever. But so far, it has not worked. Unfortunately, the due date is Sunday, the last day of the fiscal year. And Congress, which would need to allocate more money to keep the project alive, is going to want some explanations. “We didn’t achieve the goal,” said Donald L. Cook, an official at the National Nuclear Security Administration who oversees the laser project. Rather than predicting when it might succeed, he added in an interview, “we’re going to settle into a serious investigation” of what caused the unforeseen snags. The failure could have broad repercussions not only for the big laser, which is based at the Lawrence Livermore National Laboratory in California, but also for federally financed science projects in general. On one hand, the laser’s defenders point out, hard science is by definition risky, and no serious progress is possible without occasional failures. On the other, federal science initiatives seldom disappoint on such a gargantuan scale, and the setback comes in an era of tough fiscal choices and skepticism about science among some lawmakers. The laser team will have to produce a report for Congress about what might have gone wrong and how to fix it if given more time.

#### That kills the deal—Obama’s focusing capital on debt talks

Chris Cillizza, Aaron Blake, 12/11/12, What Susan Rice can tell us about Obama’s second term, www.washingtonpost.com/blogs/the-fix/wp/2012/12/11/what-susan-rice-can-tell-us-about-obamas-second-term/

President Obama continues to mull whether to nominate Susan Rice to be Secretary of State. How he decides on that question will tell us a lot about how he plans to approach his second term in office. Two things have become abundantly clear since the election: 1) Obama likes Rice quite a bit and seems inclined to pick her as the successor to outgoing Secretary of State Hillary Clinton, and 2) Opposition to Rice on Capitol Hill is real and lasting. (Sen. John McCain’s move to the Foreign Relations committee makes that abundantly clear.) Given those two realities, what does Obama do? Down one path, he nominates Rice despite the fact that Republicans like McCain (Ariz.), Sen. Lindsey Graham (S.C.) and even Susan Collins (Maine) have made clear that doing so will mean a nasty confirmation fight, and in spite of the fact that many Democrats are (privately) leery of having to vote on a pick who has generated controversy even before she is nominated. (Remember that Senate Democrats have to defend 20 seats to 14 for Republicans in 2014, including those in hostile territory like Louisiana, Arkansas, South Dakota and West Virginia.) That is best described as the damn-the-torpedos path — in two ways. First, the Rice nomination would likely land right in the middle of the final fiscal cliff negotiations and could poison any good will built up with congressional Republicans. It would also make clear to Republicans that Obama the deal-cutter is gone, upping the ante even more on the fiscal cliff talks. Even if Obama does wait until early 2013 to pick a nominee, he would have to massage it around his inauguration in late January and the coming debt ceiling fight scheduled for late February. Either way, it wouldn’t be easy. Second, it would put Senate Democrats out on a limb they have made abundantly clear they don’t want to be on. That would be a clear signal to his party that Obama is, first and foremost, all about Obama — something congressional Democrats have long suspected. If Obama does go forward with Rice, rallying his party to some of his preferred second-term initiatives could get very complicated. In short: The reservoir of good will would be drained very quickly. Then there is the path of least resistance. In that scenario, Obama goes with Massachusetts Sen. John Kerry as Secretary of State and finds another, less controversial post for Rice. A nomination fight at the start of his second term is almost certainly dodged — people like Collins have relentlessly insisted that Kerry would be confirmed without any trouble — but Obama could (and likely would) be painted in some circles as toothless. A narrative would build — although it’s not clear whether it would be sustained — that Obama was giving in (again) to Republicans and we might even see a few “Is the liberal base abandoning Obama” stories. After all, Obama is a month removed from a convincing reelection victory, and Republicans are in the midst of an examination of their party and its principles. Now is a time to be bold, not a time to capitulate to the threats of the likes of McCain, the argument from the left will go. (The Arizona senator remains a loathed figure by the Democratic base following his 2008 bid for president.) It’s not clear how widespread that dissatisfaction might be. Bypassing Rice for Kerry is different than bypassing Rice for, say, McCain. Undoubtedly there would be some element of the liberal left unhappy, but how many “real people” would sour on Obama and his policies if he made the switch? On the other hand, stepping back from the brink on Rice would also likely be taken as a signal that the ever-pragmatic Obama wants to spend his political capital on things like fixing the nation’s debt problem and reforming the country’s immigration system rather than on a Cabinet nominee — even one as prominent as Secretary of State.

#### Negotiation failure causes debt ceiling failure and global economic collapse—Obama will take us over before capitulating to the GOP

Ezra Klein, WaPo, 1/2/13, Calm down, liberals. The White House won., www.washingtonpost.com/blogs/wonkblog/wp/2013/01/02/calm-down-liberals-the-white-house-got-a-good-deal-on-the-fiscal-cliff/

All of which is leaving me a little unnerved. Because after diving deep into the arguments that Democrats and Republicans are using to justify this deal to their members, I actually think the White House got a pretty good outcome, and I think they’re well positioned going into the next negotiation. All arguments, on all sides of the issue, come down to the debt ceiling. The liberals just don’t believe the White House can hold firm against the GOP’s threats to push the country into default. The conservatives, well, they believe the exact same thing. I disagree. As I see it, there are now three possible outcomes in the debt-ceiling fight: 1) The White House is right, and they’ll be able to enforce a roughly 1:1 ratio of tax increases to spending cuts in the next deal; 2) The Republicans are right, and they’ll be able to get major spending cuts solely in return for raising the debt ceiling; 3) Both sides are wrong, and we breach the debt ceiling, unleashing economic havoc. Of these three possibilities, I see #1 as the likeliest, #3 as the second-most likely, and #2 as vanishing unlikely. That is to say, I think it’s far more plausible that we breach the debt ceiling than that the White House agrees to raise the debt ceiling as part of a deal that includes huge spending cuts but no significant tax increases. But likelier than either outcome is that Republicans agree to a deal that includes revenue-generating tax reform. Here’s why. First, Republicans make a big show of being unreasonable, but they’re not nearly as crazy as the tea party would have you believe. In the end, they weren’t even willing to go over the fiscal cliff. The debt ceiling would do far more damage to the economy than the fiscal cliff, and Republicans would receive far more of the blame. Many thought President Obama actually wanted to go over the fiscal cliff in order to raise taxes, and so it was possible Republicans could’ve portrayed the breakdown in negotiations as a Democratic strategy. No one thinks that the White House wants to breach the debt ceiling, and so Republicans will take all the blame. Second, there’s no evidence yet that the Republicans will even be able to name their price on the debt ceiling. House Speaker John Boehner has his dollar-for-dollar principle, which implies more than a trillion dollars in cuts to raise the debt ceiling through 2014. But Republicans haven’t named anywhere near a trillion dollars of further cuts in any of the fiscal cliff negotiations. They’ve been afraid to take direct aim at Social Security and Medicare, and while they can call for deep cuts to Medicaid, everyone knows that’s a nonstarter for the White House in the age of Obamacare. Meanwhile, domestic discretionary spending has already been cut to the bone, and Republicans want to increase defense spending. So what’s their demand going to be, exactly? Will they force America into default on behalf of spending cuts they can’t name? Third, a consequence of the 2012 presidential election, in which Mitt Romney argued for capping deductions and exclusions to pay for his tax cuts, and of the early fiscal cliff negotiations, in which Boehner argued for raising revenue through tax reform, is that Republican policy elites, in my experience, really don’t hate revenue-raising tax reform all that much. Raising any revenues is a bit of a problem for them as it permits the growth of government, but it’s really raising tax rates where they’ve talked themselves into hardline opposition. So they may be willing to strike a deal on this. Fourth, I don’t think the White House has a shred of credibility when they say they won’t negotiate over the debt ceiling. They may not call what they’re about to do negotiating over the debt ceiling, but that’ll be what they’re doing. That said, I’m quite convinced that they don’t intend to be held hostage over the debt ceiling. As a former constitutional law professor, the president sees himself as a steward of the executive branch and is deeply hostile to setting the precedent that congressional minorities can hold presidents hostage through the debt ceiling. At some point in the coming talks, Boehner or McConnell or both are going to realize that the White House really, seriously will not accept a bargain in which what they “got” was an increase in the debt limit, and so they’re going to have to decide at that point whether to crash the global economy. Fifth, the constellation of economic interest groups that converge on Washington understands the debt ceiling better than they did in 2011, are becoming more and more tired of congress’s tendency to negotiate by threatening to trigger economic catastrophes, and is getting better at knowing who to blame. It’s not a meaningless sign that John Engler, the former Republican Governor of Michigan who now leads the Business Roundtable, called for a five-year solution to the debt ceiling. It’s worth keeping this in perspective: All it means is that the White House can potentially demand a perfectly reasonable compromise of one dollar in revenue-generating tax reform for every dollar in spending cuts. When you add in the fiscal cliff deal, and the 2011 Budget Control Act, that’ll still mean that the total deficit reduction enacted over the last few years tilts heavily towards spending, particularly once you account for reduced war costs. But that is, arguably, another reason that the White House isn’t in such a bad position here: They’ve set up a definition of success that will sound reasonable to most people — a dollar in tax reform for a dollar in spending cuts — while the Republicans have a very unreasonable sounding definition, in which they get huge cuts to Medicare or they force the United States into default. So while it’s possible that the White House will crumble, rendering itself impotent in negotiations going forward, and while it’s possible that the we’ll breach the debt ceiling, both possibilities seem less likely than Republicans agreeing to a deal that pairs revenue-generating tax reform with spending cuts.

Extinction

Kemp 10

Geoffrey Kemp, Director of Regional Strategic Programs at The Nixon Center, served in the White House under Ronald Reagan, special assistant to the president for national security affairs and senior director for Near East and South Asian affairs on the National Security Council Staff, Former Director, Middle East Arms Control Project at the Carnegie Endowment for International Peace, 2010, The East Moves West: India, China, and Asia’s Growing Presence in the Middle East, p. 233-4

The second scenario, called Mayhem and Chaos, is the opposite of the first scenario; everything that can go wrong does go wrong. The world economic situation weakens rather than strengthens, and India, China, and Japan suffer a major reduction in their growth rates, further weakening the global economy. As a result, energy demand falls and the price of fossil fuels plummets, leading to a financial crisis for the energy-producing states, which are forced to cut back dramatically on expansion programs and social welfare. That in turn leads to political unrest: and nurtures different radical groups, including, but not limited to, Islamic extremists. The internal stability of some countries is challenged, and there are more “failed states.” Most serious is the collapse of the democratic government in Pakistan and its takeover by Muslim extremists, who then take possession of a large number of nuclear weapons. The danger of war between India and Pakistan increases significantly. Iran, always worried about an extremist Pakistan, expands and weaponizes its nuclear program. That further enhances nuclear proliferation in the Middle East, with Saudi Arabia, Turkey, and Egypt joining Israel and Iran as nuclear states. Under these circumstances, the potential for nuclear terrorism increases, and the possibility of a nuclear terrorist attack in either the Western world or in the oil-producing states may lead to a further devastating collapse of the world economic market, with a tsunami-like impact on stability. In this scenario, major disruptions can be expected, with dire consequences for two-thirds of the planet’s population.

## 4

**Plan trades off with ITER funding**

**Vastag** 6/25/**12**

Brian Vastag, Staff Writer, Washington Post, June 25, 2012, "Budget cuts threaten pursuit of nuclear fusion as a clean energy source", http://www.washingtonpost.com/national/health-science/budget-cuts-threaten-pursuit-of-nuclear-fusion-as-a-clean-energy-source/2012/06/25/gJQAKlpS2V\_story.html

President Obama’s budget request for next year cuts domestic fusion research by 16 percent, to $248 million. It would shutter a fusion lab at MIT, one of four funded by the Department of Energy. It would slash 50 to 100 jobs from the 450 at the Princeton lab. And it would use the $48 million in total savings to boost the U.S. contribution to an international fusion mega-project now under construction in the south of France, called ITER, a project whose estimated costs have grown to $23 billion and whose start date has been pushed back to the next decade. In a time of **flat federal spending**, the **president has made a choice** to fund the international project — whose costs to the United States will grow in coming years, according to Energy Department projections, to as much as $300 million a year — **at the expense** of the domestic program. (The United States pledged funding to ITER in 2003, joining the European Union, Russia, China, India, South Korea and Japan.)

**ITER funding is key to science diplomacy – key to global stability**

**Fedoroff 8** - Science and Technology Adviser to the Secretary of State and the Administrator of USAID (Nina, Testimony Before the House Science Subcommittee on Research and Science Education, 4/2, <http://www.state.gov/g/oes/rls/rm/102996.htm>)

**Science** by its nature **facilitates diplomacy because it strengthens political relationships, embodies powerful ideals, and creates opportunities** for all. The **global scientific community embraces** principles Americans cherish: **transparency, meritocracy, accountability, the objective evaluation of evidence, and broad and frequently democratic participation**. **Science is inherently democratic**, respecting evidence and truth above all. **Science is** also a common global language, **able to bridge deep political and religious divides.** **Scientists share a common language.** **Scientific interactions** serve to **keep open** lines of **communication and cultural understanding. As scientists everywhere have a common evidentiary external reference system, members of ideologically divergent societies can use the common language of science to cooperatively address both domestic and the increasingly trans- national and global problems confronting humanity in the 21st century. There is a growing recognition that** **science and technology will increasingly drive** the successful **economies** **of the 21st century. Science and technology provide an immeasurable benefit to the U.S. by bringing scientists and students here, especially from developing countries, where they see democracy in action, make friends in the international scientific community, become familiar with American technology, and contribute to the U.S. and global economy. For example, in 2005, over 50% of physical science and engineering graduate students and postdoctoral researchers trained in the U.S. have been foreign nationals. Moreover, many foreign-born scientists who were educated and have worked in the U.S. eventually progress in their careers to hold influential positions in ministries and institutions both in this country and in their home countries. They also contribute to U.S. scientific and technologic development: According to the National Science Board’s 2008 Science and Engineering Indicators, 47% of full-time doctoral science and engineering faculty in U.S. research institutions were foreign-born. Finally, some types of** **science** – particularly those **that address the grand challenges in science and technology – are** inherently **international** in scope **and collaborative** **by necessity. The ITER Project, an international fusion research and development collaboration, is a product of the thaw in superpower relations between Soviet President Mikhail Gorbachev and U.S. President Ronald Reagan. This reactor will harness the power of nuclear fusion as a possible new and viable energy source by bringing a star to earth.** **ITER serves as a symbol of international scientific cooperation among key scientific leaders in the developed and developing world** **– Japan, Korea, China, E.U., India, Russia, and United States – representing 70% of the world’s current population.. The recent elimination of funding** for FY08 U.S. contributions **to the ITER project comes at an inopportune time** **as the Agreement on the Establishment of the ITER International Fusion Energy Organization for the Joint Implementation of the ITER Project had entered into force only on October 2007.** **The elimination of the promised U.S. contribution drew our allies to question our commitment and credibility in international cooperative ventures**. More problematically, it jeopardizes **a platform for reaffirming** U.S. relations with key states**. It should be noted that even at the height of the cold war, the United States used science diplomacy as a means to maintain communications and avoid misunderstanding between the world’s two nuclear powers – the Soviet Union and the United States.** **In a complex multi-polar world**, relations are more challenging, the threats perhaps greater, and **the need for engagement more paramount**. **Using Science Diplomacy to Achieve National Security Objectives The** **welfare and stability of countries** and **regions in many parts of the globe require a concerted effort by the developed world** **to address the causal factors that render countries fragile and cause states to fail. Countries that are unable to defend their people against starvation, or fail to provide economic opportunity, are susceptible to extremist ideologies, autocratic rule, and abuses of human rights. As well, the world faces common threats, among them climate change, energy and water shortages, public health emergencies, environmental degradation, poverty, food insecurity, and religious extremism. These threats can undermine the national security of the United States, both directly and indirectly. Many are blind to political boundaries, becoming regional or global threats. The United States has no monopoly on knowledge in a globalizing world and the scientific challenges facing humankind are enormous. Addressing these common challenges demands common solutions and necessitates scientific cooperation, common standards, and common goals.** **We must** increasingly **harness the power of American ingenuity in science and technology** **through strong partnerships with the science community in both academia and the private sector, in the U.S. and abroad among our allies, to advance U.S**. interests in **foreign policy**. **There are also important challenges to the ability of states to supply their populations with sufficient food. The still-growing human population, rising affluence in emerging economies, and other factors have combined to create unprecedented pressures on global prices of staples such as edible oils and grains. Encouraging and promoting the use of contemporary molecular techniques in crop improvement is an essential goal for US science diplomacy.** **An essential part of the war on terrorism is a war of ideas. The creation of economic opportunity can do much more to combat the rise of fanaticism than** can **any weapon**. The war of ideas is a war about rationalism as opposed to irrationalism. **Science and technology put us firmly on the side of rationalism by providing ideas and opportunities that improve people’s lives**. **We may use** the **recognition and the goodwill that science still generates** for the United States **to achieve our diplomatic and developmental goals**. Additionally**, the Department continues to use science as a means to reduce the proliferation of the weapons’ of mass destruction and prevent** what has been dubbed ‘**brain drain’. Through cooperative threat reduction activities, former** **weapons scientists redirect their skills to participate in peaceful, collaborative international research** **in a large variety of scientific fields. In addition,** **new global efforts focus on improving biological, chemical, and nuclear security by promoting and implementing best scientific practices as a means to enhance security, increase global partnerships, and create sustainability**.

## 5

#### The fifty states should substantially increase financial support for magnetic fusion energy generation in the United States.

#### The fifty states should substantially increase funding for university research and training in nuclear science and engineering.

States can effectively support energy R&D

Milford, 12

(Sr. Fellow-Brookings & President-Clean Energy Group, “Leveraging State Clean Energy Funds for Economic Development,”

http://www.brookings.edu/~/media/research/files/papers/2012/1/11%20states%20energy%20funds/0111\_states\_energy\_funds)

Without a doubt the impacts of state project finance are significant and have been vital for the growth of the clean energy industry in the United States. The price of renewable energy technologies like solar and wind has come down in part through the sheer volume of project activity. However, it is becoming clear to many states that to truly grow the clean energy enterprise they must do more than just help bring down the costs of clean energy technologies through project financing. This recognition has resulted in a new generation of state programs, spearheaded by several of the state clean energy funds, that go beyond project finance. All of which points to a new brand of fund activity. Along these lines, increasingly ambitious efforts in a number of states have featured engagement on at least three major fronts: (1) **cleantech innovation support through** research, development, and deployment (**RD&D) funding**; (2) financial support for early-stage cleantech companies and emerging technologies, including working capital for companies; and (3) industry development support through business incubator programs, regional cluster promotion, manufacturing and export promotion, supply chain analysis and enhancement, and workforce training programs. On the cleantech innovation front, a few funds such as California’s through its Public Interest Energy Research (PIER) program have supported cleantech RD&D efforts. PIER, for example, funds basic and applied research on topics ranging from work on electricity grid improvement and building and lighting technologies to industrial process improvement, energy storage, renewable technologies, and other areas. In like fashion, a few states have used their CEFs to make equity investments in solar, wind, and bioenergy companies and also provide working capital for expanding growth companies. The Massachusetts Clean Energy Center’s (MassCEC) Investments in the Advancement of Technology program, for example, makes venture capital equity investments in promising early-stage companies that are developing and commercializing new clean energy technologies. And for that matter, some state CEFs have been providing industry development support in a variety of ways, whether through the development of business incubator programs such as those run by the New York State Energy Research and Development Authority (NYSERDA); workforce training programs such as the California Clean Energy Workforce Training Program; or initiatives focused on clean energy industry supply chains such as those maintained by Ohio’s Advanced Energy Fund (AEF). All of which suggests that the next era of state clean energy fund leadership is coming into focus thanks to existing fund experimentation. What is needed now, then, is a new, creative period of expanded CEF focus on clean energy economic development and industry creation to complement and build upon project financing for the installation of clean energy technologies. Such work could not be timelier at this moment of federal gridlock and market uncertainty.

#### Nuclear education grants empirically solve

DOE, 2011, Innovations in Nuclear Infrastructure and Education From the SW Consortium, http://www.osti.gov/bridge/purl.cover.jsp?purl=/1010310-rbd4px/

Athough INIE has come to a close, looking back at all the Consortium has accomplished is astounding. And, as was hoped, these funds have proved to be a springboard for continuing work, particularly at Texas A&M. With the resurgence of nuclear power, the utilities have realized that the nuclear workforce in the near future will be too small for the task of bringing dozens of new plants on line and have turned their attention to the URRs to help feed the workforce pipeline. The distance education modules developed at the A&M are soon to be broadcast throughout the country to help train a new generation of nuclear workers. Our students at the Nuclear Science Center at being snapped up by the nuclear power plants after graduating. Our research projects at A&M have all ended with new data, new ways of looking at old problems, and produced a covey of good students. I want to say “Thanks” with utmost sincerity because without the INIE funds our efforts would yield a small fraction of the accomplishments you see in this report. That said, as always, there is more to be done and I hope an opportunity to work with all of you again will come again in the future.

## 6

#### The United States Federal Government should amend the tax code to include revenue from the generation and sale of electricity produced from magnetic fusion energy generation as qualifying income for two-tiered Master Limited Partnerships.

#### CP spurs significant private investment that solves the aff and avoids politics

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.

## fusion adv

#### No fusion

Geoff Brumfiel, Scientific American, June 2012, Fusion's Missing Pieces, EBSCO

Scientists such as Lee have been seduced by fusion for half a century. Many before him have promised its impending arrival. Although some of those researchers were charlatans, the vast majority of them turned out to be plain wrong. Fusion is tough, and nature breaks promises.

Here is the core challenge: because hydrogen ions repel one another, scientists must slam them together to make them fuse. ITER's strategy is to heat the hydrogen inside a magnetic cage. The particular type of magnetic cage it employs is called a tokamak -- a metal doughnut circled by loops of coil that generate magnetic fields. These magnetic cuffs squeeze a charged plasma of hydrogen ions as it warms to hundreds of millions of degrees -- temperatures no solid material can withstand.

In the 1970s tokamaks looked so promising that some researchers predicted they could build fusion electricity plants by the mid-1990s. The only challenge was scaling research reactors up to sufficient size -- in general, the bigger the tokamak, the hotter the plasma can get, and the more efficient fusion becomes.

Then problems arose. Plasma conducts electricity and so can suffer from self-generated currents that make it buck and writhe. Violent turbulence snaps the plasma out of its cage, firing it toward the machine's wall. As the temperature rises, the tokamak grows to give the plasma space, and the magnetic fields need to be stronger to hold it. Extra room and stronger magnetic fields require higher electric current in the doughnut's copper coils. And higher current requires more power. Put simply: the larger and more powerful a machine becomes, the more energy it consumes trying to hold everything together.

This feedback meant that conventional tokamaks would never produce more energy than they consumed. Lee and others knew of only one solution: superconductors -- special materials that, at very low temperatures, can carry extremely high current with no resistance. If a tokamak's magnets were superconducting, they could be pumped up with current and left to run indefinitely. It would solve the energy problem but would not be cheap. Superconductors are exotic, expensive materials. And to work, they need to be constantly cooled with liquid helium to just four kelvins above absolute zero.

#### Err neg—this is nonsense

Chris Rhodes, Sussex University, Physical Chemistry Professor, 6/10/12, The Progress made in the Different Fields of Nuclear Fusion, oilprice.com/Alternative-Energy/Nuclear-Power/The-Progress-made-in-the-Different-Fields-of-Nuclear-Fusion.html

When I was about 10, I recall hearing that nuclear fusion power would become a reality "in about thirty years". The estimate has increased steadily since then, and now, forty odd years on, we hear that fusion power will come on-stream "in about fifty years". So, what is the real likelihood of fusion-based power stations coming to our aid in averting the imminent energy crisis? Getting two nuclei to fuse is not easy, since both carry a positive charge and hence their natural propensity is to repel one another. Therefore, a lot of energy is required to force them together so that they can fuse. To achieve this, suitable conditions of extremely high temperature, comparable to those found in stars, must be met. A specific temperature must be reached in order for particular nuclei to fuse with one another. This is termed the "critical ignition temperature", and is around 400 million degrees centigrade for two deuterium nuclei to fuse, while a more modest 100 million degrees is sufficient for a deuterium nucleus to fuse with a tritium nucleus. For this reason, it is deuterium-tritium fusion that is most sought after, since it should be most easily achieved and sustained.

One disadvantage of tritium is that it is radioactive and decays with a half-life of about 12 years, and consequently, it exists naturally in only negligible amounts. However, tritium may be "bred" from lithium using neutrons produced in an initial deuterium-tritium fusion. Ideally, the process would become self-sustaining, with lithium fuel being burned via conversion to tritium, which then fuses with deuterium, releasing more neutrons. While not unlimited, there are sufficient known resources of lithium to fire a global fusion programme for about a thousand years, mindful that there are many other uses for lithium, ranging for various types of battery to medication for schizophrenics. The supply would be effectively limitless if lithium could be extracted from the oceans.

In a working scenario, some of the energy produced by fusion would be required to maintain the high temperature of the fuel such that the fusion process becomes continuous. At the temperature of around 100 - 300 million degrees, the deuterium/lithium/tritium mixture will exist in the form of a plasma, in which the nuclei are naked (having lost their initial atomic electron clouds) and are hence exposed to fuse with one another.

The main difficulty which bedevils maintaining a working fusion reactor which might be used to fire a power station is containing the plasma, a process usually referred to as "confinement" and the process overall as “magnetic confinement fusion” (MCF). Essentially, the plasma is confined in a magnetic bottle, since its component charged nuclei and electrons tend to follow the field of magnetic force, which can be so arranged that the lines of force occupy a prescribed region and are thus centralised to a particular volume. However, the plasma is a "complex" system that readily becomes unstable and leaks away. Unlike a star, the plasma is highly rarefied (a low pressure gas), so that the proton-proton cycle that powers the sun could not be thus achieved on earth, as it is only the intensely high density of nuclei in the sun's core that allows the process to occur sustainably, and that the plasma is contained within its own gravitational mass, and isolated within the cold vacuum of space.

In June 2005, the EU, France, Japan, South Korea, China and the U.S. agreed to spend $12 billion to build an experimental fusion apparatus (called ITER) by 2014. It is planned that ITER will function as a research instrument for the following 20 years, and the knowledge gained will provide the basis for building a more advanced research machine. After another 30 years, if all goes well, the first commercial fusion powered electricity might come on-stream.

The Joint European Torus (JET)

I attended a fascinating event recently - a Cafe' Scientifique meeting held in the town of Reading in South East England. I have also performed in this arena, talking about "What Happens When the Oil Runs Out?", which remains a pertinent question. This time it was the turn of Dr Chris Warrick from the Culham Centre for Fusion Energy based near Abingdon in Oxfordshire, which hosts both the MAST (Mega Amp Spherical Tokamak) and the better known JET (Joint European Torus) experiments. In the audience was a veteran engineer/physicist who had worked on the pioneering ZETA4 experiment in the late 1950s, from which neutrons were detected leading to what proved later to be false claims that fusion had occurred, their true source being different versions of the same instability processes that had beset earlier machines.

Nonetheless, his comment was salient: "In the late 50s, we were told that fusion power was 20 years away and now, 50-odd years later it is maybe 60 years away." Indeed, JET has yet to produce a positive ratio of output power/input energy, and instability of the plasma is still a problem. Dr Warrick explained that while much of the plasma physics is now sorted-out, minor aberrations in the magnetic field allow some of the plasma to leak out, and if it touches the far colder walls of the confinement chamber, it simply "dies". In JET it is fusion of nuclei of the two hydrogen isotopes, deuterium and tritium that is being undertaken, a process that as noted earlier, requires a "temperature" of 100 million degrees.

I say "temperature" because the plasma is a rarefied (very low pressure) gas, and hence the collisions between particles are not sufficiently rapid that the term means the same distribution of energy as occurs under conditions of thermal equilibrium. It is much the same as the temperatures that may be quoted for molecules in the atmospheric region known as the thermosphere which lies some 80 kilometres above the surface of the Earth. Here too, the atmosphere is highly rarefied and thus derived temperatures refer to translational motion of molecules and are more usefully expressed as velocities. However expressed, at 100 million degrees centigrade, the nuclei of tritium and deuterium have sufficient translational velocity (have enough energy) that they can overcome the mutual repulsion arising from their positive charges and come close enough that they are drawn together by attractive nuclear forces and fuse, releasing vast amounts of energy in the process.

JET is not a small device, at 18 metres high, but bigger machines will be necessary before the technology is likely to give out more energy than it consumes. Despite the considerable volume of the chamber, it contains perhaps only one hundredth of a gram of gas, hence its very low pressure. There is another matter and that is how long the plasma and hence energy emission can be sustained. Presently it is fractions of a second but a serious "power station" would need to run for some hours. There is also the problem of getting useful energy from the plasma to convert into electricity even if the aforementioned and considerable problems can be overcome and a sustainable, large-scale plasma maintained.

The plan is to surround the chamber with a "blanket" of lithium with pipes running through it and some heat-exchanger fluid passing through them. The heated fluid would then pass on its heat to water and drive a steam-turbine, in the time-honoured fashion used for fossil fuel fired and nuclear power plants. Now my understanding is that this would not be lithium metal but some oxide material. The heat would be delivered in the form of very high energy neutrons that would be slowed-down as they encounter lithium nuclei on passing through the blanket. In principle this is a very neat trick, since absorption of a neutron by a lithium nucleus converts it to tritium, which could be fed back into the plasma as a fuel. Unlike deuterium, tritium does not exist is nature, being radioactive with a half-life of about 12 years. However produced, either separately or in the blanket, lithium is the ultimate fuel source, not tritium per se. Deuterium does exist in nature but only to the extent of one part in about two thousand of ordinary hydrogen (protium) and hence the energy costs of its separation are not inconsiderable.

The neutron flux produced by the plasma is very high, and to enhance the overall breeding efficiency of lithium to tritium the reactor would be surrounded with a “lithium” blanket about three feet thick. The intense neutron flux will render the material used to construct the reactor highly radioactive, to the extent that it would not be feasible for operators to enter its vicinity for routine maintenance. The radioactive material will need to be disposed of similarly to the requirements for nuclear waste generated by nuclear fission, and hence fusion is not as "clean" as is often claimed. Exposure to radiation of many potential materials necessary to make the reactor, blanket, and other components such as the heat-exchanger pipes would render them brittle, and so compromise their structural integrity. There is also the possibility that the lithium blanket around the reactor might be replaced by uranium, so enabling the option of breeding plutonium for use in nuclear weapons.

Providing a fairly intense magnetic field to confine the plasma (maybe Tesla - similar to that in a hospital MRI scanner) needs power (dc not ac as switching the polarity of the field would cause the plasma to collapse) and large power-supply units containing a lot of metals including rare earths which are mined and processed using fossil fuels. The issue of rare earths is troublesome already, and whether enough of them can be recovered to meet existing planned wind and electric car projects is debatable, let alone that additional pressure should be placed upon an already fragile resource to build a first generation of fusion power stations.

World supplies of lithium are also already stressed, and hence getting enough of it not only to make blankets for fusion reactors and tritium production but also for the millions-scale fleet of electric vehicles needed to divert our transportation energy demand away from oil is probably a bridge too far, unless we try getting it from seawater, which takes far more energy than mining lithium minerals. The engineering requirements too will be formidable, however, most likely forcing the need to confront problems as yet unknown, and even according to the most favourable predictions of the experts, fusion power is still 60 years away, if it will arrive at all. Given that the energy crisis will hit hard long before then, I suggest we look to more immediate solutions, mainly in terms of energy efficiency, for which there is ample scope.

To quote again the ZETA veteran, "I wonder if maybe man is not intended to have nuclear fusion," and all in all, other than from solar energy I wonder if he is right. At any rate, garnering real electrical power from fusion is so far distant as to have no impact on the more immediately pressing fossil fuels crisis, particularly for oil and natural gas. Fusion Power is a long-range "holy grail" and part of the illusion that humankind can continue in perpetuity to use energy on the scale that it presently does. Efficiency and conservation are the only real means to attenuate the impending crisis in energy and resources.

#### No commercialization—definitely not fast

Geoff Brumfiel, Scientific American, June 2012, Fusion's Missing Pieces, EBSCO

ITER will prove whether fusion is achievable. It will not prove whether it is commercially viable. There is good reason to think it might not be. For starters, the radiation from fusion is very intense and will damage ordinary material such as steel. A power plant will have to incorporate some as yet undeveloped materials that can withstand years of bombardment from the plasma -- otherwise the reactor will be constantly down for servicing. Then there is the problem of tritium fuel, which must be made on-site, probably by using the reactor's own radiation.

Arguably the greatest obstacle to building a reactor based on ITER is the machine's incredible complexity. All the specialized heating systems and custom-built parts are fine in an experiment, but a power plant will need to be simpler, says Steve Cowley, CEO of the U.K.'s Atomic Energy Authority. "You can't imagine producing power day in and day out on a machine that's all bells and whistles," he says. Another generation of expensive demonstration reactors must be built before fusion can come onto the grid. Given ITER's lumbering development, none of these will be up and running before the middle of the century.

Navy can’t de-escalate crises

A) Bureaucratic reluctance to deploy, delayed response

Watts 12

Robert, graduate of the Coast Guard Academy, Captain Watts has served six sea tours with the Navy and Coast Guard, most recently commanding USCGC Steadfast (WMEC 623). A qualified Surface Warfare Officer and Cutterman, he holds advanced degrees from the Naval War College, Old Dominion University, American Military University, and the Naval Postgraduate School, and he is currently a doctoral candidate at the Royal Military College of Canada (War Studies). The New Normalcy-Sea Power and Contingency Operations in the Twenty-First Century

http://www.usnwc.edu/getattachment/87e866a1-24dd-4e91-9ffa-cb0f64f15144/The-New-Normalcy--Sea-Power-and-Contingency-Operat.aspx

The inherent mobility of sea power means largely what it does in the traditional role—modern technology allows global reach in three dimensions and almost instant operational coordination worldwide. But the primary barrier to mobility in crisis-contingency operations is not technological. If mobility is to be exercised, ships must actually sail, and it is here—in the commitment of resources to a crisis —that things become culturally problematic. Despite the need, the answer to a crisis contingency is not always to employ sea power immediately. This cultural hesitancy has two aspects. The first is so deeply ingrained in the American psyche that it is more a matter of legend than of practical discussion. The United States has a long-standing tradition of rejecting the use of military forces in the domestic context, a rejection that dates back to the Revolution. It was codified in law with the passing of the Posse Comitatus Act of 1878, which directs that military forces (specifically the U.S. Army) cannot engage in domestic law enforcement.18 The legislation is often misinterpreted as meaning that any domestic use of military forces is illegal; that is not the case, but it is nevertheless widely believed in both civilian and military 56 NAVAL WAR COLLEGE REVIEW circles.19 Thus before naval forces can be committed to a crisis, a comprehensive legal review is often demanded, something that takes time—time that is usually not available. Another cultural barrier arises from service ethos. Bluntly, warships are designed and train to fight. In the modern high-tech era, naval warfare is a very specific (and expensive) proposition. It demands very sophisticated and specialized equipment. The radar on an Aegis cruiser, for example, is exceptionally good at tracking and destroying enemy aircraft—but only that. In a crisis contingency that marginalizes that purpose of a platform’s defining systems, the purpose of the platform itself could be called into question. According to this logic, if a vessel is employed (albeit successfully) for a purpose for which it is not designed, the door is opened for its increasing use for that purpose and not its proper one. In the grand scheme of things, warships used for other purposes are not training for war; in the short term this leads to a loss of readiness for combat, while in the longer term it could mean the elimination of platforms altogether in favor of others more suitable for noncombat missions. Although this seems to be a largely philosophical argument, in a shrinking budget environment it is not without a certain politically compelling logic. The effects of these factors are not insignificant. In recent crisis contingencies (the mass migration operations of 1994 and Katrina) the arrival of naval vessels was delayed while legal and operational impact issues were addressed, in the Katrina case so long as to become a national embarrassment.20 Bureaucratic reasons, not materiel, were the culprits, ultimately to the detriment of the response. Hesitancy can be fatal in an operation requiring rapid response, and culture and bureaucracy can conspire to encourage just that.

#### Iran isn’t a threat

Luttwak, senior associate – CSIS, professor – Georgetown and Berkeley, 5/26/’7

(Edward, “The middle of nowhere,” Prospect Magazine)

Now the Mussolini syndrome is at work over Iran. All the symptoms are present, including tabulated lists of Iran’s warships, despite the fact that most are over 30 years old; of combat aircraft, many of which (F-4s, Mirages, F-5s, F-14s) have not flown in years for lack of spare parts; and of divisions and brigades that are so only in name. There are awed descriptions of the Pasdaran revolutionary guards, inevitably described as “elite,” who do indeed strut around as if they have won many a war, but who have actually fought only one—against Iraq, which they lost. As for Iran’s claim to have defeated Israel by Hizbullah proxy in last year’s affray, the publicity was excellent but the substance went the other way, with roughly 25 per cent of the best-trained men dead, which explains the tomb-like silence and immobility of the once rumbustious Hizbullah ever since the ceasefire.

Then there is the new light cavalry of Iranian terrorism that is invoked to frighten us if all else fails. The usual middle east experts now explain that if we annoy the ayatollahs, they will unleash terrorists who will devastate our lives, even though 30 years of “death to America” invocations and vast sums spent on maintaining a special international terrorism department have produced only one major bombing in Saudi Arabia, in 1996, and two in the most permissive environment of Buenos Aires, in 1992 and 1994, along with some assassinations of exiles in Europe.

It is true enough that if Iran’s nuclear installations are bombed in some overnight raid, there is likely to be some retaliation, but we live in fortunate times in which we have only the irritant of terrorism instead of world wars to worry about—and Iran’s added contribution is not likely to leave much of an impression. There may be good reasons for not attacking Iran’s nuclear sites—including the very slow and uncertain progress of its uranium enrichment effort—but its ability to strike back is not one of them. Even the seemingly fragile tanker traffic down the Gulf and through the straits of Hormuz is not as vulnerable as it seems—Iran and Iraq have both tried to attack it many times without much success, and this time the US navy stands ready to destroy any airstrip or jetty from which attacks are launched.

As for the claim that the “Iranians” are united in patriotic support for the nuclear programme, no such nationality even exists. Out of Iran’s population of 70m or so, 51 per cent are ethnically Persian, 24 per cent are Turks (“Azeris” is the regime’s term), with other minorities comprising the remaining quarter. Many of Iran’s 16-17m Turks are in revolt against Persian cultural imperialism; its 5-6m Kurds have started a serious insurgency; the Arab minority detonates bombs in Ahvaz; and Baluch tribesmen attack gendarmes and revolutionary guards. If some 40 per cent of the British population were engaged in separatist struggles of varying intensity, nobody would claim that it was firmly united around the London government. On top of this, many of the Persian majority oppose the theocratic regime, either because they have become post-Islamic in reaction to its many prohibitions, or because they are Sufis, whom the regime now persecutes almost as much as the small Baha’i minority. So let us have no more reports from Tehran stressing the country’s national unity. Persian nationalism is a minority position in a country where half the population is not even Persian. In our times, multinational states either decentralise or break up more or less violently; Iran is not decentralising, so its future seems highly predictable, while in the present not much cohesion under attack is to be expected.

#### Iran won’t close the Strait

Saul 10

Jonathan, interviewing Iranian and American Security analysts Peter Pham and Meir Javendanfar,

http://archives.dawn.com/archives/7274

Iran is unlikely to risk blocking or mining the Strait of Hormuz if tension with the West rises, because it stands to lose vital oil revenues from closing the strategic waterway and lacks the military capability. Iran has threatened to close the strait, a vital route for world oil supplies, if it is attacked over its nuclear ambitions. Some Iran watchers say Tehran could opt to block the strait if more severe sanctions are imposed. Western powers suspect Iran`s nuclear activities are aimed at developing atomic weapons, not generating electricity as Tehran insists. Analysts believe the threat itself is enough to raise oil prices to well above $100 a barrel, potentially damaging a still fragile global economic recovery. “Oil prices rose by around $12 a barrel when Israel went into Lebanon in 2006 and neither of those countries are even involved in oil production,” said Paul Harris, head of natural resources risk management at Bank of Ireland. “You`d be looking at least double that kind of jump from an event on that scale in the region.” Many analysts say Tehran cannot afford to risk a prolonged disruption of the narrow waterway, which borders Iran`s coastline at the mouth of the Gulf, and through which 40 per cent of all seaborne oil trade, about 17 million barrels, passes daily. Iran itself exports around 2.4 million barrels daily – most of it via the Strait of Hormuz. “They would cut their own throats because two-thirds of the Iranian government`s budget comes from exports from the same strait,” said J. Peter Pham, an adviser on strategic matters to US and foreign governments. “Iran gains more from the threat of closing the strait than actually closing it.” `Fraught with problems` The strait, just 21 miles wide at its narrowest point, lies between Oman and Iran. Neighbouring oil-producing countries, including Saudi Arabia, the world`s largest crude oil exporter, are dependent on its shipping lanes. “Closing the strait would reduce Iran`s leverage in the region as it would put Persian Gulf countries squarely in the camp of America,” Iran analyst Meir Javedanfar said, adding that it could tempt them into financing Iranian opposition movements.Many analysts believe that, if Iran retaliated, it would choose to mine the strait`s sea lanes as it did during the Iran-Iraq war in the 1980s. Military analysts believe Iran has three mine-laying ships and three mine-laying helicopters, plus three Russian-built Kilo class submarines. “Military operations on the offence are fraught with problems,” said Eugene Gholz, professor of national security policy at the University of Texas. “The Iranians would have to do it over and over again every day to maintain the disruption.” Global intelligence company Stratfor said the strait`s cramped, shallow waters made submarine activity difficult. “In any event, the Iranian navy does not have enough Kilos to have any confidence in its ability to sustain submarine operations for any meaningful period after hostilities began,” it said in a study.

#### Asia is stable

Bitzinger 9

[Richard, Senior Fellow at the S. Rajaratnam School of International Studies, Barry, Dean of the S. Rajaratnam School of International Studies and Director of the Institute of Defense and Strategic Studies, Nanyang Technological University, Singapore, “ Why East Asian War is Unlikely,” Survival | vol. 50 no. 6 | December 2008–January 2009

 The Asia-Pacific region can be regarded as a zone of both relative insecurity and strategic stability. It contains some of the world’s most significant flashpoints – the Korean peninsula, the Taiwan Strait, the Siachen Glacier – where tensions between nations could escalate to the point of major war. It is replete with unresolved border issues; is a breeding ground for transnational terrorism and the site of many terrorist activities (the Bali bombings, the Manila superferry bombing); and contains overlapping claims for maritime territories (the Spratly Islands, the Senkaku/Diaoyu Islands) with considerable actual or potential wealth in resources such as oil, gas and fisheries. Finally, the Asia-Pacific is an area of strategic significance with many key sea lines of communication and important chokepoints. Yet despite all these potential crucibles of conflict, the Asia-Pacific, if not an area of serenity and calm, is certainly more stable than one might expect. To be sure, there are separatist movements and internal struggles, particularly with insurgencies, as in Thailand, the Philippines and Tibet. Since the resolution of the East Timor crisis, however, the region has been relatively free of open armed warfare. Separatism remains a challenge, but the break-up of states is unlikely. Terrorism is a nuisance, but its impact is contained. The North Korean nuclear issue, while not fully resolved, is at least moving toward a conclusion with the likely denuclearisation of the peninsula. Tensions between China and Taiwan, while always just beneath the surface, seem unlikely to erupt in open conflict any time soon, especially given recent Kuomintang Party victories in Taiwan and efforts by Taiwan and China to re-open informal channels of consultation as well as institutional relationships between organisations responsible for cross-strait relations. And while in Asia there is no strong supranational political entity like the European Union, there are many multilateral organisations and international initiatives dedicated to enhancing peace and stability, including the Asia-Pacific Economic Cooperation (APEC) forum, the Proliferation Security Initiative and the Shanghai Co-operation Organisation. In Southeast Asia, countries are united in a common geopolitical and economic organisation – the Association of Southeast Asian Nations (ASEAN) – which is dedicated to peaceful economic, social and cultural development, and to the promotion of regional peace and stability. ASEAN has played a key role in conceiving and establishing broader regional institutions such as the East Asian Summit, ASEAN+3 (China, Japan and South Korea) and the ASEAN Regional Forum. All this suggests that war in Asia – while not inconceivable – is unlikely. This is not to say that the region will not undergo significant changes. The rise of China constitutes perhaps the most significant challenge to regional security and stability – and, from Washington’s vantage point, to American hegemony in the Asia-Pacific. The United States increasingly sees China as its key peer challenger in Asia: China was singled out in the 2006 Quadrennial Defense Review as having, among the ‘major and emerging powers … the greatest potential to compete militarily with the United States’.1 Although the United States has been the hegemon in the Asia-Pacific since the end of the Second World War, it will probably not remain so over the next 25 years. A rising China will present a critical foreign-policy challenge, in some ways more difficult than that posed by the Soviet Union during the Cold War.2 While the Soviet Union was a political and strategic competitor, China will be a formidable political, strategic and economic competitor. This development will lead to profound changes in the strategic environment of the Asia-Pacific. Still, the rise of China does not automatically mean that conflict is more likely; the emergence of a more assertive China does not mean a more aggressive China. While Beijing is increasingly prone to push its own agenda, defend its interests, engage in more nationalistic – even chauvinistic – behaviour (witness the Olympic torch counter-protests), and seek to displace the United States as the regional hegemon, this does not necessarily translate into an expansionist or warlike China. If anything, Beijing appears content to press its claims peacefully (if forcefully) through existing avenues and institutions of international relations, particularly by co-opting these to meet its own purposes. This ‘soft power’ process can be described as an emerging ‘Beijing Consensus’ in regional international affairs. Moreover, when the Chinese military build-up is examined closely, it is clear that the country’s war machine, while certainly worth taking seriously, is not quite as threatening as some might argue.

## stem adv

#### This proves there aren’t enough workers to solve fast commercialization—takes out commercialization

APS 8

APS (American Physical Society), Report from the APS Panel on Public Affairs Committee on Energy and Environment, June 2008, Readiness of the U.S. Nuclear Workforce for 21st Century Challenges, http://www.aps.org/policy/reports/popa-reports/upload/Nuclear-Readiness-Report-FINAL-2.pdf

4. The continuing, largely static, nuclear engineering workforce needs of U.S. firms have been met through a combination of hiring those trained in university nuclear engineering programs and retraining others whose original expertise was in some other field (usually mechanical engineering). Also, retirees from the nuclear Navy have played an important role. This somewhat ad hoc approach may be sufficient as long as the number of nuclear reactors remains relatively static or grows at a slow but steady pace. However, large increases in the number of reactors and/or instituting the reprocessing and recycling of spent reactor fuel are likely to make this modus operandi untenable. Dealing with that eventuality will clearly call for approaches in which government, industry, and academia each play a major role. 5. There is also likely to be a severe shortage of nuclear scientists, engineers and technicians in several sectors of government responsible for regulatory, safety, or emergency response matters – both for the nuclear power industry and for other areas of national security concern (e.g. transportation and shipping). Agencies with these responsibilities include (among others) the Nuclear Regulatory Commission (NRC), the Department of Homeland Security, the Department of Transportation, the state Port Authorities, the Department of Defense, and the Department of Energy37. It seems clear that it is mostly the responsibility of Federal and state governments to train and maintain this workforce, though there is a smaller role for private industry as well.

#### Govt will just give the workforce more cash

Gene Aloise, Director, Natural Resources and Environment, GAO, April 12, MODERNIZING THE NUCLEAR SECURITY ENTERPRISE: Strategies and Challenges in Sustaining Critical Skills in Federal and Contractor Workforces, http://www.gao.gov/assets/600/590488.pdf

According to NNSA officials, these five metrics are tracked very closely by M&O contractors at all sites, and attrition, employment acceptance rates, and pay and benefits comparability data are systematically collected at regular intervals enterprisewide. If any of these metrics indicate a problem in retention, for example, NNSA officials told us, action would be taken to address it. For example, these metrics were monitored very closely by NNSA and the M&O contractors at Los Alamos National Laboratory and Lawrence Livermore National Laboratory during their 2006 transition to a new M&O contract with less generous retirement and medical benefits. There were concerns that this change could lead to a spike in attrition among highly skilled staff that could in turn lead to difficulties in the laboratories meeting deadlines on project deliverables. Similarly, NNSA is now carefully watching the same metrics at Sandia National Laboratories because the M&O contractor substantially cut future retirement benefits that took effect for those employees who remained at the lab beyond the end of 2011. If the metrics indicate greater attrition than expected, the laboratory could adjust its recruiting strategies to hire more staff.

#### That solve

Gene Aloise, Director, Natural Resources and Environment, GAO, April 12, MODERNIZING THE NUCLEAR SECURITY ENTERPRISE: Strategies and Challenges in Sustaining Critical Skills in Federal and Contractor Workforces, http://www.gao.gov/assets/600/590488.pdf

Some of the human capital challenges facing the enterprise are beyond the control of NNSA and its M&O contractors, and in these cases, NNSA has authorized increased compensation to help the sites acquire or retain the personnel they require. The site locations are fixed, and site staff cannot change the number of U.S. citizens completing graduate science and technology programs. Similarly, NNSA and its contractors have no choice but to adapt to the increased mobility of their staff resulting from the shift to a defined contribution retirement systems. To mitigate these challenges, NNSA and its contractors continue to offer financial incentives to recruit and retain critically skilled employees, with competitive starting salaries. The scale of these financial incentives can vary by location and position, but NNSA reported that this strategy has thus far been adequate for recruiting and retaining the talent they need.

#### Taboo doesn’t solve anything and their authors are hacks

Colin S **Gray 99**, professor of international politics and strategic studies and the director of the Centre for Strategic Studies, University of Reading in England, “To Confuse Ourselves: Nuclear Fallacies”, <http://fds.oup.com/www.oup.co.uk/pdf/0-19-829624-X.pdf>

Reference has been made already to a nuclear taboo. Although the proposition of a nuclear taboo is both plausible and attractive, it is perilously flawed in a way that is likely to set damaging ambushes for those who have been imprudently optimistic. The idea of a nuclear taboo hovers somewhat uneasily between fact and value. Widespread endorsement of the desirability of social demotion and general denigration of all things nuclear work to hinder prudent thoughts and action on the subject of how best to cope with the permanence of nuclear facts. Commitment to the worthy idea of a nuclear taboo is wont to encourage effort devoted to strengthening the non-proliferation regime—activity that generally is sensible, praiseworthy, and often worthy of the energy expended—rather than planning to deal effectively with the enduring nuclear dimension to security. The case of a nuclear taboo is one of those instances where a sound idea, as well as a culturally inescapable, but not thoroughly effective, proscriptive norm, has the potential to function to unanticipated dangerous consequences (the law of unintended consequences). The proposition that the global nonproliferation regime has come to be supported and is to a degree propelled forward by a nuclear taboo, is an astrategic rationalization by generally unintentionally hypocritical Westerners. The fragility of Western theory about a nuclear taboo is easily demonstrated. Supported by the structurally discriminatory NPT regime, the majority of declared nuclear-weapon states simultaneously reaffirm the nationally vital security functions of their WMD, while condemning WMD in the hands of others: not all others, one must hasten to add. Israel's nuclear arsenal attracts little negative comment from the West, while the newly demonstrated and declared nuclear-weapon states of India and Pakistan have attracted more expressions of understanding than condemnation from other polities outside the West. It is only the third tier of would-be nuclear-weapon states, deemed irresponsible, not to say roguish, for their rejection of Western norms of civilized international (and domestic) behaviour, that falls under the heavy censure of spokespeople for a nuclear taboo. The policy inclinations fairly attributable to Iraq, Iran, North Korea, and Libya, hold no appeal for this author. However, that said, one should not risk gratuitous damage to international security by fooling oneself with parochial nostrums. While arguably it is true to claim that a nuclear taboo has grown which deglamorizes and delegitimizes nuclear arms, such a taboo has proved itself no reliable barrier to further nuclear proliferation. If there had ever been some danger that states capable of acquiring nuclear arms somehow would slip, as it were naturally, into actual nuclear capability, then the taboo argument would have much more force. But, for all its popularity, inherent attractiveness (at least to us in the West), and apparent political sophistication, the operation and significance of a nuclear taboo is not all that it may seem to be. One should not presume causal connection between the phenomenon of a very slow pace of nuclear proliferation and the international popularity of a nuclear taboo. The latter probably has some relevance to the former, but nowhere near as much as often is implied or claimed. Similarly, one should not presume a causal connection between nuclear non-use and a nuclear taboo. One of the major studies of weapon taboos, for example, inadvertently illustrates the weakness of the evidential base for taboo claims. Null hypotheses are notoriously difficult to prove. For example, Richard Price and Nina Tannenwald overreach severely when they claim that ([t]he strengths of the nuclear taboo and the odium attached to nuclear weapons as weapons of mass destruction renders unusable all nuclear weapons, even though certain kinds of nuclear weapons could, from the perspective of Just War theory, conceivably be justified'.55 This is just not so. The arguments for the historical functioning of a nuclear taboo advanced by Price and Tannenwald cannot bear the strategic traffic that is run over it. In their analysis, normative proscription—taboo-related injunctions—assumes a residual value that is methodologically unfeasible. The 'taboo' argument tends to degrade under pressure into a residual culturalist explanation that is advanced as an unduly pervasive explanation. The problem is that a taboo does exist, but its worth as an explanation for the non-occurrence of some undesired events is not at all powerful.

#### NNSA will prioritize weapons no matter what – otherwise sequestration outweighs

Elaine M. Grossman 12, Global Security Newswire, “U.S. Warhead Upkeep to Get Top Priority if Deeper Budget Cuts are Imposed”, March 8, <http://www.nti.org/gsn/article/us-warhead-upkeep-get-top-priority-if-deeper-budget-cuts-are-imposed/>

The U.S. National Nuclear Security Administration would give highest priority to maintaining warheads fielded on the nation’s arsenal of ICBMs, ballistic missile submarines and bomber aircraft if automatic budget cuts affect the agency next year, the top NNSA official said on Thursday (see GSN, Feb. 17).

“If there is a reduction in this area, the thing we are going to focus on first and foremost is doing the surveillance work … on our existing stockpile [and ensuring] that today’s deterrent is taken care of,” said Thomas D’Agostino, the agency administrator. “Then we will work with the Defense Department to understand their priorities.”

The 2011 Budget Control Act mandates a roughly $450 billion cut in defense spending over the next decade, and that amount could more than double if lawmakers do not by 2013 reverse the legislation’s call for $1.2 trillion in additional government-wide reductions.

Whether the more drastic budget “sequester” would affect NNSA programs is uncertain, D’Agostino said.

However, given how much work the agency performs on behalf of the Pentagon, NNSA officials are planning now for the possibility that their programs will be affected by any new round of significant federal budget cuts. A portion of the agency’s annual spending also comes directly from Defense Department coffers, according to the White House.

The nuclear security organization -- a semiautonomous arm of the Energy Department -- is working on three major projects to extend the service lives of U.S. nuclear warheads: The W-76, used on Navy Trident D-5 submarine-based ballistic missiles; the B-61, fielded on Air Force gravity bombs; and an effort to combine updates of the W-78, carried by Minuteman 3 ICBMs, and the W-88, a second weapon for Navy Trident missiles.

Under the service life extension programs, NNSA officials work with their Defense Department counterparts to refurbish or replace aging components of decades-old nuclear arms. The effort is aimed at keeping the U.S. stockpile safe and effective without nuclear explosive testing, which Washington has by policy set aside in a moratorium dating to the early 1990s.

Along with major overhauls for different weapon types, the nuclear agency also regularly checks deployed warheads to assure that they remain in working order.

A bipartisan panel of House and Senate lawmakers late last year failed to agree on a package of possible spending cuts and tax hikes that could have averted the Budget Control Act’s requirement for an automatic sequester, beginning in 2013. Congress continues to debate potential actions that might be taken to avoid the deeper military cuts, which Defense Secretary Leon Panetta has warned could have a "devastating" effect on weapons acquisition programs, defense personnel and military operations (see GSN, Nov. 15, 2011).

If a budget sequester triggers “a dramatic change in [military] force structure, it could impact what systems we work on,” D’Agostino told reporters at a Defense Writers Group question-and-answer session.

Under a scenario in which the nuclear agency budget is reduced, D’Agostino said he would have to weigh possible delays in the three major warhead-overhaul efforts.

“We will work with the Defense Department to understand their priorities … to figure out which of these three priority projects can we defer [or] push back the date on, and [decide] what’s more important,” he said.

At this time, “I don’t want to tell you what gets cut because I don’t know what” programs might be affected, D’Agostino said. “I don’t want to make any speculation that we’re going to take a $500 million cut and therefore the last $500 million is such-and-such. I don’t know that we would take any cut at all, frankly, in sequestration.”

The NNSA budget request for fiscal 2013 calls for $11.5 billion in funding, of which $7.6 billion would be used to “maintain a safe, secure, and effective nuclear deterrent.” The nuclear deterrent funds constitute a 5 percent hike from current spending levels but $372 million less than the administration had projected in 2010. The next budget year begins on Oct. 1.

The NNSA administrator said lawmakers have not yet weighed in on their priorities for his agency should a budget sequester materialize. However, he made clear that he could not accept any change in what he believes to be his most important national security responsibilities.

“We feel very strongly that the No. 1 priority is taking care of today’s stockpile,” D’Agostino said. “I would not be an advocate of saying I would rather do a life-extension on a system that isn’t going to be done until 2019 or 2020, over working to make sure … the stockpile that the Defense Department is carrying around in their submarines, in missiles and maybe in depot facilities around the country” remains sound, he said.

“That’s No. 1 because that’s the material … that’s out there with the Defense Department,” D’Agostino added. “So safety of that stockpile is paramount. And the only way we’re assured safety of it is to constantly surveil it and watch it.”

## fusion leadership

#### Data disproves hegemony impacts

Fettweis, 11

Christopher J. Fettweis, Department of Political Science, Tulane University, 9/26/11, Free Riding or Restraint? Examining European Grand Strategy, Comparative Strategy, 30:316–332, EBSCO

It is perhaps worth noting that there is no evidence to support a direct relationship between the relative level of U.S. activism and international stability. In fact, the limited data we do have suggest the opposite may be true. During the 1990s, the United States cut back on its defense spending fairly substantially. By 1998, the United States was spending $100 billion less on defense in real terms than it had in 1990.51 To internationalists, defense hawks and believers in hegemonic stability, this irresponsible “peace dividend” endangered both national and global security. “No serious analyst of American military capabilities,” argued Kristol and Kagan, “doubts that the defense budget has been cut much too far to meet America’s responsibilities to itself and to world peace.”52 On the other hand, if the pacific trends were not based upon U.S. hegemony but a strengthening norm against interstate war, one would not have expected an increase in global instability and violence.

The verdict from the past two decades is fairly plain: The world grew more peaceful while the United States cut its forces. No state seemed to believe that its security was endangered by a less-capable United States military, or at least none took any action that would suggest such a belief. No militaries were enhanced to address power vacuums, no security dilemmas drove insecurity or arms races, and no regional balancing occurred once the stabilizing presence of the U.S. military was diminished. The rest of the world acted as if the threat of international war was not a pressing concern, despite the reduction in U.S. capabilities. Most of all, the United States and its allies were no less safe. The incidence and magnitude of global conflict declined while the United States cut its military spending under President Clinton, and kept declining as the Bush Administration ramped the spending back up. No complex statistical analysis should be necessary to reach the conclusion that the two are unrelated.

Military spending figures by themselves are insufficient to disprove a connection between overall U.S. actions and international stability. Once again, one could presumably argue that spending is not the only or even the best indication of hegemony, and that it is instead U.S. foreign political and security commitments that maintain stability. Since neither was significantly altered during this period, instability should not have been expected. Alternately, advocates of hegemonic stability could believe that relative rather than absolute spending is decisive in bringing peace. Although the United States cut back on its spending during the 1990s, its relative advantage never wavered.

However, even if it is true that either U.S. commitments or relative spending account for global pacific trends, then at the very least stability can evidently be maintained at drastically lower levels of both. In other words, even if one can be allowed to argue in the alternative for a moment and suppose that there is in fact a level of engagement below which the United States cannot drop without increasing international disorder, a rational grand strategist would still recommend cutting back on engagement and spending until that level is determined. Grand strategic decisions are never final; continual adjustments can and must be made as time goes on. Basic logic suggests that the United States ought to spend the minimum amount of its blood and treasure while seeking the maximum return on its investment. And if the current era of stability is as stable as many believe it to be, no increase in conflict would ever occur irrespective of U.S. spending, which would save untold trillions for an increasingly debt-ridden nation.

It is also perhaps worth noting that if opposite trends had unfolded, if other states had reacted to news of cuts in U.S. defense spending with more aggressive or insecure behavior, then internationalists would surely argue that their expectations had been fulfilled. If increases in conflict would have been interpreted as proof of the wisdom of internationalist strategies, then logical consistency demands that the lack thereof should at least pose a problem. As it stands, the only evidence we have regarding the likely systemic reaction to a more restrained United States suggests that the current peaceful trends are unrelated to U.S. military spending. Evidently the rest of the world can operate quite effectively without the presence of a global policeman. Those who think otherwise base their view on faith alone.

#### ITER solves the whole aff, and cutting funding it

Pace 8

David Pace, PhD Student in physics at UCLA. Current research involves experimental plasma physics in the UCLA Tokamak Laboratory, January 5, 2008, “The United States Will Probably Desert ITER Permanently,” <http://www.davidpace.com/phys>ics/graduate-school/us-leave-iter.htm

The APS Division of Plasma Physics quickly released a statement detailing their displeasure with the nixing of ITER's funding. Similar sentiments have been released by other institutions though it does not seem the physics researcher bloc exercises much influence at present. The cut may kill our role in ITER, but it also seriously wounds Fermilab. High energy physicists share our sadness over this budget news. The collection of circumstances now present do not bode well for ITER and they encourage renewed concern over U.S. fusion and plasma research in general. It seems that history is repeating itself with regard to our role in ITER. An unwilling Congress, the lack of powerful supporters, and economic pressures are aligned against a U.S. presence in ITER. The Government Accountability Office has highlighted both the need for more fusion Ph.D.'s in the workforce and the fact that as many of half of all plasma science and engineering Ph.D.'s leave the field (plain text, pdf). As a member of the group of graduate students in this field I can positively state that our discussions focus on events like this ITER cut and the uncertainty in funding for this type of research is a major motivation for moving to other sectors and very different careers. Supporting ITER encourages a new generation of plasma scientists as much as cutting it leads these same people to other fields. A broader issue remains: what happens if ITER is a rousing success and we were not involved? For a comparison, imagine that the methods of AC and DC electricity generation and transmission had not been developed in the United States. The negative impact on our industrialization and technological prowess is unimaginable. A successful ITER project with no U.S. assistance will be very similar. The rest of the industrialized world will have a wealth of knowledge and ability in the field of fusion driven electricity production, along with the desire to feed their own national corporate interests with the first commercial applications.

#### ITER funding cut guts US role in ITER—thats zero-sum with aff workforce and magnetic fusion R&D args

NBC, staff writer, 1/7/2008, Big trouble for big science, cosmiclog.nbcnews.com/\_news/2008/01/08/4351459-big-trouble-for-big-science?lite

Over the next decade, the United States and ITER’s six other partners (the European Union, China, India, Japan, Korea and Russia) will provide most of their multibillion-dollar contributions in the form of in-kind goods. The United States, for example, will be responsible for the guts of the magnetic confinement device for the experimental reactor and a lot of the cryogenic plumbing. For the time being, however, most of the U.S. contribution is in the form of cold, hard cash – “primarily paying the salaries” of U.S. scientists and engineers involved in the ITER planning process, Johnson said. For now, ITER can afford to be patient, but if the United States fails to contribute to the project, “the involvement of the U.S. would be minimal,” he said.

# 2NC

## ITER

## u

#### Link determines direction of uniqueness—the two accounts trade off

New York Daily News, 4/13/12, Don’t let the sun set on fusion, peakoil.com/alternative-energy/dont-let-the-sun-set-on-fusion/

When it comes to fusion research, however — which could deliver boundless clean energy, if the scientists get it right — Obama is basically shipping jobs overseas.

His budget for 2013 chops federal funding for American fusion labs, including projects at New York’s own Columbia University, then redirects that cash to pay the U.S. share of an international megaproject under construction in France.

No matter how you slice it — economically, scientifically or politically — robbing Peter to pay Pierre makes little sense.

To be fair, Obama is keeping a promise made by President George W. Bush, who committed support for the International Thermonuclear Experimental Reactor a decade ago — along with Europe, China, Russia, India, Japan and South Korea.

Since ITER stands to be the largest fusion experiment the world has ever known — and just might solve humanity’s energy dilemma — the U.S. can’t afford not to take part.

#### Politics triggers sequestration---results in ITER cuts

Niraj Chokshi, 1/2/13, Several ‘Cliff’ Battles Still Lie Ahead in 2013, www.nationaljournal.com/daily/several-cliff-battles-still-lie-ahead-in-2013-20130102

2) Preventing $85 Billion in Blunt Spending Cuts (a.k.a. “Sequestration”): March 1, 2013.

In its New Year’s Day deal to tackle the fiscal cliff, Congress only postponed half the fight. Sure, lawmakers reached an agreement on the expiring tax cuts, but they just delayed the imminent and drastic spending cuts known as sequestration. Now, on March 1, Obama will be required to implement what amounts to an evenly split $85 billion in cuts to defense and nondefense spending. The across-the-board cuts are widely panned for being too blunt.

The fight puts some Republicans in an unusual position: arguing against spending cuts they have long sought in order to protect the military from nearly $42.5 billion in cuts. Undoing sequestration will likely require each party to agree to hard-to-swallow spending cuts, an uphill battle in a polarized Congress.

## links

Fusion budget is zero-sum—domestic fusion research cuts are necessary to fund ITER

Kimberly Derose, USC Annenberg School, 3/3/12, Dire Prospects for Domestic Fusion Energy Research, ascjweb.org/moneymarketsmedia/?p=433

It is certainly not uncommon for government experiments to have their funding pulled. Yet Alcator C-Mod is a unique and extensive project that has produced a plethora of papers and new findings. To anyone in the plasma physics community, this closure represents a great loss. To some, the decision may be particularly bitter medicine because the funding that would normally go to the upkeep of Alcator C-Mod is being redirected out of the country to the international fusion project ITER (International Thermonuclear Experimental Reactor).

All in all, the budget allotment for fusion sciences will decrease by less than 1% in the next year, but the 150 million dollar contribution to ITER renders the roughly 18 million dollar budget for Alcator C-Mod untenable. ITER, located in the South of France, is the flagship program for fusion science worldwide. Under President George W. Bush, the United States committed to paying for 9% of the project, a gigantic tokamak over 30 meters tall. Projected costs for the construction of ITER top 20 billion dollars over the next seven years, which leaves the total American contribution at nearly 2 billion dollars. Pro rating this amount leaves the United States responsible for contributing nearly 300 million dollars a year on average until 2019.

Given that the total DOE fusion energy budget for next year is under 400 million, domestic fusion programs may soon be seeing more drastic cuts. With the government handling a severe budget crisis, it is safe to say that large funding increases for scientific research are not on the horizon. This means that the American ITER contribution will slowly consume the entire domestic budget for fusion research and might even dip into funds intended for high-energy physics experiments.

[Kevin note: Alcator C-Mod is the MIT fusion R&D program that is being cut b/c of FY2013 budget cuts]

#### It’s a forced choice—DOE has to choose between R&D and ITER

Geoffrey Styles 6/28/12, Managing Director of GSW Strategy Group, LLC, an energy and environmental strategy consulting firm, “Does All-of-the-Above Energy Include Long Shots?”, June 28, http://theenergycollective.com/geoffrey-styles/88258/does-all-above-energy-include-long-shots?utm\_source=feedburner&utm\_medium=feed&utm\_campaign=The+Energy+Collective+%28all+posts%29

Overall, the DOE has budgeted just under $400 million for fusion R&D in fiscal 2013, out of a total budget request of $27 billion. That's not insignificant, and devoting 1.5% of the federal energy budget to fusion might be about the right proportion for such a long-term endeavor that is decades from deployment, relative to funding for medium-term efforts like advanced fission reactors and near-term R&D on renewables and efficiency. The problem is that DOE is cutting deeply into US fusion capabilities, not just at Princeton but also at Lawrence Berkeley Laboratory, Livermore, Los Alamos and Sandia, in order to boost US funding for ITER from $105 million to $150 million next year. Only the fusion budgets for Oak Ridge Laboratory, which is managing the US role in ITER, and for the D.C. HQ grew. I'm certainly not against international cooperation in science, which has become increasingly important as the costs of "big science" projects expand. However, even if ITER represented the very best chance to take fusion to the next level on its long path to deployment, the long-term implications of these cuts for US fusion science capabilities look significant. As with the space program, once the highly trained and experienced fusion workforce and teams are laid off and broken up, it becomes enormously difficult to reconstitute them, if needed. This is particularly true of those with advanced degrees in fields that have declined in popularity at US universities, or for which the majority of current graduates are non-US students who will return to their countries of origin in search of better opportunities. I wouldn't support keeping these programs going just to provide guaranteed employment for physicists, but we had better be sure that we won't need them later. I am skeptical that we can be sufficiently certain today of the likely deployment pathways for fusion to be able to make such an irreversible decision with confidence. I understand that in times like these we must make tough choices; that's the essence of budgeting. I'm also sympathetic to those who might think that fusion researchers have had ample time and support to deliver the goods, already. Yet I can't help being struck by the contradiction of a DOE budget in which US R&D for such a long-term, high-potential technology is cut, at the same time that Secretary Chu and the President are pushing hard for multi-billion dollar commitments to extend the Production Tax Credit for renewable energy and reinstate the expired 1603 renewable energy cash grant program, a substantial portion of the past benefits from which went to non-US manufacturers and project developers. The total 2013 budget cuts for the US fusion labs are equivalent to the tax credits for a single 90 MW wind farm, which would contribute less than 0.01% of annual US power generation. Although we clearly can't fund every R&D idea to the extent researchers might wish, I believe it is a mistake to funnel so much money--about 40% of which must be borrowed--into perpetual supportfor the deployment of relatively low-impact and essentially mature technologies like onshore wind, when the same dollars would go much farther on R&D.

#### ITER is funded through fusion R&D cuts—plan flips the budget

Hand 6/24/12

Eric Hand, Knight science journalism fellow at the Massachusetts Institute of Technology and a reporter at Nature, Nature, July 24, 2012, "US fusion in budget vice", http://www.nature.com/news/us-fusion-in-budget-vice-1.11061

For years, US researchers have been steadfast in their support of ITER, the world’s largest fusion-energy experiment, which is under construction near Cadarache, France. But with funding commitments to ITER now putting the squeeze on three existing facilities in the United States, enthusiasm for the international project is becoming as difficult to sustain as a fusion reaction. “I think we should ask whether this is the right path,” Earl Marmar, head of the Alcator C-Mod fusion experiment run by the Massachusetts Institute of Technology in Cambridge, told colleagues on 18 July. The venue was a meeting of a US Department of Energy (DOE) group tasked with setting priorities for the non-ITER portion of the US fusion programme. At the meeting, in Bethesda, Maryland, Marmar pointed out that when US fusion researchers signed on to ITER in 2003, the project’s total construction cost was projected to be about US$5 billion, of which the United States would provide 9% over ten years. Now, the construction costs are projected to be roughly four times as much. Furthermore, the funds to support ITER were not supposed to be siphoned from existing facilities — yet if the total budget for US fusion science remains flat, as is expected, that is precisely what will happen (see ‘Death by ITER’). Marmar’s facility houses one of three US tokamaks — doughnut-shaped vessels in which physicists magnetically confine hydrogen nuclei in a plasma and heat them until they fuse and liberate energy. Alcator received $29 million in federal funding this year. But as ITER payments increase, US President Barack Obama’s 2013 budget proposal for the DOE would chop Alcator’s allocation back to $16 million, shutting down operations and forcing the experiment to lay off more than half of its 120 staff members.

## 2nc overview \*\*\*

#### The fundamental issue is one of funding, which the CP provides.

Andrew Holland is a Senior Fellow and Nicholas Cunningham is a Policy Analyst for Energy and Climate at the American Security Project, a non-partisan think tank devoted to studying questions of America's long-term national security, 8/3/2012

http://energy.aol.com/2012/08/03/through-innovation-and-investment-the-u-s-can-lead-in-next-gen/?icid=apb2#page2

We know that fusion works, it is already being done in labs around the world. Here in the United States, the three major experiments for research into magnetically-confined fusion (which uses powerful magnets to confine the superheated plasma) **are the Princeton Plasma Physics Laboratory**, **the Plasma Science and Fusion Center at** the Massachusetts Institute for Technology (**MIT**), and the DIII-D Research Program at General Atomics' **Fusion Energy Research Lab in San Diego**. **These experiments are supported by major scientific research institutions** like Oak Ridge National Laboratory in Tennessee **and by a range of businesses**, **contractors**, **and researchers in every corner of the country**.

Up to now, the problem with fusion has been crafting new materials that are strong enough to withstand the heat of a fusion reaction, which needs to reach 100 million degrees, more than six times hotter than the surface of the sun. The other challenge is confining the hot plasma long enough for the reaction to take place; a process that scientists are experimenting with either magnets or lasers. But scientists, together with the private sector, are making progress in these areas. The next step is to build a fusion reactor that will produce net energy power (get more power out than is put in); one is currently under construction in France, with American support. Known as ITER, the facility is backed by seven nations including the United States, and should be completed by 2020.

Scientists are confident that the limitations to full commercialization of fusion reactors are not scientific, but budgetary. Exponential increases in power generation were achieved for twenty years leading up to the mid 1990s, but since then, budget cuts have caused delays. A program that had suffered years of atrophy was further harmed when President Obama's fiscal year 2013 budget request called for a $45 million cut from the domestic fusion program, a drastic reduction of 16%.

**The budget cuts will force MIT's** Plasma Science and **Fusion Center to shut down**. This facility's "Alcator C-Mod" is a critical component of our national research program.

Cuts like this would prevent American fusion labs and companies from capitalizing on the lessons learned from the ITER experiment. MIT is doubly important because it houses the largest collection of plasma science graduate students in the country; **our next generation of scientists would be trained here**. Unfortunately, the prospect of the budget cut has already caused the University to delay acceptances of the incoming 2012 graduate students.

Cutting the program will start to dismantle a world class scientific workforce and send the message to our brightest science students that their best chance for career advancement will come from working abroad in France, Japan, or China.

The U.S. has a remarkable track record in developing transformational technologies that revolutionize our way of life. With much needed investment, fusion energy can transform our energy system for the next generation.

## at: no solve STEM

#### CP solves worker and expertise shortages—funding is key

APS 8

APS (American Physical Society), Report from the APS Panel on Public Affairs Committee on Energy and Environment, June 2008, Readiness of the U.S. Nuclear Workforce for 21st Century Challenges, http://www.aps.org/policy/reports/popa-reports/upload/Nuclear-Readiness-Report-FINAL-2.pdf

Over the past two decades, a number of reports have highlighted the challenges facing both nuclear science and engineering education and university-based research and training reactors. Appendix E lists some of the most influential ones. The major conclusions are as follows:

• There will be a continuing, long-term, significant need for nuclear scientists and engineers in industry, government, and academia, across a wide range of disciplines. As an example, a recent report from the American Nuclear Society (ANS) states, “It is clear that the growing problems associated with the interface between nuclear weapons and nuclear power will increasingly require innovative technical and policy solutions and people who are literate, trained, and educated in nuclear processes.”15

• Some agency of the Federal government must be in a stewardship position with respect to nuclear science and engineering education, and the designated agency must have the resources necessary to support the widespread needs for the development and maintenance of human resources, facilities, and basic and applied research. A recent National Academies study16 emphasized that university nuclear science and engineering infrastructure support should receive a high priority from its steward agency, which at the time was DOE’s Office of Nuclear Energy, Science and Technology (DOE-NE) and now is the NRC.

• Federal support for the nuclear science and engineering disciplines has been extremely effective in improving the quantity and quality of our nuclear technology expertise and expanding the university infrastructure for nuclear research and training. Previous reports recommended a variety of programs and practices that were either implemented by DOE or had the potential for implementation and success. These reports urged Congress to retain a separate funding line for nuclear science and engineering university programs in future appropriations bills. The recent National Academies report also concluded that the Federal government should include university infrastructure support in its budget at the levels authorized by the Energy Policy Act of 200517.

#### Funding is the key issue

APS 8

APS (American Physical Society), Report from the APS Panel on Public Affairs Committee on Energy and Environment, June 2008, Readiness of the U.S. Nuclear Workforce for 21st Century Challenges, http://www.aps.org/policy/reports/popa-reports/upload/Nuclear-Readiness-Report-FINAL-2.pdf

The Federal government must take an active role in helping to reinvigorate the fields of nuclear chemistry and radiochemistry, primarily by providing incentives for universities to add tenure-track faculty positions, allocating funding for university research and student scholarships and fellowships, and encouraging effective means of outreach to the general public. A funding “home” for such activities needs to be designated.

## at: hartwig

State support has a much larger and sustainable impact than high-profile national efforts

Rabe, 7

(Prof of Public Policy-Ford School at Michigan, “Beyond Kyoto: Climate Change Policy in Multilevel Governance Systems,” Governance, Vol. 20, Issue 3, July)

The translation of international agreements on climate change into domestic policy remains at a very early stage. But recent experience in multilevel governance systems, including the United States, Canada, and even the EU, suggests that greenhouse gas emission reduction does not automatically follow the ratification of an international accord. American states, Canadian provinces, and European nations continue **to play central roles** in policy development, raising enormous governance challenges for a policy problem that cuts across conventional policy and agency lines. In the American case, an unexpectedly robust body of state policy development has taken advantage of “policy room” created by federal government disengagement from Kyoto. States have clearly drawn from prior experience in related policy areas, utilized available resources, and secured supportive coalitions that cut across traditional party divides. They provide a surprisingly diverse and continually expanding set of policy innovations that appear, in many respects, consistent with the tenets of smart practices, although many uncertainties remain concerning their implementation and further diffusion to other states. Clearly, certain states such as California have assumed leadership roles on climate policy development, offering a distinct contrast to continuing federal government inertia. In the Canadian case, the prolonged debate over Kyoto ratification has coincided with paralysis in provincial policy development. Canadian greenhouse gas emissions have grown at a significantly greater rate than in the United States and no provinces begin to approach the more active states in terms of enacting and implementing policies that promise significant emission reduction. Neither federal nor provincial governments have devoted resources necessary to establish the kinds of policy analysis and development infrastructures so influential in the most active American cases. The province that has been most engaged on climate policy has been motivated principally by fervent opposition to Kyoto. In response, Alberta has promoted an alternative, a homegrown initiative that emphasizes voluntary programs and a focus on carbon intensity as opposed to outright emission stabilization or reduction. In turn, a prolonged process of intergovernmental haggling continues with no clear policy outcomes in sight. In the EU case, one sees differential national policy responses, somewhat comparable to the range of states, despite the existence of steadfast and vocal support for the united stance suggested by Kyoto ratification. These varied responses from diverse multilevel systems suggest that the next challenge for climate policy may be to move beyond the continuing focus on international compacts that may be largely meaningless in such a new and complex policy arena. The American states, Canadian provinces, and (now 25) EU nations provide intriguing testing grounds for what does—and does not—work to stabilize and reduce greenhouse gases. The prolonged quest for the best practice in international climate policy has long crowded out serious analysis of what constitutes politically, economically, and managerially viable climate governance at the national or subnational levels. Looking ahead, these 85 jurisdictions offer an extraordinary laboratory for beginning to consider the policy architecture of the next generation of climate policy. Systematic study of actual experience in policy development and implementation might help move the debate from a feckless quest for the optimal toward a more realistic exploration of what policy tools do—and do not—hold considerable promise. In turn, there may also be growing opportunities for cross-jurisdictional policy learning and formal collaboration. This is clearly evident in the growing American pattern whereby multiple states have begun to work together and is reflected in a few initial forays whereby **neighboring states and provinces have entered into serious discussion over collaborative opportunities.** In North America, these range from exploration of common policies among New England states and eastern Canadian provinces to improving east–west and north–south infrastructure for moving renewable electricity from its point of generation to areas of high demand. The continuing expansion and diversification of these kinds of cases **move us closer to the nitty-gritty of policy development and implementation, processes that are far less glamorous than all-night binges of international diplomacy but ones that are fundamental to setting the stage for expanded development of smart practices** to reduce greenhouse gas emissions in the coming decades.

## at: olnyk

#### The states are coordinated and perceived

Lutsey, 8

(PhD-Transportation Technology & Policy-UC Davis, “America's bottom-up climate change mitigation policy,” Energy Policy, Vol. 36, Issue 2, February)

The benefits of decentralized sub-national government action can be substantial. There are many circumstances and cases where locally led initiatives are quite compelling. For example, local governments can be more innovative and more responsive to local environmental preferences and economic circumstances. In the case of the US, where the federal government has been reluctant to lead efforts to reduce GHG emissions, efforts by lower-level governments take on added weight. It may make sense for more resource-constrained or less innovative local and state governments to learn from, or emulate, others’ actions in a cascading process. In many cases, however, national initiatives are far more compelling than a patchwork of local initiatives. Vehicle emission standards are a good example, since standardization and mass production leads to lower technology costs. In the case of global pollutants, the case is even more compelling than with local pollutants, where the value and importance of reductions varies greatly depending on the severity of the problem in any particular locale. The critique that states do not have sufficient leverage on climate change—an example of the well-known “commons” problem in environmental policy—is undermined by the expanding initiatives by lower-level governments in the US. Victor et al. (2005) commented that state-level actions like emission target-setting, which at that time involved 10 states with 14% of US electricity generation, lacked the necessary leverage for serious impacts. Earlier statements such as this did not anticipate the snowball effect now underway or the creative use of a variety of policy levers to effect change. The state renewable electricity standards cover more than half of US electricity generation, and states representing about half of US vehicle sales are poised to adopt the California GHG regulation for vehicles. A pivotal US Supreme Court (2007) ruling opens the door for more state and regional initiatives, including vehicle regulation. The overall US GHG emissions effect of the state and city emission targets could, if realized, stabilize US emissions at 2010 levels by 2020. The two major sector-specific mitigation efforts, those targeting vehicles and electricity, could put modest dents in national GHG emissions for their sectors with the current level of state involvement—and substantial reductions if extended to the entire US. Although these reductions are nowhere near the deeper longer-term reduction that would be required for climate stabilization, they are nonetheless substantial and significant relative to federal inaction. Lower-level US governments are learning to avoid the problem of creating a patchwork of diverse regulations for industry. They are accomplishing this by following consistent sets of mitigation actions prescribed by state policy innovators and adopting approaches that do not dictate particular technologies. Government action on climate change mitigation is generally following the steps of establishing an emissions inventory, developing a mitigation action plan, setting an emission reduction target, enacting sector-specific policies, and partnering with other governments to integrate their efforts and leverage their reductions. To accommodate further adoption by other states, principles of flexibility and incentives are being widely adopted. The California vehicle GHG regulation, the California low-carbon fuel standard, and renewable electricity standards are all performance standards that allow individual states (and industries in those states) the flexibility to choose the emission-reduction technologies that suit local circumstances.

**The “commons” problem is falling away as more sub-national governments learn to work together.** Early pioneering state actors saw themselves as models and leaders to be followed by others. For example, the first state-level emission target-setting, by Vermont, was advanced with a stated objective to demonstrate that “there are things individual Vermonters, the state and the nation can do” (Vermont, 1989). When California was developing its vehicle GHG regulations and later its low-carbon fuel standard, state leaders very deliberately watched and coordinated their efforts with other governments, within and outside the US. The vehicle regulatory report cites the importance of the combined impact of the adoption of similar mitigation measures for vehicles in other US states and other countries (Canada, Japan, and in Europe) (CARB, 2005), and the low-carbon fuel standard was developed through continuing discussion with leaders in other US states and the European Union, which proposed to adopt a standard nearly identical to California's just weeks after California's initial announcement (EU, 2007; California, 2007).

The tacit agreements between individual states are steadily giving way to formalized agreements between sub-national US governments. The US partnerships of western states, mid-western plains states, northeastern states, and cities across the map now represent over 80% of the US population and GHG emissions. These partnerships bind their climate-mitigation efforts with coordinated research into mitigation technologies, work toward consistent emissions inventory protocols, and seek to ultimately merge those emission-reduction sub-markets. This trend toward committed partnerships, often involving emissions trading, offers the prospect of overcoming cross-boundary jurisdiction issues (e.g. electricity generated in one state is consumed in another), and also cross-sectoral issues (e.g. farm-grown ethanol blended in gasoline in other states). Furthermore, US multi-government initiatives are **even creating bridges with countries outside the US.** New Jersey and the Netherlands signed a letter of intent to develop joint mitigation initiatives and establish a framework for a crediting and trading system for GHG emissions (New Jersey, 1998). The US states and Canadian provinces are forming alliances to permit emissions trading between electricity plants and perhaps other sectors (WCI, 2007; RGGI, 2007; NEG/ECP, 2001). California and Canada policy-makers had numerous discussions on the stringency and consistency of their vehicle GHG programs as they both broke from federal US vehicle emissions policy (NRCan, 2005; CARB, 2004). The agreement between the governments of California and the United Kingdom to collaborate on climatechange mitigation even aspires to work with other **countries like China and India** for further reductions outside their borders (California, 2006). While these agreements and discussions may be hampered or even stopped by constitutionality questions, these pacts between US state governments and foreign governments challenge the conventional wisdom that state-level action is incompatible with international involvement, and at a minimum facilitate later agreements between the national governments. In the end, though, the fact remains that about half the US states have not yet meaningfully engaged in climatechange mitigation. The implications of this uneven environmental performance are uncertain. In some cases, as with renewable electricity targets, national rules are not critical and may even be undesirable. For example, setting renewable electricity standards and their allowable criteria may very well depend on each state's particular available resources. In other cases, as with vehicle emissions, it is desirable to develop a single approach in dealing with automakers. Given that GHGs are a global concern and that the cost of mitigation can vary dramatically across regions and industries, it is important that local and state governments gain more experience and expertise. At some point they will likely be confronted with national initiatives. Some states, such as California, will be well prepared, as will some companies and industries (and may even resist being subsumed into national initiatives). Others will not be well prepared. The surge in local and state activity will play a crucial role in the formation of multi-government compacts to develop emissions trading systems across sectors and political jurisdictions.

5. Conclusions

US climate change policy is far more complex and rich than what is commonly thought. A wide variety of sub-national initiatives are underway. Many are leading to direct and significant emission reductions. Others are setting the stage for future incentives and enforceable policies and rules.

Out of the soup is emerging a consistent US policy structure. States (and cities) inventory their emissions, investigate GHG mitigation action plans, and commit to future emission reductions. These governments then choose from a menu of available policy alternatives, such as vehicle GHG standards, fuel standards, appliance efficiency standards, and renewable electricity portfolio standards, and innovate with particular policy instruments that are tailored to their specific locale. State governments cooperate and coordinate their actions via multi-state regional initiatives, which appear to be on the way to eventually establishing emission-trading markets. These actions are beginning to add up to a sizable portion of US population and GHG emissions and substantial potential GHG emission reductions. The commitments of lower governments on climate action are steadily amounting to substantial emission-reduction commitments. Sub-national US mitigation efforts represent engagement by 43–89% of the affected populations and responsible parties—including 53% coverage of GHG emissions by state climate change mitigation action plans; 43% coverage of emission sources by state or city emission-reduction targets; 58% coverage of US electricity production by state renewable electricity standards; 47% coverage of US vehicle sales by state vehicle GHG regulations; and 89% coverage of US GHG emissions by multi-government partnerships supporting the establishment of GHG market mechanisms. If the 17 states that have set their own GHG emission-reduction targets (generally to 1990 levels by the year 2020) in fact were to achieve those targets, nationwide US GHG emissions would be stabilized at 2010 levels by 2020—without any serious mitigation action taken by over half the states. Governments have largely overcome the “commons” problem in dealing with climate change, with a broad range of effective state- and city-level policy mechanisms being put in place. They are gaining much experience about what works, how to leverage each others efforts, and how to link across jurisdictions and sectors. Of course, governments (and industry) are still at the bottom of the learning curve, though now perceptibly moving up that curve. Even so, these efforts should not be overstated. The adoption and pursuit of targets, goals, and potential reductions should not be confused with actual mitigation performance, and what has been accomplished still falls far short of the much deeper longer-term cuts that will be needed for global climate stabilization. Moreover, even the best intentions of multiple multi-government partnerships developing consistent emission-tracking systems does not ensure that a cross-jurisdiction and cross-sectoral emissions trading mechanism will come to fruition anytime soon, never mind function well. What is clear, though, is that lower-level government policy structure need not preclude, and can certainly advance, federal policy in the area of climate change. Broad efforts of states and cities are so pervasive at this point that future federal policy will benefit by adopting the most popular and best functioning GHG mitigation programs and by coordinating the many existing initiatives. Whether and how nationwide and worldwide emissions markets evolve remains highly uncertain. All this experimentation may well result in an assortment of diverse markets and policies, though founded on common metrics and protocol. That may turn out to be the best approach of all. We will see.

## at: fed signal/certainty

States are crucial to the signal of permanence---partisanship undermines federal signal

Muro, 12

(Fellow-Brookings Institution, 1/12, “Funding Growth: State Clean Energy Funds Can Help Invent the Future,” http://www.cleanegroup.org/blog/funding-growth-state-clean-energy-funds-can-help-invent-the-future/)

In sum, our new paper proposes a much greater focus in U.S. clean energy finance on "bottom up," decentralized clean initiatives that rely on the states to catalyze regional economic development in regions. Such an approach -- which reflects the emergence of an emerging "pragmatic caucus" in U.S. economic life -- is currently demanded by federal inaction. However, it might also be the smartest**, most durable way** to develop the clean energy industries of the future **without the partisan rancor and obtuseness** that has stymied federal energy policy. State clean energy funds -- having funded thousands of individual projects -- bring significant knowledge to bear as they focus now on building whole industries. For that reason, the funds' transition from project development to industry creation should be nurtured and supported.

## AT: State Fiat Bad

The States CP is the topic---jurisdictional questions are key to energy production debates

Kay, 12

(Senior Extension Associate with the Community & Regional Development Institute-Cornell Dept. of Sociology, “Energy Federalism: Who Decides?,” http://devsoc.cals.cornell.edu/cals/devsoc/outreach/cardi/programs/loader.cfm?csModule=security/getfile&PageID=1071714)

**Questions about energy production** and consumption are acquiring renewed urgency in the 21st Century. Some **go to the heart of our nation’s system of federalism,** as an underlying but ever-present friction mounts over the way in which decision making power has been divided between central and more locally distributed political units. What is at stake? According to one author, “**the choice of regulatory forum often seems to determine the outcome of the controversy**. That may explain why Americans have traditionally **shed so much** metaphorical and genuine **blood deciding what are essentially jurisdictional disputes between governmental institutions.”**

A number of factors have raised these issues into greater prominence. Energy specific influences include the depletion of low cost oil, advances in energy extraction technology, and increased awareness of the link between climate change and energy consumption and production. Another element is the long standing but increasingly hardened absence of a broad based consensus over energy policy at the federal level, despite calls for such a policy that date back to at least the Nixon administration. These have been superimposed on shifting political trends in other areas, including the expanding national political divide. After the crest of federal adoption of new environmental legislation in the 1960’s and 1970’s, powerful and complex cross currents arose. Mostly “conservative” and anti- (or anti-“big”) government forces mobilized in the devolution, deregulation, privatization, and property rights movements.

In contrast, “progressive” movements evolved in response to increased globalization (of economic and environmental issues) and personalization (eg. of communications/information technology) by promoting global governance in some arenas and relocalization or local empowerment in others. Several energy examples being played out in New York State, as well as in other states and on the national stage, serve as useful and representative illustrations of the fundamental but insufficiently appreciated tensions raised. The first involves the spread of the controversial hydraulic fracturing technology that is used to extract oil and gas from “unconventional” reserves of shale and other rocks. The second and third involve the generation and distribution of electricity: where the authority to site electricity generating stations is vested, and who has the authority to site transmission lines that move electricity from their mostly rural points of extraction or generation to their mostly urban points of consumption. These are but a few among many examples that highlight the extent to which the proliferating threads of debate about energy federalism are being cinched into an increasingly dense tangle.

## FUSION ADV

## Too Slow Extn

#### Pro-fusion folks (their 2AC yes-feasible ev) agree its too slow

Jeff Forshaw, The Guardian, 9/15/12, Nuclear fusion – your time has come, www.guardian.co.uk/science/2012/sep/16/nuclear-fusion-iter-jet-forshaw

For a good few years now, nuclear fusion has looked like offering a solution to the problem. For every 100 tonnes of coal we burn, fusion has the potential to deliver the same amount of energy, without any carbon dioxide emission, using a small bath of water and the lithium contained in a single laptop battery. Moreover, it would be inherently very safe and would not produce any significant radioactive waste. Lest there be any confusion, the science behind this way of harnessing the energy locked away inside the atomic nucleus is entirely different from that used in current nuclear fission reactors. It almost seems too good to be true … but it isn't.

A fusion reactor called Iter is currently under construction in France and is due to start operation in 2020. Its principal goal is to determine the viability of fusion at the scale of a power station. Success is widely anticipated and there are already plans afoot to build a "demonstration power plant" to start operating in the 2030s.

Fusion is the reason that our sun keeps shining. Deep in the sun's core is a hot, dense sea of electrons and protons – the remnants of hydrogen atoms that have been torn apart by the high temperature created as a huge mass of hydrogen falls in on itself under the action of gravity. Under these extreme conditions two protons can fuse together, releasing energy in the process. Without this, the sun would stop burning and collapse under the weight of its own gravity.

The goal is to exploit the same basic physics to generate energy here on Earth. In fact, we are trying to do much better than the sun, which kilo for kilo is several thousand times less efficient than the human body at generating energy. Crucially, that is not because the energy released when two protons fuse is small. In fact a fusion reaction generates around a million times more energy than is released in a typical chemical reaction, like those that take place in the human body or when we burn a lump of coal. Instead, the inefficiency is due to the fact that proton-proton fusion within the sun is very rare: it takes a proton in the sun around 5bn years to fuse.

For that reason Iter will not fuse protons; instead it will fuse deuterium and tritium. These are heavy partners to the proton (deuterium has an extra neutron and tritium has two extra neutrons). The extra mass helps to ensure that fusion is far easier to achieve and, combined with the fact that Iter will operate at a temperature 10 times that in the sun's core, it should be possible for Iter to generate energy at a rate of 500m watts – the level of a small power station. Unlike the sun, Iter cannot exploit gravity to compress the plasma (the name for the hot fuel mix): instead the idea is to squeeze it inside a doughnut-shaped container using magnets. The energy from a single deuterium-tritium fusion reaction is carried away by a neutron and a helium nucleus. The latter is used to heat the plasma, thereby reducing the need to heat it from an external source, while the neutron can be absorbed in the walls, heating them up. In a reactor, that heat can then be extracted and delivered to the grid.

The fuel is not too hard to come by either, and it won't run out in the next few million years at least: deuterium is plentiful in seawater and tritium can be manufactured by reacting those outgoing neutrons with lithium.

It used to be joked that fusion is always the fuel of the future, but that is no longer fair. In the words of Professor Chris Llewellyn Smith, director of energy research at Oxford University, "with enough money we could probably build a fusion reactor now but it would not be economical. The challenge is to make it reliable and competitive." This confidence is built upon the fact that fusion is now a routine event at the Joint European Torus (Jet) in Culham, Oxfordshire.

## Not Feasible Extn

#### Prefer our ev—their authors are deluded

Ann Finkbeiner, NYTimes, 12/12/2008, No Light at the End of the Test Tube, [www.nytimes.com/2008/12/14/books/review/Finkbeiner-t.html?\_r=0](http://www.nytimes.com/2008/12/14/books/review/Finkbeiner-t.html?_r=0)

But sometimes wishful thinking is incurable: the poster child is nuclear fusion, the subject of Charles Seife’s substantive and lively new book, “Sun in a Bottle.” Fusion — the process by which hydrogen bombs explode and stars shine — could potentially mine cheap, limitless energy from atomic nuclei, but after decades of experiments and numberless careers, it still doesn’t work and still nobody quits. “There’s something about fusion that is a little different,” Seife writes, “that makes generation after generation of scientists deceive themselves.”

Fusion occurs only in charged gases at extraordinary temperatures and pressures that happen in bombs only for fractional seconds and that only stars can maintain. Every time scientists try to confine a charged gas, and heat and compress it until its nuclei fuse, the gas squirts out of its confinement, cools off and generally declines to light our light bulbs.

Still, as Seife shows, fusion’s grand promise has led to some dubious experiments. In 1989, Martin Fleischmann and Stanley Pons claimed to have achieved fusion at low temperatures (so-called cold fusion), effectively bottling a star on a table top. But no one else could repeat their results, and when the researchers wouldn’t back off their claims, they were effectively excommunicated. In 2002, another team of scientists claimed that sound waves in liquid could create hot little bubbles that imploded and caused fusion. But this effort — recounted vividly by Seife, who originally covered it for Science magazine, which published the controversial paper — couldn’t be repeated either and likewise ended in disgrace.

These experiments make good stories, but they occurred on fusion science’s margins — something Seife doesn’t make clear enough. Most fusion experiments are reputable and repeatable: they’re real science. They’re done by large international collaborations building machines that have been in the process of improvement since 1951 and have grown to more than 50 feet across, or by well-financed national teams using lasers powerful enough to be classified. But the state of the art is still what it has always been: fusion can’t be sustained, and the energy released is less than the energy required to produce it in the first place. The decades-old mantra — “fusion is only 20 (or 30, or 50) years away” — remains wishful thinking at its best.

Seife writes with effortless clarity, taking readers through the complex physics and engineering. That means the reader can not only understand but, even better, evaluate Seife’s message: fusion scientists should just cut bait. By analogy to your closet, if you haven’t worn it, throw it out. If you’ve been trying it for the last half-century and it hasn’t worked, then enough already.

#### Gravity constraints crush fusion progress

Charles Seife, Slate, 1/3/13, Fusion Energy’s Dreamers, Hucksters, and Loons, www.slate.com/articles/health\_and\_science/nuclear\_power/2013/01/fusion\_energy\_from\_edward\_teller\_to\_today\_why\_fusion\_won\_t\_be\_a\_source\_of.single.html

For one thing, the history of fusion energy is filled with crazies, hucksters, and starry-eyed naifs chasing after dreams of solving the world's energy problems. One of the most famous of all, Martin Fleischmann, died earlier this year. Along with a colleague, Stanley Pons, Fleischmann thought that he had converted hydrogen into helium in a beaker in his laboratory, never mind that if he had been correct he would have released so much energy that he and his labmates would have been fricasseed by the radiation coming out of the device. Fleischmann wasn't the first—Ronald Richter, a German expat who managed to entangle himself in the palace intrigues of Juan Peron, beat Fleischmann by nearly four decades—and the latest schemer, Andrea Rossi, won't be the last. The reason's easy to see: On paper, fusion energy has almost unlimited potential. A fusion reaction releases an extraordinary amount of energy by slamming together light atoms, such as hydrogen, to make heavier ones, such as helium. (Fission is essentially the opposite: breaking apart heavy atoms, such as uranium, to make lighter ones.) Fusion is the same process that powers the sun—and it's so efficient that we'd have enough atomic fuel on Earth to satisfy our civilization's need for energy for, essentially, forever. The problem is that it's really hard to slam those atoms together hard enough. You need incredibly high temperatures, tens or hundreds of millions of degrees Celsius, so that the atoms are moving fast enough to get the reaction going. But as you heat your fuel up, you have to keep it contained. A 100-million-degree plasma wants to explode in all directions, but if you're going to keep the reaction going, you have to keep it bottled up. What do you make the bottle out of? The sun's bottle is gravity. Because the sun is so massive—more than 300,000 times the mass of our planet—it has an enormous gravitational field. It's this field that compresses and constrains the hydrogen fuel and keeps it from flying off every which way. But without a sun-size mass to provide the gravity, you've got to find other ways. One way—and it works beautifully—is to use an atom bomb as the bottle. On Nov. 1, 1952, America used fusion energy to wipe the Pacific island of Elugelab off the face of the planet. The device at the heart of the "Ivy Mike" test was essentially a big, chilly tank of heavy hydrogen. At one end was a Nagasaki-type plutonium bomb, which, when it exploded, compressed the fuel, heated it to millions of degrees, and kept it bottled up. For a fraction of a second, we unleashed the power of the sun upon the surface of the Earth. The bomb that leveled Hiroshima was the equivalent of about 15 kilotons of TNT. Ivy Mike was about 10 megatons, nearly 700 times as powerful. And there is theoretically no upper limit to how large you can make these devices if you so desire. (The Soviet Union detonated a 50-megaton whopper in the 1960s.) The design works, but it’s a pretty poor solution to the world's energy needs. It's tough to turn a fusion weapon into a safe supplier of electricity. That isn't to say we haven't tried to harness the H-bomb. Edward Teller, the Strangelove-ian father of Ivy Mike, tried to convince the world that fusion weapons could be used for peaceful purposes, from controlling the weather to nuclear fracking to carving an Alaskan harbor out of bedrock to nuking the moon. Yes, Edward Teller wanted to nuke the moon to, in his words, "observe what kind of disturbance it might cause." Teller's dream of unlimited fusion energy didn't die with him. The Lawrence Livermore National Laboratory, Teller's former stomping grounds, is now the site of a monstrous $4 billion-plus fusion project known as the National Ignition Facility. The idea is to compress and bottle up a pea-sized pellet of hydrogen by using a laser so huge that it would make any red-blooded moon-nuking megalomaniac proud. The putative goal is to generate more energy through fusing hydrogen atoms than the energy that was put in by the laser in the first place. And NIF scientists say that they'll achieve success in 2010 ... rather, they'll achieve success by October 2012 ... rather, NIF has succeeded at the crucial goal of showing that Livermore scientists' predictions of success were all dead wrong. It's par for the course. Livermore has been predicting imminent success with laser fusion since the late 1970s—always failing miserably at fulfilling every prediction. In fact, critics (myself included) have long said that all the chin music about NIF being a source of fusion energy was nonsense. The laser is designed for studying nuclear weapons, not for generating energy. (And it won't even do the weapons job very well.) Yet scientists at Livermore keep pretending that their hyper-expensive laser research is somehow going to produce fusion energy, even though they've got to go through Rube Goldberg-esque variations of the idea to make it look like they've got a shot at success. (For those keeping score at home, the latest project, too, will be an abject failure if it ever gets funding.) Livermore is far from alone when it comes to overselling fusion. Way back in 1955, before the invention of the laser, physicists were predicting that fusion energy would be on tap within 20 years. Back then, the only workable method of bottling up a cloud of million-degree hydrogen, short of setting off an atomic bomb, was to use giant magnets. At that time, a number of scientists around the world attempted to design machines that would heat and confine burning hydrogen clouds with powerful electromagnetic fields. They didn't work as predicted; even after decade upon decade of false starts, the magnetic bottles were just too leaky. Yet fusion energy was still always just around the next corner. Magnetic fusion wasn't just for the Americans, but also for the Soviets, the Germans, the Japanese, the British—everybody who was anybody had a magnetic fusion program that would put power on the grid within the next few decades. At least this was the case until the 1985 Soviet-American Summit in Geneva, when Reagan and Gorbachev agreed that our countries would research fusion energy together. Within a few years, everybody who was anybody was now part of a big multibillion-dollar project to build a giant magnetic fusion bottle known as ITER. It takes a truly international effort to create something as powerfully screwed up as ITER. Yet if your only source of information were the ITER project's own history, you'd have no clue just how rocky the project has been behind the scenes. There's no mention of the nasty battles over cost overruns in the late 1980s and early 1990s. There isn't any hint of how scientists working on domestic fusion projects—whose budgets were getting eaten by ITER—worked behind the scenes to scuttle the international project. (And they succeeded: In 1998, the United States pulled out of the project, sending the whole endeavor back to the drawing board.) There's no sign of the dramatic scaling down of the machine's design (ITER had become ITER-Lite). Nor is there any acknowledgement that the new, cheaper, machine would simply be unable to achieve ITER's original goal of "ignition and sustained burn"—a fusion reaction that can be kept going indefinitely. In the aftermath of the U.S. pullout, the remaining partners regrouped, settled on the cheap design and a bare-bones budget. The United States then rejoined, and construction crews even broke ground in France for the reactor site. ITER is currently under construction in France. But despite these hopeful developments, the reborn project is foundering—dragged down by the very same forces that doomed the original ITER. The bare-bones budget (supposedly around $5 billion when the United States rejoined the project) has swollen back up to Falstaffian proportions (the latest estimate is $20 billion), and each year, the estimated completion date just keeps getting pushed further and further into the future. (A quick look into the Internet wayback machine shows the dates in flux.) The present trajectory of the reborn ITER looks incredibly familiar to anyone who watched the original project go down in flames. First comes ballooning costs and schedule slippage, and then, like clockwork, the United States begins to have difficulty coming up with the money it promised. Back in 2008, U.S. officials started telling Congress that, given tight budgets, we were likely not going to be able to shoulder our agreed-upon share of the ITER project costs. In an attempt to come up with the money, the Department of Energy has been squeezing our domestic fusion program, but there simply isn't enough cash to go around. (As Sen. Dianne Feinstein asked Secretary of Energy Steven Chu in March, "And if we continue to fund [ITER], where would the $300 million [for our soon-to-be annual ITER contribution] come from?" Secretary Chu's answer: "Senator, you're asking a very important question we've asked ourselves.") Naturally, domestic fusion scientists whose budgets are being slashed are freaking out. Viewed against this backdrop, the recent announcement by Princeton Plasma Physics Laboratory that it's working with South Korea to design a fusion reactor—one that doesn't have a snowball's chance in hell of ever being built—demonstrates the chaos that's gripped the fusion community. The scientists at PPPL are promising a billion-watt demonstration fusion power plant in the 2030s (20 years away!), without using any data from ITER. Since the whole point of ITER is to assist in the design of a demonstration fusion power plant, the implication seems to be that the $20-billion project is pretty much superfluous. (Without any sense of cognitive dissonance, even ITER's website suggests that scientists will complete the design of a demonstration power plant in 2017, two years before ITER gets plugged in, at the same time they emphasize how crucial ITER is to the prospect of a future fusion power plant.) Given this history, it's easy to understand why fanatical devotees gravitate to unorthodox approaches to fusion energy, be they cold-fusion moonbattery or schemes touted by startup companies with more cash than brains. The mainstream scientists who've been pursuing the dream have left us with little more than a thicket of delusions and broken promises. And, if one is to believe them now, after six decades of work, the clean, nearly limitless power of fusion is still 20 years away. At this rate, it will always be.

#### No evidence fusion will ever be energy-efficient

Chris Rhodes, Sussex University, Physical Chemistry Professor, 6/10/12, The Progress made in the Different Fields of Nuclear Fusion, oilprice.com/Alternative-Energy/Nuclear-Power/The-Progress-made-in-the-Different-Fields-of-Nuclear-Fusion.html

If this is true it is absolutely fascinating and perhaps some accepted scientific laws will need to be substantially modified, as has been said. However, from a practical point of view, that of dealing with the energy crunch, even if cold fusion is a reality, have we found our salvation? I don't think so, frankly. I have not seen any figures for how much Pd and deuterium gas are used to run this cell and how much excess heat is produced. However, I have yet to be convinced that the energy needed to produce deuterium gas (by the electrolysis of deuterium oxide - "heavy water") and to make enough heavy water in the first place to feed the electrolysis units, will be offset by the final thermal output of the "fusion" reactors. Then there is the matter of availability of palladium metal, the energy for its fabrication into the composite nanoparticles and so on, and how would the heat energy be extracted usefully, say to heat buildings or drive electricity turbines? The problem of energy extraction is even worse for "hot" fusion, from a plasma that even if it can be sustained, would produce ultra-high energy neutrons that no known materials are yet able to withstand, from which to extract thermal energy.

## No Commercialization Extn

#### Commercialization impossible

Keith Yost, MIT engineering student, 3/6/12, Opinion: Good riddance, Alcator C-Mod, tech.mit.edu/V132/N9/yost.html]

No one likes to hear that their work is a waste of time and money. But the job of government is not to assuage the egos of research scientists — the public welfare, writ large, comes first. In a guest column last week, Derek Sutherland ’12 bemoaned a proposed cut to state funding of the Alcator C-Mod reactor at MIT. I’m sorry Derek, but it needed to be said: your research was not worthy of the public’s money, and to be frank, was also not worth your time and attention as a researcher.

The reason why is simple: there is no future in magnetically confined fusion power. It will never be economical. We know how large the various layers of a commercial fusion reactor would have to be, and we can estimate the construction materials one would need to create such a reactor. Even if the very sizable technical hurdles were surmounted — magnetics, plasma physics, materials, and tritium availability to name a few — the capital cost of fusion’s heat island (the reactor sans turbines and other accouterments), would still be two to three times greater than that of a conventional fission reactor, on a per-MW basis. There is no pot of gold at the end of the long, long fusion research tunnel, and accordingly, little rational motivation to expend the time of Sutherland and his colleagues (and the money of the public) on such a fruitless venture.

One could argue that the other features of fusion power — its lack of a waste product, its sustainability, its steady energy generation rate, its relative safety — are compelling enough features to warrant a roll of the dice. I suppose that if one thought the safety issues of nuclear waste could never be resolved, or that the peakiness of wind power might never find an answer, such arguments could be justified. These assumptions, however, are overly pessimistic — if Derek were to ask his colleagues in Course 22 whether the kinks in fission power (safety, waste, uranium availability) could ever be solved, I think he would hear a chorus of resounding “Yes.” Nuclear reactors are already quite safe, and next generation plants are even safer. The waste is more a political issue than a technological one. And uranium is exceedingly abundant — if supplies seem short, that’s only because the price has not gone high enough to motivate fresh exploration. Certainly, the prospects of mending our existing technologies seem much brighter than the “just give us another 30 years” hope of fusion power.

Research like Derek’s is regularly billed as an investment in our future, but the more apt analogy is buying a Powerball ticket. This is not a sound roll of the dice, this is a move born out of frustration, desperation, and self-deception. It stems from a lack of political will to tackle the policy problems of today’s technology. Instead of bringing disparate stakeholders together to settle energy policy issues, we’d much rather cross our fingers and hope for a technological savior to deliver us from the need for political courage.

## at: naval power—heg

Naval power irrelevant-no statistical correlation

Crisher and Souva 12

Brian and Mark, Power At Sea: A Naval Power Dataset, 1865-2011. PhD candidate and PhD, Political Science Department, Florida State University

http://myweb.fsu.edu/bbc09/Crisher-Souva%20-%20Power%20At%20Sea%20v2.0%20full.pdf

Figure 4: Non-Directed Dyad Model Results Figure 7 also displays estimates and confidence intervals for this relationship in the post-World War II period. Here we also find an interesting result. We see that in the post-WWII period, there is no statistical relationship between the CINC power ratio variable and the onset of a MID. However, our variable, Navy Power Ratio is statistically and positively associated with a MID. As this ratio increases, meaning the balance of power in the dyad becomes more uneven, the likelihood of a MID increases. The positive relationship between the Naval Power Ratio and the onset of a MID is particularly noteworthy as the standard finding in empirical research on interstate conflict is that conflict is more likely under the condition of power parity than power preponderance. At least when it comes to naval power and non-contiguous conflict, we find the opposite.11

## 2nc won’t close straits

#### Threats are just rhetoric

Mills 8

Rodney, Naval War College Report, “Iran and the Strait of Hormuz: Saber Rattling or Global Energy Nightmare?”

http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA494366&Location=U2&doc=GetTRDoc.pdf

 In light of the operational challenges they face, the likelihood of prompt and decisive U.S. response, and the strategic negatives in carrying out their threat to blockade the Strait of Hormuz, why does Iran repeatedly assert on the world stage their ability to do so? The answer is that Iran gains more from the existence of their threat than they would by actually carrying it out. Thus, this repeated threat is part of an information campaign by Iran to prepare the operating environment and to shape U.S., coalition, and world response in dealing with Iran. These threats have been made several times a year in recent memory and have maintained this topic as a recurrent issue in the open media and public discussion about how to deal with Iran and more broadly, about global energy security. Accompanying these threats has been at least one demonstration of Iran’s asymmetric military capability and our problems at dealing with this threat. In January 2008, several IRGCN small craft interacted with three U.S. Navy ships as they transited through the Strait of Hormuz. Although the interaction was resolved without incident, the desired message entered the public discourse – that Iranian small craft can place at risk naval vessels transiting the strait and, by extension, they can place at risk the highly valuable oil tankers that also pass through the strait. Iran achieves several key benefits from this information campaign. The first is deterrence. U.S. and other decision makers are consistently reminded that a decision to attack Iran, and perhaps even a decision to put undue political or economic pressure on Iran, will result in military action with economic consequences. The second benefit comes from shaping public opinion - both internal and external to Iran. The discussion about the severe damage Iran can cause to the global energy system and the resultant economic impact is part of the public discourse on Iran and energy security. In its current form, this discussion tends to sway public opinion away from military action against Iran, unnecessarily constraining military and political leaders in their range of options and narrowing the set of circumstances under which leaders will get public support for military action. It is likely that the Iranian threat is also partly intended to shape Iranian public opinion - to show that Iranian leaders are willing to stand up to competitors and external influence in the region. Third, the information campaign shapes the oil market in ways favorable to Iran. In today’s market with little excess production capacity, factors potentially affecting future crude oil supplies 12 tend to increase the market price of oil, imposing what is termed a “risk premium.” Although the principle is straightforward, it is very difficult to quantify. One article put the value at ten to twenty dollars per barrel – a value corroborated in the article by Qatar’s oil minister – primarily due to tensions in the Middle East.23 That equates to tens of millions of dollars per day in excess income for Iran. Certainly not all of the risk premium is caused by Iran’s threat to the Strait of Hormuz, but it is a contributor to the risk premium over which Iran exercises direct control. Finally, on a longer time horizon, Iran’s information campaign also contributes to increased volatility in the oil market that will increase the economic impact if Iran ever does make good on the threat to the flow of oil.

## STEM ADV

## pay hikes

#### Nuclear workforce inevitable—pay

Gene Aloise, Director, Natural Resources and Environment, GAO, April 12, MODERNIZING THE NUCLEAR SECURITY ENTERPRISE: Strategies and Challenges in Sustaining Critical Skills in Federal and Contractor Workforces, http://www.gao.gov/assets/600/590488.pdf

NNSA officials and M&O contractors told us that maintaining competitive total compensation packages—that is, combined salary and benefits—is crucial for achieving their strategies for recruiting, developing, and retaining the workforce with the skills necessary to sustain critical capabilities in the nuclear security enterprise, but that other factors are also useful in both attracting desirable candidates and mitigating attrition. For example, M&O contractor officials at Sandia National Laboratories told us that offering the highest salary is not required to attract top talent, but offering pay comparable to peer institutions is a necessity. Accordingly, NNSA officials work very closely with M&O contractors to ensure that contractor compensation remains comparable to other enterprise laboratories and plants, private laboratories, companies, and other government entities that recruit and try to retain similar talent. M&O contractors undertake compensation studies every year and comprehensive benefits evaluation surveys every 2 years. This compensation study is done using survey data from recognized regional, national, and international surveys as needed. Based on these data, M&O contractors may seek permission from NNSA to pay certain employees more by submitting a special request in the Compensation Increase Plan. If the plan is accepted by NNSA, salaries will be increased. In addition to raising salaries for M&O contractors to keep them competitive, NNSA will also authorize and pay for sign-on and retention bonuses, significant monetary recognition and awards programs, and special compensation packages for especially difficult-to-recruit and retain critical skills specialties. The biennial benefits evaluation compares the value of M&O contractor workforce benefits to 15 peer competitors for the same talent.

According to DOE policy,16 M&O contractors may offer benefits up to 105 percent of the value of peer institutions’ benefits.

NNSA officials and M&O contractors told us that other factors are useful in both attracting desirable candidates and mitigating attrition. For example, the weapons laboratories in particular can offer scientists and engineers access to state-of-the-art equipment—such as the National Ignition Facility at Lawrence Livermore National Laboratory—and the opportunity to do cutting edge research that cannot be done outside the enterprise due to national security restrictions. Similarly, for the three production plants located in relatively remote, nonmetropolitan locations—particularly Pantex, Y-12, and the Savannah River Site— attrition rates are lower among candidates with ties to the local area. For example, M&O contractor officials at Y-12 told us that they recruit locally to the extent possible, because, historically, employees from nearby communities have been less likely to seek opportunities that would require them to relocate. These officials added that the local community is familiar with Y-12, and that about 35 percent of new applicants are employee referrals.

#### NNSA can fill-in key workforce shortages

Gene Aloise, Director, Natural Resources and Environment, GAO, April 12, MODERNIZING THE NUCLEAR SECURITY ENTERPRISE: Strategies and Challenges in Sustaining Critical Skills in Federal and Contractor Workforces, http://www.gao.gov/assets/600/590488.pdf

NNSA also maintains close, cooperative working relationships between its federal and contractor workforces. Much of NNSA’s expertise in M&O contractor human capital issues resides in its Contractor Human Resources Division (CHRD) at its Albuquerque complex. According to NNSA officials, the work of CHRD is both critical and central to how NNSA manages human capital issues with the M&O contractors. CHRD staff are in day-to-day contact with the M&O contractors on a wide range of human capital issues, including those related to recruitment, development, and retention of employees with critical skills. For example, if an M&O contractor is having difficulty recruiting staff with particular critical skills, it can submit a supplementary Compensation Increase Plan to the NNSA site office for authorization to offer candidates higher salaries. When this occurs, NNSA headquarters and the relevant site office largely rely on CHRD to review, analyze, and make recommendations to senior management on whether to accept, amend, or reject such a request. Because most sites do not have full-time human capital subject matter expertise in residence, NNSA site office officials in particular rely heavily on CHRD both for such expertise and to monitor M&O contractors’ human capital performance metrics at all nuclear security enterprise sites. For example, officials at the Sandia Site Office told us that there is no full-time subject matter expert on human capital issues at the site office, so the office relies heavily on a CHRD staff member to inform the office’s oversight of Sandia National Laboratories on this issue. According to NNSA officials, if NNSA had concerns about what a contractor was doing or had doubts that the contractor was going to be able to continue meeting its contractual obligations because of weaknesses in its recruitment, development, and retention strategies for critically skilled workers, NNSA would raise such concerns and require that corrective actions be undertaken.

#### Local employment solves

Gene Aloise, Director, Natural Resources and Environment, GAO, April 12, MODERNIZING THE NUCLEAR SECURITY ENTERPRISE: Strategies and Challenges in Sustaining Critical Skills in Federal and Contractor Workforces, http://www.gao.gov/assets/600/590488.pdf

In addition, some of the production plants and the test site are also in isolated locations and face some of the same challenges as the laboratories. However, these sites require fewer candidates with advanced degrees and can generally rely on the local workforce to fill other types of critical skills positions. For example, Savannah River Site and Pantex are also both located far from other large cities. However, because of their relative isolation, they are among the biggest employers in these areas, and many local candidates are qualified and eager to accept positions in weapons manufacturing and maintenance. Pantex officials reported that they do not have difficulty finding most workers to perform weapons maintenance, which requires a shorter amount of on- the-job training than weapons design but nonetheless requires a set of critical skills. However, site staff have had to develop strategies to attract candidates to fill those positions that require advanced degrees. Unlike the laboratories, officials at all of the production plants told us that they focus their recruiting efforts for these positions at local and regional colleges and universities. Officials at Y-12, for example, have identified competitive science and engineering programs at universities within 300 miles of their plant in Oak Ridge, Tennessee. Y-12 officials reported that they have better results in both recruiting and retaining critically skilled workers when those workers have personal ties to the area. In contrast, M&O contractor officials from the laboratories told us that they needed to recruit from the top academic programs across the country.

## AT: Testing

#### No shift back to testing ever

Daryl Kimball, Arms Control Association, 9/7/12, ACA Director Speaks in Moscow on CTBT, www.armscontrol.org/events/ACA-Director-Speaks-in-Moscow-on-CTBT

Why do I remain optimistic? Partly because the successful approval of New START in 2010 shows that even controversial arms control agreements can be approved in a tough political climate when the executive branch devotes sufficient time and high-level attention, when key Senators take the time to ask good questions and seriously consider the facts, and when U.S. military leaders speak up in support of the treaty.

It is self-defeating for the United States to oppose a treaty that prohibits an activity—nuclear testing—for which it has no need or interest in resuming. As Linton Brooks, the former head of the United States’ National Nuclear Security Administration, said in December 2011: "as a practical matter, it is almost certain that the United States will not test again ... in recent years I never met anybody who advocated that we seek authorization to return to testing."

Another reason for optimism is President Barack Obama’s strong support for moving the CTBT forward.

In his April 5 speech in Prague, President Obama declared that his administration “will immediately and aggressively pursue U.S. ratification of the Comprehensive Test Ban Treaty.” More recently, March of this year, he said: “… my administration will continue to pursue ratification of the Comprehensive Test Ban Treaty.” And the official Democratic Party platform—out just this week—once again pledges to “work to ratify the Comprehensive Test Ban Treaty.

## LEADERSHIP

## ITER Solves US Fusion

#### DOE agrees with us

Gabriel Nelson, Environment and Energy Daily, 3/21/12, DOE: Science chief questioned on a choice: to fund fusion or renewables?, lexis

Within the fusion program, DOE has decided ITER is the most promising place to send money at the moment, Brinkman said.

While the United States is paying for one-ninth of the project, the administration hasn't said exactly what it owes the project in fiscal 2013. The United States seems to have committed roughly $250 million, based on the amount that Japan has publicly said it will give, said Stephen Dean, president of Fusion Power Associates, in a comment last month to a DOE advisory committee on fusion.

DOE has agreed to spend about $250 million on the project in fiscal 2014 and another $300 million the following year, Olver said, meaning lawmakers will have to do plenty more thinking about the agency's science budget.

"We do not want ITER to fail because of the United States," Brinkman said.

#### Their distinctions are wrong—ITER supports US fusion research and causes tech spillover

National Research Council, Committee to Review the U.S. ITER Science Participation Planning Process, Plasma Science Committee, 2008, A Review of the DOE Plan for U.S. Fusion Community Participation in the ITER Program, http://www.nap.edu/openbook.php?record\_id=12449&page=15, p. 11-15

The Department of Energy (DOE) plan1 provides defined structures for organizing the participation of U.S. researchers in ITER research during the construction phase, and a phased U.S. research agenda for ITER. The plan also identifies mechanisms for adapting and advancing the plan as ITER develops (see Figures 2.1 and 2.2). In the period since August 2006 when the plan was submitted to Congress, the structures and mechanisms that it describes have been established and are operating. In addition, the ITER agreement came into force, the international ITER Organization was established, and an international technical review of the ITER design was conducted.

The DOE plan provides effective mechanisms and guidance for supporting U.S. participation in ITER research, addressing the U.S. research agenda. The plan has been elaborated and built upon in subsequent planning processes, including the ongoing Fusion Energy Sciences Advisory Committee (FESAC) strategic planning and U.S. participation in ITER Organization (IO) research planning. Key Structural Elements of U.S. Participation in ITER

The key structural elements of the U.S. participation in ITER are the U.S. ITER Project Office (USIPO), the U.S. Burning Plasma Organization (USBPO), the Virtual Laboratory for Technology (VLT), the International Tokamak Physics Activity (ITPA), and the DOE Office of Fusion Energy Sciences (OFES), as shown in Figures 2.3 and 2.4. The USIPO, the domestic project office responsible for the U.S. contributions to ITER construction, supports U.S. research and development (R&D) needed for ITER construction. The USBPO is the recently formed (2005) organization for coordinating and advocating scientific research activities in support of ITER and preparing for exploitation of ITER. OFES coordinates the activities of the USIPO, USBPO, and VLT to effectively interface with the IO. The VLT is the U.S. organization responsible for directing and coordinating engineering science and technology activities in support of ITER, including a large number of ITER R&D tasks. The director of the USBPO and the director of the VLT are the chief scientist and the chief technologist for the USIPO, respectively, ensuring close coupling of all three organizations and coupling of ITER to the U.S. scientific and engineering communities. The ITPA has been the primary international scientific coordinating body for voluntary support of ITER, identifying critical issues and facilitating joint experiments across the ITER partners. U.S. members of the ITPA are members of the USBPO, helping to ensure good communication and interaction among these groups. The ITPA, which provides a direct connection between the worldwide science communities and the IO, will soon come under the auspices of the IO. The ITPA may be viewed as the precursor of the international research team for ITER exploitation. Similarly, the USBPO may be the precursor to the U.S. ITER research team or users group.

The USBPO is the key organization for participating in ITER research in the United States. It is an open organization with 289 members (as of December 2007) across the entire U.S. fusion community. The USBPO is organized into 10 research groups focused on high-priority topical areas. The group leaders meet biweekly, via videoconferencing, to coordinate, prioritize, and organize tasks on burning plasmas, focusing on ITER. The USBPO is led by a director and an assistant director, advised by a 14-member council elected from the research community. Strong leadership of the USBPO and its topical groups is key to its effectiveness. An example of this is its role in the recent international ITER design review. The USBPO topical groups identified and documented high-priority design issues, developed an objective prioritization system, and submitted the issues to the IO for consideration. The IO formed eight design review working groups, including U.S. members, to consider all the issues submitted.

Some of the issues required significant research and investigation. The USBPO, working with the members of the design review working groups, leaders of U.S. programs, the USIPO, and the OFES, identified U.S. performers for specific work packages for the review. The USBPO coordinated and completed a number of these tasks, and it prepared documentation and informative debriefings for the U.S. members of the design review working groups and the IO Management and Science and Technology Advisory Committees (both of which advise the ITER Council). Due to the effectiveness of the USBPO and other elements of the DOE plan for participating in ITER, the United States was the first ITER partner to identify performers and propose specific tasks for the United States in the design review process, ensuring that ITER would continue to be able to address the U.S. research agenda. The United States contributed 21 percent of the scientific personnel effort devoted to completing the design review tasks, even though the United States will contribute 9 percent of the construction contributions of ITER.

In addition, the IO formed an international working group to develop detailed plans for the ITER plasma commissioning and operation phases. It has established the international scientific framework and program for ITER exploitation. This includes identification of needed research developments, such as an improved comprehensive modeling capability. The USBPO is coordinating U.S. participation in this group, ensuring good communication with the U.S. research community and recognition of the U.S. research agenda. The IO plans developed by this group also provide the structure for more detailed planning of U.S. activities on ITER in the coming years.

Finding: The committee finds that the 2006 Department of Energy plan for U.S. participation in ITER is operating and has proven effective in beginning to coordinate U.S. research activities and the development of the ITER program.

Finding: U.S. scientists have been well engaged in the planning for ITER, and the United States should endeavor to maintain this level of activity.

# 1NR

## impact ov

#### It also turns the taboo

Colin S **Gray 99**, professor of international politics and strategic studies and the director of the Centre for Strategic Studies, University of Reading in England, “To Confuse Ourselves: Nuclear Fallacies”, <http://fds.oup.com/www.oup.co.uk/pdf/0-19-829624-X.pdf>

There is much to be said in praise of the taboo hypothesis. Unfortunately, the proposition that an international political taboo against the'use' (i.e. the threat or the employment) of nuclear weapons has coalesced, is coalescing, or might coalesce, has about as much validity as the proposition that major war is, is becoming, or soon will be, obsolete.59 In the decent opinion of truly civilized folk the use of nuclear weapons (let alone chemical or, heaven forbid, biological weapons) may well be far beyond the pale of acceptable options for statecraft; that, however, can never be the relevant issue. Most probably there is today extant a political taboo against nuclear weapons, per se, and certainly against the use of nuclear weapons, which is authoritative for most people and most polities. If ruling notions for all of world politics were determined by a crude head, or political unit, count, then indeed it would be true to point to the power and influence of a, or the, nuclear taboo. The reality of world politics in this second nuclear age is, alas, far removed from that just fantasized. Self-helping security communities cannot be influenced very usefully by a nuclear taboo, especially when the principal articulators of this taboo are citizens of contentedly and prospectively permanently nuclear-armed states. To put this concept in some context, there are social (and legal) taboos against incest (everywhere) and spitting in public (in some societies), but in neither of these cases are taboos able to cope with the truly hard cases ('necessity knows no proscriptive norms' to misquote Theobald von Bethmann Hollweg60). The idea that embattled polities with the most serious of security problems could be influenced conclusively by a Westernled nuclear taboo is close to absurd. Less absurd is the proposition that the somatization of nuclear arms that is largely implicit in the global nonproliferation regime which is capped by the NPT, might help inhibit the pace of further nuclear proliferation. A general delegitimization and 'deglorification' of nuclear arms should facilitate the efforts of those who seek to impede the path of would-be nuclear proliferants. That granted, the superordinate difficulty remains that supply-side anti-proliferation measures cannot succeed, unless success is claimed merely for delay. The central problem with the hypothesis of a nuclear taboo is that it endeavours to deny needs both of the logic of policy and the grammar of strategy, to resort to Clausewitzian phrasing.61 American adherents to the hypothesis of the importance of a nuclear taboo should explain why this taboo can carry authority, given that it is flatly and robustly contradicted in key senses by the strategic beliefs and policies of eight nuclear-weapon states. There is a nuclear taboo which stigmatizes nuclear threat or employment. But policymakers in the eight nuclear weapon states do not equate such stigmatization— or singularization, for a less pejorative rendering—with unusability. Nuclear weapons may be weapons of last resort—for us, at least—but last resort should not be confused with 'no resort1. More to the point, perhaps, is the question of how a nuclear taboo possibly can contribute usefully ciegrat to world peace with security, when this second nuclear age provides a buyer's market for fissile material, skills in nuclear-weapon design and industrial fabrication, and certainly for ballistic and air-breathing means of nuclear-weapon delivery? To show the absurdity of the hypothesis of a nuclear taboo is akin to demonstrating the folly in the United Nations. Neither critique really is fair, because neither subject can command the merit in its destiny. Practical demolition of the value in the hypothesis of a nuclear taboo and thoroughgoing criticism of the United Nations ultimately are futile exercises, because both are shooting at straw targets. The United Nations cannot reform until its members reform their approaches to world politics. Similarly, a nuclear taboo cannot assume solidly reliable significance until political-military conditions are permissive, in which case it will not be needed. It is just naive to believe that nuclear arms, or other WMD, can be rendered morally unfashionable to a point of policy insignificance.

## uq

#### Current bargaining strategy makes debt ceiling solution agreement likely, but not guaranteed

Jill Lawrence, National Journal, 1/3/13, Don't Despair (Yet) Over Next Fiscal Cliff, www.nationaljournal.com/domesticpolicy/don-t-despair-yet-over-next-fiscal-cliff-20130103

The next fiscal cliff will be "much more terrifying." There are "bigger battles" ahead. The groundwork is laid for "more combustible struggles."

The tenor of analysis in the wake of Fiscal Cliff Deal #1 could be summarized as "woe is us." But here’s a radical thought: Maybe the next round of Capital Hill strife won’t be as bad as what we’ve just endured at the precipice of the Dec. 31 cliff.

I’m not predicting a harmonious glide to an agreement over the next two months, and there’s probably a limit to the number of deals Mitch McConnell can negotiate before a flock of Paulesque anti-establishmentarians descends to challenge him next year in the Republican Senate primary in Kentucky.

Still, there are a few reasons for hopeless optimism, as President Obama might put it.

First, the most intractable obstacle to moving forward is now gone. That would be Republican resistance to raising tax rates on anyone, reinforced by the no-tax pledge signed by almost all GOP lawmakers. It's no surprise that Obama's first priority, before weighing other steps to tame the debt, would be making good on his longest-running, most central campaign promise. The fiscal cliff agreement assures that wealthy Americans will share the burden of debt reduction, so now Democrats can move on – though not without friction – to broader steps.

Obama has already signaled he would consider “chained CPI,” a new way of calculating cost of living adjustments to Social Security and other programs, which could cut spending by $145 billion through 2021. Other possibilities include lifting the cap on income subject to the payroll tax (currently it doesn’t apply to income above $113,700), or means testing Medicare benefits so that wealthier people pay more for them. Obama has said explicitly that he is open to Medicare reforms and eliminating “further unnecessary spending in government.”

On the GOP side, many Republicans have signaled they would be receptive to closing tax loopholes, limiting deductions and ending some corporate subsidies -- all of this in the context of reform that simplifies the tax code and lowers the corporate rate. One of them is Pennsylvania Sen. Pat Toomey, former president of the vehemently anti-tax Club for Growth. He has supported ending subsidies for sugar and ethanol and, in a sign of the times, voted in favor of this week's cliff agreement raising tax rates for the nation's most affluent.

Another is Chris Chocola, the former GOP congressman and current president of the Club for Growth. Chocola told me Toomey and others won't necessarily be penalized for voting yes on the cliff deal, one of about 25 votes the group is using for its report cards om the 112th Congress ("they were in a tough spot"). Looking ahead to votes on the next deal, Chocola said the Club for Growth is “all for” tax reform and closing loopholes. He specifically mentioned “things like the ethanol credit, the wind tax credit.” What about eliminating oil subsidies? “We would look at it and likely support it.”

The big question, of course, is whether enough Republicans would back tax reform designed to bring in more revenue than current projections – in other words, changes that would likely require some people or entities to pay more. Obama, who so far has only secured about half of the $1.2 billion in new tax revenues he says are needed to achieve “balanced” debt reduction, has warned several times in the last few days that he’ll go after the rest in the next round. Chocola, asked if his group could support tax reform that brought in more revenue as opposed to keeping it flat, said that “we would not necessarily be opposed … if we view it as pro-growth.”

There have been many predictions of doom for the next fiscal cliff, coming in March. At that point a two-month postponement of severe defense and domestic spending cuts ends and they will automatically take effect if Congress has not settled on a different approach. That is also around the time the country will reach its debt limit and will default on its loans if Congress doesn’t raise the debt ceiling. Obama has already said he won’t negotiate on the debt ceiling and McConnell has already called it “an opportunity to curb out-of-control Washington spending.” Yet there’s common ground and, to some extent, common goals, beneath the posturing.

In a way the complexity of the next round of negotiations is an advantage. The more moving parts there are, the more bargaining chips are available to leaders on both sides. The decibel level of the left, the right, the special interests and all who represent them will be deafening. But struggles over which entitlement program or tax break is trimmed, and by how much, are business as usual in Washington. If we’re lucky, that’s what’s on tap, as opposed to ideological warfare over core party identities and principles.

#### Obama’s influence makes the difference

Kathleen Hennessey, LA Times, 12/31/12, Obama wins 'fiscal cliff' victory, but at high cost, www.latimes.com/news/nationworld/nation/la-na-fiscal-cliff-analysis-20130101,0,6417926.story

They also argued that the current deal was not the final installment on revenue. The current deal postponed, but did not eliminate, the automatic cuts in defense and domestic spending — known as the "sequester" — that Congress had put into place in 2011. Republicans don't mind the domestic spending cuts, but bitterly object to the reductions in defense.

As the price for lifting those defense cuts, White House officials have said, the president will demand another round of revenue increases through closing tax loopholes and other measures. That would bring the overall revenue total close to what Obama had originally wanted — if he can prevail.

Obama made that point himself, in an afternoon statement that sought to reassure restive Democrats that he would not allow Republicans to push through a deal with only spending cuts.

"If Republicans think that I will finish the job of deficit reduction through spending cuts alone," he said, "that's not how it's going to work."

"Revenues have to be part of the equation in turning off the sequester, in eliminating these automatic spending cuts," he said.

"If we're going to be serious about deficit reduction and debt reduction, then it's going to have to be a matter of shared sacrifice — at least as long as I'm president."

Some Democrats argued that liberal doubters were selling Obama short.

"This president's going to get more than one opportunity to exert his will," said Rep. John B. Larson of Connecticut, a member of the House Democratic leadership. "If he faces such a recalcitrant Congress and they won't act, we revisit this all over again."

"I think the president's still in the driver's seat."

## pc key

#### even if we never go over the cliff, Obama negotiation loss means we get an unbalanced spending deal—that causes economic collapse

Andrew Sullivan, Daily Beast, 1/1/13, The Long Game, Revisited, andrewsullivan.thedailybeast.com/2013/01/the-long-game-revisited.html

It's been interesting to see how the final mini-cliff-deal on taxes has been greeted on left and right. The left is pissed that Obama did not go fully over the cliff, using the post-re-election sunsetting of the Bush tax cuts to get all the revenues he campaigned on. The right is eager to get on with the debt ceiling fight, keen to forget the implosion of Plan B and their votes for one of the biggest tax increases in recent times (see the above chart from Zachary Goldfarb ranking the tax hikes in terms of their percentage of GDP). Obama yesterday basically said that he regarded the tax increases as simply the premise on which any future Grand Bargain needs to be agreed upon. And he is insisting that the next deal - on entitlements and tax reform - be equally balanced between revenue increases and spending cuts.

Well he can insist, but why would the GOP not talk right past him? The answer to that is that Obama has not lost all his leverage. The sequester remains - and is suspended only for two months (a reasonable compromise, although I'd have preferred it going into force already as a way to pressure these politicians into grander ambitions). The threat to the Pentagon therefore endures, which frightens those Republicans (and many Democrats) still wedded to a Cold War defense strategy a couple of decades after the Cold War ended. And the threat to Medicare hasn't gone away for the Democrats. Both sides will want to mitigate these crude cuts - and closing loopholes is one way to do it. Another Small Bargain with more revenues - and fewer loopholes - is therefore not necessarily a pipe dream.

And so you see that Obama's re-election has meant the biggest increase in revenues to the federal government since 1968. That would not have happened under Romney. And if the tax deal is not as big as the polls suggest Obama could have gotten away with, it is in part because of the contextual reasons Bruce Bartlett lays out here, in part because Obama genuinely believes in exercizing responsibility as president, but also in part because the president wants to avoid too much austerity too soon as we inch out of the worst recession since the 1930s.

It seems to me this latter point is under-rated. The left often talked of the fiscal cliff as if it were only win-win for Obama. It wasn't, in my view. He faced two dangers: of seeming unable to come up with a compromise (which is integral to his appeal) and of seeing the US economy sink under the weight of an imprudent and drastic reduction in demand. As Josh Marshall has noted, Obama always wanted a deal. No president wants to kick off his second term with a double-dip recession. He got half of a deal that will not have as drastic an effect as the full cliff-divers wanted.

Does the promised debt-ceiling hostage-taking by the GOP render all this strategy moot? Maybe. But it seems to me that the GOP has hurt itself so far since the election on fiscal matters - appearing, especially last week, as a herd of feral, foam-flecked cats. I don't see their threatening to ruin America's credit unless they get to cut Medicare by $500 billion over a decade as a particularly strong political hand. Any party triggering a self-imposed credit crisis as the economy recovers will not be rewarded politically. On that, especially after 2011, the president has the upper hand. Americans do not like monkeying around with the national credit rating as a way to cut medical care for grandma.

More to the point, the GOP has yet to even lay out the details of its proposed entitlement cuts (and campaigned in part against them). One way out would be for both parties to focus on cutting the Pentagon bloat - but that's not going to happen any time soon. And so I can see revenue-raising tax reform returning as a way to alleviate some of the political pain on both sides.

In other words, I can see Obama's logic here. What he's getting - which is a gradual shift toward more fiscal responsibility, with key protections for the working poor and the unemployed in place - is all he really wants right now. Like many of Obama's incremental achievements, you can sometimes miss the forest for the trees. We have the biggest tax hike in decades - without a sudden recession. And we have huge, painful spending cuts looming unless new revenue is found through tax reform. The end result - for all its unseemly messiness right now - may still be a sane, graduated fiscal readjustment as the economy recovers. The sequester can be back-loaded a little to find that elusive sweet spot between structural fiscal rebalancing and economic growth. And we could even clean up the tax code a little.

It's not great, but it will do. Sometimes, the little advances are preferable under certain circumstances to big breakthroughs. And Obama has to face a rabid Republican House probably for his next four years. They self-destructed on Plan B. They will almost certainly have to swallow hard and vote for big tax increases in the next day or so [and, in fact, now have]. And a campaign to slash Medicare is their next major goal. A phrase springs to mind.

#### BUT—we would also go over the cliff:

#### Negotiation failure means Obama let’s us default

John Avlon, Daily Beast, 1/2/13, Congress’s Fiscal-Cliff Chaos: House Passes Last-Minute Deal, www.thedailybeast.com/articles/2013/01/02/congress-s-fiscal-cliff-chaos-house-passes-last-minute-deal.html

Now is not time for broad self-congratulation, however. We have essentially just moved the fiscal cliff two months. Yep, mark your calendar, we’re going to be at this again by March 1, when the one-two punch of the debt ceiling and sequestration cuts come due. The challenge will be to see whether the president and Republican leaders can come to some sort of agreement on entitlement reform, tax reform, and spending cuts in that period.

Obama discussed the challenge frankly in his post-vote statement in the White House briefing room, citing the need to reduce the deficit and specifically mentioning Medicare reform. But he also sent a clear signal that he would not allow Republicans to hold the nation’s full faith credit hostage with the debt ceiling, indicating a willingness to let them own the default if they insist on it. It was an emboldened Obama, expressing the lessons he learned in dealing with a conservative Congress in his first term.

As absurd as it may sound in the wake of such a narrow escape, the really tough political fights still lie ahead. Enacting specific entitlement reforms is much more difficult than debates about whether 98 percent of Americans should not have their taxes raised. And when it comes to tax reform, the lobbyists and the activist class will be out in full force.

#### GOP would let it happen

Howard Kurtz, Daily Beast, 1/1/13, Obama Fiscal Cliff Victory Could Invite Years of Warfare With the GOP, www.thedailybeast.com/articles/2013/01/01/obama-fiscal-cliff-victory-could-invite-years-of-warfare-with-the-gop.print.html

Of course, many Republicans aren’t going to want to jump over that cliff—a real one, as opposed to the artificial crisis that Congress created this time—but the party is in such disarray at the moment that anything is possible.

#### Obama’s key – so the link comes first

Alexis Simendinger, Real clear politics, 1/3/13, Obama Taking Campaign-Style Approach to New Goals, www.realclearpolitics.com/articles/2013/01/03/obama\_taking\_campaign-style\_approach\_to\_new\_goals\_116581-2.html

By that hour on New Year’s Eve, Republican lawmakers assumed they were poised to vote to raise taxes, something they did not want to do, and they were stung by Obama’s determination to wage an endless political campaign into 2013 and beyond. Opponent Mitt Romney had simply morphed into “Republicans in Congress.” After clinching a deal with Congress to raise revenues, add to deficits and postpone across-the-board spending cuts for eight additional weeks, Obama took a bow in a video message to his base. “When I take the oath of office this month, I’ll be as determined as ever,” the president said in a three-minute message disseminated by his Chicago campaign team on Wednesday. “Just like four years ago, winning an election won’t bring about the change we seek on its own. It only gives us the chance to make that change. What we fought for in 2012, we’ve got to fight just as hard for in 2013.” “Make that change” was the president’s most interesting phrase. Does Obama imagine he will “create” support for legislation (a much harder task for any president -- and his aim during the prolonged health care debate)? Or does he seek to work within the bounds of existing public backing for popular policies (such as middle-class tax relief)? Obama’s second-term domestic agenda hinges on cooperation from Congress, but after Republicans gained control of the House in early 2011 and the two parties splintered over whether Congress would raise the nation’s debt ceiling, the president altered his legislative strategy. He decided House and Senate conservatives would relent if the public condemned them for obstructing something deemed important and valuable to their everyday lives. Arizona Sen. John McCain told reporters Sunday that Republicans jettisoned their embrace of a revenue-raising inflation calculation for senior citizen benefits -- even if it was loosely endorsed by Obama -- because the GOP believed the White House and Democrats were ready to throttle conservatives in the message wars. “We can’t win an argument that has Social Security for seniors versus taxes for the rich,” McCain explained. Lyndon Johnson -- who governed with large Democratic majorities and in a very different media environment -- believed as a former legislator that lawmakers were swayed by two basic impulses: hunger for recognition, and fear of losing their clout. As historian Doris Kearns Goodwin wrote, Johnson operated with the belief that “desire opened the door to the exercise of presidential power [and] fear closed it. . . . Johnson’s success in winning congressional support for change depended upon his ability to reduce the fear and increase the desire.” Obama has drawn a different lesson after serving less than a term in the Senate and four years in the Oval Office. As he heads into his second term, he has enthusiastically tried to stoke political fear among lawmakers, hoping to increase their desire to bend his way. But unlike LBJ or Franklin Roosevelt or even Bill Clinton, Obama is notably stingy with recognition once they do. Obama and his team of campaign-hardened advisers will soon be embroiled in a fiscal sequel on Capitol Hill, likely to occur within weeks of the president’s inauguration and State of the Union speeches. Obama lost no time warning Americans that Republicans are flirting with U.S. default, using that as political leverage to force him to cut favored spending to curb future deficits. “While I will negotiate over many things, I will not have another debate with this Congress over whether or not they should pay the bills that they’ve already racked up through the laws that they passed,” Obama said Monday. “People will remember back in 2011, the last time this course of action was threatened, our entire recovery was put at risk. Consumer confidence plunged. Business investment plunged. Growth dropped. We can't go down that path again.” The fiscal cliff episode did not win the president new friends on Capitol Hill, although that fact does not especially concern the White House. Obama touted the results as a victory for the American people and for his leadership, even as some liberal Democrats joined plenty of Republicans in lamenting the last-minute outcome. When asked to describe why Senate Minority Leader Mitch McConnell opted to call Vice President Biden over the weekend in an effort to get an eleventh-hour deal, a Senate GOP aide said the Kentucky Republican believed from long experience that Biden understood the art of swift legislative horse trading, which he thought Obama did not. “He was here for 20 minutes, and Biden was here for 30 years,” the aide said dryly of the president. “Biden understands what senators need.” On his second-term to-do list, Obama thinks immigration reform lends itself best to a White House campaign to enlist the public. Republicans, who lost key Latino support during the 2012 elections, according to exit polls, fear they oppose or block reform legislation at their electoral peril. The president has not yet described any legislative details. The power of the GOP-leaning gun-rights lobby will ensure that gun control measures will be a challenge to enact this year, despite the public uproar after 20 children and six adults were murdered at a Newtown, Conn., elementary school. The president assigned the vice president to convene a task force and present policy initiatives in time for inclusion in his State of the Union address. Those proposals, he suggested, would embrace gun measures, including revival of the expired assault weapons ban; approaches to mental health services and support; education and school safety improvements; and possibly a dissection of any proven links between cultural influences and mass shootings. The president’s vaguely described energy and climate-change aspirations will also be tough to pass. At a Nov. 16 news conference, he said no clear consensus exists in Congress or among Americans for new climate legislation. Secretary of State Hillary Clinton predicted in November that Obama would pursue his pending climate agenda largely through executive action, where possible, during his second term. "Look, we're still trying to debate whether we can just make sure that middle-class families don't get a tax hike. Let's see if we can resolve that. That should be easy. This one's hard," the president told reporters. Obama’s point about pushing legislation that enjoys clear public backing is key, said George C. Edwards, political science professor at Texas A&M University and author of “Overreach: Leadership in the Obama Presidency.” Based on his research, Edwards wrote that presidents who attempted to create or alter public thinking about policy ran into trouble, but those who understood how to exploit existing public opinion to achieve legislative goals proved more successful.

## hagel

#### No one will block

Joan Walsh 1-7, editor at Salon, “The phony Chuck Hagel fight”, http://www.salon.com/2013/01/07/the\_phony\_chuck\_hagel\_fight/

As if reporters don’t have enough to cover, with the House GOP imploding and another game of fiscal hostage-taking coming in two months, everybody’s gone all in on the “controversy” over former GOP Sen. Chuck Hagel’s nomination as Secretary of Defense. Yes, Sen. Lindsay Graham is shrieking that his foreign policy views are “out of the mainstream,” John McCain has “serious concerns” and Mitch McConnell won’t promise to confirm him, but this will blow over.

The biggest non-story is the threat that pro-Israel Democrats might ally to block Hagel’s nomination. Although New York Sen. Chuck Schumer conspicuously failed to promise to support Hagel’s confirmation on “Meet the Press” last month, allegedly because of his insufficient fealty to protecting Israel, Schumer is unlikely to buck President Obama. The National Journal’s Josh Kraashauer had a slightly odd column about Democratic Hagel skeptics, hyping Schumer’s doubts and pointing to the Democratic Jewish “minyan” of senators, including Dianne Feinstein and Carl Levin, as key to the confirmation. But Levin and Feinstein quickly came for Hagel’s confirmation after his nomination Monday. Schumer and New York’s other senator, Kirsten Gillibrand, both released non-committal statements praising Hagel’s background and vowing a fair hearing, but stopping short of endorsing him. Still, it’s almost impossible to imagine the two of them going it alone, without Feinstein or Levin, on Hagel.

There are a few progressives who lament that Obama is picking a Republican, squandering the political capital he’d amassed for Democrats with his hawkish foreign policy and killing Osama bin Laden. (Daily Kos ran a campaign to get Obama to pick a Democrat.) While taking those arguments seriously, Obama critic (and my former colleague) Glenn Greenwald nonetheless called Hagel’s appointment “one of Obama’s best appointments and boldest steps of his presidency.”

Others have been irked that the president is ready to fight for Hagel in a way he didn’t fight for Susan Rice as Secretary of State. I wish he’d fought for Rice, if indeed he wanted to appoint her, but I’m glad he’s bucking the neocons to fight for Hagel. It might bother me that Democrats are so willing to pick Republicans to head defense, from Robert Gates back to Bill Cohen under President Clinton, except that Hagel is better on defense policy than a lot of Democrats. His skepticism about the war in Iraq as well as a possible war with Iran, along with his unorthodox (for Washington) views about our relationship with Israel is reassuring. So is his apparent willingness to cut defense; David Sirota notes his public statements calling the defense budget “bloated” and suggesting that it “needs to be pared down,” sentiments you rarely hear from Republicans and not frequently enough from Democrats.

Hagel made dumb comments about Ambassador Jim Hormel being “aggressively gay,” for which he has apologized. Rep. Barney Frank, who first sounded alarms about the Hagel nomination, now supports him. Foreign policy wonk Steve Clemons, who happens to be gay, knows Hagel well and backs him strongly, recently writing that “Chuck Hagel is pro-gay, pro-LGBT, pro-ending ‘don’t ask, don’t tell.’” Likewise, Hagel’s maligned comments about “the Jewish lobby,” which is more correctly called the Israel lobby, didn’t disqualify him with the Jewish foreign policy expert who recorded the remarks, Aaron David Miller. Miller recently called the Hagel attacks “scurrilous,” writing in Foreign Policy.

In the end, Senate Republicans may decide to hang together to deny the president a strong defense appointment. Even though McCain hailed Hagel as a good Secretary of State choice in 2006, he’s unlikely to back him now, especially given the help Hagel gave Obama in 2008. Having backed Democrat Bob Kerrey in his failed Nebraska Senate campaign, Hagel is barely a RINO anymore, and his former GOP colleagues may relish the chance to rebuke their former colleague as well as the president they loathe. But I can’t see Schumer or other pro-Israel Democrats allying with them.

Honestly, if Hagel were to go down, it would do more to focus attention on the unseemly influence of pro-Israel hawks on American foreign policy than anything in recent memory. That may be why so far, AIPAC is officially neutral on his nomination. Neutral isn’t an endorsement, and certainly suggests their reservations, but if AIPAC isn’t ready to make this a fight, it’s hard to imagine a major Democrat bucking the president to do so.

#### Won’t drain capital – empirics

Hutchinson, Huffington Post Political Analyst, 12-31-12
(Earl, “Rice Nomination Fight Won't Drain President Obama's Political Capital,” [www.huffingtonpost.com/earl-ofari-hutchinson/rice-nomination-fight-obama\_b\_2229435.html](http://www.huffingtonpost.com/earl-ofari-hutchinson/rice-nomination-fight-obama_b_2229435.html), d/a 1-3-13, ads)

If the heat on UN Ambassador Susan Rice wasn't intense enough from GOP senators that are using her as a surrogate to batter President Obama, now Rice faces more heat from a green group. They have filled the liberal blogosphere with articles and a petition demanding that Rice divest her investments in TransCanada Corporation. This is the company that seeks approval to build the controversial Keystone XL oil pipeline to the Gulf Coast. Supposedly this is a conflict of interest that makes her unfit for the Secretary of State post. The big question beyond the issue of the ethics or even relevance of Rice's investments is whether this poses yet another peril to President Obama if he nominates her as Secretary of State. The peril is that a nasty, protracted fight over her nomination would be at best a distraction and at worst a stain on the administration at a critical moment when Obama must marshal all the political capital he can to try and get the bunch of stuck in the sand GOP senators to bend on his tax and budget proposals. It won't hurt him. All presidents from time to time face some backlash from real or manufactured controversies by opponents over a potential nominee to the Supreme Court, a cabinet or diplomatic post. In 2008, Obama faced backlash when he nominated Eric Holder as Attorney General. A pack of GOP senators huffed and puffed at Holder for alleged transgressions involving presidential pardons he signed off on as Clinton's Deputy Attorney General. In the end he was confirmed. The mild tiff over Holder didn't dampen, diminish, or tarnish Obama in his hard pursuit of his major first term initiative, namely health care reform. This was true three years earlier when then President Bush nominated Condoleezza Rice for Secretary of State. Rice was slammed hard by some Democratic senators for being up to her eyeballs in selling the phony, conniving Bush falsehood on Iraq's weapons of mass destruction. The threat to delay Rice's confirmation in the Senate quickly fizzled out, and she was confirmed. This did not distract or dampen Bush in his pursuit of his key initiatives. There was not the slightest inference that in nominating Rice, and standing behind her in the face of Democrats grumbles about her would threaten his push of his administration's larger agenda items. Susan Rice will continue to be a handy and cynical whipping person for the GOP to hector Obama. But the political reality is that the legislative business that Congress and the White House must do never has been shut down by any political squabble over a presidential appointee. The fiscal cliff is an issue that's too critical to the fiscal and economic well-being of too many interest groups to think that Rice's possible nomination will be any kind of impediment to an eventual deal brokered by the GOP and the White House. The Rice flap won't interfere in any way with other White House pursuits for another reason. By holding Rice hostage to a resolution of the fiscal cliff peril and other crucial legislative issues, the GOP would badly shoot itself in the foot. It would open the gate wide to the blatant politicizing of presidential appointments by subjecting every presidential appointment to a litmus test, not on the fitness of the nominee for the job, but on whether the appointee could be a bargaining chip to oppose a vital piece of legislation or a major White House initiative. This would hopelessly blur the legislative process and ultimately could be turned against a future GOP president. This is a slippery slope that Democrats and the GOP dare not risk going down. Rice will not be Obama's only appointment at the start of his second term. He will -- as all presidents -- see a small revolving door of some cabinet members and agency heads that will leave, and must be replaced. There almost certainly will be another Obama pick that will raise some eyebrows and draw inevitable fire from either the GOP or some interests groups. Just as other presidents, Obama will have to weigh carefully the political fallout, if any, from his pick. But as is usually the case, the likelihood of any lasting harm to the administration will be minimal to nonexistent. The White House vetting process for a potential nominee to any government position is fairly straightforward. It requires that nominees divest themselves of any investment that poses a potential conflict of interest relative to the office they'll fill. Rice's investment in the company that seeks to build the pipeline was not an issue or cause of controversy during her four-year tenure as UN ambassador and in other diplomatic posts she held. It certainly has no bearing on whether she is competent and qualified to be an effective face for American diplomacy. Above all, if Obama nominates her for Secretary of State, neither a scrutiny of her investments, or the GOP's fulminations about her, will drain any of Obama's political capital.

## link

#### Also alienates Dems

Leo Hickman, The Guardian, 8/23/11, Fusion power: is it getting any closer?, [www.guardian.co.uk/environment/2011/aug/23/fusion-power-is-it-getting-closer](http://www.guardian.co.uk/environment/2011/aug/23/fusion-power-is-it-getting-closer)

But ITER's projected costs are already rocketing, and politicians across Europe have expressed concern, demanding that budgets be capped. Fusion energy also has its environmental detractors. When the ITER project was announced in 2005, Greenpeace said it "deplored" the project, arguing that the money could be better spent building offshore wind turbines. "Advocates of fusion research predict that the first commercial fusion electricity might be delivered in 50-80 years from now," said Jan Vande Putte, Greenpeace International's nuclear campaigner. "But most likely, it will lead to a dead end, as the technical barriers to be overcome are enormous." Meanwhile, there is criticism from some plasma physicists that the design of ITER is wrong and alternative designs might produce better results for much less money.

#### Causes a fight over wasteful spending

Geoff Brumfiel, Scientific American, June 2012, Fusion's Missing Pieces, EBSCO

Supporters argue that ITER is the only hope, in the long term, of meeting the world's unquenchable demand for power. But even they have been forced to recalibrate their Utopian expectations. The project now seems to be propelled by institutional inertia -- it is easier for individual governments to stay the course rather than be the lone pariah who pulls out early. Critics, meanwhile, have more ammunition with each delay and cost overrun. ITER, they say, is a colossal waste of money at a time when funding is desperately needed in other areas of energy research. Both sides agree: when the project is finally completed, it had better work.

#### It’s a direct tradeoff in negotiations – only we have an internal link

David Unger, Christian Science Monitor, 11/8/12, US energy future back in Obama's hands, www.csmonitor.com/Environment/Energy-Voices/2012/1108/US-energy-future-back-in-Obama-s-hands

President Obama talks to the media on the Heil Family Wind Farm in Haverhill, Iowa, in this August file photo. With the reelection of Mr. Obama, energy experts have begun to speculate how his "all-of-the-above" energy strategy will play out. In his victory speech early Wednesday morning, the newly-reelected President Obama offered a glimpse of an America "that isn't threatened by the destructive power of a warming planet," served by elected officials who work across the aisle to "[free] ourselves from foreign oil." It was as close as Mr. Obama got to broaching global warming in his speech, but it gives analysts and industry insiders enough to speculate over what the 44th president's second term holds for oil, gas and renewables. The passing expression of environmental concern relieved some climate-change activists frustrated with the candidates' sidestepping of an issue they say deserves foremost attention. “During his first term, President Obama articulated a vision of America leading the world with a clean energy future that meets the challenge of climate disruption head-on," said Sierra Club Executive Director Michael Brune in a statement Tuesday. "Today, American voters chose to give President Obama both an opportunity and a challenge of huge proportions." Bolstered by the memory of hurricane Sandy's fury and free from the burden of reelection, some hope Obama's second term offers an unprecedented chance to make serious inroads on energy independence and climate change. Obama has said he wants to extend the wind industry tax credits set to expire at the end of the year and continue to invest in new green technologies. But not everyone is convinced. "There must be a real risk that action on climate change becomes a bargaining chip that Obama trades for GOP support on economic issues, particularly given the widespread judgement that he has spectacularly failed to win over opponents in the past," writes Damian Carrington in The Guardian.

#### Fiat means Obama pushes

Paul C. **Light 2k** it the vice president and director of the governmental studies program at the Brookings Institution and is the author of The President's Agenda: Domestic Policy Choice from Kennedy to Clinton. He currently teaches as an adjunct professor of politics at Harvard University's John F. Kennedy School of Government, (PRESIDENTIAL STUDIES QUARTERLY, March, p. 209) (PDBF1276)

None of the revisionists suggest that the presidency is irrelevant to domestic policy, of course. Bond and Fleisher (1990) argue that "a president's greatest influence over policy comes from the agenda he pursues and the way it is packaged" (p. 230). Jones (1994) notes that presidents retain "significant influence in setting priorities, certifying certain issues, proposing policy solutions, and reacting to policy initiatives of others (such as those increasingly offered by more policy-active members of Congress)"(p. 181), and the ubiquitous Edwards and a second coauthor Barrett (1998), conclude their analysis of 268 presidential proposals by acknowledging that **"the president is very successful in obtaining agenda space for his potentially significant legislative proposals.... Once on the agenda, 40 percent of presidential initiatives become law, nearly twice the rate of congressional initiatives."**

## doe links

#### DOE links

Thomas McGarity, Endowed Chair in Administrative Law, University of Texas School of Law, May 2012, ARTICLE: ADMINISTRATIVE LAW AS BLOOD SPORT: POLICY EROSION IN A HIGHLY PARTISAN AGE, 61 Duke L.J. 1671

The interchange-fee rulemaking experience illustrates how stakeholders in high-stakes rulemakings have begun going beyond the conventional responses to rulemaking initiatives by adopting a new toolbox of strategies better suited to the deeply divided political economy. If the players on one side of the policy debate perceive that they are unlikely to prevail in the administrative arena, they will move the implementation game to another arena - the White House, a congressional hearing, a political fundraising dinner, a think-tank white paper, talk-radio programs, attack advertising, telephone solicitation and "push polls," or Internet blogs. Many of these new venues were amply used in the battle that accompanied the interchange-fee rulemaking. In addition, although lawyers for the stakeholders employ the careful language of administrative law in arenas in which that language is expected, spokespersons and allies also employ the heated rhetoric of modern political discourse in arenas in which that language is more likely to succeed. This Part probes these, among other, contours of blood-sport rulemaking.

## at: winners win

#### Winners win is wrong -- Obama votes neg

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.