# **2AC**

## Spec

### Spec

#### The plan specifies the incentive---it’s procurement

**Counter-interpretation---the aff must defend a topical plan. Specification is bad:**

a) They detract from topic specific education by focusing debates on minute issues with bad generic ev - they just contrive the resolution to get generic ground - outweighs because we only get it for one year

b) Forcing us to specify any further than the resolution is infinitely regressive - leads to page long plan texts - detracts from substantive focus and kills neg link ground

**c) They lead to squirrely funding PIC’s which are a voting issue - makes it impossible to be aff because they can steal the entirety of our case with a minute net benefit.**

**Not a voting issue---no in round abuse, cross-x checks**

## \*United States T

#### We meet---we procure energy produced IN the US---we only incentivize what is topical

#### We meet---rectennas would be in the US

Snead 8 – James Michael Snead, senior member of the American Institute of Aeronautics and Astronautics, past chair of the Space Logistics Technical Committee, published in Aerospace America, the Air Force Air and Space Power Journal, the International Society of Logistics’ Logistics Spectrum magazine, the Journal of AstroPolitics, and the online Space Review, graduate of the Air Force Institute of Technology with Master's Degrees in Aerospace Engineering, November 19th, 2008, “The End of Easy Energy and What to Do About It,” National Space Society, <http://mikesnead.net/resources/spacefaring/white_paper_the_end_of_easy_energy_and_what_to_do_about_it.pdf>

Possible rectenna locations in the United States 2.45/5.8 GHz SSP During the initial SSP studies, Rice University conducted a preliminary assessment of the continental United States to determine where the rectennas could be located. The initial assessment concluded that about 40% of the continental United States could be used to locate rectennas. Fifteen exclusion variables were used: inland waters, metropolitan areas, other populated areas, marshlands, perennially flooded lands, military reservations, waterways, designated habitats of endangered species, topography unacceptable, atomic energy commission lands, and lands excluded by three dimensions of electromagnetic compatibility problems. Further refinement of these criteria reduced the initial 40% estimate to about 17% or about 530,000 sq. mi.209 Noting that a rectangular area enclosing the elliptical rectenna and safety zone comprises about 100 sq. mi.,210 the suitable land in the United States could, therefore, support over **5,000 rectennas,** substantially greater than the approximately 250 SSP platforms that would likely be used.211

#### Counter-interpretation---energy production is conversion to electricity

PNL 78, Report Commissioned by the DOE Pacific Northwestern Laboratories "An Analysis of Federal Incentives Used to Stimulate Energy Production" March 1978 www.osti.gov/bridge/servlets/purl/7059750-iKeQE4/7059750.pdf

Energy production is defined as the transformation of natural resources into commonly used forms of energy such as heat, light, and electricity. By this definition, the shining of the sun or the running of a river are not examples of energy production, but the installation of solar panels or the construction of a hydroelectric dam are. Energy consumption is defined as the use of one of these common, "manufactured" forms of energy. Under this definition sunbathing is not energy consumption, but heating water by means of a solar panel is. In both definitions, the crucial ingredient is the application of technology and resources to change a natural resource into a useful energy form.

#### **This takes place at rectennas on earth**

URSI 5 – International Union of Radio Science (URSI), November 2005, "Supporting Document for the URSI White Paper on Solar Power Satellite Systems," [www.ss.ncu.edu.tw/~ursi/record/WP\_SPS\_supdoc\_051129.pdf](http://www.ss.ncu.edu.tw/~ursi/record/WP_SPS_supdoc_051129.pdf)

The rectenna is extremely efficient in the energy conversion. The 82% of **the energy received** at the ground **is converted to usable electricity.** The microwave beam averages 8% of the power of full sunlight. The maximum energy rate at the center of the radio beam is ¼ of the maximum sunlight energy rate, as measured at high noon in the desert. Thus the total SPS energy arriving at the rectenna site would be a fraction of the solar energy that arrives at each square meter of the site. However, unlike the sunlight, most of this SPS energy will be recoverable, and will be available 24 hours per day. This results in an average output of almost 1500 Wh/day/m2 for a rectenna at the equator 19 compared to only 600 Wh/day/m2 for terrestrial photovoltaics.5

#### **SPS collects solar, rectennas convert it to electricity**

Powersat 12 – Powersat Corporation, 2012, "Energy market drivers behind Space Solar Power (SSP)" [www.powersat.com](http://www.powersat.com)

Space-based solar power is a method of collecting solar energy so that it can be distributed for use all over the earth. With this amazing technology, space-based solar power is the future of power generation.¶ ¶ Benefits of Space-based Solar Power¶ ¶ The first benefit of solar power satellites or powersats is the fact that space-based solar power collection is virtually unaffected by the day and night cycles of the sun, with only minor effects from orbital eclipse. On the earth’s surface, solar panels can only collect solar energy for a maximum of 9 hours per day and when there is cloud cover this number is even lower. Space-based solar power can be collected 24 hours per day for the majority of the year and this means at least 5 times more space-based solar power can be collected than that collected by solar panels on the surface. That’s 5:1 in favour of space-based solar power. In areas where it is frequently cloudy, this number jumps to 25:1.¶ **Space-based solar power is a method of using solar power satellites to collect solar energy so that it can be distributed for use all over the earth.** With this amazing technology, space-based solar power is the future of power generation.¶ What else makes space-based solar power a viable energy source for the future? It is fast. The energy can be transmitted from the solar power satellites to the receiving stations and then between receiving stations in just seconds. This is all accomplished via a wireless transfer of the energy and the result is dispatchable, base-load power, which can then power homes and businesses as effectively as the more traditional forms of power generation.¶ More FAQs & Diagram | Energy market drivers for Space Solar Power (SSP)¶ ¶ Space-based Solar Power –¶ The Power of the Future¶ Space Solar Power (Powersat)¶ ¶ Space solar power (SSP) is an innovative, reliable, technologically advanced way of collecting and distributing solar power from space down to earth. (more about powersats or solar power satellites)¶ ¶ Space Solar Power (SSP) is clean and green energy at a low cost with minimal environmental impact.¶ PowerSat Corporation is a pioneer in generating safe, clean, reliable energy from space. **Solar energy is captured via satellites (known as powersats) and transmitted wirelessly to receiving stations at various points around the** globe. Thousands of megawatts can be harnessed and shifted between receiving stations thousands of miles from each other - all in a matter of seconds. (More about PowerSat)¶ What is Space Solar Power?¶ A SSP system is comprised of a solar power satellite, or powersat, which is a satellite made up of a number of modules outfitted with light weight photovoltaic solar panels.¶ (More about space solar power)¶ Energy across geographic regions. This advantage means that powersats can provide continuous, baseload power in areas where traditional energy sources are hard to site, and in areas where demand is significant.

#### **Airspace above the US is US territory---outer space is everyone’s territory**

Achilleas 3 – Phillippe Achilleas, AND\*\*\* Laurent Crapart, AND\*\*\* Elisabeth Marescaux, Institu du Droit de l'Espace et des Telecommunications, Universite Paris, 2003, "Legal Aspects of Solar Power Satellites"www.esa.int/gsp/ACT/doc/POW/ACT-GSP-SPS-0310 Legal Aspects of SPS - FINAL REPORT s.pdf

According to the various technical/legal documents that were taken as reference for the needs of this study, most of SPS concepts are expected to transmit energy, via either microwaves beam or laser beam, to Earth. This will notably result in the transmission of energy through airspace. According to Article 1 of the 1944 Chicago Convention on international civil aviation7, "Every State has complete and exclusive sovereignty over the airspace above its territory". To that extent, the question whether power transmission through airspace could violate the sovereign rights of the State concerned might appear. This issue shall nevertheless be avoided since SPS constitute a space activity, governed by the principle of **freedom of use of outer space** and falling under the provisions of international space law. The fact that SPS signals will pass through airspace shall therefore not be considered as a reason for denying space law applicability to SPS. While the debate existing around space law sphere of applicability is not closed yet8, it is clear that SPS shall be regarded as subject to space law to the extent that they can be qualified as a use of outer space. Air law applicability shall consequently be rejected, and space law preferably applied.

#### Holistic energy education---they exclude wind and solar affs---they are naturally produced raw material---key to real world advocacy

#### Limits---there’s no uniqueness---the majority of teams read the same affs

#### Reasonability---competing interpretations are a race to the bottom to arbitrary exclude the aff---we only allow one extra aff

## \*Incentives T

#### We meet

Diehl 7 – Junior Staff Member, Journal of Land, Resources & Environmental Law; J.D candidate (Rustin P., “NOTE: Transitioning to a Clean Renewable Energy Network in the West”, 27 J. Land Resources & Envtl. L. 345, Lexis Law)

Many studies have considered the benefits and achieved results of the available renewable energy financial incentives. While studies agree that these incentives are effectively promoting business integration of renewable energies, it is questionable whether the incentives encourage private adoption of renewable energy technology.n55 The incentives for implementing clean renewable power generation fall into two main categories: financial incentives and policy [\*354] incentives. These incentives can be provided at federal, state, and municipal levels. A laundry list of financial incentives include: corporate equipment rebates, energy efficient mortgages, accelerated corporate depreciation schedules, corporate tax credits, corporate production incentives, corporate and personal tax exemptions, personal tax credits, federal grant programs, USDA renewable energy systems and energy efficiency improvements loan programs, green power purchasing or aggregation, corporate tax incentive, industry recruitment incentives, property tax incentives, state public benefit funds, and state sales tax incentives. n56 Some of the policy incentives encouraging the use of renewable energies include: construction and design policies, contractor licensing, equipment certifications, generation disclosure rules, net metering rules, renewables portfolio set asides, required utility green power option, and solar and wind access laws. n57 In addition to these policy incentives, many states have adopted portfolio mandates or portfolio standards, which require certain percentages of energy come from renewable sources.n58

#### Counter-interpretation – financial incentives are public funds to induce behaviors – we meet

Webb 93 – lecturer in the Faculty of Law at the University of Ottawa (Kernaghan, “Thumbs, Fingers, and Pushing on String: Legal Accountability in the Use of Federal Financial Incentives”, 31 Alta. L. Rev. 501 (1993) Hein Online)

In this paper, "financial incentives" are taken to mean disbursements 18 of public funds or contingent commitments to individuals and organizations, intended to encourage, support or induce certain behaviours in accordance with express public policy objectives. They take the form of grants, contributions, repayable contributions, loans, loan guarantees and insurance, subsidies, procurement contracts and tax expenditures.19 Needless to say, the ability of government to achieve desired behaviour may vary with the type of incentive in use: up-front disbursements of funds (such as with contributions and procurement contracts) may put government in a better position to dictate the terms upon which assistance is provided than contingent disbursements such as loan guarantees and insurance. In some casess, the incentive aspects of the funding come from the conditions attached to use of the monies.20 In others, the mere existence of a program providing financial assistance for a particular activity (eg. low interest loans for a nuclear power plant, or a pulp mill) may be taken as government approval of that activity, and in that sense, an incentive to encourage that type of activity has been created.21 Given the wide variety of incentive types, it will not be possible in a paper of this length to provide anything more than a cursory discussion of some of the main incentives used.22 And, needless to say, the comments made herein concerning accountability apply to differing degrees depending upon the type of incentive under consideration.¶ By limiting the definition of financial incentives to initiatives where *public funds are either disbursed or contingently committed*, a large number of regulatory programs with incentive *effects* which exist, but in which no money is forthcoming,23 are excluded from direct examination in this paper. Such programs might be referred to as *indirect* incentives. Through elimination of indirect incentives from the scope of discussion, thedefinition of the incentive instrument becomes both more manageable and more particular. Nevertheless, it is possible that much of the approach taken here may be usefully applied to these types of indirect incentives as well.24 Also excluded from discussion here are social assistance programs such as welfare and *ad hoc* industry bailout initiatives because such programs are not designed primarily to *encourage* behaviours in furtherance of specific public policy objectives. In effect, these programs are assistance, but they are not incentives.

#### Prefer it –

#### Precision – the DOE supports our definition

Waxman 98 **–** Solicitor General of the US (Seth, Brief for the United States in Opposition for the US Supreme Court case HARBERT/LUMMUS AGRIFUELS PROJECTS, ET AL., PETITIONERS v. UNITED STATES OF AMERICA, http://www.justice.gov/osg/briefs/1998/0responses/98-0697.resp.opp.pdf)

2 On November 15, 1986, Keefe was delegated “the authority, with respect to actions valued at $50 million or less, to approve, execute, enter into, modify, administer, closeout, terminate and take any other necessary and appropriate action (collectively, ‘Actions’) with respect to Financial Incentive awards.” Pet. App. 68, 111-112. Citing DOE Order No. 5700.5 (Jan. 12, 1981), the delegation defines “Financial Incentives” as the authorized financial incentive programs of DOE, “including direct loans, loan guarantees, purchase agreements, price supports, guaranteed market agreements and any others which may evolve.” The delegation proceeds to state, “[h]owever, a separate prior written approval of any such action must be given by or concurred in by Keefe to accompany the action.” The delegation also states that its exercise “shall be governed by the rules and regulations of [DOE] and policies and procedures prescribed by the Secretary or his delegate(s).” Pet. App. 111-113.

#### Ground – weak solvency mechanisms make it impossible to be aff and purchasing provides counterplan ground while still allowing the aff to beat states

#### They overlimit – excluding public funds makes no incentive aff topical

#### We are not pre-existing---their card says people WANT SPS---proves the politics link turn---not that it’s happening now

## Warming

#### 1AC

- Prothero---real and anthro---long term trend---99% agree

- Nuccitelli---reducing emissions key, action now---4 degrees catastrophic

- Flournoy---extinction---SPS key

- Sify---oceans acidification causes extinction

- Ginsborg---magnifies all impacts---land, water, food

- Flournoy---SPS transitions away---existing power plants

- Dvorsky---FF unsustainable---SPS solves, exports

- Flournoy---alts fail---SPS k2 global demand

- Ritter---US key to international signal

- Kammen---global emissions

#### Status quo transition fails---small cases in New Mexico, Colorado

#### Intermittancy and land use

#### DOD solves economical

#### Replaces fossil fuels---don’t need hundreds

### AT: CO2

#### SPS creation only emits a nebulous amount of CO2 and it's offset by the carbon-free power it creates

**Asakura**, Professor @ Azabu University, **2k** (Asakura, Keiichiro, Collins, Patrick, Nomura, Koji, Hayami, Hitoshi, and Yoshioka, Kanji, Department of Environmental Policy @ Azabu University, " CO2 Emission from Solar Power Satellite through its Life Cycle: Comparison of Power Generation Systems using Japanese Input-Output Tables," July, http://policy.rutgers.edu/cupr/iioa/AsakuraCollinsNomuraHayami&Yoshioka\_LifeCycleCO2.pdf, EMM)

In this paper we have analyzed the CO2 emission likely to be produced by a system of Solar Power Satellites in as much detail as possible, based on the DOE/NASA Reference System. Based on this analysis, in order to satisfy Japan's present electricity supply, some 18 SPSs of 5 GW output would be needed, which we have estimated would release some 470 million tons of CO2. Japan currently releases some 1.2 billion tons of CO2 per year, so it is clear that a large amount of CO2 is released when the SPS system is constructed. However, the overall CO2 output is of the same order as nuclear power stations at 20 kg per kWh. This is about 1/60 of the output of coal- red power stations, and 1/30 of the CO2 output of LNG- red power stations. Furthermore, the SPS-Breeder scenario shows signifcant improvement in CO2 emissions at only 11g per kWh. Of course SPS is a future technological system, and potential problems concerning various parts and components remain to be resolved, but our result suggests that the SPS is one of the most effective alternative technology for further CO2 reduction in electric power generation. One of the ways to solve Earth-wide environmental problems is to generate electric power in environmentally clean ways. The SPS system may give us the opportunity to solve this problem and to initiative the escape from a 'closed-Earth' industrial-economic system.

#### Their card is about heat---Reed

## Space Radar

#### 1AC

* David/Dinerman---key to SR
* Li---nuke primacy/mobile targets
* Craig---key to hegemony
* Barnett
* Lieber Press/Glaser---Taiwan
* Lieber Pres---conventional war inevitable
* Marques/Weeden/Lewis/Helfand---Russia

#### ESA doesn’t solve---US key because esponsible for global early warning capabilities---Weeden

#### SPS solves hurdles to space radar

#### Satellites solve

#### Nuclear primacy is DECLINING---Li---china developing mobile missiles and other capabilities

#### Deterrence does not solve

#### Debris---group next two cards---status quo fails---NASA is THINKING about it not doing it---also early warning capabilities key

### AT: GSO Overcrowding

#### ITU coordination solves GEO over-crowding

Smith **8** – PhD Student @ University of Reading M.V., Lt. Col, PhD student in the strategic studies program under Professor Colin Gray at the University of Reading in the UK, winner of the National Space Society’s 2008 Space Pioneer Award, Chief of Future Concepts (Dream Works) the Pentagon, http://spacesolarpower.wordpress.com/2008/08/31/parking-slots-and-frequencies/

How does a company obtain a geostationary parking slot for a SBSP satellite? Parking slots are allotted internationally, by the International Telecommunications Union (ITU). However, the ITU only allocates orbital slots to countries, and not to private sector companies. Companies must negotiate with countries who hold the rights to orbital slots of interest. They must establish an agreement whereby space-based solar power satellites can thereafter occupy the countries’ allocated orbital slot(s). This is a common and standard practice by companies operating communications satellites in the geostationary belt. Space-based solar power p [SBSP] companies will follow these routine and well established procedures to acquire orbital parking slots. When satellites are located close to each other, their up-link and downlink frequencies and polarisations are to be coordinated, so that there is no interference. Sometimes this requires that existing frequencies or polarisations be altered by existing satellites, to accommodate a new entrant. The ITU which allocates the orbital slots (to countries who in turn may grant use of their slots to commercial ventures) requires that all players coordinate their frequencies so that there is no disruption of service. The new entrant is obliged to ensure that their transmissions will not disrupt existing services.

#### New systems solve GEO crowding

Boyle10(Rebecca, Writer @ PopSci, " Levitating Satellites into Odd Orbits Can Make More Room in Space," 7/28, http://www.popsci.com/science/article/2010-07/levitating-satellites-odd-orbits-makes-more-room-space-while-defying-kepler)

Space is getting pretty crowded -- there are a couple thousand satellites orbiting Earth, not to mention destroyed-satellite debris and at least one zombiesat. Adding new ones is increasingly difficult, because there's only so much room for satellites to sit in specific, geostationary orbits. A theory first proposed by a physicist/science fiction writer may provide a solution. In a new study, engineers from the University of Strathclyde in Scotland claim to have worked out a system of displaced orbits, first proposed in 1984 by American physicist Robert Forward. Satellites follow Keplerian motion, an orbital path named for Johannes Kepler, who described it 400 years ago. Unless they are powered, they naturally glide along that path after they're launched. But Forward -- who, as the researchers point out, also spent time in Scotland -- proposed using solar sails to nudge geostationary satellites into a different path. The theory was dismissed as impossible, but now Colin McInnes, Director of the Advanced Space Concepts Laboratory at Strathclyde, and his grad student Shahid Baig have published a paper in the Journal of Guidance, Control and Dynamics that says Forward was right. McInnes says the team has devised closed orbits that don't obey Kepler's laws. The orbits would allow satellites to circle the Earth every 24 hours, but remain displaced north or south of the equator. The pressure from sunlight reflecting off a solar sail can offset the center of the orbit to be slightly behind the Earth, away from the sun, McInnes says. In science fiction-y terms that might make Forward happy, it's called a levitated orbit. Though the displacement is between 5 to 30 miles, it's enough to make room for more geostationary satellites, which are necessary for weather forecasting and communications. Hybrid solar sails could incorporate traditional thrusters to push the satellites even farther apart.

#### Multiple satellites can occupy the same slot

Nelson 9—Ph.D. (Robert, “GEO Satellite question,” <http://www.aticourses.com/blog/index.php/2009/11/18/geo-satellite-question/>,)

Dear Dr. Nelson: I understand that GEO satellites are 2 degree appart in its orbital position. How is possible that some satellites ( Telstar 11N and NSS 10 located at 37.5W; Astra 2C and 1D at 31.5 E) occupied the same orbital position ?. Could you please, help me to understand this ?. Thank you Dr. Nelson. Dr. Nelson responded as follows: The two-degree spacing requirement applies to satellites that use the same frequencies at C-band or Ku-band. Interference is avoided through the use of highly directional Earth Station antennas, although there is inevitably some adjacent satellite interference, with a C/I typically around 22 dB. **Satellites that share the same orbital slot use different frequency bands and sometimes also different polarizations**. For example, at 101 degrees WL, there are several satellites, including an SES Americom C/Ku-band satellite, an MSAT L-band satellite, and three or four DirectTV satellites that use a special portion of Ku-band for DBS and also use different polarizations. These satellites are separated by only about 0.02 degrees, or about 15 kilometers. Very exact stationkeeping must be maintained.

#### Layering allows 47,000 slots

**Gould 9** (Len, Comment on the article “Space Based Solar Power?,” <http://www.theoildrum.com/node/5314>,)

Just a further note on the "Gould orbits", each slot at GEO in the 1st Gould orbit has space for 6 solar satellites (circle of 100 km radius around the Clark orbit has a diameter of 628 km, allowing 6 positions with 100 km separation in that one slot). The 2nd Gould orbit 200 km above / below the Clark orbit has slots for 12 satellites at 100 km separation. So **just the first and second Gould orbits provide slots for 18 geosynchronous satellites for each satellite slot in the Clark orbit**, with the same safety separation margins. At lowest point, the orbit radius of the satellites in the 2nd Gould orbit would be 41,800 km compared to the orbit radius of the Clark orbit at 42,000 km. No real difference. Since Clarke orbit provides >2,600 slots at 100 km intervals, the 1st and 2nd Gould orbits provide 47,500 slots (all assuming 100 km separation).

#### This is specifically true for SPS

Potter et al 9 - Associate Technical Fellow at The Boeing Company Seth, “Space Solar Power Satellite Alternatives and Architectures,” AIAA Aerospace Sciences Meeting, http://www.sspi.gatech.edu/aiaa-2009-0462\_ssp\_alternatives\_potter.pdf

Unused GEO orbital slots over the Pacific Ocean ƒ Westernmost GEO satellite shown is at 148° west longitude ƒ An SPS at 150° west longitude can beam power to the west coast of the United States, while maintaining a 2° separation from this satellite ƒ SPS’s further west can beam power to Australia and eastern Asia ƒ In the long-term, SSP and communications satellites may share common platform.

### AO---SR---Pakistan

#### Space radar solves Pakistan loose nukes

Sersun 3 Douglas K, Major of USAF, Air Command and Staff College, "Eyes of the Nation: Does the United States Need Space Radar?", April, dtlweb.au.af.mil///exlibris/dtl/d3\_1/apache\_media/L2V4bGlicmlzL2R0bC9kM18xL2FwYWNoZV9tZWRpYS8zNzMzMA==.pdf

Space Radar is specifically designed to operate within a complementary system-of systems (SoS) architecture to address these requirements, wisely benefiting from investment in existing ISR platforms. This horizontal integration is one of the great legacies of the former Undersecretary of the Air Force (USECAF), Mr. Peter B. Teets, who drove the National Security Space community to embrace the concept. Because of the inherent day/night, all-weather, global persistence of Space Radar, Mr. Teets notes that we could use Space Radar “as a tripwire between…Iran and Iraq, or Pakistan and Afghanistan, so that anything that moves across those borders would set off alarms.” 3 With this information, we could then cue more locally persistent and responsive assets to go in for a closer look, dramatically increasing the efficiency of the entire network of sensors, and thus, denying the enemy sanctuary. ¶ U.S. forces require this timely flow of actionable intelligence to maintain full spectrum domain awareness whether engaged against hard target sets, conducting battle damage assessment, monitoring sea commerce routes, or augmenting disaster relief operations. Space Radar is the only sensor that can provide it globally, non-provocatively, in all-weather, day or night. Fully deployed, a Space Radar constellation will allow U.S. forces and coalition/allied partners to understand enemy actions and harness decision superiority to defeat him. ¶ Finally, Space Radar will enable many of the QDR’s transformation goals. We need to think well beyond OEF and OIF, continuing progress to deal with asymmetric, non-traditional threats, from non-state actors, with non-western cultural values, and potential access to WMD. This includes operational integration in interagency scenarios supporting the State Department, the Department of Commerce and justice/law enforcement. Space Radar can be harnessed to monitor nuclear storage facilities and the connecting transportation routes in Pakistan, to keep an eye on the oil infrastructure in the Mediterranean region, or to watch developments in the evolving Iranian nuclear stalemate. Space Radar can play a key role in homeland security matters such as monitoring a metropolitan containment area following an outbreak from a biological weapon during a bad weather period or for catastrophe planning in the event of another huge hurricane and the resultant evacuation. Space Radar is poised to deliver in scenarios well beyond those that resonate with French Maginot Line thinking prior to WWII.

#### Nuclear war

Pitt 9 William, a New York Times and internationally bestselling author of two books: "War on Iraq: What Team Bush Doesn't Want You to Know" and "The Greatest Sedition Is Silence”, 5/8/09, “Unstable Pakistan Threatens the World,” http://www.arabamericannews.com/news/index.php?mod=article&cat=commentary&article=2183

But a suicide bomber in Pakistan rammed a car packed with explosives into a jeep filled with troops today, killing five and wounding as many as 21, including several children who were waiting for a ride to school. Residents of the region where the attack took place are fleeing in terror as gunfire rings out around them, and government forces have been unable to quell the violence. Two regional government officials were beheaded by militants in retaliation for the killing of other militants by government forces. As familiar as this sounds, it did not take place where we have come to expect such terrible events. This, unfortunately, is a whole new ballgame. It is part of another conflict that is brewing, one which puts what is happening in Iraq and Afghanistan in deep shade, and which represents a grave and growing threat to us all. Pakistan is now trembling on the edge of violent chaos, and is doing so with nuclear weapons in its hip pocket, right in the middle of one of the most dangerous neighborhoods in the world.The situation in brief: Pakistan for years has been a nation in turmoil, run by a shaky government supported by a corrupted system, dominated by a blatantly criminal security service, and threatened by a large fundamentalist Islamic population with deep ties to the Taliban in Afghanistan. All this is piled atop an ongoing standoff with neighboring India that has been the center of political gravity in the region for more than half a century. The fact that Pakistan, and India, and Russia, and China all possess nuclear weapons and share the same space means any ongoing or escalating violence over there has the real potential to crack open the very gates of Hell itself. Recently, the Taliban made a military push into the northwest Pakistani region around the Swat Valley. According to a recent Reuters report: The (Pakistani) army deployed troops in Swat in October 2007 and used artillery and gunship helicopters to reassert control. But insecurity mounted after a civilian government came to power last year and tried to reach a negotiated settlement. A peace accord fell apart in May 2008. After that, hundreds — including soldiers, militants and civilians — died in battles. Militants unleashed a reign of terror, killing and beheading politicians, singers, soldiers and opponents. They banned female education and destroyed nearly 200 girls' schools. About 1,200 people were killed since late 2007 and 250,000 to 500,000 fled, leaving the militants in virtual control. Pakistan offered on February 16 to introduce Islamic law in the Swat valley and neighboring areas in a bid to take the steam out of the insurgency. The militants announced an indefinite cease-fire after the army said it was halting operations in the region. President Asif Ali Zardari signed a regulation imposing sharia in the area last month. But the Taliban refused to give up their guns and pushed into Buner and another district adjacent to Swat, intent on spreading their rule. The United States, already embroiled in a war against Taliban forces in Afghanistan, must now face the possibility that Pakistan could collapse under the mounting threat of Taliban forces there. Military and diplomatic advisers to President Obama, uncertain how best to proceed, now face one of the great nightmare scenarios of our time. "Recent militant gains in Pakistan," reported The New York Times on Monday, "have so alarmed the White House that the national security adviser, Gen. James L. Jones, described the situation as 'one of the very most serious problems we face.'" "Security was deteriorating rapidly," reported The Washington Post on Monday, "particularly in the mountains along the Afghan border that harbor al-Qaeda and the Taliban, intelligence chiefs reported, and there were signs that those groups were working with indigenous extremists in Pakistan's populous Punjabi heartland. The Pakistani government was mired in political bickering. The army, still fixated on its historical adversary India, remained ill-equipped and unwilling to throw its full weight into the counterinsurgency fight. But despite the threat the intelligence conveyed, Obama has only limited options for dealing with it. Anti-American feeling in Pakistan is high, and a U.S. combat presence is prohibited. The United States is fighting Pakistan-based extremists by proxy, through an army over which it has little control, in alliance with a government in which it has little confidence." It is believed Pakistan is currently in possession of between 60 and 100 nuclear weapons. Because Pakistan's stability is threatened by the wide swath of its population that shares ethnic, cultural and religious connections to the fundamentalist Islamic populace of Afghanistan, fears over what could happen to those nuclear weapons if the Pakistani government collapses are very real. "As the insurgency of the Taliban and Al Qaeda spreads in Pakistan," reported the Times last week, "senior American officials say they are increasingly concerned about new vulnerabilities for Pakistan's nuclear arsenal, including the potential for militants to snatch a weapon in transport or to insert sympathizers into laboratories or fuel-production facilities. In public, the administration has only hinted at those concerns, repeating the formulation that the Bush administration used: that it has faith in the Pakistani Army. But that cooperation, according to officials who would not speak for attribution because of the sensitivity surrounding the exchanges between Washington and Islamabad, has been sharply limited when the subject has turned to the vulnerabilities in the Pakistani nuclear infrastructure." "The prospect of turmoil in Pakistan sends shivers up the spinesof those U.S. officials charged with keeping tabs on foreign nuclear weapons," reported Time Magazine last month. "Pakistan is thought to possess about 100 — the U.S. isn't sure of the total, and may not know where all of them are. Still, if Pakistan collapses, the U.S. military is primed to enter the country and secure as many of those weapons as it can, according to U.S. officials. Pakistani officials insist their personnel safeguards are stringent, but a sleeper cell could cause big trouble, U.S. officials say." In other words, a shaky Pakistan spells trouble for everyone, especially if America loses the footrace to secure those weapons in the event of the worst-case scenario. If Pakistani militants ever succeed in toppling the government, several very dangerous events could happen at once. Nuclear-armed India could be galvanized into military action of some kind, as could nuclear-armed China or nuclear-armed Russia. If the Pakistani government does fall, and all those Pakistani nukes are not immediately accounted for and secured, the specter (or reality) of loose nukes falling into the hands of terrorist organizations could place the entire world on a collision course with unimaginable disaster. We have all been paying a great deal of attention to Iraq and Afghanistan, and rightly so. The developing situation in Pakistan, however, needs to be placed immediately on the front burner. The Obama administration appears to be gravely serious about addressing the situation. So should we all.

## Solvency

#### **SPS only needs a few launches**

Salkever 9 – Alex Salkever, interviewing Cal Boerman, Solaren's Director of Energy Services, September 26th, 2009, "Plans for solar power from outer space move forward" [www.dailyfinance.com/2009/09/26/plans-for-solar-power-from-outer-space-move-forward/](http://www.dailyfinance.com/2009/09/26/plans-for-solar-power-from-outer-space-move-forward/)

How many launches will it take to the get the whole system up and orbiting?¶ We can do it with a small number of launches, only four. To get that, we had to come up with a design that was lightweight and innovative. We're still using a big rocket. Each launch will have a satellite or a piece of our system that will go up. Once we are up there, we will rely on concentrating the suns energy with mirrors to improve efficiency. **We'll have a large footprint but it's not acres of solar cells like NASA has depicted.** We have to use space-qualified photovoltaic solar cells that have a proven track record. **We'll use mylar or some other lightweight reflective material to construct mirrors** to concentrate the sun's energy.

#### 1AC

- Lemonick/NSSO---DOD catalyzes

- Mankins---3 years, low cost, efficiencies

- Garretson---studies prove

- Reed---resilient

#### Framing issue---too outdated, doesn’t assume DOD commercialization either

#### Doesn’t take 30 years---3---Mankins---SPS Alpha

#### No obstacles---Garretson proven---Reed

#### Rockets exist---Mankins---private sector

#### Cart before the horse evidence is about demo project---not relevant

#### DOD commercializes

### AT: Space Law

#### Doesn’t say it’s illegal---says theres soom ambiguities

#### Weaponization inevitable globally

Bridge 12-10 – Robert Bridge, writer for RT, December 10th, 2012, "Space militarization: Coming to a galaxy near you" rt.com/politics/space-militarization-us-russia-699/print/

The United States is moving toward the militarization of space and this will change the face of war in the near future, an academician with the Russian Academy of Engineering Sciences has warned.¶ Judging by recent developments, **the idea of** formidable space weapons **prowling the last frontier is no longer limited to the realm of science fiction**.¶ The US has published tactical guidelines over the past three years on the use of force in outer space, while systems that may be used as orbiting weapons are undergoing rigorous test flights, said Yuri Zaitsev, Academic Advisor with the Russian Academy of Engineering Sciences.¶ In a security document released in October, the US Department of Defense (DoD) said that its space-related activities are designed to “maintain and enhance the national security advantages afforded by the use of outer space.”¶ Among its numerous stated objectives, the DoD report said it is US policy to “proactively seek opportunities to cooperate with allies and selected international partners in developing space architectures and in **designing, acquiring, and** operat**ing military space systems**.”¶ Zaitsev said that America’s push to militarize space may include the use of both nuclear and conventional weapons, which could have dangerous and dramatic implications for future warfare.¶ "**The** U**nited** S**tates, as well as some other leading powers, is attempting to gain supremacy** in [space],” Zaitsev explained. “This will enable their aerospace operations at the very beginning of a war to initiate strikes on strategic facilities throughout the [targeted] country.”¶ **During this year’s UN General Assembly, the US conspicuously refused to support a resolution to halt the militarization of space.**¶ In a vote on a resolution titled ‘Prevention of an Arms Race in Outer Space,’ 169 member-states, including the Russian Federation, voted in favor of the draft resolution stating, “[The] exploration and use of space…shall be for peaceful purposes…carried out for the benefit and in the interest of all countries, irrespective of their degree of economic or scientific development.”¶ Only **the United States and Israel abstained from voting on the document**, rendering it effectively toothless.¶ Washington’s refusal to cede control of space likely stems from its increasing reliance on space-based systems: An estimated 90 percent of the US Military reportedly uses or depends on space-based systems.¶ The Russian academic referred the shock over China’s successful targeted destruction of an old orbiting weather satellite in 2007.¶ "The Americans were frightened by the Chinese tests of anti-satellite weapons,” Zaitsev said. “It is quite possible that the US may soon initiate negotiations on anti-satellite systems."¶ Zaitsev also said that the United States and its allies may attempt to regulate space activity to its advantage.¶ "The United States and the European Union are working out a draft code of conduct in outer space," he said. "This document may regulate space activity in the interests of the United States and its allies and may discriminate [against] other states, including Russia.”¶ “**Russia and China are unlikely to sign this document, which means** military confrontation in outer space will intensify**,”** Zaitsev warned.

#### No arms race

Lopez 12 – Laura Delgado Lopez, expert at the Institute for Global Environmental Studies, Arlington, Virginia, master's degree in international science and technology from George Washington University, 2009 Truman Scholar and a Northrop Grumman Fellow at GWU's Space Policy Institute, bachelor's in political science, March 6th, 2012, "Predicting an Arms Race in Space: Problematic Assumptions for Space Arms Control" [www.tandfonline.com/doi/pdf/10.1080/14777622.2012.647391](http://www.tandfonline.com/doi/pdf/10.1080/14777622.2012.647391)

**Referring to the history of the nuclear arms race, as space doves often do, is misleading**. The Soviet Union and the United States did race to build up their nuclear arsenals, but that was because they could, both technologically and economically. Interestingly, while both lawful 43 and potentially illegal transfers of nuclear technology have taken place, the list of countries with known or suspected nuclear technology is still relatively small. 44 Moreover, it would be open to debate whether those countries that possess the knowledge of how to build nuclear weapons are currently immersed in a race to build up their arsenals in response to that of other countries. It is probable that limited proliferation may be a sign of the success of an efficient arms control regime, but it is nevertheless evident that adequate resources are a necessary prerequisite for an arms race**.**¶ **In the case of** space weapons**, the** conditions are even harsher**.** The incredible cost not only to develop and launch these systems, but to maintain them has been a major impediment to their development. Brilliant Pebbles, arguably the most cost-effective U.S. space-based missile defense program, which would also amount to an ASAT weapon, still amounted to a price tag of between $11 and $16 billion, expended over a 20-year period. 45 Would a country such as Pakistan, which ranks twenty-eighth in the U.S. Central Intelligence Agency’s World Factbook Gross Domestic Product comparison, be able to raise the kind of resources necessary for racing other countries in space? It is more probable that countries such as China and Russia would be able to compete if they so chose, 46 but **the idea of a worldwide space arms race can still not be sustained**. And therein lies the biggest issue that space doves fail to address in their arguments about an inevitable space race: resources. The perception of a threat and the political will to meet it are not enough to warrant the kind of worldwide conditions they are so quick to describe.¶ When space doves bring up the question of resources, they point to ‘‘asymmetric challenges from those who could not afford to be participants in the race itself.’’ 47 This situation might encourage, for instance, nuclear proliferation or the build-up of chemical or biological weapons. In fact, Nancy Gallagher argues that the United States rightly denies the existence of an arms race in space ‘‘only in the narrow sense that there is not, and probably will not be, a Cold War style ‘space arms race,’ i.e., an action-reaction dynamic between peer competitors,’’ but that doing so ignores the danger of ‘‘asymmetric reactions.’’ 48¶ Space doves thus seem to acknowledge that measures to regain or sustain stability in the international system do not always manifest themselves in the same way because power can take many forms. In proposing his concept of ‘‘soft power’’ as a legitimate tool for the United States to exert international influence, Joseph Nye explained that in a world of increased political complexity, the traditional ways to employ force are too costly, and thus ‘‘other instruments such as communications. . . and manipulation of interdependence have become more important.’’ 49¶ But this contention clearly **invalidates the inevitability of an arms race in space**. If countries do not respond in kind, then there is no race to speak of, and the inevitability argument breaks down. Gallagher’s statement thus seems contradictory: if a space race is not an ‘‘action-reaction dynamic between peer-competitors,’’ then what do space doves mean with an arms race? Why must it be avoided?¶ **This issue also raises a more** important problem: causality. **Unless other countries explicitly state that their asymmetric build-up is a direct response to U.S. deployment of space weapons, then** this link cannot be established**.** Even considering the timing sequence of deployment and the projected build-up—which would be difficult considering it takes years to develop, launch, and deploy space systems—**it would be simplistic to assume that other motivators for international behavior are not at work.**

#### No space war – deterrence checks

Klein 12 – CDR John J. Klein, USN (BS, Georgia Institute of Technology; MS, Naval Postgraduate School; MA, Naval War College), is assistant air officer (“miniboss”) aboard the USS John C. Stennis (CVN 74). He has served as maintenance officer, Sea Control Squadron 24 (VS‑24); test and evaluation project officer, Naval Force Aircraft Test Squadron (VX-20); naval flight officer under instruction, US Naval Test Pilot School; tactical development and evaluation officer (VS-24); and maintenance branch officer, Sea Control Squadron 28 (VS‑28). Commander Klein is the author of several journal articles and the book Space Warfare: Strategy, Principles and Policy (London: Routledge, 2006). March 6th, 2012, Astropolitics: The International Journal of Space Politics & Policy, "The Influence of Technology on Space Strategy," [www.tandfonline.com/doi/pdf/10.1080/14777622.2012.651700](http://www.tandfonline.com/doi/pdf/10.1080/14777622.2012.651700)

Fourth, advanced space-based technology and weapons systems can have a stabilizing effect on the international community. As was the case with nuclear weapons during the Cold War, if a weapons system poses a large enough threat to two or more adversaries, its potential use can cause state leaders to avoid direct confrontation. This is not to suggest that future space-based weapons will eliminate tensions among competing states, nations, or groups, but **weapons can provide a stabilizing influence at times.**

#### SPS is not a weapon and will not be attacked

Smith 8 – PhD Student @ University of Reading M.V., Lt. Col, PhD student in the strategic studies program under Professor Colin Gray at the University of Reading in the UK, winner of the National Space Society’s 2008 Space Pioneer Award, Chief of Future Concepts (Dream Works) the Pentagon “Weaponization, Environmental Risk, and Multinational Approaches”

“Your concern about weaponization of the system and environmental risks are proper and deserve solid answers. For the answers (and a whole bunch of other great information) let me point you to a special edition of Ad Astra magazine produced by the National Space Society. If you look on page 29 you’ll see the answers as to why space-based [SPS] solar power satellites cannot be weaponized. Let me add to that list the following items: **The DoD will not own or operate SBSP satellites**. Energy production and distribution is outside of its Title X authority. In my opinion the DoD merely wants to be a customer of safe, clean energy and is most comfortable purchasing its energy from commercial vendors, just as it does today. The interest shown by the National Security Space Office (NSSO) in hosting the work done by the Space-Based Solar Power Study Group was largely because NASA does not do energy and the DoE does not do space. In other words, it was a ball being dropped along organizational lines. The security-related interest of the NSSO as it stepped in to host the study was three fold: Provide more energy sources to hopefully alleviate energy competition as a trigger for war between the major powers in the 21st Century Achieve American energy independence from foreign oil suppliers who attract US vital interests in areas and with peoples with whom we really would prefer to interact with in ways other than a dependent customer-supplier relationship. Provide a source of clean energy that provides America with broader options regarding carbon contamination and clean-up, as well as improved ability to make progress on treaties such as Kyoto. **Simple inspections of the waveguides for either laser or microwave transmitters on the satellites can easily verify that the beam cannot be focused narrowly to create a weapons effect**. Such inspections can and likely will be conducted at time of insurance inspection, licensing, and registration before launch. **International inspectors would be welcome and encouraged**. The goal is to have international corporations own and operate these satellites and provide power to international customers–that’s the key to defense of these huge birds–deterrence by mutual defense through broad international ownership and international customership–an attack on a satellite is an attack against all.

#### China already perceives weaponization

Waugh 12-12 – Rob Waugh, December 12th, 2012, "US launches mysterious 'space weapon' which can orbit for a year" uk.news.yahoo.com/us-launches-mysterious--space-weapon--which-can-orbit-for-a-year-140313369.html

An Atlas V rocket blasted off from Cape Canaveral yesterday carrying a mysterious and controversial military 'space plane'. ¶ Boeing's X37-B is 196 feet long, robotic, and designed for long stays in space - it orbited for 469 days on its last mission, more than a year. ¶ What is unclear is what is aboard the unmanned craft - or what it does in orbit.¶ News outlets and analysts speculated that the craft could have been built to spy on Chinese satellites. ¶ Brian Weeden of the Secure World Foundation says that **the vehicle is highly controversial in** China**, where the government** views it as a 'space weapon'. ¶ Reports from Chinese news agencies suggested that the Chinese were developing their own rocket-powered space plane. In 2007, the Chinese tested an anti-satellite missile against one of its own weather satellites, destroying it in orbit.

#### Double bind – if there’s weaponization now, it’s non-unique – if there’s arms control now, the plan would be deployed peacefully and would not cause weaponization

#### SPS creates cooperation through the NSP

Garretson 12 – Peter Garretson, Lieutenant Colonel of the USAF serving on CSAF's Strategic Studies Group, Spring 2012 "Solar Power in Space?" Strategic Studies Quarterly Spring

Our current National Space Policy articulates the top three space-related goals as: • Energize competitive domestic industries to participate in global markets and advance the development of satellite manufacturing, satellite-based services, space launch, terrestrial applications, and increased entrepreneurship; • Expand international cooperation; and • Strengthen stability in space. It continues by articulating several foundational activities important to the nation: • Strengthen US leadership in space-related science, technology, and industrial bases. Encourage an innovative and entrepreneurial commercial space sector. • Enhance capabilities for assured access to space. Develop launch systems and technologies necessary to assure and sustain future reliable and efficient access to space, in cooperation with US industry. • Develop and retain space professionals. Promote and expand publicprivate partnerships to foster educational achievement in science, technology, engineering, and mathematics (STEM) programs; embrace innovation to cultivate and sustain an entrepreneurial US research and development environment. • Strengthen interagency partnerships. • International cooperation. Strengthen US space leadership. Facilitate new market opportunities for US commercial space capabilities and services, including commercially viable terrestrial applications that rely on government-provided space systems.6 SBSP can be seen as a desirable strategy to achieve these national-level goals, consistent with the foundational activities, and with desirable effects for the USAF and the DoD. Fundamentally, a successful SBSP program would transform our industrial base and competitiveness and be at least as significant for American STEM programs as were the post-Sputnik and Apollo expansions in aerospace engineering. It would greatly expand the role of commercial space, and the effect on assured access and launch would be profound. Its natural confluence of challenges in space, energy, and security offers exciting options to further interagency partnerships between NASA, DOE, DoD, FAA, FCC, EPA, DOC, and DOS. It presents excellent opportunities for the United States to lead in international cooperation.

#### No perception link

Lopez 12 – Laura Delgado Lopez, expert at the Institute for Global Environmental Studies, Arlington, Virginia, master's degree in international science and technology from George Washington University, 2009 Truman Scholar and a Northrop Grumman Fellow at GWU's Space Policy Institute, bachelor's in political science, March 6th, 2012, "Predicting an Arms Race in Space: Problematic Assumptions for Space Arms Control" [www.tandfonline.com/doi/pdf/10.1080/14777622.2012.647391](http://www.tandfonline.com/doi/pdf/10.1080/14777622.2012.647391)

To return to the space doves’ argument, incapable of fully trusting the intentions of the United States if it were to deploy space weapons, adversaries and allies alike would respond by seeking to increase their own offensive space capabilities. But **this assumption is unwarranted**. Lacking resources and feeling insecure, countries tend to seek alliances with those in power, not independence to offset system unbalances on their own. The ‘‘go it alone’’ attitude that this perspective assumes contradicts the basic tenets of international system stability, in which stability is manifested through alliances, as occurred during the Cold War. In such a scenario, would the European Union try to divert its resources to the development of space weapons? No, and not only because of limited resources, but also because of the political risks. Europe would have to consider the far-reaching benefits of its historical relationship with the United States. Moreover, it would have to weigh the risk of contradicting its own national and regional policies. For instance, the European Space Policy reiterates Europe’s commitment to the OST and the ‘‘use of outer space for exclusively peaceful purposes.’’ 54 **It is therefore hard to imagine that Europe’s response to U.S. deployment of space weapons would elicit more than sharp criticism, let alone a complete reversal in policy**. If history is taken as a model, which recalling the historic concept of an arms race would necessitate, then there is no precedent to assume that an aggressive action by the United States would be met by competition from both adversaries and allies alike, particularly when costly political positions averse to these actions have already been taken.

#### Unilateralism causes cooperation, not backlash

Stone 11 – Christopher Stone, Space policy analyst and strategist, space/missile officer with Air Force Space Command Reserve Component, “American leadership in space: leadership through capability,” The Space Review, Monday, March 14, 2011, pg. <http://www.thespacereview.com/article/1797/1>

When it comes to space exploration and development, including national security space and commercial, I would disagree somewhat with Mr. Friedman’s assertion that space is “often” overlooked in “foreign relations and geopolitical strategies”. My contention is that while space is indeed overlooked in national grand geopolitical strategies by many in national leadership, space is used as a tool for foreign policy and relations more often than not. In fact, I will say that the US space program has become less of an effort for the advancement of US space power and exploration, and is used more as a foreign policy tool to “shape” the strategic environment to what President Obama referred to in his National Security Strategy as “The World We Seek”. Using space to shape the strategic environment is not a bad thing in and of itself. What concerns me with this form of “shaping” is that we appear to have changed the definition of American leadership as a nation away from the traditional sense of the word. Some seem to want to base our future national foundations in space us[e]ing the important international collaboration piece as the starting point. Traditional national leadership would start by advancing United States’ space power capabilities and strategies first, then proceed toward shaping the international environment through allied cooperation efforts. The United States’ goal should be leadership through spacefaring capabilities, in all sectors. Achieving and maintaining such leadership through capability will allow for increased space security and opportunities for all and for America to lead the international space community by both technological and political example. The world has recognized America as the leaders in space because it demonstrated technological advancement by the Apollo lunar landings, our deep space exploration probes to the outer planets, and deploying national security space missions. We did not become the recognized leaders in astronautics and space technology because we decided to fund billions into research programs with no firm budgetary commitment or attainable goals. We did it because we made a national level decision to do each of them, stuck with it, and achieved exceptional things in manned and unmanned spaceflight. We have allowed ourselves to drift from this traditional strategic definition of leadership in space exploration, rapidly becoming participants in spaceflight rather than the leader of the global space community. One example is shutting down the space shuttle program without a viable domestic spacecraft chosen and funded to commence operations upon retirement of the fleet. We are paying millions to rely on Russia to ferry our astronauts to an International Space Station that US taxpayers paid the lion’s share of the cost of construction. Why would we, as United States citizens and space advocates, settle for this? The current debate on commercial crew and cargo as the stopgap between shuttle and whatever comes next could and hopefully will provide some new and exciting solutions to this particular issue. However, we need to made a decision sooner rather than later. Finally, one other issue that concerns me is the view of the world “hegemony” or “superiority” as dirty words. Some seem to view these words used in policy statements or speeches as a direct threat. In my view, each nation (should they desire) should have freedom of access to space for the purpose of advancing their “security, prestige and wealth” through exploration like we do. However, to maintain leadership in the space environment, space superiority is a worthy and necessary byproduct of the traditional leadership model. If your nation is the leader in space, it would pursue and maintain superiority in their mission sets and capabilities. In my opinion, **space superiority does** not imply a wall of orbital weapons preventing other nations from access to space, nor does it **preclude international cooperation** among friendly nations. Rather, it indicates a desire as a country to achieve its goals for national security, prestige, and economic prosperity for its people, and to be known as the best in the world with regards to space technology and astronautics. I can assure you that many other nations with aggressive space programs, like ours traditionally has been, desire the same prestige of being the best at some, if not all, parts of the space pie. Space has been characterized recently as “congested, contested, and competitive”; the quest for excellence is just one part of international space competition that, in my view, is a good and healthy thing. As other nations pursue excellence in space, we should take our responsibilities seriously, both from a national capability standpoint, and as country who desires expanded international engagement in space. If America wants to retain its true leadership in space, it must approach its space programs as the advancement of its national “security, prestige and wealth” by maintaining its edge in spaceflight capabilities and use those demonstrated talents to advance international prestige and influence in the space community. These energies and influence can be channeled to create the international space coalitions of the future that many desire and benefit mankind as well as America. Leadership will require sound, long-range exploration strategies with national and international political will behind it. American leadership in space is not a choice. It is a requirement if we are to truly lead the world into space with programs and objectives “worthy of a great nation”.

#### Weapons are not destabilizing

Lopez 12 – Laura Delgado Lopez, expert at the Institute for Global Environmental Studies, Arlington, Virginia, master's degree in international science and technology from George Washington University, 2009 Truman Scholar and a Northrop Grumman Fellow at GWU's Space Policy Institute, bachelor's in political science, March 6th, 2012, "Predicting an Arms Race in Space: Problematic Assumptions for Space Arms Control" [www.tandfonline.com/doi/pdf/10.1080/14777622.2012.647391](http://www.tandfonline.com/doi/pdf/10.1080/14777622.2012.647391)

If space weapons are taken to be destabilizing, then the context preceding their deployment requires a condition of stability in the arrangement of power in the international space system. Space doves thus assume that despite unrivaled U.S. leadership in space—investing more resources and employing more space capabilities than any other nation, even the quickly-progressing China 35 —the fact that it lacks space weapons makes it an equal player in space. This argument assumes that if the United States were to deploy weapons in space, it would acquire a resource (power) of such magnitude that it would destabilize the system, 36 forcing other countries to respond in kind and seek a new condition of stability.¶ But is there balance in the international space system? No. First, if balance requires at least more than one bloc of power, where is the parity in resources? **In 2010, the U.S. space budget accounted for 23% of global space activity, versus 8% of non-U.S. space budgets combined. 37 Likewise, since the United States waged its first space war in the 1990s, space capabilities have been a key enabler of its asymmetrical advantage in warfare. While it is true that many other countries now participate in space, few have independent access on their own. The fact that astronauts from several countries were grounded along with the U.S. Space Shuttle fleet, but for the Russian Soyuz, points to an unbalanced distribution of power as it pertains to space**.¶ If, on the other hand, stability is assumed not through the resources power paradigm, but through comparable vulnerabilities, the imbalance becomes even starker. The United States is both more vulnerable and less vulnerable than other countries in space, depending on which way one looks at it. If one considers dependability, and the important role that space plays in day-to-day activities in the United States versus in other countries (considering their indigenous capabilities) then its vulnerability and disadvantage are highlighted. But if one considers the vulnerability of a space system by itself, a country with a single or only a handful of satellites could be crippled by a single attack, whereas several U.S. systems—like the Global Positioning System—would be able to survive or recover more easily because of the size of its constellations.¶ The current space environment does not reflect stability; on the contrary, the system is tilted. **It would be more appropriate to argue that U.S. space weapons deployment would widen the existing gap and effectively rule out the influence of other countries in this domain.** For countries that are only beginning to access space or are not yet able to participate, the presence of weapons may be seen as a threat to their own activities, particularly when considering the prohibitive effects of debris-causing weapons. These considerations aside, however, **while space weapons could reduce the likelihood of many countries catching up to the United States,** it would be a mistake to assume that these weapons would be the destabilizing element in the system.

## CP

**Permutation do both**

**Permutation do the counterplan**

#### Permutation do the plan and the first plank of the counterplan

#### Permutation do the plan and the second plank of the counterplan

#### It’s not competitive---the plan doesn’t commit to how procurement contracts are structured---the CP just does the plan and phases it out over time which proves it’s not competitive

#### Doesn’t solve space radar --- it phases out DOD procurement which means it wouldn’t give us military capabilities in the long term which means we wouldn’t have radar

#### **Federal government certainty is key to renewables and clean tech leadership**

Harder 12 – Amy Harder, energy and environment reporter, National Journal, May 14th, 2012, "Boom and Bust: Renewable Energy's Future?" energy.nationaljournal.com/2012/05/boom-and-bust-renewable-energy.php

Could the recent boom in U.S. renewable energy go bust?¶ That's what a recent report warns might happen given the state of current policy. **Without a national energy policy providing certainty for renewable sources** like wind and solar, the nascent industries could go bust after a few strong years as beneficiaries of the Obama administration's $90-billion injection of stimulus, suggests the report, conducted by researchers at the Brookings Institution and the World Resources and Breakthrough Institutes.¶ Indeed, **renewable-energy policy at the federal level is lagging**. The wind industry's production tax credit is set to expire at year's end, and a popular grant program for all types of renewable energy expired last year. Cognizant of this, President Obama last week called on Congress to renew the wind industry's incentive and a manufacturing tax credit created as part of the stimulus. But lawmakers don't seem poised to tackle comprehensive policy providing long-term incentives for renewable energy anytime soon, and any action on temporary tax credits probably won't happen until year's end.¶ And another recent report by the centrist Democratic think tank Third Way warns that without a national energy policy, the U.S. will lose any edge it has in the renewable-energy space to other countries like China and India that provide more stable federal support.

#### Federal support for SPS is key to revitalize the aerospace sector

Mankins, President of SPA and Former NASA Scientist, 9 (John, Preeminent Global Expert on SSP, SPA = Space Power Association, President of ARTEMIS Innovation Management Solutions, Worked @ NASA for 25 Years, “To boldly go: the urgent need for a revitalized investment in space technology,” 5-18, <http://www.thespacereview.com/article/1377/1>)

Unfortunately, the US investment in advanced research and technology for space exploration and development has been reduced to historically low levels, and concurrently has been focused more narrowly than ever before on immediate system designs and development projects. In many respects, the current budget is little more than an “advanced development” program with minimal opportunity for innovation and essentially no possibility that an invention arising from civil space research and technology programs could influence system design decisions, inform budget estimates or inspire new, more ambitious space program goals. The challenge today Space has never been more important to our national security than it is today. The opportunities for truly profound scientific discoveries through space exploration have never been greater. And the pace of international development of new capabilities for space operations has never been faster. Federal budgets for advanced research and technology to enable future space exploration and development have been reduced in scope and focused on near-term system developments to the point that US preeminence in space activities is in question. NASA’s advanced space research and technology budget was over $2 billion in fiscal year (FY) 2005, with a focus on objectives five to ten years in the future and with the purpose of informing program and design decisions, while retiring both technical and budget risks of those future programs. The President’s FY 2007 budget for NASA exploration technology declined to less than $700 million, and of that only a small fraction (perhaps less than $200 million) still addressed longer-term objectives. The corresponding budgets in 2008 and 2009 were further reduced. Little to none of the remaining investment deals with enabling fundamentally new goals or objectives, or dramatically reducing expected costs. With these funding levels and program goals, it is unlikely that the US will maintain leadership in space exploration beyond the current generation of projects—all of which are founded on the “seed corn” harvested from past investments in innovative new space capabilities. Further, declining support for space research and technology is creating an innovation vacuum in the US as small business opportunities evaporate, and funding for universities and students vanishes. This trend jeopardizes America’s long-term leadership in space exploration and development, and damages our ability to achieve important national security goals. History Since the conclusion of the Apollo program in the early 1970s, the US space program has experienced varying levels of support from national leaders in the White House and the US Congress. Moreover, during most of that time human exploration beyond low Earth orbit has been “off the agenda”, with the exception of the short-lived Space Exploration Initiative (SEI) of 1989–1993. During the same period, US robotic exploration has had a number of tremendous successes, primarily involving the outer planets (e.g., Voyager spacecraft, Galileo, and more recently, Cassini), but also the inner solar system (e.g., Viking on Mars, Magellan at Venus), and the recent series of Mars missions (e.g., Pathfinder/Sojourner, Mars Observer, Spirit and Opportunity). However, these programs have tended to reflect one-of-a-kind successes with a minimal number of spacecraft and missions using common systems or technologies, resulting in continuing very high costs. Various attempts to create a foundation of common technologies and modular spacecraft have failed. Similarly, attempts to bridge the gap between robotic mission systems technologies and human space flight technologies (e.g., “Platform Z” from the early Space Station Freedom program) have failed. The most notable successes in this vein arose from the in-space assembly and spacecraft servicing capabilities of the Space Shuttle, first in the early 1980s with the Solar Max servicing mission, then with the series of hugely successful Hubble Space Telescope servicing missions, and finally with the assembly of the International Space Station. However, these achievements were far more the exception than the rule. For the most part human and robotic exploration systems and technologies became increasingly isolated beginning in the 1970s. More recently Following the Columbia tragedy in 2003, the direction of the US space program was again the subject of intense discussion (led by the White House) and including various agencies and organizations. The result, announced in January 2004, was the “Vision for Space Exploration” (VSE). The VSE as formulated originally was much more than a new justification for human space flight. Rather, the Vision addressed the full range of human and robotic exploration, as well as a revitalization of advanced space research and technology with far-reaching implications. The original VSE strategy placed strong emphasis on studies, research, and technology developments that would in time inform decisions regarding architectures and systems for (1) a Space Shuttle replacement; (2) annual robotic technology missions to the Moon; (3) a human return to the Moon to establish a permanent presence; (4) new space observatories to explore the universe beyond our solar system; (5) a campaign of robotic missions to Mars and beyond; and more. With current funding levels and program goals, it is unlikely that the US will maintain leadership in space exploration beyond the current generation of projects—all of which are founded on the “seed corn” harvested from past investments in innovative new space capabilities. However, in 2005 NASA shifted to a dramatically different approach to exploration and related technology developments with the results of the Exploration Systems Architecture Study. ESAS results placed exclusive emphasis on a US human lunar return and in an attempt to accelerate the first operational capability for the “crew exploration vehicle”—a capsule-based Space Shuttle replacement. To achieve this focus, numerous strategic changes were necessary. References to other aspects of space science and exploration were dropped, as was integrated planning of human and robotic exploration missions. For example, the initially planned annual campaign of robotic technology missions to the Moon was reduced to a single orbiter and one lunar lander mission, and these retained little or no role in guiding design decisions for human lunar systems. Also, to avoid technology-related risks, a range of lifecycle cost-related architectural options were eliminated from consideration, including in-space assembly of lunar transportation systems, in-space fueling and servicing, reusable lunar transportation systems, and others. The result was a family of systems for low Earth orbit access and a return to the Moon that involved a re-sized, Apollo-like architectural approach, with a heavy-lift launch vehicle and expendable transportation system elements. Significant shifts in agency budgets followed these new strategic directions, including drastic reductions in advanced space research and technology development, and a redefinition of remaining investments as “technology development”, focused on already-made design decisions. This shift in strategy was epitomized by NASA’s elimination of the NASA Institute of Advanced Concepts (NIAC) on the grounds of budget constraints, despite that fact that NIAC represented less than one third of one percent of the agency’s annual budget. The real point was that NIAC no longer had a legitimate role given NASA’s new approach to innovation: low engineering risk designs, and modest technology developments focused on those designs. Unfortunately, the elimination of design-to-cost and investments in longer-term innovation have come with a price. By recent estimates, the transportation-related cost of a single human mission to the Moon using the present, low-technology design solution will exceed $5 billion; transportation for two crewed lunar missions per year would require approximately 60% of NASA’s annual budget. Moreover, in-house agency subject matter expertise has been severely affected, as has the Agency’s contribution to US space technology leadership. Overall, the ambitious goals that were articulated by the White House in 2004 have been pushed into the indefinite future. A permanent human outpost of the Moon, development of lunar resources, deployment of large space observatories, and ambitious missions to the outer planets: all of these have been pushed out into the future by 20 years or more. Moreover, it is difficult to envision how such goals could ever be achieved using current systems concepts and concomitant prohibitively high costs. Only new systems concepts, enabled by focused space research and technology developments, can change this assessment. At the same time, real progress continues to be made by the international space community, grounded in steady investments in new technologies and systems—and resulting in regular accomplishments in space systems. The international flotilla of robotic space missions to the Moon illustrates this point: the US contribution of a single orbiter and a future lander are largely indistinguishable from the missions of other countries. Without an adequate strategy for, and more robust investment in, advanced space research and technology, long-term US preeminence in space exploration and development is doubtful. The Office of Naval Research (ONR) of the US Department of Defense (DOD) provides a useful example for how long-term but focused government research and technology advancement may be pursued. In particular, the ONR uses four complementary program strategies: a foundation of in-house subject matter expertise, sustained basic research and technology investments, development and demonstration of prototypes, and a focus on future capabilities. The concept of “Future Naval Capabilities” (FNCs) is used by the ONR to focus advanced research and technology (R&T) efforts around novel systems and concepts of operations. FNCs allow a range of R&T investments to be coordinated around specific new capabilities—even though the details of those systems designs have not yet been finalized, nor development programs approved. Also, the ONR uses the concept of “Innovative Naval Prototypes” (INPs) to orchestrate a range of ongoing R&T and draw the results of those efforts into nearer-term demonstrations of working prototypes and test-beds. INPs are characterized by ambitious technical objectives, and their potential to truly transform future naval operations. In addition, the ONR has preserved for over 60 years a commitment to long lead, discipline-oriented research and technology development. These investments have been responsible for advances in areas as diverse as materials, electronics, communications, power, and others—but all leading toward naval preeminence. And finally, DOD investments have maintained a foundation of in-house subject matter expertise at the Naval Research Laboratory (NRL) and other installations. Over the years, these in-house experts have enabled more effective technology investment decisions and, working with civilian and uniformed leaders better system acquisition decisions. Novel technologies and systems concepts must be matured and validated before decisions are made regarding the detailed designs of future space systems. There are a variety of business models that might be considered for space research and technology development. However, the strategies used by the ONR for its investments seem especially appropriate to the long-term character of the challenge of space exploration and development. For civil space exploration and development, these would be: (1) maintenance of in-house NASA subject matter expertise in relevant technologies; (2) sustained, discipline-oriented investment in basic research and technology at NASA centers, universities, and small businesses; (3) development and demonstration of transformational systems prototypes in partnerships involving NASA, major industry and others; and (4) a sustained focus on future space capabilities. And the results of these investments must be harvested before designs are finalized and system acquisition programs started. Assessment It is hardly consistent with the aspirations of Americans to “go where everyone has been before…” However, it is fantasy to suppose that the civil space program can affordably accomplish ambitious goals and objectives in space using systems concepts and technologies of the last century. Novel technologies and systems concepts must be matured and validated before decisions are made regarding the detailed designs of future space systems. In fact, numerous reports over a period of decades have established the criticality of a robust and focused investment in advanced research and technology, including the findings of several National Commissions, committees of the National Academy of Sciences, and others. Stable, robust, long-term federal investments in advanced research and technology for future civil space capabilities—funded at a level sufficient to assure US preeminence in space science, exploration, and utilization—are critical if we are to meet the challenges of this century: achieving ambitious goals in science and exploration, delivering on the promise of space to contribute to a strong national economy, maintaining a skilled aerospace workforce, and providing the foundations for future national security. It is time for the Congress and the White House—recognizing the challenges facing this nation’s space sector—to articulate and implement a strategy to revitalize advanced space research and technology and to make a sustained commitment to the implementation of that strategy. The recently chartered national study on the future of human space exploration, chaired by Norm Augustine, should take up this task. What should be done? The following actions are needed now: The federal government should revitalize its investment to invent and develop innovative new technologies for space science, exploration, and development, consistent with assuring US preeminence in space activities and industry’s ability to adopt these innovations for application in future space missions and markets. A balanced distribution should be created in the allocation of revitalized advanced space research and technology funding among more basic research efforts, technology maturation, and demonstrations of new technologies. These investments should be guided by the goal of creating ambitious new “future space capabilities”—well-enough defined to inform technology investments, but flexible enough to allow the results of those investments to influence designs, reduce costs, and enable new and more ambitious science goals. In establishing these investments, NASA must seek and embrace inputs from outside the agency (including other agencies, industry, academia) to develop, review, and recommend NASA advanced space research and technology plans, programs, and strategies. NASA in-house space research and technology (performed by engineers and technical specialists) should be restored, in balance with increased external research (by industry and academia). Funding for university research should also be targeted toward producing graduates with advanced degrees to support the follow-on work that will be undertaken by industry. We need to reconsider what makes an ambitious space program worth a substantial investment of public dollars—and consider again the historical and future importance of advancing space technology and developing truly new and valuable space capabilities for the public, the nation, and the world. To achieve the purposes for which it was created, NASA must maintain the excellence of its workforce and their expertise in a wide array of cutting-edge new technologies. As they enter the workforce, it will be impossible to attract the “best and the brightest” to federal service without a foundation of cutting-edge research and technology program opportunities. Moreover, a healthy NASA workforce, armed with appropriate skills and secure in its future, will provide better oversight for technical system procurement and program management. This competence will result in better performing systems, better ability to meet schedule, more productive interactions with other stakeholders in the aerospace enterprise, and more efficient use of taxpayer dollars. Although NASA must accommodate changing priorities and budgets, it must also ensure that it does not lose the important skills and knowledge currently possessed by its workers. NASA also must continue to ensure that the NASA workforce gains the new competencies needed in the aerospace industry of the future. In order accelerate the transition of novel technologies into transformational future space capabilities NASA must invest in demonstrations of innovative space prototypes on the ground and in space. Innovative space prototypes should be implemented in coordination with the DoD, academia, and industry; and wherever possible with co-funding with the private sector in order to speed the application of these new capabilities in creating new space industries. To implement these recommendations effectively, focused and timely near term action is essential: The National Academy of Sciences (National Research Council) should be chartered to conduct an independent, visionary study to identify 6–12 transformational “future space capabilities” that would—if developed—enable a wide range of new, ambitious, and affordable space exploration and development. These future space capabilities would in turn drive planning for government and industry research and technology investments. The Administration should develop—in consultation with the US Congress, and using NASA as its executive agent—a strategic research and technology development roadmap that establishes a baseline for achieving these goals, including objectives, schedules, milestones and budgets. This roadmap should be used to provide the basis for future US investments in advanced space research and technology development and demonstrations. The US space program needs more than a national discussion of what human exploration should do next: International Space Station research versus lunar outposts versus asteroid sorties versus human Mars missions, and so on. These are important questions. Even more, however, weneed to set in place basic policies that can endure from one administration to the next. We need to reconsider what makes an ambitious space program worth a substantial investment of public dollars—and consider again the historical and future importance of advancing space technology and developing truly new and valuable space capabilities for the public, the nation, and the world.

#### Aerospace is key to solve cruise missile prolif

Gardner 99 (Lt Col Igor J.P., School of Advanced Airpower Studies, “THEATER LAND ATTACK CRUISE MISSILE DEFENSE: GUARDING THE BACK DOOR”)

LACM = Land Attack Cruise Missile

While few likely regional adversaries currently possess an LACM capability, a serious threat could materialize in a relatively short period of time. LACMs provide an adversary with several important advantages over alternative delivery means. Their small size could provide a greater survivability, both before and after launch, than either theater ballistic missiles or manned aircraft. LACM flight characteristics make them well suited for WMD delivery, particularly for chemical and biological agents. The means to achieve a highly accurate LACM capability are rapidly becoming widely available, through the purchase or transfer of existing off-the-shelf technology and conversion of widely proliferated ASCMs and UAVs. While some uncertainties exist about how future LACM threats will evolve (quantities, ranges, types of payloads, degrees of low observable technology incorporated), even relatively “low tech” LACMs could present serious challenges to today’s defenses. WMD warheads, the 360-degree threat, combat identification and fratricide avoidance are major challenges that must be solved to effectively counter LACM threats. Theater missile defense (against both ballistic and cruise missiles) is a key aspect of counter air strategy, and the ability to effectively counter LACMs will be essential to achieving air superiority, much less air supremacy. As defense budgets continue to decline in search of the elusive peace dividend, the U.S. military will continue to face the problem of doing more with less. These resource reductions, combined with the likelihood that future adversaries will learn form their predecessors and attempt to counter U.S. strategy asymmetrically, make it all the more important that the services fight as an integrated and effective joint team. Currently, no single service has the resources required to defend a theater against a serious LACM threat. This will require a balanced, joint force trained to operate under common doctrine, with fully integrated command and control, and overlapping sensor and shooter system coverage. Defense against LACMs will require a mix of attack operations, active and passive defense, and C 4 I optimized for the particular theater. It will require a mix of surface, air and space systems to gain command of the air rapidly by destroying enemy cruise missiles and their support systems on the ground and in the air. Only through such concerted efforts will the joint force commander achieve freedom from attack in order to gain freedom to attack. To assure integration, cruise missile defense doctrine and capabilities require the same level of effort currently focused on theater ballistic missile defense in the areas of common doctrine, system modernization and integration, and joint training.

#### Global nuclear war

Telegraph 11

(Missile Technology Control Regime (MTCR) Reinforced Point Of Contact (RPOC) Meeting, April 10, 2008, Wikileaks Transcript Classified by ISN/MTR Director Pam Durham, February 2, 2011, pg online @ Telegraph)

21. (C) Additionally, many countries are pursuing cruise missile programs as alternatives or supplements to their ballistic missile capabilities. Like ballistic missiles, cruise missiles can be a platform for WMD delivery and provide a more effective vehicle for biological and chemical weapons distribution than ballistic missiles. These trends are especially evident in the key regions of tension, the Middle East and Persian Gulf, Northeast Asia, and South Asia. 22. (C) Ballistic and cruise missile programs in these regions are evolving in different ways. While nearly all ultimately seek to obtain indigenous production capabilities, some rely primarily on direct missile purchases from countries such as North Korea, while others solicit extensive foreign assistance in missile design, development, and/or production. In other cases, more limited, specialized assistance is sought from foreign sources to sustain domestic design efforts and overcome technological impediments that prevent self-sufficiency in a state's missile program. 23. (C) The procurement efforts required to support missile development are global in scope, utilizing the territories and economies of a wide range of countries as sources of equipment and technology, as re-export/transit cutouts, and as brokering and finance centers. Many of these countries, including MTCR Partner countries, are not aware that their entities are inadvertently assisting ballistic missile proliferation. 24. (C) In several cases, broad international consensus has been reached that certain national missile programs constitute a threat to international peace and security. With respect to Iran, UNSCRs including 1696, 1737, and 1747, and 1803, prohibit technological transfers and other assistance by all states to Iran's missile programs. UNSCRs 1695 and 1718 require similar actions regarding ballistic missile programs in North Korea. These UNSCRs reflect the fact that ongoing nuclear tensions in the Persian Gulf and Northeast Asia threaten the viability of the global nonproliferation and security system. These tensions are aggravated and made more real and widespread by the open development and testing of ballistic missiles capable of delivering WMD. 25. (S/REL MTCR) For example, Iran has publicly revealed it had conducted some tests related to solid-propellant missile technology and implied that it was working on a design for a two-stage, 2,000 km-range system. Iran has also worked to improve the capabilities of its liquid propellant missile systems, claiming that a variant of the Shahab-3 missile has a 2,000 km-range and improved accuracy. Not only would missile-delivered WMD in Northeast Asia or the Middle East have the potential to cripple the global economy, the development of longer-range ballistic missiles carries with it the ability to deliver WMD to other regions. 26. (C) There are similar implications related to missile proliferation in South Asia, where a nuclear and missile arms race has the direct potential to lead to nuclear war in the world's most densely populated area and a region of increasing global economic significance. As we have already seen in South Asia in the nuclear area, the possession and development of missile technology there also carries with it the risk that this technology will spread to other regions. 27. (C) In an increasingly interdependent world, missile programs for WMD delivery in regions of tension threaten stability -- not just in those regions, but globally. Moreover, the challenge posed by these programs is growing as they improve qualitatively and quantitatively, often by drawing on all of us for various forms of facilitation.

#### Aerospace solves cyberterrorism

Deloitte 12 | (Deloitte is a consulting and financial advisory service, Report Commissioned by the Aerospace Industries Association, " The Aerospace and Defense Industry in the U.S. A financial and economic impact study," March, http://www.aia-aerospace.org/assets/deloitte\_study\_2012.pdf)

The world continues to demonstrate how dangerous it is and how our civilization and way of life can be put in jeopardy quickly. The surprise attacks on Pearl Harbor and the tragic events surrounding the terrorist attacks of 9/11 have shown our nation how vulnerable it can be. Technology innovations and products developed in the aerospace and defense industry have made our nation safer, from sophisticated sensors that can “see” nefarious activities of our adversaries, to the bomb and metal detectors that have become ubiquitous at airports around the world, the industry continues to innovate to produce the necessary defenses used to increase our national security. Recent advances to counter the next generation national security threats include for example, sophisticated software to trace bank transactions of terrorists, advanced listening sensors to eavesdrop on communications of known terrorists, and sophisticated sensors to help discover threats at our airports, borders, and seaports. Of course, the unmanned aerial vehicle (UAV) has been extraordinarily successful in helping to see, then attack if necessary, our adversaries. Lastly, the specter of a potential cyber-attack on our nation’s water, power, transportation or communications infrastructure is cause for alarm, and the industry continues to develop the next generation technologies to address these and future threats.

#### Great power nuclear war

Fritz 9 | Researcher for International Commission on Nuclear Nonproliferation and Disarmament [Jason, researcher for International Commission on Nuclear Nonproliferation and Disarmament, former Army officer and consultant, and has a master of international relations at Bond University, “Hacking Nuclear Command and Control,” July, <http://www.icnnd.org/latest/research/Jason_Fritz_Hacking_NC2.pdf>]

This paper will analyse the threat of cyber terrorism in regard to nuclear weapons. Specifically, this research will use open source knowledge to identify the structure of nuclear command and control centres, how those structures might be compromised through computer network operations, and how doing so would fit within established cyber terrorists’ capabilities, strategies, and tactics. If access to command and control centres is obtained, terrorists could fake or actually cause one nuclear-armed state to attack another, thus provoking a nuclear response from another nuclear power. This may be an easier alternative for terrorist groups than building or acquiring a nuclear weapon or dirty bomb themselves. This would also act as a force equaliser, and provide terrorists with the asymmetric benefits of high speed, removal of geographical distance, and a relatively low cost. Continuing difficulties in developing computer tracking technologies which could trace the identity of intruders, and difficulties in establishing an internationally agreed upon legal framework to guide responses to computer network operations, point towards an inherent weakness in using computer networks to manage nuclear weaponry. This is particularly relevant to reducing the hair trigger posture of existing nuclear arsenals. All computers which are connected to the internet are susceptible to infiltration and remote control. Computers which operate on a closed network may also be compromised by various hacker methods, such as privilege escalation, roaming notebooks, wireless access points, embedded exploits in software and hardware, and maintenance entry points. For example, e-mail spoofing targeted at individuals who have access to a closed network, could lead to the installation of a virus on an open network. This virus could then be carelessly transported on removable data storage between the open and closed network. Information found on the internet may also reveal how to access these closed networks directly. Efforts by militaries to place increasing reliance on computer networks, including experimental technology such as autonomous systems, and their desire to have multiple launch options, such as nuclear triad capability, enables multiple entry points for terrorists. For example, if a terrestrial command centre is impenetrable, perhaps isolating one nuclear armed submarine would prove an easier task. There is evidence to suggest multiple attempts have been made by hackers to compromise the extremely low radio frequency once used by the US Navy to send nuclear launch approval to submerged submarines. Additionally, the alleged Soviet system known as Perimetr was designed to automatically launch nuclear weapons if it was unable to establish communications with Soviet leadership. This was intended as a retaliatory response in the event that nuclear weapons had decapitated Soviet leadership; however it did not account for the possibility of cyber terrorists blocking communications through computer network operations in an attempt to engage the system. Should a warhead be launched, damage could be further enhanced through additional computer network operations. By using proxies, multi-layered attacks could be engineered. Terrorists could remotely commandeer computers in China and use them to launch a US nuclear attack against Russia. Thus Russia would believe it was under attack from the US and the US would believe China was responsible. Further, emergency response communications could be disrupted, transportation could be shut down, and disinformation, such as misdirection, could be planted, thereby hindering the disaster relief effort and maximizing destruction. Disruptions in communication and the use of disinformation could also be used to provoke uninformed responses. For example, a nuclear strike between India and Pakistan could be coordinated with Distributed Denial of Service attacks against key networks, so they would have further difficulty in identifying what happened and be forced to respond quickly. Terrorists could also knock out communications between these states so they cannot discuss the situation. Alternatively, amidst the confusion of a traditional large-scale terrorist attack, claims of responsibility and declarations of war could be falsified in an attempt to instigate a hasty military response. These false claims could be posted directly on Presidential, military, and government websites. E-mails could also be sent to the media and foreign governments using the IP addresses and e-mail accounts of government officials. A sophisticated and all encompassing combination of traditional terrorism and cyber terrorism could be enough to launch nuclear weapons on its own, without the need for compromising command and control centres directly.

#### New spending wrecks the California economy

Krol 12 Robert, Professor of economics at California State University Northridge and author of a forthcoming Cato Journal paper on state budget institutions, 2012, “California Needs a Spending Limit”, http://www.cato.org/publications/commentary/california-needs-spending-limit

California's budget is once again in the red. The governor signed a balanced budget in August of last year, but before the ink was dry, a slowing economy, the real estate bust and a spate of unplanned spending resulted in a significant budget crunch. The Legislative Analyst's Office now projects a deficit of about $10 billion over the next 18 months, and Gov. Schwarzenegger says the shortfall may be as high as $14 billion. To be sure, the slowing economy has reduced revenues, but excessive spending remains the root cause ofCalifornia's persistent financial troubles. The governor plans to declare a "fiscal emergency," requiring legislators in Sacramento to correct the deficit. The resulting legislation will likely include spending cuts, fee increases and borrowing. Details aside, Schwarzenegger must insist that any legislation contain an enforceable framework to help prevent future fiscal crises and allow for a voter referendum on a constitutional spending limit. The time is right**.** California's taxes are already high, so the solution is to control spending with a constitutional constraint limiting expenditure growth to inflation plus population growth. Schwarzenegger proposed a spending limit in 2005, but it was poorly designed, and voters had little incentive to support it. Now, the fiscal crunch is much worse. A new proposal should require legislators to get voter approval for any expenditures above the limit, and include a component allowing taxpayers to decide for themselves whether they want higher spending or a tax refund. Such a law would lessen the severity of budget shortfalls in economic downturns. Recent experience provides an example of how this would work. The state's revenues began to rise in the 2004-05 fiscal year. Since that time, pegging spending increases to inflation and population growth would have allowed spending to grow by 15 percent. Instead, expenditures increased by more than twice that much. If spending growth had been limited to 15 percent since 2004-05, we'd be facing a $7 billion surplus rather than a $2 billion deficit for the current fiscal year. Thirty states already have some form of a tax or government spending limit. Most of the limits link the growth of state expenditures to growth in personal income. California overwhelmingly passed a population growth plus inflation spending constraint in 1979, but it was amended by voters in 1990 to limit expenditure growth to increases in population plus growth in personal income. This more generous limit has never effectively constrained state spending. Linking spending growth to increases in population plus inflation is a more effective way to establish fiscal discipline in Sacramento. We know from other states that tax and spending limits can constrain the expansion of government. Research shows that the most effective limits are constitutional, written by voters and limit increases in spending rather than revenues. As an added bonus, financial markets reward states with expenditure limits by demanding lower interest rates on state borrowing. This offers significant savings over time. During economic booms, if revenues increase more than inflation plus population growth, the surplus should be refunded to taxpayers or used to shore up California's rainy-day fund. If state leaders wanted to spend some of the additional revenues, they should put their proposals up for a vote. California has little choice but to get its spending under control. Higher taxes are not an economically viable option. The Tax Foundation in Washington, D.C., ranks California 46th in its 2007 State Business Climate Rankings. Our neighboring states – Arizona, Nevada and Oregon – rank considerably better. Despite healthy revenue growth over the last few years, the California budget has been mismanaged. Schwarzenegger has been unable to make good on his pledge to reform Sacramento and get state lawmakers off of what he called "autopilot" spending. In the 2003 recall election, he ran as a budget reformer, promising he would "tear up the credit cards" and rein in runaway spending. He has failed to live up to his promises. A spending limit would give California some much-needed budget stability, and allow the governor to salvage his legacy. With a new fiscal mess brewing, it's time for him to try again.

#### California is key to the US economy

Williams 9 Juliet, writer for the Huffington Post, June 29, 2009, “California's Ailing Economy Could Prolong US Recession”, http://www.huffingtonpost.com/2009/06/29/californias-ailing-econom\_n\_222616.html

SACRAMENTO, Calif. — California faces a $24 billion budget shortfall, an eye-popping amount that dwarfs many states' entire annual spending plans. Beyond California's borders, why should anyone care that the home of Google and the Walt Disney Co. might stop paying its bills this week? Virtually all states are suffering in the recession, some worse than California. But none has the economic horsepower of the world's eighth-largest economy, home to one in eight Americans. California accounts for 12 percent of the nation's gross domestic product and the largest share of retail sales of any state. It also sends far more in tax revenue to the federal government than it receives giving a dollar for every 80 cents it gets back which means Californians are keeping social programs afloat across the country. While the deficit only affects the state, California's deepening economic malaise could make it harder for the entire nation's economy to recover. When the state stumbles, its sheer size 38.3 million people creates fallout for businesses from Texas to Michigan. "California is the key catalyst for U.S. retail sales, and if California falls further you will see the U.S. economy suffer significantly," said retail consultant Burt P. Flickinger, managing director of Strategic Resource Group. He warned of more bankruptcies of national retail chains and brand suppliers. Even if California lawmakers solve the deficit quickly, there will likely be more government furloughs and layoffs and tens of billions of dollars in spending cuts. That will ripple through the state economy, sowing fear of even more job losses.

### AO---SPS---Competitiveness

#### **SPS is key to global economic competitiveness – specifically in aerospace and manufacturing**

Matai 10 – DK Matai, PhD in Engineering, Chairman of the Asymmetric Threats Contingency Alliance (ATCA), won The Queen’s Award for Enterprise in the category of Innovation for Bespoke Security Architecture in 2003, authority on countering complex global threats; strategic risk management & visualisation; contingency planning; Information Operations (IO); electronic defence; biometric authentication; secure payment systems and Open Source hardened kernel solutions, June 13th, 2010, "Japan Takes Lead in Wireless Power? 21stC Global Energy Supply,” [www.mi2g.com/cgi/mi2g/frameset.php?pageid=http%3A//www.mi2g.com/cgi/mi2g/press/130610.php](http://www.mi2g.com/cgi/mi2g/frameset.php?pageid=http%3A//www.mi2g.com/cgi/mi2g/press/130610.php)

Conclusion¶ The demand for power on Earth is growing exponentially, and associated environmental consequences are becoming significant. Global electric power production is about a USD 1 trillion per year market currently, and represents the largest market on Earth. In this new century, Space Solar Power **(SSP) may provide a clean, safe energy source, alleviating some of the problems we would otherwise expect from increasing nuclear and fossil fuel use.** SSP combined with Wireless Power Transmission (WPT), offers the far-term potential to solve major energy problems on Earth. WPT is an enabling technology for utilising renewable and inexhaustible energy sources on Earth and in space to **meet projected electrical energy demands in the 21st century on a global scale**.¶ With few energy resources of its own and heavily reliant on oil imports, Japan has long been a leader in solar and other renewable energies. The current opportunities that Japan's nascent Wireless Power Transmission (WPT) industry is providing will be the basis not only for energy independence domestically from imported energy sources, but as a supplier of "clean" energy, Japan is likely to gain significant political influence and leverage globally. Penetration of this market by gradually substituting WPT to access renewable and inexhaustible energy sources anywhere on Earth and in space is an opportunity that Japan has clearly recognised. The implications of successful developments of WPT systems by the Japanese are profound enough to **merit a deliberate US or European competitive decision either to pursue further coherent development of WPT or to abandon pursuit of WPT markets to other countries**. **The consequences of abandoning WPT may include** adverse impact on Western industrial competitiveness **in the 21st century and beyond.** It is now obvious that:¶ 1. Nikola Tesla and his early 20th century unique work in regard to Wireless Power generation and transmission was extremely far sighted and accurate; ¶ 2. The Japanese government and multi-nationals are committing tens of billions of dollars to the deployment of SSP and WPT because this is a lucrative area; and ¶ 3. **Given the fallout from the Gulf of Mexico oil catastrophe, there is going to be little choice left other than to move towards SSP and WPT type solutions**.¶ The Western nations including the US and Europe are still in a position to lead a Space Solar Power (SSP) and Wireless Power Transmission (WPT) effort but not for long. The question is not whether we harness power from Space**; but rather** who will get there first **to garner first mover advantage** with significant impact on global economic competitiveness. Now is the time to plan for the WPT future that can be discerned in broad outlines only. The inability to see the future except as a continuation of the present and not to plan for asymmetric threats and opportunities will prevent critical technological evolution and progress. Maximising the opportunities to participate in the development and applications of SSP and WPT systems would **provide not only an outlet for the considerable experience and talents residing in the global** aerospace and manufacturing **industries, but ensure that these industries remain** competitive in the markets for environmentally compatible energy sources where carbon based fuels are no longer the essential element for electrical power generation. The evolution of the human species into the cosmos, including harnessing the moon and immediate outer space, appears to provide a viable space solar and wireless power solution. There is no turning back from this final frontier in the 21st century and beyond!

#### Economic benefits occur even before space deployment

SEC 8 – Space Enterprise Council, 2008, NSS, http://www.nss.org/settlement/ssp/library/2008-SECSpaceBasedSolarPowerWhitePaper.pdf

SBSP is unusual among renewable energy options because it might satisfy all four of the following criteria critical to investment decisions: environmental cleanliness, sustainability of supply, flexibility of location, and capacity to generate continuous rather than intermittent power. The cost of SBSP-generated electricity would initially be greater than that provided by fossil fuel or nuclear power but could be comparable to other alternative energy sources, particularly for baseload power. In addition, SBSP might offer an attractive approach, not only for satisfying today's needs but also for meeting tomorrow’s much greater requirements. We cannot accurately predict environmental and other consequences of harvesting energy from natural Earthbound sources (e.g., wind, ocean current, geothermal, biofuels), when these methods are scaled up to considerably higher levels. By providing an additional source of renewable energy, SBSP might help avoid potentially negative consequences if limits to the costeffective expansion of other renewable sources become evident. Beyond enhancement of energy production per se, SBSP might help create new economic opportunities through resultant technology advances in space launch, space utilization, and technological spin-offs applicable to a host of materials and processes. For example, SBSP research might lead to improvements in the efficiency of solar cells that power communications satellites, as well as power management systems for terrestrial solar power systems. Also, to the extent that SBSP is integrated into terrestrial solar power production, development of SBSP ground infrastructure might generate revenue even before deployment of systems in space. In this and related applications, SBSP could emerge as an enhancement for, rather than a competitor with, terrestrial solar power generation.

#### US competitiveness is key to hegemony and independently solves great power war

Baru 9 – Sanjaya Baru is a Professor at the Lee Kuan Yew School in Singapore Geopolitical Implications of the Current Global Financial Crisis, Strategic Analysis, Volume 33, Issue 2 March 2009 , pages 163 - 168

Hence, economic policies and performance do have strategic consequences.2 In the modern era, the idea that strong economic performance is the foundation of power was argued most persuasively by historian Paul Kennedy. 'Victory (in war)', Kennedy claimed, 'has repeatedly gone to the side with more flourishing productive base'.3 Drawing attention to the interrelationships between economic wealth, technological innovation, and the ability of states to efficiently mobilize economic and technological resources for power projection and national defence, Kennedy argued that nations that were able to better combine military and economic strength scored over others. 'The fact remains', Kennedy argued, 'that all of the major shifts in the world's military-power balance have followed alterations in the productive balances; and further, that the rising and falling of the various empires and states in the international system has been confirmed by the outcomes of the major Great Power wars, where victory has always gone to the side with the greatest material resources'.4 In Kennedy's view, the geopolitical consequences of an economic crisis, or even decline, would be transmitted through a nation's **inability to** find adequate financial resources to simultaneously **sustain** economic growth and **military power**, the classic 'guns versus butter' dilemma.

## \*DOD DA

### 2AC Conditionality

#### Conditionality---reject the team---destroys stable advocacy---key to defending real world proposals---kills 2AC strategic flex---[magnified by multiple worlds]---1 conditional world and pre-round conditionality solves their offense

### Impact

#### No Middle East impact

Cook 7**—**CFR senior fellow for Mid East Studies. BA in international studies from Vassar College, an MA in international relations from the Johns Hopkins School of Advanced International Studies, and both an MA and PhD in political science from the University of Pennsylvania(Steven, Ray Takeyh, CFR fellow, and Suzanne Maloney, Brookings fellow, 6 /28, Why the Iraq war won't engulf the Mideast, http://www.iht.com/bin/print.php?id=6383265, AG)

Underlying this anxiety was a scenario in which Iraq's sectarian and ethnic violence spills over into neighboring countries, producing conflicts between the major Arab states and Iran as well as Turkey and the Kurdistan Regional Government. These wars then destabilize the entire region well beyond the current conflict zone, involving heavyweights like Egypt. This is scary stuff indeed, but with the exception of the conflict between Turkey and the Kurds, the scenario is far from an accurate reflection of the way Middle Eastern leaders view the situation in Iraq and calculate their interests there. It is abundantly clear that major outside powers like Saudi Arabia, Iran and Turkey are heavily involved in Iraq. These countries have so much at stake in the future of Iraq that it is natural they would seek to influence political developments in the country. Yet, the Saudis, Iranians, Jordanians, Syrians, and others are very unlikely to go to war either to protect their own sect or ethnic group or to prevent one country from gaining the upper hand in Iraq. The reasons are fairly straightforward. First, Middle Eastern leaders, like politicians everywhere, are primarily interested in one thing: self-preservation. Committing forces to Iraq is an inherently risky proposition, which, if the conflict went badly, could threaten domestic political stability. Moreover, most Arab armies are geared toward regime protection rather than projecting power and thus have little capability for sending troops to Iraq. Second, there is cause for concern about the so-called blowback scenario in which jihadis returning from Iraq destabilize their home countries, plunging the region into conflict. Middle Eastern leaders are preparing for this possibility. Unlike in the 1990s, when Arab fighters in the Afghan jihad against the Soviet Union returned to Algeria, Egypt and Saudi Arabia and became a source of instability, Arab security services are being vigilant about who is coming in and going from their countries. In the last month, the Saudi government has arrested approximately 200 people suspected of ties with militants. Riyadh is also building a 700 kilometer wall along part of its frontier with Iraq in order to keep militants out of the kingdom. Finally, there is no precedent for Arab leaders to commit forces to conflicts in which they are not directly involved. The Iraqis and the Saudis did send small contingents to fight the Israelis in 1948 and 1967, but they were either ineffective or never made it. In the 1970s and 1980s, Arab countries other than Syria, which had a compelling interest in establishing its hegemony over Lebanon, never committed forces either to protect the Lebanese from the Israelis or from other Lebanese. The civil war in Lebanon was regarded as someone else's fight. Indeed, this is the way many leaders view the current situation in Iraq. To Cairo, Amman and Riyadh, the situation in Iraq is worrisome, but in the end it is an Iraqi and American fight. As far as Iranian mullahs are concerned, they have long preferred to press their interests through proxies as opposed to direct engagement. At a time when Tehran has access and influence over powerful Shiite militias, a massive cross-border incursion is both unlikely and unnecessary. So Iraqis will remain locked in a sectarian and ethnic struggle that outside powers may abet, but will remain within the borders of Iraq. The Middle East is a region both prone and accustomed to civil wars. But given its experience with ambiguous conflicts, **the region has** also **developed an intuitive ability to contain its civil strife and prevent local conflicts from enveloping the entire Middle East.**

### AO---Asia Pivot

#### The pivot fails now

Aaron L. Friedberg 12, Professor of Politics and International Affairs at the Woodrow Wilson School of Public and International Affairs at Princeton University, September/October 2012, “Bucking Beijing,” Foreign Affairs, Vol. 91, No. 5, p. 48-58

The problem with the pivot is that to date it has lacked serious substance. The actions it has entailed either have been merely symbolic, such as the pending deployment of a small number of U.S. marines to Australia, or have involved simply the reallocation of existing air and naval assets from other theaters. Apart from vague references to a new "air-sea battle" concept, which the Pentagon describes, in typical jargon, as "networked, integrated, attack-in-depth to disrupt, destroy and defeat" opposing forces, the administration has not made clear how it actually intends to respond to China's increasing military capabilities. To the contrary, having announced the new approach, Defense Department spokespeople have been at pains to avoid acknowledging the obvious fact that it will be aimed primarily at China. Especially in the current fiscal climate, it is hard to see how any administration could mobilize the public support necessary to maintain a favorable balance of power in Asia if it is not willing to be far more candid about the nature of the challenge posed by China's growing strength.

#### SPS is key to air power

Garretson 12 – Lt Col Peter Garretson is an airpower strategist currently serving on the CSAF’s Strategic Studies Group (HAF/CK). His previous assignment was at the Institute for Defence Studies and Analyses in New Delhi as an Air Force Fellow examining Indo–US long-term space collaboration under the sponsorship of the Council on Foreign Relations. Prior to that he was the chief of future science and technology exploration for the HQ USAF Directorate of Strategic Planning (AF/A8XC), Spring 2012, "Solar Power in Space?" Strategic Studies Quarterly Spring, <http://www.au.af.mil/au/ssq/2012/spring/garretson.pdf>

But so far at least, the reaction seems more consistent with the worry expressed by Friedman that the United States, as compared to China, had lost its “can-do” spirit in the early twenty-first century.29 Airmen, as stewards of America’s aerospace power, should not be so complacent. Understanding the critical link between dual-use infrastructure that contributes to access and on-orbit capabilities, an Air Force strategist might then take a much less complacent view of international competition. There are no battles in this strategy; each side is merely trying to outdo in performance the equipment of the other. . . . Its tactics are industrial, technical, and financial. . . . A silent and apparently peaceful war is therefore in progress, but it could well be a war which of itself could be decisive. —General d’Armee Andre Beaufre For years **the Air Force has kept the** United States **out of** a **major war and kept the world from another** global conflict **by maintaining technological preeminence** and overmatch, practicing what a Cold War textbook called a “Strategy of Technology”: The Technological War is the decisive struggle in the Protracted Conflict. Victory in the Technological War **gives supremacy in all other phases of the conflict**. . . . The Technological War creates the resources to be employed in all other parts of the Protracted Conflict. It governs the range of strategies that can be adapted in actual or hot war. . . . Military superiority or even supremacy is not permanent, and never ends the conflict unless it is used. The United States considers the Technological War as an infinite game: one which is not played out to a decisive victory. We are committed to a grand strategy of defense, and will never employ a decisive advantage to end the conflict by destroying our enemies. Consequently, we must maintain not only military superiority but [also] technological supremacy. The race is an alternative to destructive war, not the cause of military conflict. . . . The United States is dedicated to a strategy of stability. We are a stabilizing rather than a disturbing power, and our goal is preserving the status quo and the balance of power rather than seeking conquest and the final solution to the problems of international conflict through occupation or extermination of all opponents. In a word, the U.S. sees the Technological War as an infinite game, one played for the sake of continuing to play, rather than for the sake of “victory” in the narrow sense. 30 That is not to imply that Airmen should recommend a zero-sum orientation toward SBSP competition, only that America should get its head in this game. Because it is the policy of the United States to pursue international cooperation in space and take the lead in multilateral efforts which enhance stability and transparency in space, Airmen must consider not only the threat of losing an important technical competition but also the opportunity international cooperation could provide to advance US interests through partnerships in the domains under their stewardship. Aerospace competition is not only technical; it also has an aspirational moral dimension, as nations are measured, admired, and respected not only by their accomplishments but also by their ambitions. Former USAF strategist Col John Boyd made clear the strategic value of vision: “What is needed is a vision rooted in human nature so noble, so attractive that it not only **attracts the uncommitted and magnifies** the spirit and **strength of** its **adherents, but also undermines** the dedication and **determination of any** competitors and **adversaries.**” 31

#### **That makes the pivot effective**

Lowther 11 – Dr. Adam B. Lowther is a member of the faculty at the U.S Air Force's Air University. November 22nd, 2011, "Why U.S. Needs Airpower Diplomacy," thediplomat.com/2011/11/22/why-u-s-needs-airpower-diplomacy/?all=true

What makes affording a shift to the region particularly difficult is the fact that the Asia-Pacific’s distances make operating in the region much more expensive than operating in the West. By contrast, Europe is a rather compact continent where the distance between Washington, DC, and Berlin is closer to half that of Los Angeles to Beijing. To make matters more challenging, **existing U.S. bases in Japan and Korea, for example, are among the United States’ most expensive—even with significant financial support from the host nation. And to make matters even more difficult, in some cases, local populations no longer support a permanent American presence**.¶ These challenges impose a difficult set of requirements on a new U.S. strategy for the Asia-Pacific. Such a strategy should demonstrate that it relies on U.S. assets best able to overcome the challenges of distance; it must prove cost effective; and it is sensitive to the domestic and strategic position of partner nations. One approach is particularly well suited to overcoming these challenges. ¶ Airpower diplomacy, also known as building partnerships by the U.S. Air Force, offers some distinct advantages over any alternatives. Best thought of as the non-kinetic application of air, space, and cyber power, airpower diplomacy is a form of soft power that’s useful in strengthening existing relationships and developing new ones—while protecting American interests. The U.S. Air Force **has successfully employed airpower diplomacy in one iteration or another for more than six decades**. Its strengths are in three distinct areas. ¶ First, airpower, broadly speaking, is able to overcome the distances that make the Asia-Pacific such a challenging region. As the single largest feature on the earth’s surface, the Pacific Ocean makes it difficult for the United States to respond quickly with men and material to unexpected events in the region. With airpower, there’s no place on earth that the United States can’t reach in less than 24 hours.¶ However, aircraft must land, which is why building partnerships—of mutual interests—with countries in the region is a critical component of airpower diplomacy. For many nations in the Asia-Pacific, walking a careful line between China and the United States is the unenviable position in which they find themselves. As the most advanced air, space, and cyber force in the world, the U.S. Air Force is a desirable partner for many countries. This provides a natural advantage for the United States. However, ensuring that the U.S. doesn’t overplay its hand is important if airpower diplomacy is to succeed. ¶ Second, airpower diplomacy is a cost-effective alternative to the use of force. Since it’s a concept that focuses on the application of soft power, airpower diplomacy is far more than just American aircraft sitting on the ramps of foreign airfields. **It** builds partnerships through economic ties**, training and** support of local forces**,** humanitarian relief**,** joint operations**, and much more.** For example, Fifth Air Force, based at Yokota Air Force Base in Japan, has provided assistance to victims of floods, typhoons, volcanoes, and earthquakes on numerous occasions in recent years. The Indian Ocean earthquake and tsunami (2004), Burma cyclone (2008), Indonesian earthquake (2009), and the Tohoku earthquake and tsunami (2011) are some examples of where airpower diplomacy played a leading role in the United States’ response to natural disasters. In the case of the Indian Ocean and Tohoku earthquakes and tsunamis, a strong American response led to improved relations between the United States and Indonesia in the first case and the United States and Japan in the second. This was airpower diplomacy at work.¶ An often overlooked example of airpower diplomacy is the U.S. Air Force’s Inter-American Air Forces Academy (IAAFA) at Lackland Air Force Base in San Antonio, Texas. There, students from across Latin America attend courses ranging from aircraft maintenance to professional leadership. The school’s broader objective is to **build a community of airmen with the skills to lead capable air forces in their home countries—making cooperation with the United States more likely.**¶ In these and many other instances, **airpower diplomacy acts as a cost-effective way for the United States to build partnerships with nations that share common interests**. And, **by strengthening relationships, the** U**nited** S**tates is less likely to find itself in a costly conflict with what could have been a partner**. ¶ Third, airpower and airpower diplomacy don’t require permanent large footprint bases that are both expensive for the United States and a political irritant for many governments in the region. **With the U.S.** pivoting toward the Asia-Pacific, a growth in the number of American main-operating bases in the region would be expected. Airpower diplomacy, however, focuses on the use of joint operations, short-term deployments, and other temporary measures, enabling the United States to maintain a regional presence—demonstrating commitment—while eliminating concerns of an American occupation.¶ Flexible operations and arrangements also have the added benefit of proving to be less of a stressor in the host nation’s relationship with China, which is becoming increasingly important for every nation in the region. The United States’ attempt to conduct what Secretary of State Clinton calls “forward deployed diplomacy,” a strategy in which American airmen operate with their host nation counterparts at bases owned and operated by the host nation, may prove a far superior option to one resembling Cold War NATO where up to several hundred thousand Americans were stationed in Western Europe. ¶ With its focus on a wide range of soft power tools, airpower diplomacy is well suited to serve a central role in American foreign policy in the Asia-Pacific. Simply put, **no other U.S. military capability provides the speed and flexibility of airpower.¶** As defense and foreign policy officials in the Obama administration refine the president’s regional strategy, they may want to give airpower diplomacy and its mix of diplomatic tools significant consideration. After all, no other approach is as cost effective, culturally sensitive, and responsive to the requirements of a complex and changing region.

### Fuel Costs

#### **The plan frees up the DOD budget---fuel costs**

Schwartz et al. 12-10 – Moshe Schwartz, specialist in defense acquisition, AND\*\*\* Katherine Blakeley, analyst in foreign affairs, AND\*\*\* Ronald O'Rourke, specialist in naval affairs, Congress Research Service Report for Congress, December 10th, 2012, "Department of Defense Energy Initiatives: Background and Issues for Congress," [www.fas.org/sgp/crs/natsec/R42558.pdf](http://www.fas.org/sgp/crs/natsec/R42558.pdf)

Possible Longer-Term Trend of Increasing Fuel Costs

DOD’s petroleum costs have increased substantially over the last seven years even as DOD petroleum use has declined slightly over the same period. Between FY2005 and FY2011, DOD’s petroleum use decreased 4%, from 122 million barrels to 117 million barrels (see Figure 2). Over the same period, DOD spending on petroleum rose 381% in real (i.e., inflation-adjusted) terms, from $4.5 billion in FY2005 (in FY2011 dollars) to about $17.3 billion in FY2011.42¶ A longer-term trend of increasing fuel costs could require DOD to devote an increasing share of its budget to fuel, which in turn could make it more difficult for DOD to fund other priorities, such as personnel pay and benefits or equipment acquisition programs. Since the early 1990s, **the cost of buying fuel has increased faster than any other major DOD budget category**, including health care and military personnel.43 Since FY2005, the share of DOD’s spending dedicated to fuel increased from about 1.6% to about 2.5% of total spending.44 Although that change appears small, in a DOD budget of roughly $700 billion per year, the increase of about 0.9% equates to about **$6 billion per year that otherwise might be available for funding other DOD priorities.**

## \*Immigration DA

### No Impact---Relations

#### India relations are resilient---not decided by a single issue

Indian Express 11 – Indian Express, April 29th, 2011, "No single issue can decide Indo-US relation: Roemer" [www.indianexpress.com/news/no-single-issue-can-decide-indous-relation-roemer/783485](http://www.indianexpress.com/news/no-single-issue-can-decide-indous-relation-roemer/783485)

After both its fighters failed to make it to India's multi-billion dollar deal, the US on Friday said even though it is deeply disappointed, no single issue can decide the Indo-US relation.¶ "We respect Indian procurement process but we are deeply disappointed... But I am forever an optimist and positive. No single issue can decide the Indo-US relation. Our partnership is resilient and global in nature. It will make us inextricable in coming decades," US Ambassador to India Timothy J Roemer said here.¶ He was addressing a gathering of the US Chamber of Commerce to India.¶ His statement comes a day after India announced the rejection of its two aircraft - Boeing's F-18 and Lockheed Martin's F-16, from multi billion dollar 126 Medium-Multi Role Combat Aircraft (M-MRCA) deal, in which European Eurofighter and French Rafale have been shortlisted for final selection.¶ The US Ambassador has resigned a day after India informed America about its decision to reject American fighters.¶ Addressing the gathering Roemer said, "The US India partnership is on a trajectory that knows no limits. We are entering a golden age in our relations that will result in us creating economic opportunities for our citizens and ensuring safe and secure communities throughout the world."¶ He further talked about the **Indo-US partnership in areas of health, education, trade, energy and agriculture.**¶ Calling his two year-long stint in India as an "extraordinarily successful and rewarding" period, Roemer said, "**Our two countries are collaborating and partnering in almost every field of human endeavour**."

#### No impact to relations

**Tellis 7** - senior associate at the Carnegie Endowment for International Peace, specializing in international security, defense, and Asian strategic issues. Former Department of State senior adviser to the Undersecretary of State for Political Affairs. Former senior policy analyst at the RAND corporation

CHAPTER 8 Gauging U.S.-Indian strategic cooperation Edited By Henry D. Sokolski, Army War College (U.S.). Strategic Studies Institute WHAT SHOULD WE EXPECT FROM INDIA AS A STRATEGIC PARTNER? Ashley J. Tellis http://74.125.155.132/scholar?q=cache:AN0FEcbqUQ0J:scholar.google.com/+india+author:%22Ashley+Tellis%22&hl=en&as\_sdt=0,23

It would not be an exaggeration to say that for the first time in recent memory Indian and American interests in each of these eight issue-areas are strongly convergent.10 It is equally true to assert that India’s contribution ranges from important to indispensable as far as achieving U.S. objectives in each of these issue-areas is concerned. That does not mean, however, that the United States and India will automatically collaborate on every problem that comes before the two countries. The differentials in raw power between the United States and India are still too great and could produce differences in operational objectives, even when the overarching interests are preeminently compatible. Beyond the differentials in raw power, bilateral collaboration could still be stymied by competing national preferences over the strategies used to realize certain objectives. And, finally, even when disagreement over strategies is not at issue, differences in negotiating styles and tactics may sometimes divide the two sides.

### No Impact---General

#### Comprehensive reform fails – if it passes it has too many compromises that pent solvency

Morrison 12-9 – Bruce Morrison, a former U.S. Representative from Connecticut, was the chairman of the House immigration subcommittee and the author of the Immigration Act of 1990. December 9th, 2012, "One Bill of Compromises Isn’t the Answer” www.nytimes.com/roomfordebate/2012/12/09/understanding-immigration-reform/one-immigration-bill-of-compromises-isnt-the-answer

To many, “comprehensive immigration reform” means “fix it and forget it.” But doing it all in one bill reprises what got us in the current mess in the first place. After major reform bills in 1986 and 1990, the failing employment verification scheme and the clogged green card process were allowed to go unattended. The “enforcement only” 1996 law only froze the mess in place.¶ Save the 'punishment' for those that do not comply with a system that works, not those ensnared in the current system that does not.¶ **A huge compromise of all competing immigration fixes larded into one bill will involve compromises that do not serve the nation’s interests.** Instead we need to assemble the votes to do the two things that must be done — a broad earned legalization program for the 11 million now illegally resident in the country in conjunction with the assurance that this problem will not happen again. That assurance will come from a universal, electronic, identity-authenticating screening of all workers to ensure that they are authorized to work in the U.S.¶ Because almost all who make unauthorized entries and overstays do so to seek and accept employment, no other tool will get the result we need to make legalization politically and philosophically justified — that we have fixed the source of the problem. And this also means using the employment relationship to roll-in legalization while rolling out universal verification.¶ The key point is that prevention of illegal presence is the goal. Save the “punishment” for those that do not comply with a system that works, not those ensnared in the current system that does not.¶ Our legal immigration system needs lots of fixing, like the increase of STEM green cards passed by the House last week and much more. But these fixes, including all future flows beyond the current one million annual immigrants and the millions who will be legalized, will get much easier to negotiate when the legalization-prevention barrier is removed.

### No Impact---Timeframe

#### Timeframe is more than 10 years

Navarrette 2-19 – Ruben Navarrette, CNN Contributor, February 19th, 2013, "Guest worker issue may kill immigration reform" [www.cnn.com/2013/02/19/opinion/navarrette-immigration-reform/index.html](http://www.cnn.com/2013/02/19/opinion/navarrette-immigration-reform/index.html)

How long? The undocumented could immediately apply for a special protective status to avoid deportation, but it would take them about eight years to get legal permanent residency (a green card) and another four or five years to become a U.S. citizen.

### Won’t Pass---1

#### **Won’t pass---border security**

Auerbach 2-23 – Matthew Auerbach, writer for Newsmax, February 23rd, 2013, "Brewer: Border not Secure, Drug Cartels 'Ready to Come Across' " www.newsmax.com/US/Arizona-Brewer-borders-immigration/2013/02/23/id/491648

Gov. Jan Brewer, R-Ariz., says she has first-hand evidence Mexican drug cartels are on the verge of breaching her state’s border.¶ “I was just down there last week,” Brewer said in an interview on Fox News.¶ “I was with the National Guard. I was in a Blackhawk. I saw them on the other side, the drug cartels, ready to come across in the middle of the night. It is not secure.”¶ Brewer said the border is not secure, the fences aren’t completed and there isn’t enough law enforcement on the ground.¶ Brewer says any immigration reform legislation will stall until the situation is rectified.¶ “The ranchers will tell you, if you sit down and talk to them, that they’re fearful, that the border patrol is too far north,” she said.¶ “They need to get closer to the border because they let them go so far, and then they just sort of blend in, and they’re destroying their land and destroying their cattle, they’re destroying their water.¶ **They’re frustrated. And I believe that until the ranchers, law enforcement, is satisfied and they tell us that this border is secured, there’s not going to be a whole lot of movement.”**

#### Immigration is dead on arrival---won’t pass and won’t solve

Epstein 2-16 – Jennifer Epstein, February 16th, 2013, "Rubio: Reported Obama immigration plan 'dead on arrival'" www.politico.com/politico44/2013/02/rubio-reported-obama-immigration-plan-dead-on-arrival-157209.html

Sen. Marco Rubio said Saturday that President Barack Obama's immigration plan will be "dead on arrival" on Capitol Hill if it looks like the proposal reported by USA Today.¶ “If actually proposed, the president’s bill would be dead on arrival in Congress, leaving us with unsecured borders and a broken legal immigration system for years to come," said **Rubio, who's seen as a key figure in pushing a bipartisan immigration** bill through the Senate.¶ A White House spokesman told POLITICO earlier Saturday that the administration continues to support a bipartisan plan from the Hill and has not produced a final bill to send to Congress.¶ Rubio's statement is combative, faulting the administration for releasing a proposal without getting Republican input. “**It’s a mistake for the White House to draft immigration legislation without seeking input from Republican members of Congress,"** Rubio said. "President Obama’s leaked immigration proposal is disappointing to those of us working on a serious solution."¶ "The president’s bill repeats the failures of past legislation," he continued. "It **fails to follow through on previously broken promises to secure our borders, creates a special pathway that puts those who broke our immigration laws at an advantage over those who chose to do things the right way and come here legally and does nothing to address guest workers or future flow, which serious immigration experts agree is critical to preventing future influxes of illegal immigrants."**¶ “Much like the president’s self-described stopgap deferred action measure last year, this legislation is half-baked and seriously flawed," Rubio added. "**It would actually make our immigration problems worse and would further undermine the American people’s confidence in Washington’s ability to enforce our immigration laws and reform our broken immigration system.**

### Won’t Pass---2

#### **Obama’s strategy is to make sure immigration does NOT pass**

Nazworth 2-18 – Napp Nazworth, February 18th, 2013, "Does Obama Really Want Immigration Reform?" www.christianpost.com/news/does-obama-really-want-immigration-reform-90270/

Republicans are asking whether President Barack Obama really wants immigration reform to pass in the narrow window that experts say now exists in the Congress, pointing to a leak late last week and statements by officials over the weekend.¶ Some congressional Republicans are concerned that the White House immigration proposal leaked to USA Today over the weekend signaled that Obama is more interested in using the issue to divide the Republican Party ahead of the 2014 elections than actually getting an immigration reform bill signed into law, according to some political insiders.¶ The leak "does feed a fear" that Obama "will pull the rug out from under us," said Michael Gerson, a Washington Post columnist and former speechwriter for President George W. Bush, on CBS' "Face the Nation."¶ Stuart Stevens, a top strategist for Mitt Romney's 2012 presidential election campaign, reflected that fear in a panel discussion on ABC's "This Week." Stevens could not understand why **the White House is leaking proposals that have no chance of getting passed in the House, rather than working with Sen. Marco Rubio (Fla.), a leading Republican on the immigration reform issue**.¶ "Is this about politics or is this about passing a bill?" Stevens asked rhetorically. "You have in Senator Rubio someone who really is doing something extraordinary, trying to, and could be a partner in this process to help get it through."¶ Rubio could help the White House "lower the temperature in all this" and "try to get something done," Stevens added.¶ Jonathan Karl, ABC's chief White House correspondent, interviewed Obama's new chief of staff, Denis McDonough, on "This Week." Karl asked him repeatedly why the White House would leak the proposal and why they have not even met with Rubio.¶ "Let's be honest. There is no passing an immigration bill without Marco Rubio. How could the White House be working on a draft without Republican input?" Karl asked.¶ "We've got a bill, we're doing exactly what the president said we would do last month in Las Vegas, which is we're preparing. We're going to be ready," McDonough answered.¶ McDonough was referring to Obama's Jan. 29 speech on immigration reform in which he warned members of Congress that if they did not pass an immigration reform bill, he would propose his own bill. The threat is odd because a bill proposed by Obama would certainly have less support than the bills worked on by bipartisan groups in the House and Senate.¶ "An Obama immigration plan is not going to pass the House," former speaker of the House and presidential candidate Newt Gingrich pointed out in the panel discussion.¶ A bipartisan House immigration bill negotiated with a bipartisan Senate immigration bill "could actually get to the president's desk," Gingrich added. "But an Obama plan, led and driven by Obama, in this atmosphere, with the level of hostility towards the president, and the way he goads the hostility, I think it's very hard to imagine that his bill is going to pass the House."¶ Liberal Washington Post columnist Ruth Marcus added that Gingrich's point raises a "really interesting leadership conundrum with Obama" because Republicans are asking Obama to show more leadership on the debt crisis but are asking him to stay out of the way on the immigration issue.¶ The fear among some Republicans is that the White House will seek to add a "poison pill" to the bill, or a provision that will make the bill unattractive to Republicans who otherwise want immigration reform. The bill would not pass, but then Obama could blame Republicans for killing the bill and use it as an issue in the 2014 midterm elections.¶ **The leaked White House immigration proposal had several issues of concern for Republicans: it would not include adequate border security, it would not require unauthorized immigrants to wait until all immigrants who have applied to enter the country through legal means are processed first, and there would be no guest worker program**. A bill that did not include, at least, these three would not be able to pass in the Republican-controlled House.¶ Obama has already called for giving gay partners family status in the legislation, and there have been discussions in the House and Senate about adding that to the bill. Such a proposal, though, would diminish support among many, mostly Republican, members of Congress.¶ The Catholic Church and many evangelical groups are lending their support to immigration reform, but adding a controversial provision about gay partners could cause some of them to withdraw their support.

#### **It LOOKS like it will pass but it WON’T---politicians are doing nothing**

Navarrette 2-19 – Ruben Navarrette, CNN Contributor, February 19th, 2013, "Guest worker issue may kill immigration reform" [www.cnn.com/2013/02/19/opinion/navarrette-immigration-reform/index.html](http://www.cnn.com/2013/02/19/opinion/navarrette-immigration-reform/index.html)

(CNN) -- All those who are hoping that comprehensive immigration reform is going to happen this year -- Latinos, businesses, churches, agriculture industry, law enforcement and others -- are in for a rude awakening.¶ The trick for politicians will be to look as if they're doing something, when really they're doing nothing. But, **regardless of how it looks,** it's a long shot that Congress will pass immigration reform this year.¶ That's bad news for those who want to give the undocumented a chance to get right with the law and develop a sensible, fair and efficient policy for future immigrants. But it's good news for those who resist legalizing the undocumented because they're afraid of foreigners -- either because of competition with their work ethic, or that they're changing the culture and complexion of the country.¶ The problem isn't just Republicans, who can't get on the same page about whether they want to be reformers. It's also **Democrats, who seem to be playing the immigration reform camp for chumps**.¶ The signs are everywhere, if you know where to look. For instance, a few days ago, a draft of President Obama's immigration reform plan was leaked. It took four years to write, and yet its key points fit on a cocktail napkin with room to spare.¶ Here's what is in the plan: more border security, a requirement that employers use an electronic system to verify if prospective hires are eligible to work, and a long path to citizenship for the estimated 11 million undocumented immigrants in the United States.

#### **Won’t pass the Senate, and House leaders won’t push**

The National 2-6 – National Journal Staff, February 6th, 2013, "The Edge: House to Senate: You Go First on Immigration" [www.nationaljournal.com/congress/the-edge-house-to-senate-you-go-first-on-immigration-20130206](http://www.nationaljournal.com/congress/the-edge-house-to-senate-you-go-first-on-immigration-20130206)

So when immigration reform gained bipartisan momentum after the election, this group came out of the shadows and GOP House Speaker John Boehner said the group basically had a deal. **The House had an opportunity to lead.**¶ **But** that’s not going to happen.¶ Sure, the House will likely hold hearings and markups, and maybe even offer the bipartisan bill, but they’re not going first. House Republican leadership thinks immigration will likely fail in the Senate, and they’re not wild about the idea of making their members take a politically tough vote only to have reform die. ¶ So despite being light years ahead of the Senate, **the House is unlikely to lead.**

### Pounders

#### Multiple fights pound the agenda---Hagel, guns, budget, Brennan

Zengerle 2-14 Patricia, Reuters, "Republicans block vote on Obama's defense nominee, Hagel", 2013, www.reuters.com/article/2013/02/15/us-obama-nominations-hagel-idUSBRE91C1K320130215

The struggle over Hagel's nomination is one of many battles raging between Obama's Democrats and Republicans in Congress, including disputes over gun control, immigration rules and dealing with huge budget deficits.¶ Hagel broke from his party as a senator by opposing former President George W. Bush's handling of the Iraq War, angering many Republicans. Some Republicans have also raised questions about whether Hagel is sufficiently supportive of Israel, tough enough on Iran or capable of leading the Pentagon.¶ His performance at his confirmation hearing before the Senate Armed Services Committee also drew harsh criticism. Even some Democrats have said he appeared unprepared and at times hesitant in the face of aggressive questioning.¶ The panel voted 14-11 along party lines on Tuesday to advance Hagel's nomination to the full Senate.¶ Republican Senator John McCain, for example, had said he opposed procedural tactics to block the vote on Hagel, but changed his mind in order to press the White House to release more information on Benghazi.¶ "As far as we are concerned on this issue, there are other questions. We feel the intervening week and a half is sufficient time to get those questions answered," McCain told a news conference with fellow Republican Senators Lindsey Graham and Kelly Ayotte, who have been among the most vocal Hagel critics.¶ Republicans said that Reid brought the uncertainty on himself by trying to rush Hagel's confirmation. Obama nominated Hagel on January 7 and his hearing before the Armed Services panel took place on January 31.¶ Democrats said the time frame was not unusually short. They also noted that many of Hagel's most vocal opponents served with him during his two terms as senator from Nebraska from 1997 to 2009 and knew him well.¶ The confirmation of another of Obama's national security nominees, John Brennan for CIA director, also faces a delay as the White House and lawmakers joust over the release of sensitive documents, including some related to Benghazi.

### PC Not Key

#### PC’s a bankrupt concept and isn’t key to immigration

Hirsh 2/7 Michael Hirsh is chief correspondent for National Journal. Hirsh previously served as the senior editor and national economics correspondent for Newsweek. Hirsh has appeared many times as a commentator on Fox News, CNN, MSNBC, and National Public Radio. He has written for the Associated Press, The New York Times, The Washington Post, Foreign Affairs, Harper’s, and Washington Monthly, and authored two books. “There’s No Such Thing as Political Capital,” 2013, http://www.nationaljournal.com/magazine/there-s-no-such-thing-as-political-capital-20130207?page=1

On Tuesday, in his State of the Union address, President Obama will do what every president does this time of year. For about 60 minutes, he will lay out a sprawling and ambitious wish list highlighted by gun control and immigration reform, climate change and debt reduction. In response, the pundits will do what they always do this time of year: They will talk about how unrealistic most of the proposals are, discussions often informed by sagacious reckonings of how much “political capital” Obama possesses to push his program through.¶ Most of this talk will have no bearing on what actually happens over the next four years.¶ Consider this: Three months ago, just before the November election, if someone had talked seriously about Obama having enough political capital to oversee passage of both immigration reform and gun-control legislation at the beginning of his second term—even after winning the election by 4 percentage points and 5 million votes (the actual final tally)—this person would have been called crazy and stripped of his pundit’s license. (It doesn’t exist, but it ought to.) In his first term, in a starkly polarized country, the president had been so frustrated by GOP resistance that he finally issued a limited executive order last August permitting immigrants who entered the country illegally as children to work without fear of deportation for at least two years. Obama didn’t dare to even bring up gun control, a Democratic “third rail” that has cost the party elections and that actually might have been even less popular on the right than the president’s health care law. And yet, for reasons that have very little to do with Obama’s personal prestige or popularity—variously put in terms of a “mandate” or “political capital”—chances are fair that both will now happen.¶ What changed? In the case of gun control, of course, it wasn’t the election. It was the horror of the 20 first-graders who were slaughtered in Newtown, Conn., in mid-December. The sickening reality of little girls and boys riddled with bullets from a high-capacity assault weapon seemed to precipitate a sudden tipping point in the national conscience. One thing changed after another. Wayne LaPierre of the National Rifle Association marginalized himself with poorly chosen comments soon after the massacre. The pro-gun lobby, once a phalanx of opposition, began to fissure into reasonables and crazies. Former Rep. Gabrielle Giffords, D-Ariz., who was shot in the head two years ago and is still struggling to speak and walk, started a PAC with her husband to appeal to the moderate middle of gun owners. Then she gave riveting and poignant testimony to the Senate, challenging lawmakers: “Be bold.”¶ As a result, momentum has appeared to build around some kind of a plan to curtail sales of the most dangerous weapons and ammunition and the way people are permitted to buy them. It’s impossible to say now whether such a bill will pass and, if it does, whether it will make anything more than cosmetic changes to gun laws. But one thing is clear: The political tectonics have shifted dramatically in very little time. Whole new possibilities exist now that didn’t a few weeks ago.¶ Meanwhile, the Republican members of the Senate’s so-called Gang of Eight are pushing hard for a new spirit of compromise on immigration reform, a sharp change after an election year in which the GOP standard-bearer declared he would make life so miserable for the 11 million illegal immigrants in the U.S. that they would “self-deport.” But this turnaround has very little to do with Obama’s personal influence—his political mandate, as it were. It has almost entirely to do with just two numbers: 71 and 27. That’s 71 percent for Obama, 27 percent for Mitt Romney, the breakdown of the Hispanic vote in the 2012 presidential election. Obama drove home his advantage by giving a speech on immigration reform on Jan. 29 at a Hispanic-dominated high school in Nevada, a swing state he won by a surprising 8 percentage points in November. But the movement on immigration has mainly come out of the Republican Party’s recent introspection, and the realization by its more thoughtful members, such as Sen. Marco Rubio of Florida and Gov. Bobby Jindal of Louisiana, that without such a shift the party may be facing demographic death in a country where the 2010 census showed, for the first time, that white births have fallen into the minority. It’s got nothing to do with Obama’s political capital or, indeed, Obama at all.¶ The point is not that “political capital” is a meaningless term. Often it is a synonym for “mandate” or “momentum” in the aftermath of a decisive election—and just about every politician ever elected has tried to claim more of a mandate than he actually has. Certainly, Obama can say that because he was elected and Romney wasn’t, he has a better claim on the country’s mood and direction. Many pundits still defend political capital as a useful metaphor at least. “It’s an unquantifiable but meaningful concept,” says Norman Ornstein of the American Enterprise Institute. “You can’t really look at a president and say he’s got 37 ounces of political capital. But the fact is, it’s a concept that matters, if you have popularity and some momentum on your side.”¶ The real problem is that the idea of political capital—or mandates, or momentum—is so poorly defined that presidents and pundits often get it wrong. “Presidents usually over-estimate it,” says George Edwards, a presidential scholar at Texas A&M University. “The best kind of political capital—some sense of an electoral mandate to do something—is very rare. It almost never happens. In 1964, maybe. And to some degree in 1980.” For that reason**,** political capital is a concept that misleads far more than it enlightens. It is distortionary. It conveys the idea that we know more than we really do about the ever-elusive concept of political power, and it discounts the way unforeseen events can suddenly change everything. Instead, it suggests, erroneously, that a political figure has a concrete amount of political capital to invest, just as someone might have real investment capital—that a particular leader can bank his gains, and the size of his account determines what he can do at any given moment in history.

#### Obama not spending PC on immigration

Aguilar 2-11 – Latino Partnership for Conservative Principles, February 11th, 2012, “The great absentee on immigration” http://thehill.com/blogs/congress-blog/homeland-security/282219-the-great-absentee-on-immigration

The president loves to pontificate about immigration, but the reality is that since his administration began, he hasn’t done anything to advance the discussion of immigration and help forge the bipartisan consensus necessary to address this important issue. He’s only made promises that he hasn’t kept. As a candidate back in 2008, he told Univision’s Jorge Ramos that “[w]hat I can guarantee is that we will have in the first year [of the presidency] an immigration bill that I strongly support.” Yet, he didn’t lift a finger to keep what Ramos called “la promesa de Obama”–Obama’s promise. The president went at it again a few days ago in Las Vegas where he outlined his immigration reform plan and basically restated “la promesa,” saying, "I’m here today because the time has come for common-sense, comprehensive immigration reform.” Yet, the president has done nothing to reach across the aisle to discuss his ideas on how to solve this tough issue. Since the election, in fact, **he hasn't called one Republican member to talk about immigration.** When asked in an interview why he hadn’t pro-actively reached out to Republicans, **he seemed to indicate that the leadership has to come from Capitol Hill and** not from him. “I am happy to meet with anybody, anytime, anywhere to make sure that this thing happens,” he said. “You know, the truth is oftentimes what happens is members of Congress prefer meeting among themselves to build trust between Democrats and Republicans there.” The question then is: how exactly is he leading and "working on the issue" if he's not talking to anyone on the other side? After all, the most important role of a president is of consensus builder. Presidents outline a vision to resolve specific problems the nation is facing and then work to bring legislators from both parties together. That’s what presidents have always done. A president doesn't lead or govern just by giving speeches. Congressman Luis Gutierrez, a Democrat from Illinois, and an unquestioned leader on immigration reform, just last month vented his frustration with the president in an interview with The Hill: “Who’s missing from these conversations is the president of the United States. When senators from both parties and members of the House are talking, when you have the Senate majority leader and Speaker Boehner both saying that this is an important priority. Who’s the one missing? The president.” Nonetheless, as Congressman Gutierrez mentioned, the good news is that congressional Democrats and Republicans early on, right after the elections, began working together on the issue and have achieved considerable progress. Just recently, after weeks of tough negotiations and discussions, a bipartisan group of senators came out with a framework that fully addresses the immigration challenges that our nation is facing, and that strikes an appropriate balance between the legitimate security concerns of the country and our tradition of being a welcoming nation. And a bipartisan working group in the House is expected to announce a similar blueprint in the next few weeks. The only party that has not been involved in these historic and productive conversations has been the White House. If the president is really being honest about wanting to get immigration reform done, then it would be better for him to quit for now the speaking tour, follow the example of congressional Democrats and Republicans, and work in earnest to expand the bipartisan consensus that has been achieved so far. Many are concerned, though, that the president will only use immigration for political advantage; that he will call on Americans to mobilize and express their support for immigration reform, but **won’t do anything himself to engage congressional leaders** in a serious conversation about the issue. If the president chooses this path, **he will surely disrupt the great progress that has been achieved so far by both parties** in Congress.

### XO Solves

#### **Obama will XO immigration reforms**

Lillis 2-16 – Mike Lillis, February 16th, 2013, "Dems: Obama can act unilaterally on immigration reform" thehill.com/blogs/regwatch/administration/283583-dems-recognize-that-obama-can-act-unilaterally-on-immigration-reform

President Obama can – and will – take steps on immigration reform in the event Congress doesn't reach a comprehensive deal this year, according to several House Democratic leaders.¶ While the Democrats are hoping Congress will preclude any executive action by enacting reforms legislatively, they say the administration has the tools to move unilaterally if the bipartisan talks on Capitol Hill break down. Furthermore, they say, **Obama stands poised to use them.**¶ **"I don't think the president will be hands off on immigration for any moment in time**," Rep. Xavier Becerra (D-Calif.), the head of the House Democratic Caucus, told reporters this week. "**He's ready to move forward if we're not**."¶ Rep. Joseph Crowley (N.Y.), vice chairman of the Democratic Caucus, echoed that message, saying Obama is "not just beating the drum," for immigration reform, "he's actually the drum major."¶ "There are limitations as to what he can do with executive order," Crowley said Wednesday, "but he did say that if Congress continued to fail to act that he would take steps and measures to enact common-sense executive orders to move this country forward."¶ Rep. Raul Grijalva (D-Ariz.), who heads the Congressional Progressive Caucus, said there are "plenty" of executive steps Obama could take if Congress fails to pass a reform package. "The huge one," Grijalva said, is "**the waiving of deportation**" in order to keep families together.¶ "Four million of the undocumented [immigrants] are people who overstayed their visas to stay with family," he said Friday. "So that would be, I think, an area in which … there's a great deal of executive authority that he could deal with."¶ The administration **could also waive visa caps**, Grijalva said, to ensure that industries like agriculture have ample access to low-skilled labor.¶ "Everybody's for getting the smart and the talented in, but there's also a labor flow issue," he said.

### SPS Link

#### No link---does NOT go through Congress, just the DOD

#### Not an opportunity cost---a logical policymaker could do both---key to decision-making

#### Congressional support for SPS

Morring 7 – Frank Morring, expert at Aviation Week & Space Technology, August 20th, 2007, “Space Solar Power: Climate, Economy, National Security Drive Another Look At SSP; Experts see warming, economic concerns and energy security as reasons to build SSP” Proquest Search

Another factor that might build support in Congress and the Executive Branch is the effect building an SSP system would have on competitiveness. "Here in the U.S. **we continue to be concerned about competitiveness**, particularly in light of the migration of many high-tech industries overseas, and how [to] provide long-term economic and science and technology strength in the U.S. [It's] an ongoing challenge," Mankins says.

### Winners Win

#### Winners win

Hirsh 2-7 – Michael, chief correspondent for National Journal; citing Ornstein, a political scientist and scholar at the American Enterprise Institute and Bensel, gov’t prof at Cornell, "There's No Such Thing as Political Capital", 2013, [www.nationaljournal.com/magazine/there-s-no-such-thing-as-political-capital-20130207](http://www.nationaljournal.com/magazine/there-s-no-such-thing-as-political-capital-20130207)

But the abrupt emergence of the immigration and gun-control issues illustrates how suddenly shifts in mood can occur and how political interests can align in new ways just as suddenly. Indeed, the pseudo-concept of political capital masks a larger truth about Washington that is kindergarten simple: You just don’t know what you can do until you try. Or as Ornstein himself once wrote years ago, “Winning wins.” In theory, and in practice, depending on Obama’s handling of any particular issue, even in a polarized time, he could still deliver on a lot of his second-term goals, depending on his skill and the breaks. Unforeseen catalysts can appear, like Newtown. Epiphanies can dawn, such as when many Republican Party leaders suddenly woke up in panic to the huge disparity in the Hispanic vote.¶ Some political scientists who study the elusive calculus of how to pass legislation and run successful presidencies say that political capital is, at best, an empty concept, and that almost nothing in the academic literature successfully quantifies or even defines it. “It can refer to a very abstract thing, like a president’s popularity, but there’s no mechanism there. That makes it kind of useless,” says Richard Bensel, a government professor at Cornell University. Even Ornstein concedes that the calculus is far more complex than the term suggests. Winning on one issue often changes the calculation for the next issue; there is never any known amount of capital. “The idea here is, if an issue comes up where the conventional wisdom is that president is not going to get what he wants, and he gets it, then each time that happens, it changes the calculus of the other actors” Ornstein says. “If they think he’s going to win, they may change positions to get on the winning side. It’s a bandwagon effect.”

### DOD

#### The DOD supports SPS and shields it

Hurst 8 – executive editor and writer for ecopolitology and Cleantechnica (Timothy B. December 21, 2008, Red Green & Blue, “Will Obama Champion Space-Based Solar Power?” <http://redgreenandblue.org/2008/12/21/will-obama-champion-space-based-solar-power/>)

But there has also been some discussion that Obama could make cuts at NASA, if for no other reason than something has got to be cut somewhere. Although funding NASA may not be a top priority for Obama, a strong argument could be made that investment in SSP research program would sync with his focus on building a clean energy economy. It also helps that the idea has been supported by Defense Department officials who see SSP applications in the transmission of electricity to remote locations to support military actions. I’m not suggesting that Obama will use the cover of the Defense Departmen**t to expand solar research**, but used as part of a strategy that promotes economic growth and environmental health, it may be a strategic choice that has some political legs. Whatever political method the Obama administration uses to hammer on the clean energy agenda, it is clear that Obama’s will be a science-based administration. And as recently as yesterday, Obama reiterated that his administration would not stifle hard-to-swallow science, but nurture it. Obama said in his weekly address: “Today more than ever before science holds the key to our survival as a planet and the security and prosperity as a nation. It’s time once again that we put science at the top of our agenda and restore America’s place as the world leader in science and technology.” If that includes a robust Space-Based Solar Program, we’ll have to wait and see.

#### The DOD shields the plan from politics

Appelbaum 12 – Binyamin, Defense cuts would hurt scientific R&D, experts say, The New York Times, 1-8, http://hamptonroads.com/2012/01/defense-cuts-would-hurt-scientific-rd-experts-say

Sarewitz, who studies the government's role in promoting innovation, said the Defense Department had been more successful than other federal agencies because it is the main user of the innovations that it finances. The Pentagon, which spends billions each year on weapons, equipment and technology, has an unusually direct stake in the outcome of its research and development projects.¶ "The central thing that distinguishes them from other agencies is that they are the customer," Sarewitz said. "You can't pull the wool over their eyes."¶ Another factor is the Pentagon's relative insulation from politics, which has allowed it to sustain a long-term research agenda in controversial areas**.** No matter which party is in power, the Pentagon has continued to invest in clean-energy technology, for example, in an effort to find ways to reduce one of its largest budget items, energy costs.

#### DOD spending is untouchable

Maddow 11 – Rachel, MSNBC show host, political commentator, “Rachel Maddow Show for March 25, 2011”, MSNBC, 3-25-11, Lexis

Case in point: there is a magic word in Washington politics. The well-earned common wisdom about this word is that if you attach this special magic word to a proposal, to something the government could spend money on, it doesn`t really matter how bad an idea it is, how many smart people think it`s a stupid thing, if it has this magic word attached to it, it becomes politically invincible, indestructible, it can`t be killed. The magic word is "defense." And it is well-earned common wisdom in Washington that any spending that is labeled "defense" is pretty much untouchable spending. It can`t be killed. Dollars spent by the military or on things that seem military-esque just don`t compete with other kinds of spending in the United States. And there`s a million reasons why. Defense contractors figured out that spreading to lots of different congressional districts the jobs associated with a particular airplane or vehicle or weapon system earns you a champion in Congress for keeping those jobs from every district you have larded yourself into. Defense spending is untouchable because calling a politician weak on defense in the 2000s is the equivalent of calling them soft on communism in the 1950s. Defense spending is untouchable because civilian lawmakers defer so deeply to the military, and to the former military officers laced through the contractor world, that if you squint, you would swear that Congress is some lackey puppet parliament in a country where the government has taken over by a junta. Defense spending, since the mammoth defense-funded, spend thrifty arms race build up of the Reagan years has been unquestionable in America.

### A/O---India Relations

#### Plan solves India relations

Dinerman 9 – regular contributor to the Space Review

(Taylor, “Should India and the US cooperate on space solar power?,” <http://www.thespacereview.com/article/1389/1>)

If the US has a serious medium-term need for a very large new source of clean energy, India needs it even more. While there is a lot of talk about terrestrial solar, wind, and geothermal power as alternatives to coal—which seems to be currently politically unacceptable—or nuclear—which has its own set of political problems but whose greatest drawback may simply be the length of time it takes to build new power plants—space solar power (SSP) may be the only alternative that could be made to work before the major global electricity demand crisis hits, around the year 2050. In Washington lots of people have complained that the Obama Administration has so far not given the India-US relationship the attention it deserves. Others are waiting to see if this relatively new team is going to follow up on the progress made by both the Clinton and the George W. Bush Administrations in building a real friendship between the two democratic giants. The one area in which there seems to be movement on, though, is a “renewable energy partnership”. From India’s standpoint the government does take the energy problem very seriously. While they connect it with the question of climate change, they have made it clear that they are not willing to inflict economic pain on their people in order to appease those in the West who are demanding that they cease their current drive to climb out of mass poverty in the name of the environment. Former External Affairs Minister Pranab Mukherjee made this clear when he spoke at the Asia Society in New York last year and said, “It is therefore completely one sided to target countries like India, whose emissions though modest are rising, but fail to bring to account those who have been responsible for more than 70% of the accumulated emissions in the atmosphere.” Recognizing the potential weakness of a case based strictly on the question of climate change, Mukherjee was wise enough to add that “even if there were no climate change arguments, considerations of energy security alone would require a medium to long term strategy of implementing a strategic shift from fossil fuels to non fossil fuels.” He called for a “major R&D effort to develop applications that that can provide convenient, cost effective large scale applications of solar energy.” Any analysis of the potential of terrestrial solar energy in India or elsewhere runs up against the awesome size of the future demand for power. Photovoltaic panels on rooftops and solar water heaters all make excellent small-scale contributions to the solution, but they cannot by any stretch of the imagination fulfill the requirements of a huge growing economy like India’s. Only SSP, which operates 24 hours a day, 7 days a week, year after year, can hope to meet this need. Fortunately both India and the US have space programs and technologies that could, if developed together and possibly with other interested nations such as Japan, bring SSP systems into service sometime late next decade or the early 2020s. With its commitment to develop a new low cost reusable spaceplane, the India Space Research Organisation (ISRO) is already working on one of the key technologies needed for an SSP system. Indian participation in both private and public SSP programs should be welcomed by the US. Ehe US government should make an effort to facilitate this by helping with visas and work permits for qualified Indian scientists and engineers. Recent moves towards reforming the notorious International Traffic in Arms Regulations (ITAR) should include ensuring that SSP systems are covered by the Department of Commerce regulators rather than by the State Department, which has gained such a sorry reputation in this area. In the near term the new Indo-US renewable energy partnership would seem to be the right place to start this collaboration. Together the partners can identify what will be needed in the way of technological and scientific investments over the next decade in order to make SSP a reality. India has lots of talent that can be committed to this effort and so does the US. In fact, the kind of ambitious idealism that we saw at NASA during the Apollo years could be engendered by this goal. Safe, clean, abundant energy from the Sun is not an impossible dream. The technology has not been perfected and the need for new, low-cost Earth-to-orbit transportation systems is as urgent as ever, but there are no requirements for any scientific breakthroughs. The Space Solar Power Study released by the US National Security Space Office (NSSO) in October 2007 found that since the 1977 “Reference” study, there had been: (a) improvements in PV [photovoltaic] efficiency from about 10% (1970s) to more than 40% (2007); (b) increases in robotics capabilities from simple tele-operated manipulators in a few degrees of freedom (1970s) to fully autonomous robotics with insect-class intelligence and 30–100 degrees of freedom (2007); (c) increases in the efficiency of solid state devices from around 20% (1970s) to as much as 70%–90% (2007); (d) improvements in materials for structures from simple aluminum (1970s) to advanced composites including nanotechnology composites (2007) The 2007 NSSO study showed just how far the technology had come and why space solar power is now a more viable alternative for very large-scale power generation than ever before. India and the US are natural partners in the development of this technology and the opportunity provided by the planned renewable energy partnership is a perfect place to begin.

## Counterplan

## CP

#### Links to spending---costs money in the short term which leads to tradeoff

#### No decline in US economic power and no impact

Lieber 8 [Robert J., Prof of Government at Georgetown “The Declinists Are Wrong Again” Perspectives Papers on Current Affairs, Perspectives 47 July 30, 2008, http://www.biu.ac.il/Besa/perspectives47.html]

On the domestic front, the subprime mortgage crisis, investment bank turmoil, a yawning balance of payments deficit, and the falling dollar lead to a warning that, “We are competing – and losing – in a global marketplace.” And America has become an “enfeebled” superpower, according to Fareed Zakaria, who adds that while the US will not be replaced in the foreseeable future, nevertheless, “Just as the rest of the world is opening up, America is closing down.” The declinists’ central proposition holds that both the rise of other countries and an increasing degree of counterbalancing are transforming the international system and profoundly weakening the leading role of the United States in world affairs. The new declinism rests not only on a global narrative, but it also makes an argument about fundamental domestic weaknesses. It points to the long-term burdens of entitlement programs, which will face large unfunded liabilities. Deficits in international trade and payments and the federal budget, a major credit crisis, collapse of the residential housing bubble and economic turbulence add to the list of troubles. Another clearly overdue task concerns the need to reduce dependence on imported oil and the resultant economic and security vulnerabilities. America’s infrastructure is aging and in need of repair and modernization. In addition, the effectiveness of government institutions may be less than optimal, as evident in the chaotic response to Hurricane Katrina, ongoing problems at the Department of Homeland Security, cumbersome interaction among intelligence agencies, and the need for more effective coordination of national security policy. It is premature to write the epitaph for American power and leadership. In contrast to these arguments and analyses, America continues to maintain a position of relative predominance, and despite an increasing diffusion of power, no single country has emerged as a plausible counterpart or peer competitor. Apart from the long-term possibility of China, none is likely to do so. Similarly, without minimizing the impact of domestic problems, it would be wise not to overstate the likelihood of fundamental economic decline. Current challenges are ultimately manageable and are likely to prove less daunting than those that afflicted the US economy in the mid- to late-1970s and early 1980s. It is worth reminding ourselves that the overall size and dynamism of the economy remains unmatched. Consider that America continues to lead on comparative measures of competitiveness, technology and innovation, for example ranking first in information technology and second (after Finland) in overall competitiveness. The US even ranks first in “space competitiveness.” Higher education and science represent another huge asset. America’s major research universities are outstanding in their international stature and rankings, occupying 17 of the top 20 places and 35 of the top 50. Noteworthy, 70 percent of the world’s Nobel Prize winners work in US institutions. Broad demographic trends also favor the United States, whereas countries that are possible peer competitors face much more adverse patterns of aging populations. This is not only true for Russia, Europe, and Japan, but even China is affected as a result of its long-standing one child policy. America’s birthrate is consistently higher than in those countries and its population continues to grow through natural increase as well as immigration. Population patterns thus contribute to the long-term persistence of American predominance. Militarily, no other country possesses anything like the capacity of the United States to project power on a global basis. American military technology remains unmatched, and even when foreign countries may achieve comparable quality in producing an individual type of modern weapon, none come close to parity in the overall systems applicable to land, sea or air warfare. While military spending is enormous in real terms, the defense budget amounts to approximately 4.2 percent of GDP. That contrasts with 6.6 percent at the height of the Reagan buildup and double digit percentages during the early and middle years of the Cold War. In short, the costs of national defense do not by themselves pose an imminent danger of overstretch.

## \*2AC Offense

### AO---SPS---Disease

#### **SPS is key to disaster response and soft power**

Wood 12 – Leet W.Wood is a PhD student in political science at George Mason University in Fairfax, Virginia, Bulletin of the Atomic Scientists, February 15th, 2012, ““Projecting power: The security implications of space-based solar power,” Ebscohost

The ability of the system to direct power on short notice to most points on the globe also has significance for international aid and disaster relief. In the wake of a **natural or humanitarian disaster**, power from space could be used to **keep hospitals and refugee camps operational, as well as providing electricity for water desalination** and other critical but energy-intensive processes. Operating in this mode, spacebased solar power could become a powerful tool of diplomacy rather than one of force projection in the traditional sense.

#### Disaster response prevents disease outbreaks

Aljunid et al 12 Syed, Professor of Health Economics and Senior Research Fellow at UNU International Institute for Global Health, Kouadio Koffi Isidore, Postdoctoral Fellow at United Nations University International Institute for Global Health, Taro Kamigaki, Assistant Professor, at the Department of Virology of Tohoku University Graduate School of Medicine, Karen Hammad, Australian emergency nurse and Lecturer at the School of Nursing and Midwifery, Flinders University and Hitoshi Oshitani, Professor of Virology at Tohoku University Graduate School of Medicine, "Preventing and controlling infectious diseases after natural disasters", March 13, United Nations University, unu.edu/publications/articles/preventing-and-controlling-infectious-diseases-after-natural-disasters.html#info

Beyond damaging and destroying physical infrastructure, natural disasters can lead to outbreaks of infectious disease. In this article, two UNU-IIGH researchers and colleagues review risk factors and potential infectious diseases resulting from the secondary effects of major natural disasters that occurred from 2000 to 2011, classify possible diseases, and give recommendations on prevention, control measures and primary healthcare delivery improvements.¶ Over the past few decades, the incidence and magnitude of natural disasters has grown, resulting in substantial economic damages and affecting or killing millions of people. Recent disasters have shown that even the most developed countries are vulnerable to natural disasters, such as Hurricane Katrina in the United States in 2005 and the Great Eastern Japan Earthquake and tsunami in 2011. Global population growth, poverty, land shortages and urbanization in many countries have increased the number of people living in areas prone to natural disasters and multiplied the public health impacts.¶ Natural disasters can be split in three categories: hydro-meteorological disasters, geophysical disasters and geomorphologic disasters.¶ Hydro-meteorological disasters, like floods, are the most common (40 percent) natural disasters worldwide and are widely documented. The public health consequences of flooding are disease outbreaks mostly resulting from the displacement of people into overcrowded camps and cross-contamination of water sources with faecal material and toxic chemicals. Flooding also is usually followed by the proliferation of mosquitoes, resulting in an upsurgence of mosquito-borne diseases such as malaria. Documentation of disease outbreaks and the public health after-effects of tropical cyclones (hurricanes and typhoons) and tornadoes, however, is lacking.¶ Geophysical disasters are the second-most reported type of natural disaster, and earthquakes are the majority of disasters in this category. Outbreaks of infectious diseases may be reported when earthquake disasters result in substantial population displacement into unplanned and overcrowded shelters, with limited access to food and safe water. Disease outbreaks may also result from the destruction of water/sanitation systems and the degradation of sanitary conditions directly caused by the earthquake. Tsunamis are commonly associated with earthquakes, but can also be caused by powerful volcanic eruptions or underwater landslides. Although classified as geophysical disasters, they have a similar clinical and threat profile (water-related consequences) to that of tropical cyclones (e.g., typhoon or hurricane).¶ Geomorphologic disasters, such as avalanches and landslides, also are associated with infectious disease transmissions and outbreaks, but documentation is generally lacking.¶ After a natural disaster¶ The overwhelming majority of deaths immediately after a natural disaster are directly associated with blunt trauma, crush-related injuries and burn injuries. The risk of infectious disease outbreaks in the aftermath of natural disasters has usually been overemphasized by health officials and the media, leading to panic, confusion and sometimes to unnecessary public health activities.¶ The prolonged health impact of natural disasters on a community may be the consequence of the collapse of health facilities and healthcare systems, the disruption of surveillance and health programmes (immunization and vector control programmes), the limitation or destruction of farming activities (scarcity of food/food insecurity), or the interruption of ongoing treatments and use of unprescribed medications.¶ The risk factors for increased infectious diseases transmission and outbreaks are mainly associated with the after-effects of the disasters rather than to the primary disaster itself or to the corpses of those killed. These after-effects include displacement of populations (internally displaced persons and refugees), environmental changes and increased vector breeding sites. Unplanned and overcrowded shelters, poor water and sanitation conditions, poor nutritional status or insufficient personal hygiene are often the case. Consequently, there are low levels of immunity to vaccine-preventable diseases, or insufficient vaccination coverage and limited access to health care services.¶ Phases of outbreak and classification of infectious disease¶ Infectious disease transmission or outbreaks may be seen days, weeks or even months after the onset of the disaster. Three clinical phases of natural disasters summarize the chronological public health effects on injured people and survivors:¶ Phase (1), the impact phase (lasting up to to 4 days), is usually the period when victims are extricated and initial treatment of disaster-related injuries is provided.¶ Phase (2), the post-impact phase (4 days to 4 weeks), is the period when the first waves of infectious diseases (air-borne, food-borne, and/or water-borne infections) might emerge.¶ Phase (3), the recovery phase (after 4 weeks), is the period when symptoms of victims who have contracted infections with long incubation periods or those with latent-type infections may become clinically apparent. During this period, infectious diseases that are already endemic in the area, as well as newly imported ones among the affected community, may grow into an epidemic.¶ It is common to see the international community, NGOs, volunteers, experts and the media leaving a disaster-affected zone usually within three months, when in reality basic sanitation facilities and access to basic hygiene may still be unavailable or worsen due to the economic burden of the disasters.¶ Although it is not possible to predict with accuracy which diseases will occur following certain types of disasters, diseases can be distinguished as either water-borne, air-borne/droplet or vector-borne diseases, and contamination from wounded injuries.¶ Diarrhoeal diseases¶ The most documented and commonly occurring diseases are water-borne diseases (diarrhoeal diseases and Leptospirosis). Diarrhoeal diseases cause over 40 percent of the deaths in disaster and refugee camp settings. Epidemics among victims are commonly related to polluted water sources (faecal contamination), or contamination of water during transportation and storage. Outbreaks have also been related to shared water containers and cooking pots, scarcity of soap and contaminated food, as well as pre-existing poor sanitary infrastructures, water supply and sewerage systems.

#### Extinction

**Torrey and Yolken 5** E. Fuller and Robert H, Directors Stanley Medical Research Institute, 2005, Beasts of the Earth: Animals, Humans and Disease, pp. 5-6

The outcome of this marriage, however, is not as clearly defined as it was once thought to be. For many years, it was believed that microbes and human slowly learn to live with each other as microbes evolve toward a benign coexistence wit their hosts. Thus, the bacterium that causes syphilis was thought to be extremely virulent when it initially spread among humans in the sixteenth century, then to have slowly become less virulent over the following three centuries. This reassuring view of microbial history has recently been challenged by Paul Ewald and others, who have questioned whether microbes do necessarily evolve toward long-term accommodation with their hosts. Under certain circumstances, Ewald argues, “Natural selection may…favor the evolution of extreme harmfulness if the exploitation that damages the host [i.e. disease] enhances the ability of the harmful variant to compete with a more benign pathogen.” The outcome of such a “marriage” may thus be the murder of one spouse by the other. In eschatological terms, this view argues that a microbe such as HIV or SARS virus may be truly capable of **eradicating the human race**.

### AO---SPS---Water Wars

#### SPS solves water wars – the impact is extinction

**Schwab 5 –** director of the Homeplanet Defense Institute (Martin, Homeplanet Defense: Strategic Thought for a World in Crisis, chapter 5)

The protracted crisis in Israel/Palestine continues to fuel much of the fire in the hearts of the Islamic world against the U.S. Even Europe, in general, perceives the U.S. as an impartial broker. This dynamic is destructive to the world system because it divides the transatlantic alliance, perhaps more than most analysts are willing to admit. As the gulf between Europe and the U.S. widens, hardliners and even reformers in China have less of an incentive to take the risks necessary for renewing their great civilization. I believe the sickness in Israel/Palestine radiates outward to the rest of humankind, leading us toward auto-nuclear annihilation on our planet. By implication, I believe the situation in Israel/Palestine is the most immediate and pivotal threat to humankind's continued expansion throughout the cosmos. The stakes have never been higher, more urgent and more opportune on this question than at the present. This is why an entire chapter is devoted to examining this infuriating conflict. Rabbi Michael Lerner, a citizen of San Francisco whose father was national vice president of the Zionist Organization of America, offers a reflective and courageous voice on what is needed to heal Israel/Palestine. "Healing Israel/Palestine" is Rabbi Lerner's framework for how to resolve once and for all this burning and vital question before the world community. To quote Rabbi Lerner: Jews did not return to their ancient homeland to oppress the Palestinian people, and Palestinians did not resist the creation of a Jewish state out of hatred of the Jews ... In fact, both sides have made and continue to make terrible mistakes ... As long as each side clings to its own story, and is unable to acknowledge what is plausible in the story of the other side, peace will remain a distant hope... We need to learn how two groups of human beings, each containing the usual range of people –from loving to hateful, rational to demented, idealistic to self-centered – could end up feeling so angry at each other. 180 Rabbi Lerner has founded a group called Tikkun, which in Hebrew means healing or transformation. This dedicated group has an agenda of global peace that starts- with healing Israel/Palestine. See also www.tikkun.org. Another useful framework for cooling the cauldron of our world's sickness has been offered by diplomatic historians Dr. Laura Zittrain Eisenberg and Dr. Neil Caplan. Like Lerner, they contend that the "unfinished business" of the Arab-Israeli peace process is solvable but only if the parties themselves break the historic patterns of failed negotiations. 181 Eisenberg and Caplan outline the period from 1918-1977 as being characterized by "persistence of passionately held but genuinely irreconcilable national goals [italics are mine]" primarily over territory. The nation-states in the region conducted negotiations for appearances, "trying to impress upon their constituents or upon a powerful third party the justness of their cause, the righteousness of their interpretation of events and their flexibility and willingness to resolve matters, as opposed to the extremist, uncompromising posture of the other side."' 82 Today, this description still applies to Israel and the Palestinians. Eisenberg and Caplan conclude that what is needed, is for the leaders in the region to somehow think about the conflict in a different way that does not inevitably lead to deadlock. 181 The rest of this chapter offers a few specific prescriptive measures by which Israel/Palestine can heal their sickness, with the aid of the rest of the world. As the world moves forward on the Israel/Palestine question, it will be important for the U.S., EU, Russia and the UN, known as the "Quartet" of third-party negotiators to keep in mind a potential inhibitor to peace in the region: The leaders of Egypt, Syria, Saudi Arabia and Iran will be vying amongst one other to be the most influential leader of all Islamic people. Middle East water as a global strategic issue Given the intertwining issues of Israeli settlements and Palestinian and Arab states' demographic projections, this section will address the issue of water in the Middle East in terms of scarcity rather than distribution. During the latter half of 2002, water scarcity became a quiet driver of conflict in the Middle East. This driver, which has long been considered a topic of "low diplomacy," has the potential to inflame already negative attitudes against the U.S. presence in the region. It has been argued that water resource initiatives over the years have not been as successful as they could have been because they were handled separately from political discussions. Some believe that this separation of "high" diplomacy from "low" diplomacy dooms each process to failure. Progress that had been made by water experts in the Madrid multilateral talks ceased in 1996 only because the bilateral talks on final status between the Palestinians and Israel broke down during Benjamin Netanyahu's tenure as Prime Minister of Israel.' 84 Restarting the multilateral discussions known as the "multilaterals" became a high diplomacy issue of public contention between Israel and Egypt. Egypt contended that resumption of the multilaterals was contingent on the revival of the bilateral talks between Israel and Syria. Addressing mutual problems (namely water scarcity) in what has become the "post peace process era" in the Middle East is an alternative diplomatic framework in which to shape a common vision for future general relations.' 85 In October 2002, the Sharon government of Israel, despite U.S. pressure on it to compromise on the water issue, threatened to go to war with Lebanon over water resources. Sharon, a long time champion for Israeli settlements, stated: "We are deploying maximum efforts to keep our water resources, and Israel always has and always will do whatever it takes to protect its vital resources." This statement, made on public radio, was in reaction to Lebanon's plan to pump water from the Wazzani River. This river indirectly feeds the Sea of Galilee, Israel's main source of fresh water. Lebanon's position is that the water transfer would provide needed drinking water to some 40 villages in the border area. This area had been under Israeli occupation for 22 years, until May 2000. 186 In response, Hezbollah chief, Seyyed Hassan Nasrallah, warned Israel that if it attacks the new Lebanese pumping station on the Wazzani, his guerrillas would retaliate "within minutes" at already selected targets in Israel.' 8' These diplomatic exchanges, through the intermediary of the international press, are indicative of a type of cold war framework that has emerged over the lifeblood of the region, water. Given the seriousness of the situation, the U.S. Department of State sent to the region Chuck Lawson, a U.S. water expert. In late 2002, Lawson conducted quiet talks with officials on both sides of the border. In addition, the EU and the UN sent their own delegates to mediate. 188 It is absolutely critical that the U.S. preempt the possibility of nation-state on nation-state conflict between Israel and her neighbors by placing desalination powered by space solar power on the agenda for peace in a manner that is noticeable to the world community. This is not the first time that the U.S. has acted as a critical third party in the Middle East over the issue of water scarcity. In July 1953, just a few years after its founding, Israel began construction on the intake of its National Water Carrier, on the northern shore of the Sea of Galilee. The problem was that their construction began in the demilitarized zone between Israel and Syria. Syria deployed its armed forces along the border and artillery units opened fire on the construction and engineering sites. Syria then protested Israel's action to the UN. 189 In 1954, the UN issued a resolution that allowed Israel to resume work on the water carrier and the U.S.S.R. vetoed the resolution. Israel then moved its intake out of the demilitarized zone and to the northwest shore of the Sea of Galilee. It was during this tense situation, with Cold War implications, that President Eisenhower sent his special envoy, Eric Johnston, to the Middle East in October 1953. His mission was to mediate a comprehensive settlement of the Jordan River system and design a plan for its regional development.'" Johnston engaged in shuttle diplomacy until the end of 1955 to reconcile and unify the separate plans that had been presented by the U.S., Arab states and Israel. His position in the negotiations was bolstered by the fact that the U.S. was offering to fund two-thirds of the development costs. Johnston was also able to work with the common belief by both sides that a regional approach was needed.' 9' Johnston addressed the objections of both Israelis and Arabs and therefore achieved a great deal of compromise in what has become known as the "Johnston Plan." The structure of the Johnston Plan was around distribution of existing water in the Jordan Basin. Four hundred million cubic meters (MCM) per year would go to Israel, 720 MCM/year to Jordan, 35 MCM/year to Lebanon and 132 MCM/year to Syria. Israel had given up on appropriating the Litani River for its sole use and was accepting international supervision of its water projects. Arab states agreed to Israeli storage of water in the Sea of Galilee and the construction of the Magarin Dam as long as neither side would have physical control over the share available to the other.' 192 Johnston's neglect, perhaps purposeful, of groundwater issues later proved to be a significant oversight. The Johnston Plan was never ratified. However, since that time to the present, Israeli and Jordanian (not Syrian) water officials have met several times a year at the confluence of the Jordan and Yarmuk rivers at "Picnic Table Talks" to discuss flow rates and allocations. The water officials even meet as often as every two weeks during the critical summer months. It should be noted that the impetus for this cooperation has been funding for future water development projects, promised by the U.S. only as long as the principles behind the Johnston Plan are adhered to.' 9' Sometimes, what a critical third party cannot achieve through the rule of law, due to the need of parties to save face, can be achieved through hard cash, in combination with innovative ideas. It is important to understand that the Middle East is a transition zone between Mediterranean subtropical and and climates. The Middle East has three main watersheds: the Nile Basin, the Jordan Basin (or "Jordan Valley") and the Tigris-Euphrates Basin. The politics of the Middle East have always been in part "hydro-politics" that occur when a population's demand for water approaches or exceeds water supply. It is little wonder that former Secretary General of the UN, Boutros Boutros-Ghali, said in 1991 that a future war in the Middle East may be fought over water. 194 This chapter focuses on the Jordan Basin or watershed. The conflict in this area, albeit for many reasons beyond water, has infected the entire globe with fervor for human self-destruction. Understanding this crucial strand of this conflict is key to untangling this web that has been woven by Israel and her neighbors in the years since 1948. Seawater desalination powered by space solar power The proximity of the Mediterranean and Red seas serves as an attractive potential to create water abundance through desalination powered by SSP. This potential could help bring the general conflict in this region of our interconnected world to an end. The factor of expense that is associated with water desalination will not be used in the typical manner to disregard the option of desalination but rather as a framework around which all sides involved in the present conflict may be able to contribute. It is the oceans that hold 97 percent of the water on our homeplanet. Desalination is technically feasible, and the use of the process has grown enormously over the last 40 years. In 1992, more than 7,500 desalination plants of various kinds and sizes existed worldwide. Together, they convert 4.8 billion cubic meters of salt water into fresh water each year. However, desalination still produces just one tenth of 1 percent of the world's potable water. Desalination, either by heating water and condensing the steam (distillation) or by filtering water through a membrane using pressure (reverse osmosis), is energy intensive. SSP can ease this problem in Israel/Palestine.

### Aerospace AO

#### Federal support for SPS is key to revitalize the aerospace sector

Mankins, President of SPA and Former NASA Scientist, 9 (John, Preeminent Global Expert on SSP, SPA = Space Power Association, President of ARTEMIS Innovation Management Solutions, Worked @ NASA for 25 Years, “To boldly go: the urgent need for a revitalized investment in space technology,” 5-18, <http://www.thespacereview.com/article/1377/1>)

Unfortunately, the US investment in advanced research and technology for space exploration and development has been reduced to historically low levels, and concurrently has been focused more narrowly than ever before on immediate system designs and development projects. In many respects, the current budget is little more than an “advanced development” program with minimal opportunity for innovation and essentially no possibility that an invention arising from civil space research and technology programs could influence system design decisions, inform budget estimates or inspire new, more ambitious space program goals. The challenge today Space has never been more important to our national security than it is today. The opportunities for truly profound scientific discoveries through space exploration have never been greater. And the pace of international development of new capabilities for space operations has never been faster. Federal budgets for advanced research and technology to enable future space exploration and development have been reduced in scope and focused on near-term system developments to the point that US preeminence in space activities is in question. NASA’s advanced space research and technology budget was over $2 billion in fiscal year (FY) 2005, with a focus on objectives five to ten years in the future and with the purpose of informing program and design decisions, while retiring both technical and budget risks of those future programs. The President’s FY 2007 budget for NASA exploration technology declined to less than $700 million, and of that only a small fraction (perhaps less than $200 million) still addressed longer-term objectives. The corresponding budgets in 2008 and 2009 were further reduced. Little to none of the remaining investment deals with enabling fundamentally new goals or objectives, or dramatically reducing expected costs. With these funding levels and program goals, it is unlikely that the US will maintain leadership in space exploration beyond the current generation of projects—all of which are founded on the “seed corn” harvested from past investments in innovative new space capabilities. Further, declining support for space research and technology is creating an innovation vacuum in the US as small business opportunities evaporate, and funding for universities and students vanishes. This trend jeopardizes America’s long-term leadership in space exploration and development, and damages our ability to achieve important national security goals. History Since the conclusion of the Apollo program in the early 1970s, the US space program has experienced varying levels of support from national leaders in the White House and the US Congress. Moreover, during most of that time human exploration beyond low Earth orbit has been “off the agenda”, with the exception of the short-lived Space Exploration Initiative (SEI) of 1989–1993. During the same period, US robotic exploration has had a number of tremendous successes, primarily involving the outer planets (e.g., Voyager spacecraft, Galileo, and more recently, Cassini), but also the inner solar system (e.g., Viking on Mars, Magellan at Venus), and the recent series of Mars missions (e.g., Pathfinder/Sojourner, Mars Observer, Spirit and Opportunity). However, these programs have tended to reflect one-of-a-kind successes with a minimal number of spacecraft and missions using common systems or technologies, resulting in continuing very high costs. Various attempts to create a foundation of common technologies and modular spacecraft have failed. Similarly, attempts to bridge the gap between robotic mission systems technologies and human space flight technologies (e.g., “Platform Z” from the early Space Station Freedom program) have failed. The most notable successes in this vein arose from the in-space assembly and spacecraft servicing capabilities of the Space Shuttle, first in the early 1980s with the Solar Max servicing mission, then with the series of hugely successful Hubble Space Telescope servicing missions, and finally with the assembly of the International Space Station. However, these achievements were far more the exception than the rule. For the most part human and robotic exploration systems and technologies became increasingly isolated beginning in the 1970s. More recently Following the Columbia tragedy in 2003, the direction of the US space program was again the subject of intense discussion (led by the White House) and including various agencies and organizations. The result, announced in January 2004, was the “Vision for Space Exploration” (VSE). The VSE as formulated originally was much more than a new justification for human space flight. Rather, the Vision addressed the full range of human and robotic exploration, as well as a revitalization of advanced space research and technology with far-reaching implications. The original VSE strategy placed strong emphasis on studies, research, and technology developments that would in time inform decisions regarding architectures and systems for (1) a Space Shuttle replacement; (2) annual robotic technology missions to the Moon; (3) a human return to the Moon to establish a permanent presence; (4) new space observatories to explore the universe beyond our solar system; (5) a campaign of robotic missions to Mars and beyond; and more. With current funding levels and program goals, it is unlikely that the US will maintain leadership in space exploration beyond the current generation of projects—all of which are founded on the “seed corn” harvested from past investments in innovative new space capabilities. However, in 2005 NASA shifted to a dramatically different approach to exploration and related technology developments with the results of the Exploration Systems Architecture Study. ESAS results placed exclusive emphasis on a US human lunar return and in an attempt to accelerate the first operational capability for the “crew exploration vehicle”—a capsule-based Space Shuttle replacement. To achieve this focus, numerous strategic changes were necessary. References to other aspects of space science and exploration were dropped, as was integrated planning of human and robotic exploration missions. For example, the initially planned annual campaign of robotic technology missions to the Moon was reduced to a single orbiter and one lunar lander mission, and these retained little or no role in guiding design decisions for human lunar systems. Also, to avoid technology-related risks, a range of lifecycle cost-related architectural options were eliminated from consideration, including in-space assembly of lunar transportation systems, in-space fueling and servicing, reusable lunar transportation systems, and others. The result was a family of systems for low Earth orbit access and a return to the Moon that involved a re-sized, Apollo-like architectural approach, with a heavy-lift launch vehicle and expendable transportation system elements. Significant shifts in agency budgets followed these new strategic directions, including drastic reductions in advanced space research and technology development, and a redefinition of remaining investments as “technology development”, focused on already-made design decisions. This shift in strategy was epitomized by NASA’s elimination of the NASA Institute of Advanced Concepts (NIAC) on the grounds of budget constraints, despite that fact that NIAC represented less than one third of one percent of the agency’s annual budget. The real point was that NIAC no longer had a legitimate role given NASA’s new approach to innovation: low engineering risk designs, and modest technology developments focused on those designs. Unfortunately, the elimination of design-to-cost and investments in longer-term innovation have come with a price. By recent estimates, the transportation-related cost of a single human mission to the Moon using the present, low-technology design solution will exceed $5 billion; transportation for two crewed lunar missions per year would require approximately 60% of NASA’s annual budget. Moreover, in-house agency subject matter expertise has been severely affected, as has the Agency’s contribution to US space technology leadership. Overall, the ambitious goals that were articulated by the White House in 2004 have been pushed into the indefinite future. A permanent human outpost of the Moon, development of lunar resources, deployment of large space observatories, and ambitious missions to the outer planets: all of these have been pushed out into the future by 20 years or more. Moreover, it is difficult to envision how such goals could ever be achieved using current systems concepts and concomitant prohibitively high costs. Only new systems concepts, enabled by focused space research and technology developments, can change this assessment. At the same time, real progress continues to be made by the international space community, grounded in steady investments in new technologies and systems—and resulting in regular accomplishments in space systems. The international flotilla of robotic space missions to the Moon illustrates this point: the US contribution of a single orbiter and a future lander are largely indistinguishable from the missions of other countries. Without an adequate strategy for, and more robust investment in, advanced space research and technology, long-term US preeminence in space exploration and development is doubtful. The Office of Naval Research (ONR) of the US Department of Defense (DOD) provides a useful example for how long-term but focused government research and technology advancement may be pursued. In particular, the ONR uses four complementary program strategies: a foundation of in-house subject matter expertise, sustained basic research and technology investments, development and demonstration of prototypes, and a focus on future capabilities. The concept of “Future Naval Capabilities” (FNCs) is used by the ONR to focus advanced research and technology (R&T) efforts around novel systems and concepts of operations. FNCs allow a range of R&T investments to be coordinated around specific new capabilities—even though the details of those systems designs have not yet been finalized, nor development programs approved. Also, the ONR uses the concept of “Innovative Naval Prototypes” (INPs) to orchestrate a range of ongoing R&T and draw the results of those efforts into nearer-term demonstrations of working prototypes and test-beds. INPs are characterized by ambitious technical objectives, and their potential to truly transform future naval operations. In addition, the ONR has preserved for over 60 years a commitment to long lead, discipline-oriented research and technology development. These investments have been responsible for advances in areas as diverse as materials, electronics, communications, power, and others—but all leading toward naval preeminence. And finally, DOD investments have maintained a foundation of in-house subject matter expertise at the Naval Research Laboratory (NRL) and other installations. Over the years, these in-house experts have enabled more effective technology investment decisions and, working with civilian and uniformed leaders better system acquisition decisions. Novel technologies and systems concepts must be matured and validated before decisions are made regarding the detailed designs of future space systems. There are a variety of business models that might be considered for space research and technology development. However, the strategies used by the ONR for its investments seem especially appropriate to the long-term character of the challenge of space exploration and development. For civil space exploration and development, these would be: (1) maintenance of in-house NASA subject matter expertise in relevant technologies; (2) sustained, discipline-oriented investment in basic research and technology at NASA centers, universities, and small businesses; (3) development and demonstration of transformational systems prototypes in partnerships involving NASA, major industry and others; and (4) a sustained focus on future space capabilities. And the results of these investments must be harvested before designs are finalized and system acquisition programs started. Assessment It is hardly consistent with the aspirations of Americans to “go where everyone has been before…” However, it is fantasy to suppose that the civil space program can affordably accomplish ambitious goals and objectives in space using systems concepts and technologies of the last century. Novel technologies and systems concepts must be matured and validated before decisions are made regarding the detailed designs of future space systems. In fact, numerous reports over a period of decades have established the criticality of a robust and focused investment in advanced research and technology, including the findings of several National Commissions, committees of the National Academy of Sciences, and others. Stable, robust, long-term federal investments in advanced research and technology for future civil space capabilities—funded at a level sufficient to assure US preeminence in space science, exploration, and utilization—are critical if we are to meet the challenges of this century: achieving ambitious goals in science and exploration, delivering on the promise of space to contribute to a strong national economy, maintaining a skilled aerospace workforce, and providing the foundations for future national security. It is time for the Congress and the White House—recognizing the challenges facing this nation’s space sector—to articulate and implement a strategy to revitalize advanced space research and technology and to make a sustained commitment to the implementation of that strategy. The recently chartered national study on the future of human space exploration, chaired by Norm Augustine, should take up this task. What should be done? The following actions are needed now: The federal government should revitalize its investment to invent and develop innovative new technologies for space science, exploration, and development, consistent with assuring US preeminence in space activities and industry’s ability to adopt these innovations for application in future space missions and markets. A balanced distribution should be created in the allocation of revitalized advanced space research and technology funding among more basic research efforts, technology maturation, and demonstrations of new technologies. These investments should be guided by the goal of creating ambitious new “future space capabilities”—well-enough defined to inform technology investments, but flexible enough to allow the results of those investments to influence designs, reduce costs, and enable new and more ambitious science goals. In establishing these investments, NASA must seek and embrace inputs from outside the agency (including other agencies, industry, academia) to develop, review, and recommend NASA advanced space research and technology plans, programs, and strategies. NASA in-house space research and technology (performed by engineers and technical specialists) should be restored, in balance with increased external research (by industry and academia). Funding for university research should also be targeted toward producing graduates with advanced degrees to support the follow-on work that will be undertaken by industry. We need to reconsider what makes an ambitious space program worth a substantial investment of public dollars—and consider again the historical and future importance of advancing space technology and developing truly new and valuable space capabilities for the public, the nation, and the world. To achieve the purposes for which it was created, NASA must maintain the excellence of its workforce and their expertise in a wide array of cutting-edge new technologies. As they enter the workforce, it will be impossible to attract the “best and the brightest” to federal service without a foundation of cutting-edge research and technology program opportunities. Moreover, a healthy NASA workforce, armed with appropriate skills and secure in its future, will provide better oversight for technical system procurement and program management. This competence will result in better performing systems, better ability to meet schedule, more productive interactions with other stakeholders in the aerospace enterprise, and more efficient use of taxpayer dollars. Although NASA must accommodate changing priorities and budgets, it must also ensure that it does not lose the important skills and knowledge currently possessed by its workers. NASA also must continue to ensure that the NASA workforce gains the new competencies needed in the aerospace industry of the future. In order accelerate the transition of novel technologies into transformational future space capabilities NASA must invest in demonstrations of innovative space prototypes on the ground and in space. Innovative space prototypes should be implemented in coordination with the DoD, academia, and industry; and wherever possible with co-funding with the private sector in order to speed the application of these new capabilities in creating new space industries. To implement these recommendations effectively, focused and timely near term action is essential: The National Academy of Sciences (National Research Council) should be chartered to conduct an independent, visionary study to identify 6–12 transformational “future space capabilities” that would—if developed—enable a wide range of new, ambitious, and affordable space exploration and development. These future space capabilities would in turn drive planning for government and industry research and technology investments. The Administration should develop—in consultation with the US Congress, and using NASA as its executive agent—a strategic research and technology development roadmap that establishes a baseline for achieving these goals, including objectives, schedules, milestones and budgets. This roadmap should be used to provide the basis for future US investments in advanced space research and technology development and demonstrations. The US space program needs more than a national discussion of what human exploration should do next: International Space Station research versus lunar outposts versus asteroid sorties versus human Mars missions, and so on. These are important questions. Even more, however, weneed to set in place basic policies that can endure from one administration to the next. We need to reconsider what makes an ambitious space program worth a substantial investment of public dollars—and consider again the historical and future importance of advancing space technology and developing truly new and valuable space capabilities for the public, the nation, and the world.

#### Aerospace solves cyberterrorism

Deloitte 12 | (Deloitte is a consulting and financial advisory service, Report Commissioned by the Aerospace Industries Association, " The Aerospace and Defense Industry in the U.S. A financial and economic impact study," March, http://www.aia-aerospace.org/assets/deloitte\_study\_2012.pdf)

The world continues to demonstrate how dangerous it is and how our civilization and way of life can be put in jeopardy quickly. The surprise attacks on Pearl Harbor and the tragic events surrounding the terrorist attacks of 9/11 have shown our nation how vulnerable it can be. Technology innovations and products developed in the aerospace and defense industry have made our nation safer, from sophisticated sensors that can “see” nefarious activities of our adversaries, to the bomb and metal detectors that have become ubiquitous at airports around the world, the industry continues to innovate to produce the necessary defenses used to increase our national security. Recent advances to counter the next generation national security threats include for example, sophisticated software to trace bank transactions of terrorists, advanced listening sensors to eavesdrop on communications of known terrorists, and sophisticated sensors to help discover threats at our airports, borders, and seaports. Of course, the unmanned aerial vehicle (UAV) has been extraordinarily successful in helping to see, then attack if necessary, our adversaries. Lastly, the specter of a potential cyber-attack on our nation’s water, power, transportation or communications infrastructure is cause for alarm, and the industry continues to develop the next generation technologies to address these and future threats.

#### Great power nuclear war

Fritz 9 | Researcher for International Commission on Nuclear Nonproliferation and Disarmament [Jason, researcher for International Commission on Nuclear Nonproliferation and Disarmament, former Army officer and consultant, and has a master of international relations at Bond University, “Hacking Nuclear Command and Control,” July, <http://www.icnnd.org/latest/research/Jason_Fritz_Hacking_NC2.pdf>]

This paper will analyse the threat of cyber terrorism in regard to nuclear weapons. Specifically, this research will use open source knowledge to identify the structure of nuclear command and control centres, how those structures might be compromised through computer network operations, and how doing so would fit within established cyber terrorists’ capabilities, strategies, and tactics. If access to command and control centres is obtained, terrorists could fake or actually cause one nuclear-armed state to attack another, thus provoking a nuclear response from another nuclear power. This may be an easier alternative for terrorist groups than building or acquiring a nuclear weapon or dirty bomb themselves. This would also act as a force equaliser, and provide terrorists with the asymmetric benefits of high speed, removal of geographical distance, and a relatively low cost. Continuing difficulties in developing computer tracking technologies which could trace the identity of intruders, and difficulties in establishing an internationally agreed upon legal framework to guide responses to computer network operations, point towards an inherent weakness in using computer networks to manage nuclear weaponry. This is particularly relevant to reducing the hair trigger posture of existing nuclear arsenals. All computers which are connected to the internet are susceptible to infiltration and remote control. Computers which operate on a closed network may also be compromised by various hacker methods, such as privilege escalation, roaming notebooks, wireless access points, embedded exploits in software and hardware, and maintenance entry points. For example, e-mail spoofing targeted at individuals who have access to a closed network, could lead to the installation of a virus on an open network. This virus could then be carelessly transported on removable data storage between the open and closed network. Information found on the internet may also reveal how to access these closed networks directly. Efforts by militaries to place increasing reliance on computer networks, including experimental technology such as autonomous systems, and their desire to have multiple launch options, such as nuclear triad capability, enables multiple entry points for terrorists. For example, if a terrestrial command centre is impenetrable, perhaps isolating one nuclear armed submarine would prove an easier task. There is evidence to suggest multiple attempts have been made by hackers to compromise the extremely low radio frequency once used by the US Navy to send nuclear launch approval to submerged submarines. Additionally, the alleged Soviet system known as Perimetr was designed to automatically launch nuclear weapons if it was unable to establish communications with Soviet leadership. This was intended as a retaliatory response in the event that nuclear weapons had decapitated Soviet leadership; however it did not account for the possibility of cyber terrorists blocking communications through computer network operations in an attempt to engage the system. Should a warhead be launched, damage could be further enhanced through additional computer network operations. By using proxies, multi-layered attacks could be engineered. Terrorists could remotely commandeer computers in China and use them to launch a US nuclear attack against Russia. Thus Russia would believe it was under attack from the US and the US would believe China was responsible. Further, emergency response communications could be disrupted, transportation could be shut down, and disinformation, such as misdirection, could be planted, thereby hindering the disaster relief effort and maximizing destruction. Disruptions in communication and the use of disinformation could also be used to provoke uninformed responses. For example, a nuclear strike between India and Pakistan could be coordinated with Distributed Denial of Service attacks against key networks, so they would have further difficulty in identifying what happened and be forced to respond quickly. Terrorists could also knock out communications between these states so they cannot discuss the situation. Alternatively, amidst the confusion of a traditional large-scale terrorist attack, claims of responsibility and declarations of war could be falsified in an attempt to instigate a hasty military response. These false claims could be posted directly on Presidential, military, and government websites. E-mails could also be sent to the media and foreign governments using the IP addresses and e-mail accounts of government officials. A sophisticated and all encompassing combination of traditional terrorism and cyber terrorism could be enough to launch nuclear weapons on its own, without the need for compromising command and control centres directly.

# 1AR

## Counterplan

#### **Uncertainty kills the aerospace industry**

Maser Chair of the Corporate Membership Committee – American Institute of Aeronautics and Astronautics and President – Pratt & Whitney Rocketdyne, 2011 Jim, “A Review of NASA’s Exploration Program in Transition: Issues for Congress and Industry”, U.S. House Science, Space, and Technology Committee Hearing, 3-30, http://www.prattwhitney.com/media\_center/executive\_speeches/jim\_maser\_03-30-2011.asp

This lack of a unified strategy coupled with the fact that the NASA transition is being planned without any coordination with industry leaders, makes it impossible for businesses like mine to adequately plan for the future.

How can we right-size our businesses and work towards achieving greatest efficiency if we can’t define the future need? This is an impossible task.

So, faced with this uncertainty, companies like mine continue fulfilling Constellation requirements pursuant to the Congressional mandate to capitalize on our investment in this program, but we are doing so at significantly reduced contractual baseline levels, forcing reductions in force at both the prime contractor and subcontractor levels.

This reality reflects the fact that the space industrial base is not FACING a crisis; we are IN a crisis.

And we are losing a National Perishable Asset ... our unique workforce.

The entire space industrial base is currently being downsized with no net gain of jobs. At the same time we are

totally unclear as to what might be the correct levels needed to support the government.

Designing, developing, testing, and manufacturing the hardware and software to explore space requires highly skilled people with unique knowledge and technical expertise which takes decades to develop.

These technical experts cannot be grown overnight, and once they leave the industry, they rarely return. If the U.S. develops a tremendous vision for space exploration five years from now, but the people with these critical skills have not been preserved and developed, that vision will disappear.

We need that vision, that commitment, that certainty right now, not five or ten years from now, if we are going to have a credible chance of bringing it to fruition.

In addition to difficulties in retaining our current workforce, the uncertainty facing the U.S. space program is already having a negative impact on our industry’s ability to attract new talent from critical science, technology, engineering and mathematics. Young graduates who may have been inspired to follow STEM education plans because of their interest in space and space exploration look at the industry now and see no clear future. This will have implications on the space industrial base for years to come.

## Topicality

#### **SPS photovoltaic cells convert sunlight to microwaves, NOT electricity**

Shinohara No Date – Naoki Shinohara, Ph.D. in engineering, professor at Kyoto University, works at the Research Institute for Sustainable Humanosphere (RISH), the Institute of Electronics, Information and Communication Engineers of Japan, The Institute of Electrical Engineering of Japan, Japan Solar Energy Society, "Space Solar Power Station/Satellite (SPS)" [www.rish.kyoto-u.ac.jp/space/people/shino/research-spse2.htm](http://www.rish.kyoto-u.ac.jp/space/people/shino/research-spse2.htm)

In the over-all SPS System**,** the output of the photovoltaic cell panel is converted to microwave**, transmitted to the ground rectenna system, and converted back to DC**. An aperture of a microwave transmitting antenna array can be designed with freedom of parameters such as the microwave operating frequency and the antenna element spacing. The dimension of the rectenna site on the ground is dependent on the transmitting antenna size and the beam (power) collection efficiency. Assuming 70% conversion rate in the space segment, 90% beam (power) collection efficiency, and 80% conversion rate in the ground segment, the estimated over-all efficiency from DC (output of the solar panel) to DC (output from the rectenna system) is approximately 50%.

#### Space is everyone’s territory

Bormann et al. 9 – Natalie Bormann teaches at the Department of Politics, Northeastern University, Boston, previous position at the Watson Institute for International Studies, Brown University. AND\*\*\* Michael Sheehan, Professor of International Relations at Swansea University, AND\*\*\* Jill Stuart, PhD from the London School of Economics, AND\*\*\* Dave Webb, Professor of Engineering Modelling, Director of the Praxis Centre, a multidisciplinary research center, and a member of the School of Applied Global Ethics at Leeds Metropolitan University, 2009, “Securing Outer Space,” pg. 11

**Outer space is a global commons**, and has been deemed res communis, belonging to all. As such it poses unique conceptual and governance challenges in a system traditionally rooted in territorial notions of sovereignty. While analogous legal and conceptual systems can be applied to outer space, based on precedents from, for example, the high seas, I argue that the concept of Westphalian sovereignty remains an awkward fit in regards to outer space politics. The relationship between sovereignty, territory, and the state needs to be unbundled in regards to neutral territory in outer space.

## Radar

McCall 6 Chair, USAF Scientific Advisory Board, “Spacecraft Bus Technoligies,” http://www.au.af.mil/au/awc/awcgate/vistas/stechch3.pdf

All current spacecraft are either power limited or restricted in some measure by inadequate electrical power. Power limitations impose restrictions on the communications and propulsion subsystems and currently make large space-based radars and space-based weapons **relatively** unfeasible. A revolutionary change in capabilities will result from power technologies capable of providing large amounts of power onboard satellites. Large amounts of power will be enabling on spacecraft in the same sense that large amounts of random access memory have been enabling in personal computers. If power is not an issue, then previously hard applications become easy and new applications become possible. Evolutionary development of solar-array-based power technologies will see improvements to tens of kilowatts on satellites over the next decades. However, all solar collection systems in Earth orbit are limited by the solar constant of 1.4 kiloWatts per square meter. Large powers from solar collectors require large collection areas. For substantially larger powers (> 100 kW), several different types of technologies will have to be explored. Powers of this level will make large space-based radars, space-based directed energy weapons, and the use of high-performance electrically driven maneuvering technologies possible. A natural technology to enable high power is nuclear power in space; however, this technology has to date been considered unacceptable due to political and environmental limitations. Thus it is desirable to develop other technologies that may provide large power levels in space. In addition to continued development of safe nuclear systems, two other sources of continuous power in space that should be explored are the concepts of electrodynamic power-generating tethers and power beaming from one location to another (e.g., from space to space). The development of these and other technologies for high continuous power will have a revolutionary effect and the Air Force should invest in these areas as well as continuing to invest in solar collection technologies. Over the years, there have been several programs in nuclear powered spacecraft. NASA has been using Radioisotope Thermoelectric Generators (RTGs) for the interplanetary missions that generate a few tens of watts of power. Russia has flown nuclear reactors in space and BMDO has a joint program with the Russians (TOPAZ), under which the Defense department bought three of the reactors to do laboratory experiments. DoE had a program (SP 100) to use nuclear power in space and the Air Force had a nuclear propulsion program; these programs have been canceled. Nuclear power, however, remains one of the attractive alternatives in generating large amounts of power in space. To build a reactor for space applications has many challenging technical aspects including development of high-temperature lightweight materials, active cooling technologies, extremely radiation-hard and high-temperature electronics, and fail-safe system architectures. Setting the emotional issues of nuclear power aside, this technology offers a viable alternative for large amount of power in space. The Air Force should continue efforts towards making a safe nuclear reactor in space a viable option. Existing joint programs with Russia offer a low cost alternative and should be pursued. To build a reactor for space applications has many challenging technical aspects including development of high-temperature lightweight materials, active cooling technologies, extremely radiation-hard and high-temperature electronics, and fail-safe system architectures. Setting the emotional issues of nuclear power aside, this technology offers a viable alternative for large amount of power in space. The Air Force should continue efforts towards making a safe nuclear reactor in space a viable option. Existing joint programs with Russia offer a low cost alternative and should be pursued.

## CP

### 1AR---Competition Debate

#### Before the colon

Webster’s Guide to Grammar and Writing – 2k <http://ccc.commnet.edu/grammar/marks/colon.htm>

Use of a colon before a list or an explanation that is preceded by a clause that can stand by itself. Think of the colon as a gate, inviting one to go on… If the introductory phrase preceding the colon is very brief and the clause following the colon represents the real business of the sentence, begin the clause after the colon with a capital letter.

#### Should doesn’t make the CP competitive

Atlas Collaboration 99 [ATD, Jan. 24, <http://rd13doc.cern.ch/Atlas/DaqSoft/sde/inspect/shall.html>]

'shall' describes something that is mandatory. If a requirement uses 'shall', then that requirement \_will\_ be satisfied without fail.   
Noncompliance is not allowed. Failure to comply with one single 'shall' is sufficient reason to reject the entire product. Indeed, it must be rejected under these circumstances.   
Examples:

"Requirements shall make use of the word 'shall' only where compliance is mandatory."   
 This is a  good example.   
 "C++ code shall have comments every 5th line."   
 This is a bad example. Using 'shall' here is too strong.

should

'should' is weaker. It describes something that might not be satisfied in the final product, but that is desirable enough that **any noncompliance shall be explicitly justified**. Any use of 'should' should be examined carefully, as it probably means that something is not being stated clearly. If a 'should' can be replaced by a 'shall', or can be discarded entirely, so much the better.

Counter-interpretation: Substantial is a considerable amount

WORDS & PHRASES, Vol. 40A, 2002, p. 453. (DRGCL/A30)

N.D.AIa. 1957. The word "substantial" means considerable in amount, value, or the like, large, as a substantial gain.-Lcvenson v. U.S., IS'7 F.Supp. 244.