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#### R&D isn’t T

#### Violates Energy production---it’s pre-production

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3. SUBSIDIES THROUGH THE FUEL CYCLE

Because no two fuel cycles are exactly the same, examining subsidies through the context of a generic fuel cycle is instructive in providing an overall framework from which to understand how common subsidization policies work. Subsidies are grouped into preproduction (e.g., R&D, resource location), production (e.g., extraction, conversion/generation, distribution, accident risks), consumption, postproduction (e.g., decommissioning, reclamation), and externalities (e.g., energy security, environmental, health and safety).

3.1 Preproduction

Preproduction activities include research into new technologies, improving existing technologies, and market assessments to identify the location and quality of energy resources.

3.1.1 Research and Development

R&D subsidies to energy are common worldwide, generally through government-funded research or tax breaks. Proponents of R&D subsidies argue that because a portion of the financial returns from successful innovations cannot be captured by the innovator, the private sector will spend less than is appropriate given the aggregate returns to society. Empirical data assembled by Margolis and Kammen supported this claim, suggesting average social returns on R&D of 50% versus private returns of only 20 to 30%.

However, the general concept masks several potential concerns regarding energy R&D. First, ideas near commercialization have much lower spillover than does basic research, making subsidies harder to justify. Second, politics is often an important factor in R&D choices, especially regarding how the research plans are structured and the support for follow-on funding for existing projects.

Allocation bias is also a concern. Historical data on energy R&D (Table III) demonstrate that R&D spending has heavily favored nuclear and fossil energy across many countries. Although efficiency, renewables, and conservation have captured a higher share of public funds during recent years, the overall support remains skewed to a degree that may well have influenced the relative competitiveness of energy technologies. Extensive public support for energy R&D may also reduce the incentive for firms to invest themselves. U.S. company spending on R&D for the petroleum refining and extraction sector was roughly one-third the multi-industry average during the 1956-1998 period based on survey data from the U.S. National Science Foundation. For the electric, gas, and sanitary services sector, the value was one-twentieth, albeit during the more limited 1995-1998 period.

3.1.2 Resource Location

Governments frequently conduct surveys to identify the location and composition of energy resources. Although these have addressed wind or geothermal resources on occasion, they most often involve oil and gas. Plant siting is another area where public funds are used, primarily to assess risks from natural disasters such as earthquakes for large hydroelectric or nuclear installations. Survey information can be important to evaluate energy security risks and to support mineral leasing auctions, especially when bidders do not operate competitively. However, costs should be offset from lease sale revenues when evaluating the public return on these sales. Similarly, the costs of siting studies should be recovered from the beneficiary industries.

3.2 Production

Energy production includes all stages from the point of resource location through distribution to the final consumers. Specific items examined here include resource extraction, resource conversion (including electricity), the various distribution links to bring the energy resource to the point of final use, and accident risks.

#### They also can’t say that r&d is energy production since the plan says “energy generation”

#### Violates incentives---they have to provide money to the private sector---r&D is distinct

CCES 9 Center for Climate and Energy Solutions (also called c2es) “Buildings and Emissions: Making the Connection” No specific date dated, most recent citation from 2009 www.c2es.org/technology/overview/buildings

Policy Options to Promote Climate-Friendly Buildings

The mosaic of current policies affecting the building sector is complex and dynamic involving voluntary and mandatory programs implemented at all levels of government, from local to federal. Government efforts to reduce the overall environmental impact of buildings have resulted in numerous innovative policies at the state and local levels. Non-governmental organizations, utilities, and other private actors also play a role in shaping GHG emissions from buildings through third-party “green building” certification, energy efficiency programs, and other efforts.

Various taxonomies have been used to describe the policy instruments that govern buildings, typically distinguishing between regulations, financial incentives, information and education, management of government energy use, and subsidies for research and development (R&D). Each of these is broadly described below.

-Standards and codes

Regulatory policies include building and zoning codes, appliance energy efficiency standards, clean energy portfolio standards, and electricity interconnection standards for distributed generation equipment. Building codes can require a minimum level of energy efficiency for new buildings, thus mandating reductions at the construction stage, where there is the most opportunity to integrate efficiency measures. Zoning codes can provide incentives to developers to achieve higher performance. Because of regional differences in such factors as climatic conditions and building practices, and because building and zoning codes are implemented by states and localities, the codes vary considerably across the country. While substantial progress has been made over the past decade, opportunities to strengthen code requirements and compliance remain.

Appliance and equipment standards require minimum efficiencies to be met by all regulated products sold; they thereby eliminate the least efficient products from the market. Federal standards exist for many residential and commercial appliances, and several states have implemented standards for appliances not covered by federal standards (see Appliance Efficiency Standards).

-Financial incentives

Financial incentives can best induce energy-efficient behavior where relatively few barriers limit information and decision-making opportunities (e.g., in owner-occupied buildings). Financial incentives include tax credits, rebates, low-interest loans, energy-efficient mortgages, and innovative financing, all of which address the barrier of first costs. Many utilities also offer individual incentive programs, because reducing demand, especially peak demand, can enhance the utility’s system-wide performance.

-Information and education

While many businesses and homeowners express interest in making energy-efficiency improvements for their own buildings and homes, they often do not know which products or services to ask for, who supplies them in their areas, or whether the energy savings realized will live up to claims. Requiring providers to furnish good information to consumers on the performance of appliances, equipment and even entire buildings is a powerful tool for promoting energy efficiency by enabling intelligent consumer choices.

-Lead-by-example programs

A variety of mechanisms are available to ensure that government agencies lead by example in the effort to build and manage more energy-efficient buildings and reduce GHG emissions. For example, several cities and states, and federal agencies (including the General Services Administration), have mandated LEED or LEED-equivalent certification for public buildings, and the Energy Independence and Security Act of 2007 includes provisions for reduced energy use and energy efficiency improvements in federal buildings.

-Research and development (R&D)

In the long run, the opportunities for a low-greenhouse gas energy future depend critically on new and emerging technologies. Some technological improvements are incremental and have a high probability of commercial introduction over the next decade (such as low-cost compact fluorescents). Other technology advances will require considerable R&D before they can become commercially feasible (such as solid-state lighting). The fragmented and highly competitive market structure of the building sector and the small size of most building companies discourage private R&D, on both individual components and the interactive performance of components in whole buildings.

Building Technologies Center. The Oak Ridge National Laboratory’s Buildings Technology Center was established by the U.S. Department of Energy (DOE) and performs research into issues including heating and cooling equipment, thermal engineering, weatherization, building design and performance, envelope systems and materials, and power systems.

Emerging Technologies. This U.S. DOE-sponsored program develops technology that would reduce energy use in residential and commercial buildings by 60-70 percent. Technologies are in fields including solid-state lighting, space conditioning and refrigeration, building envelopes, and analysis tools and design strategies that would facilitate the development of energy efficient buildings through software and computer-based building analysis.

#### At best they’re indirect which means they’re FX---this cards draws a predictable limit and brightline

GSWH 11 Global Solar Water Heating Market Transformation and Strengthening Initiative, This publication is the result of a joint effort from the following contributors: The European Solar ThermalIndustry Federation (ESTIF), the United Nations Environment Program (UNEP) through its Division ofTechnology, Industry and Economics (DTIE) and the Global Environment Fund (GEF). "Guidelines for policy and framework conditions" No Specific Date Cited, Most Recent Citations From 2011 www.solarthermalworld.org/files/policy\_framework.pdf?download

8 Non financial incentives for solar thermal

Non Financial Incentives include all public policies that support the creation of public good, even when providing an indirect financial advantage to the solar thermal market. For instance: an awareness raising campaign financed from public money or a programme to subsidise craftsmen training or R&D, etc. Obviously, all these instruments create an indirect financial advantage for companies involved in the market and this benefit is then passed on to the users.

8.1 Solar thermal obligations

• What is a Solar Thermal Obligation (STO)?

STO are legal provisions making mandatory the installation of solar thermal systems in buildings. The obligation mainly applies to new buildings and those undergoing major refurbishment. The owner must then install a solar thermal system meeting legal requirements. Most of the existing STOs are connected to national or regional energy laws and implemented through the municipal building codes. A growing number of European municipalities, regions and countries have adopted solar thermal obligations. Already today, more than 150 million people live in regions covered by a STO.

• Benefits

A major benefit of solar thermal ordinances is their effectiveness combined with low costs and limited administrative overheads for public authorities. As part of the building permit process, the inspection with regard to the renewable energy requirement is simple and thus does not strain public finances.

The introduction of a solar thermal ordinance prevents market fluctuation caused by inconsistent incentive programmes. It provides a stable planning environment for market actors and investors, encouraging local economic growth and creating new jobs in this sector.

• Unwanted effects and flanking measures

Solar obligations have a profound effect on the solar thermal market's structure. Therefore, to maximise their benefits, they require flanking measures.

In a market where solar thermal becomes mandatory, promoters and customers will tend to question the solar systems' operation and react more negatively than in a voluntary market.

Ends users and the construction sector will often go for the cheapest possible solution, while building owners will try to circumvent the obligation through exemptions. The real impact of any regulation strongly depends on its technical parameters and control procedures.

It is vital, therefore, that the regulations adopted ensure state-of-the-art quality assurance, products, planning, installation and maintenance of the system, guaranteeing the same high level of customer satisfaction as in the current voluntary market. Poor performance of "mandatory" systems would not only undermine public acceptance of the obligation, but also, possibly, of the solar thermal technology in general.

Israel, 30 years of experience with solar thermal ordinances

Thirty years ago, Israel was the first country to pass legislation on solar thermal installations. With the second oil crisis at the end of the 1970s, members of parliament examined ways to make their country less dependent on imported energy. The result was a law, which made solar water heaters mandatory in new buildings such as residential housing, hotels, guest houses and old people's homes up to 27 metres high. The legislation entered into force in 1980.

Nowadays over 80% of Israel's households get their domestic hot water from solar rooftop heaters. A typical domestic unit consists of a 150 litre insulated storage tank and a 2 m2 collector. These hot water heaters save the country the need to import about 4% of its energy needs, and replace about 9% of the electricity production.

The law has now become redundant. More than 90% of the solar systems are installed on a voluntary basis, i.e. they are installed in existing buildings, or the systems are larger than required by the obligation.

Source: PROSTO project

8.2 Quality, standards and certification policy

The need and methods to ensure quality in the market are so important for solar thermal, that a complete guide is dedicated to this topic in the framework of the GSWH project.

Why do we need standards?

The objective of standardisation and quality assurance is to guarantee product safety and quality, as well as lower prices. At every stage of market development, the capacity of solar thermal systems to deliver the expected level of performance is a key factor. In the early stage of the market, quality issues have had long lasting devastating effects. The existence of standards is the cornerstone of quality assurance.

The actors of standards and certification

Standardisation and quality for solar thermal should be the result of a joint effort from public authorities (market regulation), the industry, the technical community and, when they are adequately organised, the end users.

• Public authorities have a key role to play in imposing stringent quality requirements and in initiating, facilitating and controlling the standardisation process.

• The industry must provide product and technical expertise. It must understand the benefits

of ensuring standardised level of quality. Public authorities should guarantee that the standards are neutral and do not favour certain products or companies.

• I t is essential to be able to rely on independent testing facilities and certification bodies. If the private initiative is not adequate, then public authorities should actively support the creation of such structures.

• Consumer organisations can bring a useful contribution to the process. Quality installation for quality products

Solar thermal products usually need to be installed. This operation can be simple to the extent that it might not require the intervention of a specialist, e.g. some termosiphons systems, but on average it should be undertaken by a professional. To guarantee performance, the quality of the installation is as important as the quality of the system. Minimum requirements in terms of training and qualification of installers should be implemented in parallel with product requirements. Public authorities should regulate in the absence of initiatives from trade and industry.

Performance and quality for a sustainable market

Performance and quality measures do not constitute flanking or accompanying measures. Framework and regulations should be developed, and relevant bodies involved from the beginning, even if this has to be imposed to the market to some extent.

The market tends to be shortsighted; industry will naturally prefer to avoid costs and regulations. The benefits of high quality regulations and market surveillance will emerge eventually and guarantee a sustainable market. Public authorities should ensure that incentives and promotion endorse quality.

8.3 Research and development, demonstration projects (definition, importance, recommendations, examples)

Solar thermal is a simple and mature technology; however, research and development are necessary to guarantee that performance will continue to improve and costs to decrease. Research and development can also contribute to adapt the technical features of products to local needs, e.g. improve water tightness in tropical areas, resistance to frost in mountainous regions. Research and development cannot proceed only from public initiative but, through public universities and public research centres, public authorities have a leading role to play.

Building up centres of technical excellence

Applied research, engineering education, development, product innovation, standardisation, testing are closely linked and there are a lot of synergies between those fields. Most of the time, the same persons will be likely to teach, test and lead research projects. A sustainable market will always require relying on a high level engineering community. Public authorities should encourage the creation of multi disciplinary technical facilities for solar thermal engineering and encourage or even impose on the industry to participate in this effort.

Importance of demonstration projects

For both promotion and technical (experimental) reasons demonstrations projects are extremely useful. Projects implementing technologies that are not market ready, but which have an important potential, will allow testing and improving the solution, gather data, monitor functioning and finally demonstrate the feasibility to the general public and the industry in order to prepare the introduction on the market.

9 Financial incentives (direct, indirect, tax incentives, low interest loans): definition, importance, recommendations, examples

Financial Incentives include any public policy giving a financial advantage to those who install a solar thermal system or that use solar thermal energy.

#### Voting issue for limits and ground---creates an unmanageable topic of new speculative tech via government research that doesn’t interact with the market

**Dyson et al, 3** - International Union for Conservation of Nature and Natural Resources (Megan, Flow: The Essentials of Environmental Flows, p. 67-68)

Understanding of the term ‘incentives’ varies and economists have produced numerous typologies. A brief characterization of incentives is therefore warranted. First, the term is understood by economists as incorporating both positive and negative aspects, for example a tax that leads a consumer to give up an activity that is an incentive, not a disincentive or negative incentive. Second, although incentives are also construed purely in economic terms, incentives refer to more than just financial rewards and penalties. They are the “positive and negative changes in outcomes that individuals perceive as likely to result from particular actions taken within a set of rules in a particular physical and social context.”80 Third, it is possible to distinguish between direct and indirect incentives, with direct incentives referring to **financial** or other inducements and indirect incentives referring to both variable and **enabling incentives**.81 Finally, incentives of any kind may be called ‘perverse’ where they work against their purported aims or have significant adverse side effects. ¶ Direct incentives lead people, groups and organisations to take particular action or inaction. In the case of environmental flows these are the same as the net gains and losses that different stakeholders experience. The key challenge is to ensure that the incentives are consistent with the achievement of environmental flows. This implies the need to compensate those that incur additional costs by providing them with the appropriate payment or other compensation. Thus, farmers asked to give up irrigation water to which they have an established property or use right are likely to require a payment for ceding this right. The question, of course, is how to obtain the financing necessary to cover the costs of developing such transactions and the transaction itself. ¶ Variable incentives are policy instruments that affect the relative costs and benefits of different economic activities. As such, they can be manipulated to affect the behaviour of the producer or consumer. For example, a government subsidy on farm inputs will increase the relative profitability of agricultural products, hence probably increasing the demand for irrigation water. Variable incentives therefore have the ability to greatly increase or reduce the demand for out-of-stream, as well as in-stream, uses of water. The number of these incentives within the realm of economic and fiscal policy is practically **limitless.**

#### If they don’t do r&d vote neg on presumption because that’s obvi what all their solvency cards are about and fusion wouldn’t work without it

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#### The aff is an elaborate expression of the unconconscious fantasies that motivate and sustain pro-space activism---attention to what the 1AC takes for granted reveals that their project is saturated in fantasies of omnipotence and narcissism

**Ormrod 9** James S. Ormrod, Lecturer in Sociology at Univ. of Brighton, 2009 “Phantasy and Social Movements: An Ontology of Pro-Space Activism”, Social Movement Studies, Vol. 8, No. 2, 115–129, April 2009

**The centrality of fantasy** or daydreaming **to those pursuing the human exploration, development and settlement of space is well established**. McCurdy (1997) argues that motivation has been based on constructed romantic images of space travel. It is reported that the early rocket pioneers like Robert Goddard were driven by imaginative daydreams. Carl Sagan describes a young Goddard sitting in a cherry tree and envisioning exotic new vehicles (cited in Kilgore, 2003, p. 42). My own interviews showed that pro-space activists continue childhood daydreaming about space in later life, as Melvin, a 35 year-old parttime student from the UK testified; Me: Do you find yourself still daydreaming about space a lot? M: [resounding] Yes. Probably too much, but its one of those things that’s so rigid in my psyche I don’t suppose I’ll ever be able to get it out really. Nor would I want to, I don’t think. Yeah, a lot of people say I spend too much time up there. There were also more subtle clues that vivid space fantasies lay behind individuals’ activism. Middle-aged Bruce McMurray gave the most speculative talks about space settlement at one of the pro-space conferences I attended. What was noticeable about his talks was the authority with which he pronounced not that we could build houses for our space colony in a particular way, but that we will build our houses in a particular way. This was not unique to Bruce but suggested that what he was doing was not forwarding possible solutions to potential engineering problems, but instead describing a very elaborate fantasy he had constructed. Pro-space activists report two main catalysts for their fantasising. The first is reading science fiction. The second is having witnessed previous space missions. Despite crucial differences from science fiction fans (discussed later), science fiction is an essential part of many activists’ paths to joining the movement. One veteran estimated that seventy per cent of members got into the movement through reading (or, less commonly, watching) science fiction. For many of them, the interest in science fiction began at an early age, even as young as four (‘Rupert and the Spaceship’). From this point, activists often developed an insatiable appetite for the genre. Arthur C. Clarke and Robert Heinlein (along with Isaac Asimov and Ray Bradbury) have a particularly close relationship with the pro-space movement. But crucially, pro-space activists did not simply read science fiction passively, they elaborated their own fantasies based on it. The creative aspects of science fiction fandom have been emphasised by Jenkins (1992). When discussing how they ‘got into’ space, nearly all pro-space activists will mention something about their memories of watching space missions, usually huddled around the family TV, or perhaps witnessing a launch in person. Again, childhood memories are the most pertinent. Amongst those I interviewed, first memories ranged from Sputnik I, the first satellite to be put into space in 1957, to the first launch of the American Space Shuttle in 1981. There is a large cohort that grew up during the Apollo era, clearly the most stimulating American space program, but there are many activists inspired by other programs. Journalist Marina Benjamin (2003) explains how NASA’s ‘dream-peddling’ had filled her and others like her with inspiration when they were young, and gave them high hopes for what mankind could achieve in the future. Looking back, she asks reflexively whether these were delusions; ‘Was I naı¨ve to believe we’d simply hop from the moon to other planets and thence to the stars?’ (Benjamin, 2003, p. 3). It is clear that for Benjamin, as for so many pro-space activists, seeing space missions unfold before them had encouraged daydreams and fantasies every bit as much as reading science fiction. **Activists’ fantasies about the future have largely been ignored in social movement research**. This is despite the fact that any utopian movement must, by definition, imagine some form of alternative future society which exists only in the mind and not in reality, as Robin Kelley (2002) has pointed out in his celebration of the imagination in radical social movements. There are many theoretical positions from which fantasy can be approached, however (Ormrod, 2007), and my psychoanalytic framework is quite different to Kelley’s. Where Kelley sees the imagining of future worlds as a positive creative force operating on a conscious level, I argue that **conscious imaginings are best understood as manifestations of underlying unconscious phantasies about the self**. 2 Space Fantasy and Unconscious Phantasy One initial piece of evidence for the unconscious origins of space activists’ motivation is that often they cannot explain why they want to get into space. Jim, a software engineer from Illinois, is articulately inarticulate on the matter 3; Me: For what reasons would you want to go? J: For the fun of it or for the . . . It’s hard to say it’s just been a dreamofmine to be in space, you know. So, why do you want to be in space; it’s exciting, you know, it’s not something that everybody does but still its not trying to beat the Joneses or anything. It’s just one of those desires you grow up with from when you’re a kid, it’s just a strong desire so you kind of loose track of the original reason [ . . . .]. So let me think about that, I might be able to answer you better in the future, but it’s not one of those things . . . It’s sort of like asking somebody ‘why do you scratch your head up here instead of over here?’ It’s like ‘I just got into the habit of doing it’. 118 J. S. Ormrod Jim could no longer remember why it was he wanted to go into space (assuming he ever knew). Lots of other pro-space activists got agitated when pushed on the origins of their selfconfessed ‘drive’.One resorted to saying ‘the mystics amongst us might say God put it there’. My argument is that the conscious fantasies of pro-space activists **play out intrapsychic conflicts and desires relating to the break from the state of primary narcissism experienced in the first few years of life**.4 After reading science fiction or watching space missions, these unconscious phantasies are translated into fantasies about the exploration, development and settlement of space. Two pleasurable aspects of the stage of primary narcissism are relevant here. Arguably the precedent one is the unity of the infant with the mother (‘the monad’, Grunberger, 1989) and indeed the rest of its universe. This is a state in which the infant does not even recognise the separate existence of other selves. Some have suggested this begins with the pre-natal relationship between child and mother in the womb. As the child grows older, it learns to appreciate the independent existence of others (Mahler et al., 1975). The other aspect is the experience of omnipotence - of power and control over the world - afforded to the infant treated as ‘HisMajesty the baby’ (Freud, 1995, p. 556). This is a world in which all demands are satisfied. In normal development these experiences are, of course, shattered by the realities of family life and social existence. Pro-space activists’ **fantasies can be understood, however, as translations of phantasies about regaining the self of primary narcissism**. I distinguish three dominant themes in pro-space fantasy, though often they occur in combination. The first relates to trips, often just into Earth’s orbit, in which the activist experiences the pleasure of floating around in zero gravity. This weightlessness has been likened to being in the womb (Bainbridge, 1976, p. 255; White, 1987, p. 23). And if sexual partnerships are sought in part as a return to the monad as many psychoanalysts contend, then one activist’s fantasy of having zero-gravity sex perhaps represents the ultimate nirvana. An alternative interpretation is to relate the ease of movement in zero-gravity environments to the way in which at will infants command their parents to pick them up and carry them around. The social and oedipal restrictions that gravity comes to represent are symbolically escaped. A second theme is **the fantasy of seeing the Earth from space as a unified** (and in many accounts insignificant) **whole.** This **demonstrates the activist’s need for separation from the mother coupled with power** over her. Earth is commonly referred to as a ‘mother’, and activists talked about being able to obscure the Earth with their thumb – literally being ‘under the thumb’. But at the same time there is the anticipation of a new feeling of unity with the whole Earth, seen without political boundaries. Indeed in White’s (1987) account of astronauts’ experiences he describes it as ‘the ultimate journey from part to whole’. There is a magical resolution here to the infant’s developmental dilemma. Mother Earth is at once transcended and brought back into one being with the observer. The third theme is present in fantasies about the development and settlement of other planets, the Moon and asteroids. Here **the omnipotent desire to tame, conquer, control and consume the universe is manifest in fantasies** such as playing golf on a course on the moon, mining asteroids or building a colony on Mars (possibly having terraformed the planet – changing its climate to make itmore Earth-like). The envisioning of such distant objects being brought under personal control and symbolically consumed back into the allencompassing self **plays out the desired but impossible regaining of the** phantasized **omnipotent self of primary narcissism** around which the whole universe was oriented.

#### This space fantasy is the culmination of the long western imperial project of organizing the world in its own image—space is merely the final frontier onto which the aff projects its fear of instability in an attempt at total control which creates the conditions for warfare and extinction

Brennan 93 Teresa Brennan, 1993, Professor of at Cambridge, History After Lacan, 40-45

From the beginning, Lacan had asserted that the ‘lure of spatial identification’ in the mirror-stage accounts for the méconnaissances that mark the ego in all its structures (Lacan 1949, pp. 4–6). The mirror-stage identification is an inverse one, in which the image is outside and opposed to the self; it is, so to speak, a ‘reversal’. This spatial lure is an energetic formation which also structures the subject as a rival within itself. Subsequently, its energetic aspect will implicitly, as ever with Lacan who is always implicit, bear on the link between the ego and the environment. Turning here to the mirror-stage as an internal rivalrous structure: the key point here is that this structure not only constitutes the subject-to-be’s identity. It is also a precondition for the subject’s Oedipal rivalry with the other. Note that this means that an internal structure prefigures a similar external one. A psychical reality, or fantasy, **pre-dates its subsequent acting out. The narcissism of the mirror-stage is inextricably bound up with aggressiveness against this ‘other’**, and is the locus of the master-slave struggle for recognition that binds the ego as master and the ego as slave one to another. In steps that are not clear (and to which I return) Lacan discusses this bondage and the aggressiveness it generates in the first four theses of ‘On Aggressivity’. He introduces the fifth, final thesis by saying that **Such a notion of aggressivity as one of the intentional co-ordinates of the human ego, especially relative to the category of space, allows us to conceive of its role in modern neurosis and in the ‘discontents’ of civilization**. (Lacan 1948, p. 25) The fifth thesis is avowedly ‘social’. It is about aggression ‘in the present social order’ (ibid., p. 25). In it, Lacan indicates how the spatial dimensions of the environment and the ego intersect. He seems to be saying that aggression increases in the spatial restrictions of an urban environment. He explicitly refers to ‘the dialectic common to the passions of the soul and the city’ and to the effects of the ‘ever-contracting living space” in which human competition is becoming ever keener…’ (ibid., pp. 26–7).22 For Lacan the city’s spatial restrictions result in needs to escape on the one hand, and an increased social aggressiveness on the other. The apparent banality of Lacan’s statement that ‘overcrowding leads to aggressiveness’ is alleviated in that his account gestures to why overcrowding leads to aggressiveness, and as we shall see, to a territorializing imperative whereby the ego seeks to make the globe over in its own image. **Aggressiveness motivates the drive to dominate not only the earth’s surface but outer space** through ‘psycho-techniques’ (ibid.). It is also part of a competitive Darwinian ethic which ‘projected the predations of Victorian Society **and the economic euphoria that sanctioned for that society the social devastation that it initiated on a planetary scale’** (ibid., p. 26). It is with Victorian imperialism that the ego’s era gathers steam. The Darwinian ethic, Lacan notes, presents itself as natural, although its true origins lie in the aggression generated by the masterslave dialectic. In its entirety, ‘On Aggressivity’ suggests a fundamental connection between the spatial dimension of the ego and the spatial environment. However, the precise nature of this egoic/environmental spatial dialectic needs to be constructed from Lacan’s allusions. There are some indications as to how this might be done. To begin explicating them, it is necessary to hark back to Lacan’s comment on anxiety, and its intersection with the spatial dimension. Lacan’s introduction of anxiety at that point in the text on aggressiveness appears somewhat ad hoc. Yet he has obliquely referred to anxiety earlier in the same text, through referring to Melanie Klein. Lacan’s text is dated 1948, a time when Klein’s name was associated with the view that anxiety and aggressiveness played a dominant part in very early psychical life.23 Lacan refers to Klein in ‘On Aggressivity’ when discussing the ‘paranoiac structure of the ego’ and the ‘especial delusion of the misanthropic belle âme, throwing back onto the world the disorder out of which his being is composed’ (Lacan 1948, p. 20). After referring to Klein’s work, Lacan turns to aggressiveness and its relation to narcissism (ibid., p. 21). I take this mention of the belle âme as a signpost to the formation of the modern ego, given that Lacan referred to the belle âme when saying that he had ‘indicated elsewhere’ how the modern ego takes on its form. Projection is a mechanism of the imaginary, and the subject who throws his disorder back into the world is engaging, evidently, in the act of projection. Klein was particularly concerned with the early operation of projection, whose force she linked to anxiety: for her, the extent of a subject’s persecutory anxiety not only affects its ability to link; it also determines the degree to which it projects ‘bad internal objects’. Projection is the mode for putting bad feelings and ‘bad internal objects’ (to which Lacan explicitly refers) (ibid., p. 21) **outside the self: this projective process in turn generates feelings of persecution about bad objects returning, hence paranoia**. This is not the only reference to this projective process in the text on aggressiveness. The projection of internal negativity is **a mobilizing factor in war**, as indeed is the need to dominate physical space (ibid., p. 28). Taking physical pressure, its ‘dialectical counterpart’ in the physical environment and the aggressive anxiety they trigger into account, there are grounds for setting out how a historical, spatial dynamic might work. If, as Lacan says, the more spatially constricted the environment is, the more anxiety and the aggressive desire to dominate space increase, then that desire and anxiety must increase as space becomes more constricted and more dominated. Yet as Lacan also says that this process produces an increase in aggressive competitiveness, his dialectic requires an economic, technological supplement. The supplement should illuminate the ego’s **rigidity and desire for control**. The rigidity, the basis of the ego’s ‘resistance to truth’, is first formed in the spatial positioning of the mirror-stage. I want to suggest here that, just as there is a dialectic between the spatial dimensions of the ego and of the environment, so too might the ego’s rigidity have a dialectical counterpart in the things the subject constructs. It is this dialectical counterpart which accounts for the temporal process at work in the foreclosure of the sense of time, and which explains why the sense of history is fading. As will be plain by Chapter 5, the ‘things’ constructed physically alter the perception of time. ‘Things’ means the whole technological apparatus by which the environment is controlled. The modern age ‘begins that way of being human which mans the realm of human capability as a domain given over to measuring and executing, for the purpose of gaining mastery over that which is as a whole’ (Heidegger 1949, p. 132). Apart from the fact that **the construction of things is one expression of the desire to dominate space**, it is also consistent with Lacan’s otherwise puzzling question as to whether the master-slave dialectic ‘will find its resolution in the service of the machine’. It fits, too, with his suspicion of reality-testing. If the construction of things is one expression of what Lacan elsewhere refers to as ‘the passionate desire peculiar to man to impress his image on reality’(Lacan 1948, p. 22) then **reality-testing is suspect because the ego has constructed the reality it then proceeds to test.** As the point of departure for this supplement on how the ego’s rigidity has a counterpart in the environment it constructs, it is worth recalling that **Lacan ties both the ego’s rigidity and the social psychosis to paranoia**. The ego, in part, has a paranoid dimension because both the ego and the ego’s objects are conceived of as fixed, and the ego wants them to stay fixed. Any unregulated movement or change in these objects poses a threat to the ego’s concept of itself as fixed, in that its own fixity is defined in relation to them. Here we can locate the need to control the environment in an attempt to predict and regulate changes within it, to subject the irregularity of living things to a form of domination in which the ego closes off to itself the truth about itself, by making its dream of fixation come true. That is to say, at the same time as it closes off the truth on which its psychical health depends, it also, and in a parallel manner, restricts the regeneration of the natural environment on which it depends to stay alive. This coupling of spatial shifts with technological expansion is repeated, although the emphasis is reversed in Marx’s account. For Marx, the division of town and country is at one and the same time the basis of the accumulation of capital, which accelerates and requires the technological expansion necessary for winning in the competition of the marketplace. This does not solve the problem of what triggers aggressive competitiveness in so far as Marx himself continued to seek, and was unhappy with, his own accounts of the cause of the accumulation of capital; he sought them in a variety of places, from the relaxation of the church’s laws restricting usury, to the shift whereby the merchant became an industrialist through employing small rural producers.24 Marx’s critics, notably Max Weber, have argued that he overlooked the extent to which substantial urbanization preceded capitalization (Giddens 1981, p. 109). Yet whatever the cause of capitalization, the technological expansion that accompanied it is the means whereby the ego is able to secure the ‘reversal’ in knowledge, as it makes the world over in its own image. It is also, and this is critical to the dynamics of the ego’s era, **a means of generating continuous economic insecurity and anxiety over survival in the majority, and guarantees their dependence on those identified with the dominant ego’s standpoint.** In fact to say that the above points can be made in the form of an economic supplement is drastically to understate the case: the unelaborated relation between the economic dimension and the ego is the subjective flaw in Lacan’s historical theory, because it is only through the elaboration of this relation that the mechanism by which the social psychosis could exist simultaneously in and around individuals will emerge. ‘Aggressive competitiveness’ is tied to imperialism (loosely) but the fact that this tie is also fundamental in the competitive profit motive is not followed through (despite, or perhaps because of, the Heideggerian allusions). This tie can be effected after the foundational fantasy is identified in more detail in Part II. And once this is done, the details of the mechanism by which the fixity or rigidity that Lacan so frequently refers to as a hallmark of the individual ego has a counterpart in the historical ego’s era will be apparent. So will another reason for scepticism about ‘reality-testing’. Lacan refers to **the ego’s era approach to knowledge as paranoid, as it is based on a need for control**. But he does not take account of how the ego technologically constructs an environment it can control, and how this, in turn, reinforces paranoia, precisely because the damage done to nature in the process makes the ego fear (rightly) for its own **survival**.

#### These pathologies distort not only how we respond to crisis but also why and to which crises---as such, your primary role is to investigate the aff’s psychological investment in energy production as an exercise in reprogramming our position in a non-linear and inevitably chaotic world.

Dodds 12 Joseph, MPhil, Psychoanalytic Studies, Sheffield University, UK, MA, Psychoanalytic Studies, Sheffield University, UK BSc, Psychology and Neuroscience, Manchester University, UK, Chartered Psychologist (CPsychol) of the British Psychological Society (BPS), and a member of several other profession al organizations such as the International Neuropsychoanalysis Society, Psychoanalysis and Ecology at the Edge of Chaos p 198 ( ) – gender modified

The metaphor of an acrobat on a high wire referred to by Bateson (2000: 506) is particularly apt for us now. The acrobat, in order not to fall, requires maximum freedom to 'move from one position of instability to another.' This is the paradox of order and disorder that we discussed in Chapter 11. In our current ecological crisis we must face the possibility that achieving the freedom and flexibility that we need to survive requires a fundamental re-examination of many of the basic coordinates of our lives, and some of our most cherished theories. In analyzing the rise and fall of past civilizations, we find that a 'new technology for the exploitation of nature or a new technique for the exploitation of other men ... gives elbow room or flexibility' but that 'the using up of that flexibility is death' (Bateson 2000: 503).

Like the patient stuck on a local optima that we discussed in Chapter 12, unable or unwilling to cross the threshold to a more adaptive peak, entire species, and civilizations, have in the past found themselves in dangerous dead ends and unable to change. These dead ends include those within the ecology of mind, ways of thinking and being that become pathological if they fail to evolve along with the constantly shifting relations in the constitution of natural and social ecosystems. Ecopsychoanalysis, which draws on the tools and ideas of nonlinear science, understands that our world is governed by nonlinear dynamics, to the extent that the prediction and control promised by Enlightenment rationality will always remain to some degree illusory. Instead, we need to engage with the creativity of the Earth, and follow the lines of flight we uncover, exploring 'the potential for self-organization inherent in even the humblest forms of matter-energy' (DeLanda 2005:273).

Our species has experienced such severe existential threats before. One of the most extreme examples was an evolutionary bottleneck which molecular biology shows us occurred approximately 70,000 years ago, when the human species was down to the last few thousand individuals or even less. Geological evidence suggests that this near extinction may have been linked to the Toba supervolcano in Indonesia, whose eruption triggered sudden climate change with major environmental impacts (Dawkins 2004). We do not know how we emerged from that particular crisis, or how close we may have come to extinction at various other times in our history.

We might reflect on these experiences as applying to the whole species an idea that Winnicott (1974: 104) once discussed in terms of the fear of breakdown in individual psychoanalysis. For Winnicott, this fear refers to a breakdown that has already occurred, but it was a catastrophe which took place before there was yet a subject to folly experience it with a reflective consciousness. At the risk of anthropocentrism, we might do well to consider Dennett's (2003: 267) point that in many ways we do occupy a unique position in the history of the Earth, as 'wherever lineages found themselves on local peaks of the adaptive landscape, their members had no way of so much as wondering whether or not there might be higher, better summits on the far side of this valley or that.'

Despite all the defensive reasons to not know which we explored in Chapters 4-7. we are, to some extent at least, becoming conscious of the enormity of the danger which confronts us. Today we are forced to think in these complex terms, to wonder about other valleys and other peaks on the plane of immanence, our virtual realm of possibility, to find a path through the current deadlock. As we saw in Part I of this book, these are difficult times. As Bateson (2000: 495) writes, the 'massive aggregation of threats to (hu)man(kind) and his ecological systems arises out of errors in our habits of thought at deep and partly unconscious levels.'

The contribution of psychoanalysis is precisely to help us to overcome such errors through investigating their unconscious roots. Ecopsychoanalysis recognizes the need for a radical questioning of our theories, whether psychoanalytic, philosophical, scientific or political, and the corresponding ways of living individually and collectively that they make possible and reflect. However, it does so through a respectful engagement with the best that our various traditions have to offer, entering into uncanny new symbioses, making these disciplines strange to themselves not in order to destroy them but to make them more vital and alive.

Despite the gravity of our situation, there are 'patches of sanity still surviving in the world' (Bateson 2000: 495), ideas in the ecology of mind worth exploring, helping us to construct a new alpha function we can only hope is capable of dreaming at the precipice. This book has sought to uncover what some of the components of this might be, focusing in particular on the constructive synergy between psychoanalysis, complexity theory, ecology, and the philosophy of Deleuze and Guattari. Ecopsychoanalysis wonders whether it is precisely in the very severity of the desperate ecological situation we face that a great opportunity lies for re-imagining the human, our societies, and our place in the world. It is in the ecopsychological spirit of nurturing hope while facing despair that this book was written.

However, there is no 'big Other' (Zizek 2007) to guarantee our success, or even our future existence. In a chaotic world without certainty, ecopsychoanalysis can turn to the experimental pragmatics of Deleuze and Guattari (2003a: 161): 'Lodge yourself on a stratum, experiment with the opportunities it offers ... find potential movements of deterritorialization, possible lines of flight, experience them, produce flow conjunctions here and there, try out continuums of intensities segment by segment, have a small plot of new land at all times.'

Assumptions according to which we have long lived our lives collapse as we begin to feel the disturbing effects of the hyperobject of climate change on the ecology of mind. Ecopsychoanalysis itself can be viewed as a hyperobject in that it does not yet fully exist. It should not be seen as an end state but a process of becoming, a work in progress, a meshwork emerging at the interstices of the three ecologies, and the elaboration of an alpha function that is able to think and dwell in our new uncanny home. As Bateson (2000: 512) writes, 'we are not outside the ecology for which we plan - we are always and inevitably a part of it. Herein lies the charm and the terror of ecology.' Ecopsychoanalysis can never occupy an outside from which to explore and engage with the new strange ecology(s), but is always already extimate with it (Lacan 1992: 139).

For all its chaos, because of all its chaos, the world is still a place of wonder, and we can only hope that we find ways of staying in it at least a little while longer. The nonlinearity and chaos of nature, and the forms of thinking required to sustain our relationship to it beyond the limited horizons of our experience, are both frightening and liberating. Yet, despite the anxiety, guilt and terror that climate change forces us to face, this moment of crisis can also offer us an opportunity for a more open vision of ourselves, as subjects, as societies, and as a species among the interconnected life systems of the Earth.

### CP

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

Solves the case since the only warrant is funding and we fund the same labs the aff does---all their federal commitment ev is about the designation of the laboratory not where the money comes from---and, all laboratories are private anyways

### CP 2

#### The United States Federal Government should substantially increase research and development funding for magnetic fusion energy in the United States.

#### The CP only does what the plan wants to do---you should punish them for being shady---we have 2 net benefits

#### Market financial support is winner picking

#### fatal conceit in the context of energy policy makes their impacts inevitable and cause policy failure

Robinson 8 Colin, Institute of Economic Affairs “Climate Change Policy: Challenging the Activists,” http://www.iea.org.uk/files/upld-book440pdf?.pdf

There is, however, more to the apocalyptic forecast than that because it always contains a call to action. It comes in two parts. Part one is the ‘conditional’ forecast – what would happen on unchanged policy. Part two is the plan – what should be done to avoid the dire consequences that the forecast reveals. The latter-day apocalyptic forecaster, when turning to the plan, almost invariably recommends centralised solutions carried out by governments and international organisations. It would be unusual, if not unprecedented, for someone, having seen the apocalypse, to recommend leaving solution of the foreseen problems entirely to decentralised market forces. There must be coordinated, centralised national government or international action so that someone is seen to be doing something. Recom- mendations are usually for direct government intervention in the market by targets, regulations, government-controlled investment programmes, taxes or sometimes ‘market instruments’ (of which more later).

But there is a serious problem with the view that centralised action, via governments and international organisations, is required to avoid the apocalypse. This form of action suffers from the same inherent problems as does central planning, which has, wherever it has been tried, failed. Briefly, there are two reasons. First, the information required for centralised action to work – which is information about the future – cannot readily be gathered. Information is not available off the shelf, to be collected together in Whitehall or similar locations, because it is essentially decentralised and much of it is tacit. The production and dissemination of information are primarily market phenomena and the suppression of markets, which is the inevitable consequence of central planning, also suppresses the information that planners would need if they were to operate successfully.

The second problem is that, even if the information were avail- able, the incentives to deal with problems are lacking. There is no Whitehall counterpart to the powerful self-interest motives to solve problems that exist in markets. On the contrary, the pursuit of self-interest by people in organisations that have a monopoly of policy-making is most unlikely to be to the public benefit. Public choice theory has shown the dangers of assuming, as much main- stream economic theory does, that politicians and bureaucrats, domestic and international, are wise, far-sighted and disinterested and will simply identify and then pursue the ‘public good’.

By contrast, the market system is essentially a massive problem- solving mechanism. Markets may appear to operate slowly and ‘imperfectly’ but they do so surely: their existence is the reason why past apocalyptic forecasts have not come true. Competitive markets are powerful adaptive systems which contain strong incentives to solve the problems of the day, whether trivial or apparently serious. Unfortunately, the essence of the market’s functions is often clouded by the mechanistic neoclassical models used by many economists which concentrate on end-states of markets rather than the processes by which they adjust to change. Hayek’s insight – that competition is a process of discovery, quite different from stylised textbook models of competition which show the states of markets once competition has been exhausted – is the key to understanding the problem-solving power of markets (Hayek, 1948). Competitive markets provide the information and the incentives that spark the discovery process in which human ingenuity is exercised to deal with economic, social and technological problems. Marketplace incentives, operating mainly through price signals, induce entrepreneurs to seek out and then exploit market opportunities so as to make profits. Sometimes, entrepreneurial action may result in no more than the discovery of a slightly cheaper way of making a product or a slightly more efficient method of organising a firm. At other times, it may result in a major invention and its subsequent exploitation with global consequences. On a Hayekian view, the apocalyptic forecaster/ planner who believes he or she can see a long way into the future and has the answer to the world’s problems, substituting for and surpassing the problem-solving capabilities of markets, has been misled into the ‘pretence of knowledge’, if not into a ‘fatal conceit’ (Hayek and Bartley, 1988).

Of course, no one can be sure that there will always be an economic or technological fix for every conceivable problem that ever arises. But past history, including the failure of predicted catastrophes to materialise, suggests that market systems act effectively to deal even with predicted global disasters. Russell Lewis’s chapter in this volume gives some examples of past false predictions of catastrophe. One particularly apposite example, on which it is worth dwelling because it is the most recent and the one that bears similarities to the concerns of today, is the ‘energy crisis’ of the 1970s when there was a consensus that rapid depletion of energy resources (especially crude oil), allied with the exploitation of monopoly power by the Organisation of Petroleum Exporting Countries (OPEC), would result in ever-rising energy prices. ‘The days of cheap energy are gone for ever’ was the slogan of many commentators, unwise enough to think they could see ‘for ever’ into the future. Only centralised action by governments and inter- national bodies could, it was argued, avoid a major world energy crisis. In the event, despite the almost total absence of the government and international action that had been deemed so important, energy markets adjusted to the ‘crisis’ so that, within ten years, the world was (by the mid-1980s) awash with oil and OPEC was meeting to try to prop up crude oil prices. Instead of crude oil prices tripling in real terms by the end of the century, as had been the consensus of forecasts in 1980, they began to decline almost as soon as the fore- casts were made and halved by the end of the century. Even in the first half of 2008, despite increases in crude prices in the previous few years, they were still lower in real terms than in 1980.3

#### This is an a priori voting issue---sound economic epistemology is key to the efficacy of all social and political praxes---accesses every impact

Reisman 96 George, Pepperdine University Professor Emeritus of Economics, Capitalism: A Treatise on Economics, http://www.capitalism.net/Capitalism/Economics%20and%20Capitalism.htm

In the absence of a widespread, serious understanding of the principles of economics, the citizens of an advanced, division-of-labor society, such as our own, are in a position analogous to that of a crowd wandering among banks of computers or other highly complex machinery, with no understanding of the functioning or maintenance or safety requirements of the equipment, and randomly pushing buttons and pulling levers. This is no exaggeration. In the absence of a knowledge of economics, our contemporaries feel perfectly free to enact measures such as currency depreciation and price controls. They feel free casually to experiment with the destruction of such fundamental economic institutions as the freedom of contract, inheritance, and private ownership of the means of production itself. In the absence of a knowledge of economics, our civilization is perfectly capable of destroying itself, and, in the view of some observers, is actually in the process of doing so.

Thus, the importance of economics consists in the fact that ultimately our entire modern material civilization depends on its being understood. What rests on modern material civilization is not only the well-being but also the very lives of the great majority of people now living. In the absence of the extensive division of labor we now possess, the production of modern medicines and vaccines, the provision of modern sanitation and hygiene, and the production even of adequate food supplies for our present numbers, would simply be impossible. The territory of the continental United States, for example, counting the deserts, mountains, rivers, and lakes, amounts to less than nine acres per person with its present population—not enough to enable that population to survive as primitive farmers. In Western Europe and Japan, the problem of overpopulation would, of course, be far more severe. Needless to say, the present vast populations of Asia, Africa, and Latin America would be unable to survive in the absence of Western food and medical supplies.

#### Presumption---we do what they want to do---they either do more or shouldn’t be able to define the plan after they’ve written it vaguely---the CP is narrower than the plan

### DA

#### Obama’s ahead but the race is close---voters are paying attention which means the plan could cause a shift

Cooper 10/25 Michael is a writer at the New York Times’ Caucus blog. “Has Romney’s Rise in Polls Stopped?” 2012, http://thecaucus.blogs.nytimes.com/2012/10/25/has-romneys-rise-in-polls-stopped/?gwh=20374120E0C2B79985262EFF8E8CD19D

A debate has been raging among polling analysts and commentators about whether Mitt Romney is still gaining ground, as he did after the first debate, or if his bounce has slowed or stalled. But while some Republicans say that they still have the wind at their backs, several polling analysts weighed in recently to argue that the data suggests there is no longer a Romney surge.¶ Mark Blumenthal, the senior polling editor of the Huffington Post and the founding editor of Pollster.com, wrote a piece this morning with the headline: “Presidential Polls Counter Romney Surge Myth.”¶ “While Romney gained significantly in the wake of the first presidential debate in early October,’’ he wrote, “the lack of a continuing trend over the past two weeks helps counter a theme in some campaign coverage that Romney’s support continues to ‘surge’ nationwide.”¶ Sam Wang, who analyzes state polls at the Princeton Election Consortium, wrote this week that the Mr. Obama’s plunge after the first debate had **stopped with him still ahead**, and delivered the following verdict: “Indeed **the race is close,** but it seems stable. For the last week, there is no evidence that conditions have been moving toward Romney. There is always the chance that I may have to eat my words — but that will require movement that is not yet apparent in polls.”¶ Nate Silver, who writes the FiveThirtyEight blog in The New York Times, wrote Thursday: “Mr. Romney clearly gained ground in the polls in the week or two after the Denver debate, putting himself in a much stronger overall position in the race. However, it seems that he is no longer doing so.”¶ With the race so close in so many places, it can be difficult to assess the true state of play. ¶ Most major national polls, with the exception of a few tracking polls, have shown the race to be essentially tied for months. Some polls in crucial swing states where Mr. Obama has been leading have tightened between the two candidates since the first debate, including Ohio, which is closer than it was a month ago. And **now is the point where many voters pay more attention** to the election, **which can move the polls**. But even with the proliferation of polls and the increased reliance on aggregated polls — lumping or averaging many polls together — it can be difficult to get a realistic picture on any given day in the closing weeks, given that some polls do not reach voters who use only cellphones, and many polls have struggled in an environment where fewer people want to respond to questions.

#### Advocating nuclear would be election suicide for Obama---he’s backing off it now

Levine 9/7 Gregg is a contributing editor and former managing editor of Firedoglake. “Obama Drops Nuclear from Energy Segment of Convention Speech,” 2012, http://capitoilette.com/2012/09/07/obama-drops-nuclear-from-energy-segment-of-convention-speech/

That Duke’s CEO thought to highlight efficiency is interesting. That President Obama, with his well-documented ties to the nuclear industry, chose **not to even mention nuclear power** is important. In the wake of Fukushima, where hundreds of thousands of Japanese have been displaced, where tens of thousands are showing elevated radiation exposure, and where thousands of children have thyroid abnormalities, no one can be cavalier about promising a safe harnessing of the atom. And in a world where radioisotopes from the breached reactors continue to turn up in fish and farm products, not only across Japan, but across the northern hemisphere, no one can pretend this is someone else’s problem. Obama and his campaign advisors know all this and more. They know that most industrialized democracies have chosen to shift away from nuclear since the start of the Japanese crisis. They know that populations that have been polled on the matter want to see nuclear power **phased out**. And they know that in a time of deficit hysteria, nuclear power plants are an **economic sinkhole**. And so, on a night when the president was promised one of the largest audiences of his entire campaign, **he and his team decided that 2012 was not a year to throw a bone to Obama’s nuclear backers.** Obama, a consummate politician, made the decision that for his second shot at casting for the future, nuclear power is political deadweight.

#### Romney will start a trade war with China---this time is different---collapses the global economy

Bohan 10/3 Caren is a writer for the National Journal and White House correspondent for Reuters. “Why China-Bashing Matters,” 2012, <http://www.nationaljournal.com/magazine/why-china-bashing-matters-20120927>

Mitt Romney is blasting China on the campaign trail as a trade cheat and a thief of American ideas and technology. He has pledged that if he’s elected president, **one of his first acts would be to label the country a currency manipulator**. It’s a theme the Republican nominee hopes will play well in Midwestern industrial states where workers have seen factories—and their jobs—move overseas. President Obama is talking tough, too. In Ohio this month, he announced a push to try to get the World Trade Organization to sanction China over its subsidies of autos and auto parts.¶ China-bashing by U.S. presidential candidates is nothing new. On the stump in 2008, Obama and Democratic rival Hillary Rodham Clinton both vowed to confront Beijing over a yuan currency that U.S. manufacturers say is kept artificially low. As president, Obama has followed a pragmatic approach, using a combination of pressure and cajoling over the currency while pursuing trade actions in cases involving such goods as tires and autos. Like his predecessor George W. Bush, he has stopped short of branding China a currency manipulator, a step that would sharply ratchet up tensions and possibly ignite a trade war. The interdependence of the United States and its biggest creditor has led many analysts to predict that no matter who wins the White House on Nov. 6, the tough talk on China will soon fade away.¶ But this time could be different.¶ After years of robust, export-fueled expansion, the world’s second-largest economy is slowing. China is grappling with an uneven pace of growth within its borders as it faces a once-in-a-decade leadership transition, with Xi Jinping expected to succeed Hu Jintao as the top leader. And with Europe in crisis, the global economy is fragile, shrinking the market for Chinese-made goods and increasing the temptation for Beijing to use a weak currency to allow it to sell cheap exports. Meanwhile, as American workers struggle with a stagnating jobs market and unemployment above 8 percent, U.S. frustrations over China could grow, **putting pressure on politicians in Washington to keep the heat on Beijing.** All of this could add up to **heightened trade frictions** between the two countries.¶ “I think U.S.-China relations are about to go into a period as difficult as we’ve seen since the early 1990s, when we were in the throes of almost constant tension with the Japanese,” said David Rothkopf, head of the international advisory firm Garten Rothkopf.¶ Rothkopf, a former Commerce Department official under President Clinton, said analysts have a tendency to dismiss the campaign rhetoric as “par for the course.” But he added, “What may make it different is that if we’re in a slow economy for a protracted period of time, as seems likely, and we’re not creating jobs in the way we would like to … we could be entering a period where we’re seeing not just U.S.-China tension but we may well see much broader trade tension in the world.”¶ One irony of the campaign-trail sparring over China is that Romney is actually running to the left of Obama on this issue. Romney has accused the president of being a “doormat” on China, leading Obama to fire back by accusing Romney of helping to ship jobs to China through his former role as head of the private-equity firm Bain Capital. The pledge to slap the currency-manipulator label on China is popular with union workers and has found more favor among Democratic lawmakers than Republicans. House Speaker John Boehner has opposed legislation to penalize China over its currency, saying it could lead to a “dangerous” trade war. Boehner’s worries echo those of many in the business community. Although numerous manufacturers would like to see a stronger push on the yuan, large retailers and other companies benefit from trade. Many experts worry that protectionism could worsen the global economy’s woes.¶ In response to Romney’s attacks on China’s currency, the official Xinhua News agency has called his plans foolish and said they would lead to a trade war.¶ Obama’s Treasury Department has so far declined to label China a currency manipulator. It has another chance to do so on Oct. 15, when a report on the currency is due. But the administration could decide to postpone the report until after the election.¶ China ended its fixed peg for the yuan, also known as the renminbi, in 2005. Under pressure from the United States, it allowed the yuan to rise gradually during the later years of the Bush administration and during the Obama administration. But U.S. officials still consider the currency undervalued.¶ Despite Romney’s pledge to label China a currency manipulator, some analysts remain doubtful he would follow through, especially given the business community’s concerns.¶ “Time and again, we’ve seen that what candidates say about China on the campaign trail bears virtually no resemblance to what they do once they’re in office,” said Elizabeth Economy, a China expert at the Council on Foreign Relations. “Whatever political lift they get from scapegoating China on the economic front disappears once the task of governing becomes paramount.”¶ Still, Romney has hammered the currency theme repeatedly, and on his website he lists his vow to label the country a currency manipulator as one of his top priorities. It would be hard for him to back down if he wins the White House.¶ “When a candidate makes a promise as many times as he has made that one, I believe he would have to do it,” said Bonnie Glaser, a senior fellow with the Center for Strategic and International Studies. But Glaser said that the currency-manipulator label would do nothing to create a more level playing field with China. “It’s a feel-good measure. It doesn’t really get us anywhere,” she said.

#### That causes full-scale war

Landy 7 [Ben Landy, Director of Research and Strategy at the Atlantic Media Company, publisher of the Atlantic Monthly, National Journal, and Government Executive magazines April 3, 2007, <http://chinaredux.com/2007/04/03/protectionism-and-war/#comments>,]

The greatest threat for the 21st century is that these economic flare-ups between the US and China will not be contained, but might spill over into the realm of military aggression between these two world powers. Economic conflict breeds military conflict. The stakes of trade override the ideological power of the Taiwan issue. China’s ability to continue growing at a rapid rate takes precedence, since there can be no sovereignty for China without economic growth. The United States’ role as the world’s superpower is dependent on its ability to lead economically. As many of you will know from reading this blog, I do not believe that war between the US and China is imminent, or a foregone conclusion in the future. I certainly do not hope for war. But I have little doubt that protectionist policies on both sides greatly increase the likelihood of conflict–far more than increases in military budgets and anti-satellite tests**.**

#### Extinction

Straits Times 2K [June, 25, No one gains in war over Taiwan]

The doomsday scenario THE high-intensity scenario postulates a cross-strait war escalating into a full-scale war between the US and China. If Washington were to conclude that splitting China would better serve its national interests, then a full-scale war becomes unavoidable. Conflict on such a scale would embroil other countries far and near and -- horror of horrors -- raise the possibility of a nuclear war. Beijing has already told the US and Japan privately that it considers any country providing bases and logistics support to any US forces attacking China as belligerent parties open to its retaliation. In the region, this means South Korea, Japan, the Philippines and, to a lesser extent, Singapore. If China were to retaliate, east Asia will be set on fire. And the conflagration may not end there as opportunistic powers elsewhere may try to overturn the existing world order. With the US distracted, Russia may seek to redefine Europe's political landscape. The balance of power in the Middle East may be similarly upset by the likes of Iraq. In south Asia, hostilities between India and Pakistan, each armed with its own nuclear arsenal, could enter a new and dangerous phase. Will a full-scale Sino-US war lead to a nuclear war? According to General Matthew Ridgeway, commander of the US Eighth Army which fought against the Chinese in the Korean War, the US had at the time thought of using nuclear weapons against China to save the US from military defeat. In his book The Korean War, a personal account of the military and political aspects of the conflict and its implications on future US foreign policy, Gen Ridgeway said that US was confronted with two choices in Korea -- truce or a broadened war, which could have led to the use of nuclear weapons. If the US had to resort to nuclear weaponry to defeat China long before the latter acquired a similar capability, there is little hope of winning a war against China 50 years later, short of using nuclear weapons. The US estimates that China possesses about 20 nuclear warheads that can destroy major American cities. Beijing also seems prepared to go for the nuclear option. A Chinese military officer disclosed recently that Beijing was considering a review of its "non first use" principle regarding nuclear weapons. Major-General Pan Zhangqiang, president of the military-funded Institute for Strategic Studies, told a gathering at the Woodrow Wilson International Centre for Scholars in Washington that although the government still abided by that principle, there were strong pressures from the military to drop it. He said military leaders considered the use of nuclear weapons mandatory if the country risked dismemberment as a result of foreign intervention. Gen Ridgeway said that should that come to pass, we would see the destruction of civilisation. There would be no victors in such a war. While the prospect of a nuclear Armaggedon over Taiwan might seem inconceivable, it cannot be ruled out entirely, for China puts sovereignty above everything else.

### Solvency

#### To solve their advantages, they have to win the plan will result in global spread of fusion plants. They’ve written their plan to be as vague and nebulous as possible, which means it doesn’t solve – unspecified money for R&D doesn’t change the economics of nuclear and no solvency card in the aff says they speed up commercialization.

#### Fusion is impossible and even the best case is 60 years – obstacles are enormous

Chris Rhodes, Sussex University, Physical Chemistry Professor, 6/10/2012, The Progress made in the Different Fields of Nuclear Fusion, oilprice.com/Alternative-Energy/Nuclear-Power/The-Progress-made-in-the-Different-Fields-of-Nuclear-Fusion.html

When I was about 10, I recall hearing that nuclear fusion power would become a reality "in about thirty years". The estimate has increased steadily since then, and now, forty odd years on, we hear that fusion power will come on-stream "in about fifty years". So, what is the real likelihood of fusion-based power stations coming to our aid in averting the imminent energy crisis? Getting two nuclei to fuse is not easy, since both carry a positive charge and hence their natural propensity is to repel one another. Therefore, a lot of energy is required to force them together so that they can fuse. To achieve this, suitable conditions of extremely high temperature, comparable to those found in stars, must be met. A specific temperature must be reached in order for particular nuclei to fuse with one another. This is termed the "critical ignition temperature", and is around 400 million degrees centigrade for two deuterium nuclei to fuse, while a more modest 100 million degrees is sufficient for a deuterium nucleus to fuse with a tritium nucleus. For this reason, it is deuterium-tritium fusion that is most sought after, since it should be most easily achieved and sustained. One disadvantage of tritium is that it is radioactive and decays with a half-life of about 12 years, and consequently, it exists naturally in only negligible amounts. However, tritium may be "bred" from lithium using neutrons produced in an initial deuterium-tritium fusion. Ideally, the process would become self-sustaining, with lithium fuel being burned via conversion to tritium, which then fuses with deuterium, releasing more neutrons. While not unlimited, there are sufficient known resources of lithium to fire a global fusion programme for about a thousand years, mindful that there are many other uses for lithium, ranging for various types of battery to medication for schizophrenics. The supply would be effectively limitless if lithium could be extracted from the oceans. In a working scenario, some of the energy produced by fusion would be required to maintain the high temperature of the fuel such that the fusion process becomes continuous. At the temperature of around 100 - 300 million degrees, the deuterium/lithium/tritium mixture will exist in the form of a plasma, in which the nuclei are naked (having lost their initial atomic electron clouds) and are hence exposed to fuse with one another. The main difficulty which bedevils maintaining a working fusion reactor which might be used to fire a power station is containing the plasma, a process usually referred to as "confinement" and the process overall as “magnetic confinement fusion” (MCF). Essentially, the plasma is confined in a magnetic bottle, since its component charged nuclei and electrons tend to follow the field of magnetic force, which can be so arranged that the lines of force occupy a prescribed region and are thus centralised to a particular volume. However, the plasma is a "complex" system that readily becomes unstable and leaks away. Unlike a star, the plasma is highly rarefied (a low pressure gas), so that the proton-proton cycle that powers the sun could not be thus achieved on earth, as it is only the intensely high density of nuclei in the sun's core that allows the process to occur sustainably, and that the plasma is contained within its own gravitational mass, and isolated within the cold vacuum of space. In June 2005, the EU, France, Japan, South Korea, China and the U.S. agreed to spend $12 billion to build an experimental fusion apparatus (called ITER) by 2014. It is planned that ITER will function as a research instrument for the following 20 years, and the knowledge gained will provide the basis for building a more advanced research machine. After another 30 years, if all goes well, the first commercial fusion powered electricity might come on-stream. The Joint European Torus (JET) I attended a fascinating event recently - a Cafe' Scientifique meeting held in the town of Reading in South East England. I have also performed in this arena, talking about "What Happens When the Oil Runs Out?", which remains a pertinent question. This time it was the turn of Dr Chris Warrick from the Culham Centre for Fusion Energy based near Abingdon in Oxfordshire, which hosts both the MAST (Mega Amp Spherical Tokamak) and the better known JET (Joint European Torus) experiments. In the audience was a veteran engineer/physicist who had worked on the pioneering ZETA4 experiment in the late 1950s, from which neutrons were detected leading to what proved later to be false claims that fusion had occurred, their true source being different versions of the same instability processes that had beset earlier machines. Nonetheless, his comment was salient: "In the late 50s, we were told that fusion power was 20 years away and now, 50-odd years later it is maybe 60 years away." Indeed, JET has yet to produce a positive ratio of output power/input energy, and instability of the plasma is still a problem. Dr Warrick explained that while much of the plasma physics is now sorted-out, minor aberrations in the magnetic field allow some of the plasma to leak out, and if it touches the far colder walls of the confinement chamber, it simply "dies". In JET it is fusion of nuclei of the two hydrogen isotopes, deuterium and tritium that is being undertaken, a process that as noted earlier, requires a "temperature" of 100 million degrees. I say "temperature" because the plasma is a rarefied (very low pressure) gas, and hence the collisions between particles are not sufficiently rapid that the term means the same distribution of energy as occurs under conditions of thermal equilibrium. It is much the same as the temperatures that may be quoted for molecules in the atmospheric region known as the thermosphere which lies some 80 kilometres above the surface of the Earth. Here too, the atmosphere is highly rarefied and thus derived temperatures refer to translational motion of molecules and are more usefully expressed as velocities. However expressed, at 100 million degrees centigrade, the nuclei of tritium and deuterium have sufficient translational velocity (have enough energy) that they can overcome the mutual repulsion arising from their positive charges and come close enough that they are drawn together by attractive nuclear forces and fuse, releasing vast amounts of energy in the process. JET is not a small device, at 18 metres high, but bigger machines will be necessary before the technology is likely to give out more energy than it consumes. Despite the considerable volume of the chamber, it contains perhaps only one hundredth of a gram of gas, hence its very low pressure. There is another matter and that is how long the plasma and hence energy emission can be sustained. Presently it is fractions of a second but a serious "power station" would need to run for some hours. There is also the problem of getting useful energy from the plasma to convert into electricity even if the aforementioned and considerable problems can be overcome and a sustainable, large-scale plasma maintained. The plan is to surround the chamber with a "blanket" of lithium with pipes running through it and some heat-exchanger fluid passing through them. The heated fluid would then pass on its heat to water and drive a steam-turbine, in the time-honoured fashion used for fossil fuel fired and nuclear power plants. Now my understanding is that this would not be lithium metal but some oxide material. The heat would be delivered in the form of very high energy neutrons that would be slowed-down as they encounter lithium nuclei on passing through the blanket. In principle this is a very neat trick, since absorption of a neutron by a lithium nucleus converts it to tritium, which could be fed back into the plasma as a fuel. Unlike deuterium, tritium does not exist is nature, being radioactive with a half-life of about 12 years. However produced, either separately or in the blanket, lithium is the ultimate fuel source, not tritium per se. Deuterium does exist in nature but only to the extent of one part in about two thousand of ordinary hydrogen (protium) and hence the energy costs of its separation are not inconsiderable. The neutron flux produced by the plasma is very high, and to enhance the overall breeding efficiency of lithium to tritium the reactor would be surrounded with a “lithium” blanket about three feet thick. The intense neutron flux will render the material used to construct the reactor highly radioactive, to the extent that it would not be feasible for operators to enter its vicinity for routine maintenance. The radioactive material will need to be disposed of similarly to the requirements for nuclear waste generated by nuclear fission, and hence fusion is not as "clean" as is often claimed. Exposure to radiation of many potential materials necessary to make the reactor, blanket, and other components such as the heat-exchanger pipes would render them brittle, and so compromise their structural integrity. There is also the possibility that the lithium blanket around the reactor might be replaced by uranium, so enabling the option of breeding plutonium for use in nuclear weapons. Providing a fairly intense magnetic field to confine the plasma (maybe Tesla - similar to that in a hospital MRI scanner) needs power (dc not ac as switching the polarity of the field would cause the plasma to collapse) and large power-supply units containing a lot of metals including rare earths which are mined and processed using fossil fuels. The issue of rare earths is troublesome already, and whether enough of them can be recovered to meet existing planned wind and electric car projects is debatable, let alone that additional pressure should be placed upon an already fragile resource to build a first generation of fusion power stations. World supplies of lithium are also already stressed, and hence getting enough of it not only to make blankets for fusion reactors and tritium production but also for the millions-scale fleet of electric vehicles needed to divert our transportation energy demand away from oil is probably a bridge too far, unless we try getting it from seawater, which takes far more energy than mining lithium minerals. The engineering requirements too will be formidable, however, most likely forcing the need to confront problems as yet unknown, and even according to the most favourable predictions of the experts, fusion power is still 60 years away, if it will arrive at all. Given that the energy crisis will hit hard long before then, I suggest we look to more immediate solutions, mainly in terms of energy efficiency, for which there is ample scope. To quote again the ZETA veteran, "I wonder if maybe man is not intended to have nuclear fusion," and all in all, other than from solar energy I wonder if he is right. At any rate, garnering real electrical power from fusion is so far distant as to have no impact on the more immediately pressing fossil fuels crisis, particularly for oil and natural gas. Fusion Power is a long-range "holy grail" and part of the illusion that humankind can continue in perpetuity to use energy on the scale that it presently does. Efficiency and conservation are the only real means to attenuate the impending crisis in energy and resources.

#### Even if it’s theoretically possible, fusion can’t be commercialized – prefer our ev, it’s from the grandfather of fusion---also proves elections link

Robert L. Hirsch, PhD, former director of the US Fusion Energy Program with the Atomic Energy Commission, and part of basically every major energy and fusion institute in existence, 10-19-2012, “A Veteran of Fusion Science Proposes Narrowing the Field,” NYT, http://dotearth.blogs.nytimes.com/2012/10/19/a-veteran-of-fusion-science-proposes-narrowing-the-field/

Many outstanding people turned to the pursuit of fusion power. A number of fusion concepts emerged and were investigated. Soon it became painfully clear that practical fusion power would not happen quickly. First, we had to develop the science of plasma physics. After decades of effort, a great deal has been learned and accomplished, but a practical fusion power concept has not been forthcoming. Note that I said ”practical fusion power.” Unlike fire, fusion power has to compete against a number of other options. The word “practical” means that a fusion power system must be desirable, based on the realities of the society into which it will be introduced. An unfortunate problem today is that many people in fusion research believe that producing a fusion-something that simply works is the goal, but that is definitely wrong! Fusion power and fire are distinctly different. Let’s consider some specific criteria for practical fusion power. In 1994, the U.S. Electric Power Research Institute – EPRI – convened a panel of utility technologists to develop “Criteria for Practical Fusion Power Systems.” The result was a four-page folder that outlined “Three principal types of criteria:” Economics, Public Acceptance, and Regulatory Simplicity. The criteria are almost self-explanatory, but let me quote from the Economics Criteria: “To compensate for the higher economic risks associated with new technologies, fusion plants must have lower lifecycle costs than competing technologies available at the time of commercialization.” Details for the criteria are given in the report, which I commend to anyone motivated to help develop fusion power. Against these criteria, let’s consider tokamak fusion, the centerpiece of which is ITER – the International Thermonuclear Experimental Reactor – under construction in France. As we know, it’s an enormously large machine, which is generally considered to be a prototype of a practical fusion power plant. Comparing the ITER and the core of a comparable commercial fission reactor shows an enormous difference in size – a factor of 5-10 — ITER being huge by comparison to a fission reactor core. It is known in engineering and technology development that the cost of a finished machine or product is roughly proportional to the mass of the device. Eyeballing ITER compared to a fission reactor core, it’s obvious that an ITER-like machine is many times more massive. Yes, you can argue details, like the hollow bore of a tokamak, but the size of the huge superconducting magnets and their heavy support structures provides no relief. Bottom line – On the face of it, an ITER-like power system will be much more expensive than a comparable fission reactor, so I believe that tokamak fusion loses big-time on cost, independent of details. Next, consider the fact that deuterium-tritium fusion inherently emits copious neutrons, which will induce significant radioactivity in adjacent tokamak structural and moderating materials. Accordingly, a tokamak power system will become highly radioactive as soon as it begins to operate and, over time, radiation damage will render those same materials structurally weak, requiring replacement. In the U.S., as elsewhere in the world, we have a Nuclear Regulatory Commission, which will almost certainly be given the task of ensuring that the public is safe from mishaps associated with tokamak power system failures. Expected regulation will require all kinds of safety features, which will add further costs to tokamak power. While the character of the plasma in a tokamak power reactor will not likely represent a large energy-release safety issue, the superconducting magnets would contain a huge amount of stored energy. If those magnets were to go normal – lose their superconducting properties – the energy release would be very large. It can be argued that the probability of that happening will be small, but it will nevertheless not be zero, so the regulators will require safety features that will protect the public in a situation where the magnets go normal, releasing very large amounts of energy. Accordingly, it is virtually certain that the regulators will demand a containment building for a commercial tokamak reactor that will likely resemble what is currently required for fission reactors, so as to protect the public from normal-going superconducting magnet energy release. Because an ITER-like tokamak reactor is inherently so large, such a building will be extremely expensive, further increasing the costs of something that is already too expensive. Next, there’s the induced radioactivity in the structure and moderator of a tokamak power reactor. Some tokamak proponents contend that structure might be made out of an exotic material that will have low induced radioactivity. Maybe, but last I looked, such materials were very expensive and not in common use in the electric power industry. So if one were to decide to use such materials, there would be another boost to cost, along with an added difficulty for industry to deal with. No matter what materials are chosen, there will still be neutron-induced materials damage and large amounts of induced radioactivity. There will thus be remote operations required and large amounts of radioactive waste that will have to be handled and sent off site for cooling and maybe burial. That will be expensive and the public is not likely to be happy with large volumes of fusion-based radioactivity materials being transported around the country. Remember the criteria of public acceptance. I could go on with other downsides and showstoppers associated with tokamak fusion power, but I won’t. It is enough to say that tokamak fusion power has what I believe are insurmountable barriers to practicability and acceptability. By the way, my arguments assume that tokamak physics and technology works well and is reasonably simple, meaning that not many more components will have to be added to the system to allow it to operate on a steady basis for very long periods of time between the long shutdowns needed to change out radiation-damaged, radioactive materials. What I’ve just described is not a happy story. At some point, probably in a matter of years, a group of pragmatic power industry engineers will be convened to seriously scrutinize tokamak fusion, and they are virtually certain to declare that it cannot become a practical power system. That will certainly be a calamity for the people involved and for the cause of fusion power. Let’s review what I’ve said. First, we have to recognize that practical fusion power must measure up to or be superior to the competition in the electric power industry. Second, it is virtually certain that tokamak fusion as represented by ITER will not be practical.

#### Money doesn’t change the calculus – more fusion research doesn’t speed up commercialization

Hank Campbell, 10-15-2012, “Fusion In A Coffee Mug,” Science 2.0, http://www.science20.com/science\_20/fusion\_coffee\_mug-95126

They are basically correct about one part. Fusion is not ready yet. It may be another 50 years before it is ready. But, as much as it will send some in the broad audience into hysterical shrieks to read it, we have that 50 years and it will be time well spent. CO2 from energy companies have plummeted and the dirtiest source, coal, is in steep decline and producing levels of emissions not seen since Reagan was in his first term. Our current energy is getting cleaner and nothing else is ready to take its place - we'd need to build a nuclear plant every day for the next 50 years to meet our energy needs and even then we can do it only because fission energy is relatively efficient; if we instead tried to use solar power, the environmental energy darling du jour, it would be close to impossible. The 'greenmail' and environmental lawsuits that appear every time a decent-sized solar plant is even proposed makes it too flaky in a nation that wants a reliable energy plan.(1) Politicians think about 'the now' and fusion is not exciting people, despite its potential. Like solar power, it's already been promised for 60 years and made no huge advances. If a president comes into power who is a believer, it may get tens of billions of dollars in subsidies thrown at it, like solar power has, but here on Science 2.0 we would still ridicule it because you can't just throw money at a company or a school and have a basic research miracle spring to life. It takes time, and mistakes, and increments, before anything revolutionary happens. Instead of invoking yet another Cold War military-industrial pipe dream - government loves to build "Manhattan Project of X" behemoths despite none of them working since the actual Manhattan Project - a smaller, nimbler, 21st century way of doing science makes more sense when it comes to fusion. Lots of programs that are outside Big Science may lead to a real breakthrough and aren't 'all or nothing' financially. It's being done now, in both corporate- and government-funded science, and one recent program may be worth getting excited about.

### Space Adv

#### They obviously don’t solve trying to get to space with fission…in the short term people will do it anyways…it’s also empirically denied since we’ve had fission for 60 years and a space program for just as long

#### Colonization's impossible and you should privilege short-term existential risks

**Stross 7** (Charlie, "The High Frontier, Redux," http://www.antipope.org/charlie/blog-static/2007/06/the\_high\_frontier\_redux.html)

I'm going to take it as read that the idea of space colonization isn't unfamiliar; domed cities on Mars, orbiting cylindrical space habitats a la J. D. Bernal or Gerard K. O'Neill, that sort of thing. Generation ships that take hundreds of years to ferry colonists out to other star systems where — as we are now discovering — there are profusions of planets to explore. And I don't want to spend much time talking about the unspoken ideological underpinnings of the urge to space colonization, other than to point out that they're there, that the case for space colonization isn't usually presented as an economic enterprise so much as a quasi-religious one. "We can't afford to keep all our eggs in one basket" isn't so much a justification as an appeal to sentimentality, for in the hypothetical case of a planet-trashing catastrophe, we (who currently inhabit the surface of the Earth) are dead anyway. The future extinction of the human species cannot affect you if you are already dead: strictly speaking, it should be of no personal concern. Historically, crossing oceans and setting up farmsteads on new lands conveniently stripped of indigenous inhabitants by disease has been a cost-effective proposition. But the scale factor involved in space travel is strongly counter-intuitive. Here's a handy metaphor: let's approximate one astronomical unit — the distance between the Earth and the sun, roughly 150 million kilometres, or 600 times the distance from the Earth to the Moon — to one centimetre. Got that? 1AU = 1cm. (You may want to get hold of a ruler to follow through with this one.) The solar system is conveniently small. Neptune, the outermost planet in our solar system, orbits the sun at a distance of almost exactly 30AU, or 30 centimetres — one foot (in imperial units). Giant Jupiter is 5.46 AU out from the sun, almost exactly two inches (in old money). We've sent space probes to Jupiter; they take two and a half years to get there if we send them on a straight Hohmann transfer orbit, but we can get there a bit faster using some fancy orbital mechanics. Neptune is still a stretch — only one spacecraft, Voyager 2, has made it out there so far. Its journey time was 12 years, and it wasn't stopping. (It's now on its way out into interstellar space, having passed the heliopause some years ago.) The Kuiper belt, domain of icy wandering dwarf planets like Pluto and Eris, extends perhaps another 30AU, before merging into the much more tenuous Hills cloud and Oort cloud, domain of loosely coupled long-period comets. Now for the first scale shock: using our handy metaphor the Kuiper belt is perhaps a metre in diameter. The Oort cloud, in contrast, is as much as 50,000 AU in radius — its outer edge lies half a kilometre away. Got that? Our planetary solar system is 30 centimetres, roughly a foot, in radius. But to get to the edge of the Oort cloud, you have to go half a kilometre, roughly a third of a mile. Next on our tour is Proxima Centauri, our nearest star. (There might be a brown dwarf or two lurking unseen in the icy depths beyond the Oort cloud, but if we've spotted one, I'm unaware of it.) Proxima Centauri is 4.22 light years away.A light year is 63.2 x 103 AU, or 9.46 x 1012 Km. So Proxima Centauri, at 267,000 AU, is just under two and a third kilometres, or two miles (in old money) away from us. But Proxima Centauri is a poor choice, if we're looking for habitable real estate. While exoplanets are apparently common as muck, terrestrial planets are harder to find; Gliese 581c, the first such to be detected (and it looks like a pretty weird one, at that), is roughly 20.4 light years away, or using our metaphor, about ten miles. Try to get a handle on this: it takes us 2-5 years to travel two inches. But the proponents of interstellar travel are talking about journeys of ten miles. That's the first point I want to get across: that if the distances involved in interplanetary travel are enormous, and the travel times fit to rival the first Australian settlers, then the distances and times involved in interstellar travel are mind-numbing. This is not to say that interstellar travel is impossible; quite the contrary. But to do so effectively you need either (a) outrageous amounts of cheap energy, or (b) highly efficient robot probes, or (c) a magic wand. And in the absence of (c) you're not going to get any news back from the other end in less than decades. Even if (a) is achievable, or by means of (b) we can send self-replicating factories and have them turn distant solar systems into hives of industry, and more speculatively find some way to transmit human beings there, they are going to have zero net economic impact on our circumstances (except insofar as sending them out costs us money). What do I mean by outrageous amounts of cheap energy? Let's postulate that in the future, it will be possible to wave a magic wand and construct a camping kit that encapsulates all the necessary technologies and information to rebuild a human civilization capable of eventually sending out interstellar colonization missions — a bunch of self-replicating, self-repairing robotic hardware, and a downloadable copy of the sum total of human knowledge to date. Let's also be generous and throw in a closed-circuit life support system capable of keeping a human occupant alive indefinitely, for many years at a stretch, with zero failures and losses, and capable where necessary of providing medical intervention. Let's throw in a willing astronaut (the fool!) and stick them inside this assembly. It's going to be pretty boring in there, but I think we can conceive of our minimal manned interstellar mission as being about the size and mass of a Mercury capsule. And I'm going to nail a target to the barn door and call it 2000kg in total. (Of course we can cut corners, but I've already invoked self-replicating robotic factories and closed-cycle life support systems, and those are close enough to magic wands as it is. I'm going to deliberately ignore more speculative technologies such as starwisps, mind transfer, or AIs sufficiently powerful to operate autonomously — although I used them shamelessly in my novel Accelerando. What I'm trying to do here is come up with a useful metaphor for the energy budget realistically required for interstellar flight.) Incidentally, a probe massing 1-2 tons with an astronaut on top is a bit implausible, but a 1-2 ton probe could conceivably carry enough robotic instrumentation to do useful research, plus a laser powerful enough to punch a signal home, and maybe even that shrink-wrapped military/industrial complex in a tin can that would allow it to build something useful at the other end. Anything much smaller, though, isn't going to be able to transmit its findings to us — at least, not without some breakthroughs in communication technology that haven't shown up so far. Now, let's say we want to deliver our canned monkey to Proxima Centauri within its own lifetime. We're sending them on a one-way trip, so a 42 year flight time isn't unreasonable. (Their job is to supervise the machinery as it unpacks itself and begins to brew up a bunch of new colonists using an artificial uterus. Okay?) This means they need to achieve a mean cruise speed of 10% of the speed of light. They then need to decelerate at the other end. At 10% of c relativistic effects are minor — there's going to be time dilation, but it'll be on the order of hours or days over the duration of the 42-year voyage. So we need to accelerate our astronaut to 30,000,000 metres per second, and decelerate them at the other end. Cheating and using Newton's laws of motion, the kinetic energy acquired by acceleration is 9 x 1017 Joules, so we can call it 2 x 1018 Joules in round numbers for the entire trip. NB: This assumes that the propulsion system in use is 100% efficient at converting energy into momentum, that there are no losses from friction with the interstellar medium, and that the propulsion source is external — that is, there's no need to take reaction mass along en route. So this is a lower bound on the energy cost of transporting our Mercury-capsule sized expedition to Proxima Centauri in less than a lifetime. To put this figure in perspective, the total conversion of one kilogram of mass into energy yields 9 x 1016 Joules. (Which one of my sources informs me, is about equivalent to 21.6 megatons in thermonuclear explosive yield). So we require the equivalent energy output to 400 megatons of nuclear armageddon in order to move a capsule of about the gross weight of a fully loaded Volvo V70 automobile to Proxima Centauri in less than a human lifetime. That's the same as the yield of the entire US Minuteman III ICBM force. For a less explosive reference point, our entire planetary economy runs on roughly 4 terawatts of electricity (4 x 1012 watts). So it would take our total planetary electricity production for a period of half a million seconds — roughly 5 days — to supply the necessary va-va-voom. But to bring this back to earth with a bump, let me just remind you that this probe is so implausibly efficient that it's veering back into "magic wand" territory. I've tap-danced past a 100% efficient power transmission system capable of operating across interstellar distances with pinpoint precision and no conversion losses, and that allows the spacecraft on the receiving end to convert power directly into momentum. This is not exactly like any power transmission system that anyone's built to this date, and I'm not sure I can see where it's coming from. Our one astronaut, 10% of c mission approximates well to an unmanned flight, but what about longer-term expeditions? Generation ships are a staple of SF; they're slow (probably under 1% of c) and they carry a self-sufficient city-state. The crew who set off won't live to see their destination (the flight time to Proxima Centauri at 1% of c is about 420 years), but the vague hope is that someone will. Leaving aside our lack of a proven track record at building social institutions that are stable across time periods greatly in excess of a human lifespan, using a generation ship probably doesn't do much for our energy budget problem either. A society of human beings are likely to need more space and raw material to do stuff with while in flight; sticking a solitary explorer in a tin can for forty-something years is merely cruel and unusual, but doing it to an entire city for several centuries probably qualifies as a crime against humanity. We therefore need to relax the mass constraint. Assuming the same super-efficient life support as our solitary explorer, we might postulate that each colonist requires ten tons of structural mass to move around in. (About the same as a large trailer home. For life.) We've cut the peak velocity by an order of magnitude, but we've increased the payload requirement by an order of magnitude per passenger — and we need enough passengers to make a stable society fly. I'd guess a sensible lower number would be on the order of 200 people, the size of a prehistoric primate troupe. (Genetic diversity? I'm going to assume we can hand-wave around that by packing some deep-frozen sperm and ova, or frozen embryos, for later reuse.) By the time we work up to a minimal generation ship (and how minimal can we get, confining 200 human beings in an object weighing aout 2000 tons, for roughly the same period of time that has elapsed since the Plymouth colony landed in what was later to become Massachusetts?) we're actually requiring much more energy than our solitary high-speed explorer. And remember, this is only what it takes to go to Proxima Centauri our nearest neighbour. Gliese 581c is five times as far away. Planets that are already habitable insofar as they orbit inside the habitable zone of their star, possess free oxygen in their atmosphere, and have a mass, surface gravity and escape velocity that are not too forbidding, are likely to be somewhat rarer. (And if there is free oxygen in the atmosphere on a planet, that implies something else — the presence of pre-existing photosynthetic life, a carbon cycle, and a bunch of other stuff that could well unleash a big can of whoop-ass on an unprimed human immune system. The question of how we might interact with alien biologies is an order of magnitude bigger and more complex than the question of how we might get there — and the preliminary outlook is rather forbidding.) The long and the short of what I'm trying to get across is quite simply that, in the absence of technology indistinguishable from magic — magic tech that, furthermore, does things that from today's perspective appear to play fast and loose with the laws of physics — interstellar travel for human beings is near-as-dammit a non-starter. And while I won't rule out the possibility of such seemingly-magical technology appearing at some time in the future, the conclusion I draw as a science fiction writer is that if interstellar colonization ever happens, it will not follow the pattern of historical colonization drives that are followed by mass emigration and trade between the colonies and the old home soil. What about our own solar system? After contemplating the vastness of interstellar space, our own solar system looks almost comfortingly accessible at first. Exploring our own solar system is a no-brainer: we can do it, we are doing it, and interplanetary exploration is probably going to be seen as one of the great scientific undertakings of the late 20th and early 21st century, when the history books get written. But when we start examining the prospects for interplanetary colonization things turn gloomy again. Bluntly, we're not going to get there by rocket ship. Optimistic projects suggest that it should be possible, with the low cost rockets currently under development, to maintain a Lunar presence for a transportation cost of roughly $15,000 per kilogram. Some extreme projections suggest that if the cost can be cut to roughly triple the cost of fuel and oxidizer (meaning, the spacecraft concerned will be both largely reusable and very cheap) then we might even get as low as $165/kilogram to the lunar surface. At that price, sending a 100Kg astronaut to Moon Base One looks as if it ought to cost not much more than a first-class return air fare from the UK to New Zealand ... except that such a price estimate is hogwash. We primates have certain failure modes, and one of them that must not be underestimated is our tendency to irreversibly malfunction when exposed to climactic extremes of temperature, pressure, and partial pressure of oxygen. While the amount of oxygen, water, and food a human consumes per day doesn't sound all that serious — it probably totals roughly ten kilograms, if you economize and recycle the washing-up water — the amount of parasitic weight you need to keep the monkey from blowing out is measured in tons. A Russian Orlan-M space suit (which, some would say, is better than anything NASA has come up with over the years — take heed of the pre-breathe time requirements!) weighs 112 kilograms, which pretty much puts a floor on our infrastructure requirements. An actual habitat would need to mass a whole lot more. Even at $165/kilogram, that's going to add up to a very hefty excess baggage charge on that notional first class air fare to New Zealand — and I think the $165/kg figure is in any case highly unrealistic; even the authors of the article I cited thought $2000/kg was a bit more reasonable. Whichever way you cut it, sending a single tourist to the moon is going to cost not less than $50,000 — and a more realistic figure, for a mature reusable, cheap, rocket-based lunar transport cycle is more like $1M. And that's before you factor in the price of bringing them back ... The moon is about 1.3 light seconds away. If we want to go panning the (metaphorical) rivers for gold, we'd do better to send teleoperator-controlled robots; it's close enough that we can control them directly, and far enough away that the cost of transporting food and creature comforts for human explorers is astronomical. There probably are niches for human workers on a moon base, but only until our robot technologies are somewhat more mature than they are today; Mission Control would be a lot happier with a pair of hands and a high-def camera that doesn't talk back and doesn't need to go to the toilet or take naps. When we look at the rest of the solar system, the picture is even bleaker. Mars is ... well, the phrase "tourist resort" springs to mind, and is promptly filed in the same corner as "Gobi desert". As Bruce Sterling has puts it: "I'll believe in people settling Mars at about the same time I see people settling the Gobi Desert. The Gobi Desert is about a thousand times as hospitable as Mars and five hundred times cheaper and easier to reach. Nobody ever writes "Gobi Desert Opera" because, well, it's just kind of plonkingly obvious that there's no good reason to go there and live. It's ugly, it's inhospitable and there's no way to make it pay. Mars is just the same, really. We just romanticize it because it's so hard to reach." In other words, going there to explore is fine and dandy — our robots are all over it already. But as a desirable residential neighbourhood it has some shortcomings, starting with the slight lack of breathable air and the sub-Antarctic nighttime temperatures and the Mach 0.5 dust storms, and working down from there. Actually, there probably is a good reason for sending human explorers to Mars. And that's the distance: at up to 30 minutes, the speed of light delay means that remote control of robots on the Martian surface is extremely tedious. Either we need autonomous roots that can be assigned tasks and carry them out without direct human supervision, or we need astronauts in orbit or on the ground to boss the robot work gangs around. On the other hand, Mars is a good way further away than the moon, and has a deeper gravity well. All of which drive up the cost per kilogram delivered to the Martian surface. Maybe FedEx could cut it as low as $20,000 per kilogram, but I'm not holding my breath. Let me repeat myself: we are not going there with rockets. At least, not the conventional kind — and while there may be a role for nuclear propulsion in deep space, in general there's a trade-off between instantaneous thrust and efficiency; the more efficient your motor, the lower the actual thrust it provides. Some technologies such as the variable specific impulse magnetoplasma rocket show a good degree of flexibility, but in general they're not suitable for getting us from Earth's surface into orbit — they're only useful for trucking things around from low earth orbit on out. Again, as with interstellar colonization, there are other options. Space elevators, if we build them, will invalidate a lot of what I just said. Some analyses of the energy costs of space elevators suggest that a marginal cost of $350/kilogram to geosynchronous orbit should be achievable without waving any magic wands (other than the enormous practical materials and structural engineering problems of building the thing in the first place). So we probably can look forward to zero-gee vacations in orbit, at a price. And space elevators are attractive because they're a scalable technology; you can use one to haul into space the material to build more. So, long term, space elevators may give us not-unreasonably priced access to space, including jaunts to the lunar surface for a price equivalent to less than $100,000 in today's money. At which point, settlement would begin to look economically feasible, except ... We're human beings. We evolved to flourish in a very specific environment that covers perhaps 10% of our home planet's surface area. (Earth is 70% ocean, and while we can survive, with assistance, in extremely inhospitable terrain, be it arctic or desert or mountain, we aren't well-adapted to thriving there.) Space itself is a very poor environment for humans to live in. A simple pressure failure can kill a spaceship crew in minutes. And that's not the only threat. Cosmic radiation poses a serious risk to long duration interplanetary missions, and unlike solar radiation and radiation from coronal mass ejections the energies of the particles responsible make shielding astronauts extremely difficult. And finally, there's the travel time. Two and a half years to Jupiter system; six months to Mars. Now, these problems are subject to a variety of approaches — including medical ones: does it matter if cosmic radiation causes long-term cumulative radiation exposure leading to cancers if we have advanced side-effect-free cancer treatments? Better still, if hydrogen sulphide-induced hibernation turns out to be a practical technique in human beings, we may be able to sleep through the trip. But even so, when you get down to it, there's not really any economically viable activity on the horizon for people to engage in that would require them to settle on a planet or asteroid and live there for the rest of their lives. In general, when we need to extract resources from a hostile environment we tend to build infrastructure to exploit them (such as oil platforms) but we don't exactly scurry to move our families there. Rather, crews go out to work a long shift, then return home to take their leave. After all, there's no there there — just a howling wilderness of north Atlantic gales and frigid water that will kill you within five minutes of exposure. And that, I submit, is the closest metaphor we'll find for interplanetary colonization. Most of the heavy lifting more than a million kilometres from Earth will be done by robots, overseen by human supervisors who will be itching to get home and spend their hardship pay. And closer to home, the commercialization of space will be incremental and slow, driven by our increasing dependence on near-earth space for communications, positioning, weather forecasting, and (still in its embryonic stages) tourism. But the domed city on Mars is going to have to wait for a magic wand or two to do something about the climate, or reinvent a kind of human being who can thrive in an airless, inhospitable environment.

#### Multiple diseases destroy sustainability of life in space

**Matin and Lynch 5** – (2005, A. C. Matin, PhD in Microbiology, Professor of Microbiology and Immunology at Stanford University in Stanford, California, and Susan V. Lynch, PhD, Molcular Microbiology, Assistant Professor In Residence, Division of Gastroenterology, UC San Francisco, “Investigating the Threat of Bacteria Grown in Space,” Volume 71, Number 5, 2005/ASM News, <http://www.asm.org/asm/files/ccLibraryFiles/Filename/000000001523/znw00505000235.pdf> )

Although tantalizing, space is an inhospitable and dangerous frontier for those sent to explore it. Hence, progress towards more safely navigating and perhaps colonizing space are tasks that demand that we develop knowledge on several fronts, from designing radically new means of space transport to determining how space conditions inﬂuence biological processes. Several harmful effects of space on humans are documented. During extended missions in space, for example, bones lose mass, predisposing space travelers not only to fracture their bones but also to develop renal stones from resorbed bone material. Moreover, muscles atrophy, decreased blood production and volume damage the cardiovascular system, latent viruses (such as Varicella zoster, which causes shingles) tend to reactivate, the incidence of diseases such as bacterial cystitis increases, wound healing slows, pharmacologic agents act differently, and pyschological conditions such as claustrophobia and anxiety tend to be accentuated, in part because of disrupted sleep and dietary patterns. Amid these physical and psychological conditions, there is the added problem that astronauts in space are exposed to intense radiation, involving high-energy protons and nuclei of heavy elements with greater penetrating power and increased capacity to cause malignancies and other problems, than they would be on earth. Additionally, the diminished gravity of space and planets, referred to as microgravity, also poses a direct threat to human health.

### Leadership Adv

#### ITER solves – their author

Fedoroff 8 Nina V. Fedoroff, Ph.D., Science and Technology Adviser to the Secretary of State and the Administrator of USAID, “Testimony Before the House Science Subcommittee on Research and Science Education”, April 2, 2008, http://2001-2009.state.gov/g/stas/2008/105286.htm

Finally, some types of science – particularly those that address the grand challenges in science and technology – are inherently international in scope and collaborative by necessity. The ITER Project, an international fusion research and development collaboration, is a product of the thaw in superpower relations between Soviet President Mikhail Gorbachev and U.S. President Ronald Reagan. This reactor will harness the power of nuclear fusion as a possible new and viable energy source by bringing a star to earth. ITER serves as a symbol of international scientific cooperation among key scientific leaders in the developed and developing world – Japan, Korea, China, E.U., India, Russia, and United States – representing 70% of the world’s current population.

#### War won’t escalate

Kang 10 – professor of international relations and business and director of the Korean Studies Institute at the University of Southern California (12/31/10, David C., “Korea’s New Cold War,” <http://nationalinterest.org/commentary/koreas-new-cold-war-4653>)

However, despite dueling artillery barrages and the sinking of a warship, pledges of “enormous retaliation,” in-your-face joint military exercises and urgent calls for talks, the risk of all-out war on the Korean peninsula is less than it has been at anytime in the past four decades. North Korea didn’t blink, because it had no intention of actually starting a major war. Rather than signifying a new round of escalating tension between North and South Korea, the events of the past year point to something else—a new cold war between the two sides.

In fact, one of my pet peeves is the analogies we use to describe the situation between South and North Korea. We often call the situation a “powder keg” or a “tinderbox,” implying a very unstable situation in which one small spark could lead to a huge explosion. But the **evidence actually leads to the opposite conclusion**: **we have gone sixty years without a major war, despite numerous “sparks**” such as the skirmishing and shows of force that occurred over the past month. If one believes the situation is a tinderbox, the only explanation for six decades without a major war is that we have been extraordinarily lucky.

I prefer the opposite explanation: deterrence is quite stable because both sides know the costs of a major war, and both sides—**rhetoric and muscle-flexing aside**—keep smaller incidents in their proper perspective.

How can this be, when North Korea threatens to use massive retaliation and mentions its nuclear weapons in its rhetoric, and when the South Korean leadership and military is determined to "respond relentlessly [8]" to meet any North Korean provocation?

**Local skirmishing has stayed local for sixty years**. The key issue is whether a local fight could escalate into all-out war, such as North Korea shelling Seoul with artillery or missiles. Such a decision would clearly have to be taken at the top of the North Korean leadership. Especially when tensions are high, both militaries are on high alert and local commanders particularly careful with their actions. Without a clear directive from the top, it is not likely that a commander one hundred kilometers away from the military exercises would make a decision on his own to start shooting at Seoul. For their part, North Korean leaders have not made such a decision in sixty years, knowing that any major attack on Seoul would cause a massive response from the South Korean and U.S. forces and would carry the war into Pyongyang and beyond. After the fighting, **North Korea would cease to exist**.

Thus, while both North and South Korean leaders talk in grim tones about war, both sides have kept the actual fighting to localized areas, and I have seen no indication that this time the North Korean leadership plans to expand the fighting into a general war.

#### South Korea and US will deescalate

Feigenbaum 10 (Evan Feigenbaum is Adjunct Senior Fellow for East, Central, and South Asia at the Council on Foreign Relations, "Korea conflict: Could it escalate?" December 8, 2010, http://www.eastasiaforum.org/2010/12/08/korean-conflict-could-it-escalate/)

Just over a week into the Korea crisis, the constraints on retaliation by Seoul and Washington have become increasingly apparent. Both fret that Pyongyang lacks escalation control and remain deeply anxious about the consequences of a tit-for-tat escalation. Events of the past week have mostly underscored the basic calculations of the main parties: North Korea is prone to provocative behaviour, in large part for domestic reasons. But the North has been emboldened because its closest partner, China, has sought to rationalise Pyongyang’s actions, caveat its entreaties to Pyongyang for ‘restraint,’ and shield the North from retaliation. This has almost certainly made North Korea more prone to act provocatively since its actions have invited few consequences from its principal benefactor. Indeed, Chinese diplomacy since last week has struck a mostly even-handed tone, calling for restraint by all parties while hinting that China views US and South Korean military displays, not just North Korean artillery strikes, as provocative. This context shapes North Korea’s cost/benefit calculations: since it has been given few disincentives to do otherwise, the North will continue to challenge South Korea around the Northern Limit Line and engage in other provocations. By contrast, Seoul is more constrained. President Lee Myung-bak is under intense domestic pressure to further loosen the South’s military rules of engagement. Some in South Korea seem to be itching for a rematch, not least because the military performed poorly in last week’s confrontation. But Seoul remains more cautious in deed than word. The rhetoric has sharpened. Lee replaced his defence minister. The South Korean military now has greater license to shoot back. But the central problem for Seoul remains structural: Weakness could invite additional North Korean provocation, but striking peninsular North Korean targets could invite rapid and very consequential escalation. In practice, then, I suspect Seoul will seek to preserve a ladder of escalation in its future responses to North Korean actions: (1) firing at North Korean vessels offshore, as in the past; (2) discrete and limited counterbattery responses to specific sources of North Korean artillery fire; and (3) weighing a wider counterbattery target package only in extremis. That innate conservatism reflects South Korea’s own cost/benefit calculus. The South, having built something over the last 40 years, has everything to lose. Short of war, North Korea benefits more from escalation. So Seoul will remain risk-averse. Put bluntly, Seoul is certain to respond to a repeat performance by North Korea, but the scope and scale of its response will remain constrained. At most, Seoul will respond proportionately. More likely, it will respond conservatively. What now? As I argued in my last post, the North has plenty of options for additional provocations, including a third nuclear test, another long-range missile test, or conventional attacks beyond the northern limit line (NLL). But further conventional attacks would be especially destabilising: they would raise questions about whether the conventional deterrence that has kept the peace in Korea for decades is eroding under the shadow of Pyongyang’s nuclear capability. For now, Seoul and Washington seem to be betting that failure to respond to future attacks would further undermine deterrence and invite additional North Korean provocations. But both seem anxious not to escalate tensions and will likely focus on joint military displays to bolster conventional deterrence while rejecting Chinese entreaties for talks with Pyongyang. My bets are off if North Korea attacks US military assets — for instance, in a future joint exercise — or targets peninsular South Korea. But, for the moment, the bet in Seoul and Washington seems to be that common sense and Chinese leverage will set limits on rapid escalation by Pyongyang. Still, that almost certainly means the crisis will sharpen US-China tensions. The US continues to bet that Chinese leverage will set limits on escalation by Pyongyang and restrain further provocations. But China has shown scant appetite for coercing North Korea, and that seems unlikely to change in a fundamental way. Indeed, while Beijing may well be privately telling the North to knock it off, those private messages have been sweetened by public displays of even-handedness and calls for ‘mutual’ restraint. And with President Hu Jintao coming to Washington in about six weeks, this issue has rocketed toward the top of the US-China agenda. North Korea won’t crowd out every other piece of business, some of which will be positive. But, like a growing number of issues in US-China relations, this one will produce more rancor than agreement.

## 2NC

### T

#### Incentives include regulations, outreach, and financial incentives---allowing outreach programs allows over 200 different mechanisms

Beattie & Menz 5 Kristin M. Beattie Interdisciplinary Engineering and Management, Honors Program Clarkson University, Potsdam, NY Mentor: Dr. Fredric Menz Professor, Department of Economics Clarkson University, Potsdam, NY “Renewable Energy in the United States: Policy Effectiveness and Economic Issues” Summer Research Program, 2005, Google (downloaded as word doc)

There are many different incentive programs that exist in different states to promote the use of renewable energy technologies. The three main categories of policies to promote green power are financial incentives, volunteer and outreach programs, and rules and regulations.

The financial incentives include personal income tax exemptions, corporate tax exemptions, sales tax exemptions, property tax exemptions, rebate programs, grant programs, loan programs, industry recruitment programs, leasing/lease purchase programs, and production incentives. There are currently 200 financial incentives in place that promote renewable energy in the United States (DSIRE, 2003).

Volunteer and Outreach Programs include green pricing programs, voluntary installer certification programs, and outreach programs. At present, there are 201 volunteer and outreach programs in place to promote renewable energy in the United States (DSIRE, 2003).

Rules, regulations, and policies include public benefits funds, generation disclosure rules, renewable portfolio standards, net metering rules, line extension analysis requirements, contractor licensing requirements, equipment certifications, solar access laws, construction and design standards, green power purchasing/aggregation, and mandatory utility green power options. There are currently 216 rules, regulations, and policies in place to promote renewable energy in the United States (DSIRE, 2003).

### CP

#### States energy policies cause federal follow-on—empirics

McKinstry, 4

(Prof-Forestry & Environmental Resources Conservation-Penn State, Laboratories for Local Solutions for Global Problems: State, Local and Private Leadership in Developing Strategies to Mitigate the Causes and Effects of Climate Change, 12 Penn St. Envtl. L. Rev. 15)

Although the United States joined with the rest of the world in signing and ratifying the Framework Convention on Climate Change n1 and in signing the Kyoto Protocol to the Framework Convention, n2 concerns about possible, adverse short-term economic impacts from control of greenhouse gases has stymied further participation by the federal government in global efforts. These concerns have generated pressures that have prevented the United States from ratifying the Kyoto Protocol, participating in the Bonn, Germany in 2001 negotiations, or meeting some of its obligations under the Framework Convention. The federal government's withdrawal from active engagement in the global response to climate change has not, however, eliminated all response to climate change in the United States. It has simply moved the locus of the response from the federal government to state and local governments and the private sector. State leadership in environmental issues has not been uncommon historically. In a frequently quoted dissent, Justice Brandeis observed [\*16] that "it is one of the happy incidents of the federal system that a single courageous State may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country." n3 Results from state "laboratories" have often generated the models for federal legislation governing the United States' national response to environmental problems. For example, California state air regulation provided a model for the Clean Air Act. n4 Regulation of water quality by the interstate Delaware River Basin Commission ("DRBC") n5 provided the model for the system of federal regulation implemented by the Clean Water Act. n6 Pennsylvania's system of surface mining regulation served as the model for the federal Surface Mining Control and Reclamation Act. n7 The hazardous site remediation program established by New Jersey pursuant to the New Jersey Spill Compensation and Control Act n8 was copied by Congress in enacting the federal Comprehensive Environmental Response Compensation and Liability Act. n9

#### Education—the states counterplan is critical to education on an energy topic

Kay 12 (David, Cornell Community and Regional Development Institute, “Energy Federalism: Who Decides?”, July, http://devsoc.cals.cornell.edu/cals/devsoc/outreach/cardi/programs/loader.cfm?csModule=security/getfile&PageID=1071714)

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

### Case

#### Low risk is no risk---and as a policymaker that threshold isn’t very high

Mueller 10 John Mueller is a professor of political science at Ohio State University, “Calming Our Nuclear Jitters” Issues Online in Science and Technology, Winter 2010 <http://www.issues.org/26.2/mueller.html>

The purpose here has not been to argue that policies designed to inconvenience the atomic terrorist are necessarily unneeded or unwise. Rather, in contrast with the many who insist that atomic terrorism under current conditions is rather likely— indeed, exceedingly likely—to come about, I have contended that it is hugely unlikely. However, it is important to consider not only the likelihood that an event will take place, but also its consequences. Therefore, one must be concerned about catastrophic events even if their probability is small, and efforts to reduce that likelihood even further may well be justified.

At some point, however, probabilities become so low that, even for catastrophic events, it may make sense to ignore them or at least put them on the back burner; in short, the risk becomes acceptable. For example, the British could at any time attack the United States with their submarine-launched missiles and kill millions of Americans, far more than even the most monumentally gifted and lucky terrorist group. Yet the risk that this potential calamity might take place evokes little concern; essentially it is an acceptable risk. Meanwhile, Russia, with whom the United States has a rather strained relationship, could at any time do vastly more damage with its nuclear weapons, a fully imaginable calamity that is substantially ignored.

In constructing what he calls “a case for fear,” Cass Sunstein, a scholar and current Obama administration official, has pointed out that if there is a yearly probability of 1 in 100,000 that terrorists could launch a nuclear or massive biological attack, the risk would cumulate to 1 in 10,000 over 10 years and to 1 in 5,000 over 20. These odds, he suggests, are “not the most comforting.” Comfort, of course, lies in the viscera of those to be comforted, and, as he suggests, many would probably have difficulty settling down with odds like that. But there must be some point at which the concerns even of these people would ease. Just perhaps it is at one of the levels suggested above: one in a million or one in three billion per attempt.

#### Even with unlimited funding and a perfect investment climate the plan will have no effect for decades – THEIR 1AC EVIDENCE

CN 12 The Challenge Network is an International Partnership of Expert Individuals, Most of Whom Have Occupied Senior Planning or Management Roles in Commerce and the Public Sector, "Nuclear Fusion: Penurious Promise", 2012, http://www.chforum.org/scenario2012/paper-1-4.shtml

Suppose that we had access to unlimited funds and that it was clear today how to spend them? The figure shows work done by Shell on the pace at which energy technologies penetrate the global market. Plainly, the economic potential and the regulatory environment will effect these, but the general trend is clear enough. Fusion, if available today, would take a considerable time to replace and extend existing electricity infrastructure.¶ What consequences would even the knowledge of its certain existence have on the world? It would, self-evidently, render investment in all but a few renewables obsolete. It would change our perception of primary energy from a limited to an unlimited resource, or one properly limited only by economic realities. It would considerably reduce the long run potential of the oil producing countries, and increase those of, in particular, poor importing nations. However, given the slow penetration that the figure shows, these would be impacts anticipated rather than felt in 2025. The forced retirement of conventional power stations by states as a climate management measure could well bring this forward, but still to the 2030s and beyond. The nature of the plant - turnkey modules or complex, delicate equipment that needed constant expert management - would greatly impact poor-world uptake, and hydrocarbons could become "poor man's energy" in such an environment.

## 1NR

#### China turns Korea

Kelly 10—Assistant Professor Department of Political Science & Diplomacy Pusan National University (Robert E., 16 December 2010, Yeonpyeong Shelling Summation (2): More Causes in Hindsight, <http://asiansecurityblog.wordpress.com/2010/12/16/yeonpyeong-shelling-summation-2-more-causes-in-hindsight/>)

China continues to calculate that an erratic, nuclearized NK is preferable to unification on Southern terms. A peninsula-wide version of SK is the only realistic unity scenario given NK’s extreme backwardness – decrepit, corrupt NK probably could not even manage the whole peninsula – and SK’s demonstrated unwillingness to sacrifice democracy for unity. **China’s continued subsidization for NK’s economy is well-known and has only become more crucial** as events like the famines, failed currency reform, UN sanctions, expensive nuclear program, and continued resistance to Chinese-style reforms have effectively devastated the NK economy, all the more ironic for its autarkic claims of juche. (The CIA estimates NK’s GDP at just $42 billion for 24 million people.) China’s refusal to endorse the Security Council reprimand of NK over the Cheonan signaled that when pushed, it will choose North over South.

**This opens the door for continued NK intransigence and provocation. Given NK’s extreme asymmetric dependence on China**, it is highly unlikely that NK would openly cross its benefactor. One can only speculate what if any Chinese red-line warnings on provocations were given to Kim Jong-Il on his recent trips to Beijing. Yeonpyeong probably did not cross that line, as the Chinese response has been widely regarded as tepid and insufficient.

#### Biggest i/l

**Choi 10**—Dr. Choi is a political scientist educated at Indiana University and taught at the University of Wisconsin and University of Seoul (Yearn-hong, 4 June 2010, China’s role in East Asia’s peace, <http://www.koreatimes.co.kr/www/news/opinon/2010/06/137_67082.html>)

Former President Kim Dae-jung and his successor Roh Moo-hyun launched the sunshine policy, with only wishful thinking. However, the 10 years under their rule did not produce any meaningful change in the North Korean regime. China has sided with North Korea since the 1950-53 Korean War. The latter's survival has basically depended on Beijing support, even as China has emerged as a superpower. It has used its position of permanent member of the United Nations' Security Council to protect North Korea. But its blind support and alliance with North Korea are raising questions as to China's ability as a superpower. The North Korean dictatorial regime is heading for a three-generation succession, while its people are starved to death. A hundred thousand or more North Korean people are wandering around northeast China for their mere survival. China behind North Korea supported South Korean President Kim Dae-jung's sunshine policy toward the North when it began in 1998. That sunshine policy helped the North Korean regime survive with South Korea's economic assistance and humanitarian aid. However, that has been betrayed over the years by North Korea instigating sea battles in the Yellow Sea, killing an innocent woman tourist at the Mt. Geumgang resort and the conducting of a couple of nuclear bomb and long-range missile tests, well before the torpedo attack. Now, many South Korean people believe that Seoul should give up the so-called sunshine policy. They ask why they should tolerate North Korea's barbaric acts, while continuing to provide astronomical economic assistance it. Ten years is more than long enough to see some decent changes in the North, but nothing has happened. Behind this “no change,” has been China. This is a very unfortunate situation for China and North Korea. Some, a very few, American journalists are sympathetic to the North Korean dictatorship and critical of South Korean President Lee Myung-bak's hard-line policy toward the North. They are ridiculous. These people do not see the cause-and-effect relationship. Lee has been trying to maintain a reciprocal relationship with the North. He has genuinely tried to maintain an amicable relationship with Pyongyang under the most difficult situations. President Barack Obama's foreign policy toward North Korea has been one ``tough but fair." Lee and Obama have made every effort to bring North Korea to the table for the six-nation talks to freeze its nuclear ambitions for a ``nuclear-free Korean Peninsula." Nevertheless, **China has not used its superpower status** and its U.N. Security Council membership to punish North Korea for its barbaric acts. That is the reason why the latter continues to behave like an ugly barbarian nation. China should do something to admonish and penalize crimes willfully committed by the North and any other countries: China is trying to say ``neutral" on the two Koreas. Neutrality is just an excuse. Under the name of neutrality, it provides forgiveness and encouragements of crimes against humanity. **Under the protection of China, North Korea** **developed nuclear weapons** and threatened South Korea, Japan and the United States. Why is this? Probably because North Korea is China's colony or satellite. China should be serious toward North Korea, and control the latter's behavior. It is in a position to teach and admonish its ``satellite" country. Superpower nations should not just be armed with nuclear weapons, but civility and humility. China should show the world its decency, civility and responsibility. Rogue nations should be punished by the international community. The United Nations is supposed to be a decent organization. Assume: China's naval ship was destroyed by Taiwan's submarine attack, and 46 were killed. Could China be quiet or neutral? China will not tolerate any attack from any nation. If this is the case, China should not tolerate the North Korean submarine's torpedo attack on a South Korean ship in South Korean waters. There is no excuse for China's “neutrality”which only encourages North Korea's barbaric acts!

#### Momentum is building now – Romney will capitalize on it to label China as a currency manipulator

CNBC 12 Li Anne Wong and Jean Chua. “Will Yuan's Decline Reignite Trade Tensions With US?” Aug 21, <http://www.cnbc.com/id/48734436>

The yuan’s recent decline, the first in seven years, is raising eyebrows among U.S. politicians and sparking concerns that the weakening currency could trigger another round of nasty bickering between Beijing and Washington.¶ The renminbi [CNY 40.92 -0.0025 (-0.01%) ] has fallen one percent against the U.S. dollar so far this year, after appreciating 22 percent since 2005 when China abandoned the currency’s peg to the greenback. Analysts say the development could further the case for U.S. lawmakers, who havelong held the belief that China is keeping its currency artificially cheap, giving the country’s own exports an unfair advantage.¶ Already, the rumblings have begun. Mitt Romney, the U.S. Republican presidential candidate, has dragged in the issue in the race for the White House, declaring to voters that the U.S. will adopt a tougher stance and accuse China of currency manipulation.¶ Frank Lavin, former Under Secretary of Commerce for International Trade from 2005 to 2007, said the yuan issue “is not going away” and will “surface intermittently in these final three months” of the U.S. presidential elections.¶ “There is a view in a segment of the electorate that the Chinese have artificially manipulated their currency to gain an unfair advantage,” Lavin said. “In a political season, this view can take on a populist tone and be turned into general criticism of the Obama administration.”

#### Currnet rhetoric means that Congress will get riled up to China bash if Romeny wins– spirals out of control and collapses relations

WSJ 11 “Romney's China Blunder,” Sept 17, http://online.wsj.com/article/SB10001424053111904836104576558090193802586.html

If Mr. Romney is elected, he would quickly realize the complications of carrying out his threat to designate China a currency manipulator. Mr. Romney seems to think that this would be little more than a discreet event, that the U.S. could impose narrow "countervailing duties" and that China would soon bend.¶ But once a U.S. President starts whipping up trade furies, it's hard to predict how the story ends. Congress already has a bipartisan lineup pressing to impose 25% tariffs on all Chinese goods. Because every Administration also needs Beijing's support on a range of global issues, candidate Romney would be wiser to promise to pressure China to speed up its financial reform and pledging American help to make the process easier.¶ Mr. Romney's China foray also contradicts the otherwise free-trade bent of his new jobs plan. His idea for a "Reagan economic zone" of developed countries committed to promoting trade in services and protecting intellectual property is worth discussing. As the benefits of such a zone became clear, it could serve as an incentive for developing countries like China and India to lower barriers that they have clung to during the WTO's decade-long Doha Round negotiations.¶ We hope that the other Republican candidates will follow Mr. Huntsman's lead and repudiate Mr. Romney's China blunder. Especially in bad economic times, American lawmakers from both parties will happily turn protectionist if they think a President won't resist and make them pay a political price. The easiest path for Congressmen is always to vote for special or regional interests. Serious Presidential candidates have to protect the national interest.

#### **It’s not just campaign rhetoric – Romney will take action**

The Atlantic 12 "The Risks of Romney's Anti-China Rhetoric,” 2/21, http://www.theatlantic.com/international/archive/2012/02/the-risks-of-romneys-anti-china-rhetoric/253362/

The business community for decades has watched presidential contenders routinely use free trade with China as a political punching bag, only to preserve the same policies once in office. But Romney's campaign is giving them pause.¶ According to one Washington lobbyist who works on U.S.-China relations, and who requested anonymity in order to speak candidly, Romney's continued hammering on the issue -- he has mentioned it frequently for months -- has raised concern among private industry leaders that this is more than rhetoric. "He has clearly staked out a position," said the lobbyist, who backed Romney in 2008.

#### The plan happens before the election---Congress is holding pro forma sessions now

Cox 9/24 Ramsey is a writer for The Hill. “Congress to hold pro forma sessions until November,” 2012, http://thehill.com/blogs/floor-action/senate/251313-congress-to-hold-pro-forma-sessions-until-november

Rather than being in recess for more than five weeks, both the Senate and the House decided to hold pro forma sessions until after the November elections.

#### Legislation can be passed then

Cover 12 Matt is a writer at CNS news. “Democrats Passed Payroll Tax Extension During ‘Pro Forma’ Session on Dec. 23,” 1/6, http://cnsnews.com/news/

(CNSNews.com) – Senate Majority Leader Harry Reid (D-Nev.) took to the Senate floor during a “pro forma” session on Dec. 23 to pass a two-month extension to the payroll tax. President Barack Obama, however, this week claimed that a pro forma session means the Senate is practically in recess, opening the door for him to make appointments whenever he deems the Senate is out of session.¶ In justifying the appointments made on Wednesday, Jan. 4, while the Senate was in pro forma session, Obama spokesman Dan Pfeiffer said that the Senate was “effectively” in recess because “no Senate business is conducted.”¶ “The Senate has effectively been in recess for weeks, and is expected to remain in recess for weeks,” Pfeiffer wrote on the White House Web site on Jan. 4. “In an overt attempt to prevent the President from exercising his authority during this period, Republican Senators insisted on using a gimmick called ‘pro forma’ sessions, which are sessions during which no Senate business is conducted.”¶ However, **the Senate did conduct business during a pro forma session**, with Majority Leader Reid leading the unanimous consent proceeding to pass the two-month payroll tax extension.

#### Should immediate

Nieto 9 --- Judge Henry Nieto, Colorado Court of Appeals, 8-20-2009 People v. Munoz, 240 P.3d 311 (Colo. Ct. App. 2009)

"Should" is "used . . . to express duty, obligation, propriety, or expediency." Webster's Third New International Dictionary 2104 (2002). Courts [\*\*15] interpreting the word in various contexts have drawn conflicting conclusions, although the **weight of authority** appears to favor interpreting "should" in an imperative, obligatory sense. HN7A number of courts, confronted with the question of whether using the word "should" in jury instructions conforms with the Fifth and Sixth Amendment protections governing the reasonable doubt standard, have upheld instructions using the word. In the courts of other states in which a defendant has argued that the word "should" in the reasonable doubt instruction does not sufficiently inform the jury that it is bound to find the defendant not guilty if insufficient proof is submitted at trial, the courts have squarely rejected the argument. They reasoned that the word **"**conveys a sense of duty and obligationand **could not be misunderstood** by a jury." See State v. McCloud, 257 Kan. 1, 891 P.2d 324, 335 (Kan. 1995); see also Tyson v. State, 217 Ga. App. 428, 457 S.E.2d 690, 691-92 (Ga. Ct. App. 1995) (finding argument that "should" is directional but not instructional to be without merit); Commonwealth v. Hammond, 350 Pa. Super. 477, 504 A.2d 940, 941-42 (Pa. Super. Ct. 1986). Notably, courts interpreting the word "should" in other types of jury instructions [\*\*16] have also found that the word conveys to the jury a sense of duty or obligation and **not discretion**. In Little v. State, 261 Ark. 859, 554 S.W.2d 312, 324 (Ark. 1977), the Arkansas Supreme Court interpreted the word "should" in an instruction on circumstantial evidence as **synonymous with the word "must**" and rejected the defendant's argument that the jury may have been misled by the court's use of the word in the instruction. Similarly, the Missouri Supreme Court rejected a defendant's argument that the court erred by not using the word "should" in an instruction on witness credibility which used the word "must" because the two words **have the same meaning**. State v. Rack, 318 S.W.2d 211, 215 (Mo. 1958). [\*318] In applying a child support statute, the Arizona Court of Appeals concluded that **a legislature's or commission's use of the word "should" is meant to convey duty or obligation**. McNutt v. McNutt, 203 Ariz. 28, 49 P.3d 300, 306 (Ariz. Ct. App. 2002) (finding a statute stating that child support expenditures "should" be allocated for the purpose of parents' federal tax exemption to be mandatory).

#### The race could still shift---every swing state is close

Cohn 10/24 Nate is an elections expert at The New Republic. “Expect the Unexpected: Diverse Battleground States Mean the Race Can Shift in Any Number of Ways,” 2012, http://www.tnr.com/blog/electionate/109067/diverse-and-competitive-electoral-map-introduces-more-possibilities-surprisi

With a deadlocked popular vote all eyes turn toward the electoral college, where the conventional wisdom holds that the state of the race is pretty straightforward: Romney leads in North Carolina and Florida, but Obama leads in Ohio, Nevada, and Wisconsin, states worth 271 electoral votes. As an advocate of the polling average as the principal means to understand the state of the race, I don’t fundamentally disagree with this view. But this year’s battleground states **are so close** and so diverse that it would be wise to remain open to unexpected outcomes.¶ That's because the battleground states are all so different demographically. States once deemed microcosmic of the country like Michigan, Pennsylvania, and Missouri have been swept off the map for being a few points too Republican or Democratic, and they’ve been replaced with a diverse set of states that add up to a tight race. “New coalition” states like Virginia and Colorado hold exceptionally well-educated and affluent populations. More than 20 percent of the Virginia and North Carolina electorates might be black in 2012—far more than any battleground state of 2004. Nevada and the once dispositive Orlando area have been dramatically reshaped by an exploding Latino population. Northeast Ohio is full of manufacturing workers, something absent from many other battleground states.¶ Today, the national polls show a truly deadlocked race, and the nine battleground states each appear to rest within about three points on either side of a tie. With diverse battlegrounds, **there are plenty of moving pieces that could potentially nudge a state one or two** percentage **points in either side’s direction** without influencing the other battlegrounds. For instance, if Romney sweeps undecided and disaffected white working class voters, it won’t do him much additional good in Virginia but could make the difference in Ohio. If Obama’s GOTV efforts rejuvenate Latino turnout, it barely matters in Iowa but probably ends Romney’s chances in Nevada. If Mourdock comments cause a new round of abortion coverage, it might make a difference in Colorado without any consequence for Ohio or Florida. A strong black turnout wouldn't swing New Hampshire but could be decisive in Virginia.¶ Making matters worse, several of the most important questions of the election are issues that pollsters struggle with the most. While the average of polls is the best available indicator of the state of the race, the polls are neither perfect nor infallible. The RealClearPolitics average, for instance, usually misses its mark by an average of 2 or 3 points, even without systemic bias toward either party and even in years when it gets all the states right. And unlike unscientific criticisms of polls (ie: the party-ID wars), there are many substantive and defensible criticisms of the continuing accuracy of polling in an era of low response rates, including their ability to reach out to Latino voters and people with cell phones. For good measure, likely voter screens are imprecise, to say the least. While all of these issues were potentially problematic a decade ago, many were not as serious. Cell phones weren't yet ubiquitous, and an enclave of Cubans in Miami were the most important Latinos to the election. Young voters were not as critical to the Democratic coalition, since the age gap was far smaller than it is today. These issues give more reason to avoid placing too much faith in a 2-point lead in a polling average, but they could also manifest unevenly across the electoral map. If the polls miss Latino turnout in 2012, that potentially changes the outcome of Colorado, Nevada, and Florida without much of a consequence for Iowa or Ohio. And it’s worth remembering that something like this may have been responsible for Reid and Bennet’s upset victories in 2010. ¶ None of these scenarios are particularly probable, especially individually. But one way or another, **we could easily be surprised between now and the** time the **election** is called in 13 days. The polls are pretty good, but they are not perfect, and with observers paying so much attention to the slight distinctions between Obama's 1.9 point lead in Ohio and .6 point lead in Virginia, unrealistic levels of precision may be necessary to avoid surprises. And that's before accounting for the possibility that the race could shift over the final two weeks in subtle ways that move particular demographic groups and states without similar changes in others. The nine battleground states are so close and so diverse that late movement among specific demographic groups or slight errors in the polling could easily reshape the electoral map before November 6.

#### Obama’s ahead in the newest polling and has arrested Romney’s momentum

Silver 10/26 Nate is an elections expert for the NYT. “Oct. 25: The State of the States,” 2012, <http://fivethirtyeight.blogs.nytimes.com/2012/10/26/oct-25-the-state-of-the-states/?gwh=9157D2A2D5EC17B9DE2F9DF51818F651>

Thursday was a busy day for the polls, with some bright spots for each candidate. But it made clear that Barack Obama maintains a narrow lead in the polling averages in states that would get him to 270 electoral votes. Mr. Obama also remains roughly tied in the polls in two other states, Colorado and Virginia, that could serve as second lines of defense for him if he were to lose a state like Ohio.¶ The day featured the release of 10 national polls, but there was little in the way of a consistent pattern in them. On average, the polls showed a tied race. Furthermore, among the nine polls that provided for a comparison to another poll conducted after the first presidential debate in Denver, the net result was unchanged, on average, with Mr. Obama gaining one percentage point or more in three polls, but Mr. Romney doing so in three others.¶ Mr. Obama held the lead in nine polls of battleground states on Thursday, as compared to three leads for Mr. Romney and two polls showing a tied race.¶ This tally exaggerates the lopsidedness of the polling a bit, since the state polls released on Thursday were something of a Democratic-leaning bunch, some of which had shown strong numbers for Mr. Obama previously.¶ Mr. Romney’s strongest number came in a Fox News poll of Virginia, which had him 2 points ahead there – a sharp reversal from a 7-point advantage there for Mr. Obama before the Denver debate. However, Mr. Romney’s worst poll of the day was probably also in Virginia, where Public Policy Polling showed Mr. Obama’s lead expanding to 5 points from 2.¶ Among the 10 polls that provided for a comparison to another poll conducted after the Denver debate, Mr. Obama gained 1 percentage point, on average. The past week of polling suggests that Mr. Romney is no longer improving his position in the race.¶ Whether Mr. Obama has any momentum of his own, such as because of this week’s debate in New York, is less clear. To me, it looks more like a gradual reversion to the mean than anything all that assertive.¶ At the same time, Mr. Obama has led in the polling averages all year in states that would allow him to win the Electoral College, and that remains the case now.

#### Obama will win---swing states, models, ground game, enthusiasm, early voting

Klein 10/25 Ezra is a politics writer for the Washington Post. “Where the 2012 presidential election is right now,” 2012, http://www.washingtonpost.com/blogs/ezra-klein/wp/2012/10/25/where-the-2012-presidential-election-is-right-now/?wprss=rss\_ezra-klein

State polls: Barack Obama holds a slight but persistent lead in the battleground states. Real Clear Politics puts him up in Ohio, New Hampshire, Iowa, Nevada, Wisconsin, Pennsylvania and Michigan — which is **more than enough to win the election**. Romney is up in Florida, Colorado and North Carolina. Virginia is tied. The Pollster.com list is exactly the same, save for Obama holding slight leads in Colorado and Virginia. Note that in all the polling averages, Obama’s lead in Ohio is larger than Romney’s lead in Florida.¶ Models: At this point, I don’t know of any continuously updated model that shows Romney ahead. Nate Silver’s model gives Obama a 71 percent chance of winning. Sam Wang’s meta-analysis predicts 293 electoral votes for Obama. Drew Linzer’s Votamatic predicts 332 electoral votes for Obama.¶ Ground game: No one pretends that Romney’s ground game is anything close to what the Obama campaign has put together. Conventional wisdom is that a good ground game can get you about 2 percentage points in the polls. If that proves true here, **it will be decisive**. (For more on this, read Molly Ball’s excellent survey of the two ground games.) ¶ Enthusiasm: The conventional wisdom through much of this election is that Democrats face an enthusiasm gap. But that’s become hard to spot in the polls. The latest Washington Post/ABC News tracker, for instance, puts Romney up by 1 point among likely voters, and reports that 95 percent of Obama’s supporters say they’re enthusiastic about voting and 93 percent of Romney voters say the same.¶ Early voting: Absolutely everything I’ve heard suggests the Obama campaign is meeting and exceeding its early voting targets. You can see some on-the-ground evidence of this from Jon Ralston’s look at early voting in Nevada, which is showing huge numbers for the Democrats, and the Time poll of Ohio, which showed a huge lead for Democrats among early voters. Democrats also appear to lead in early voting in North Carolina. Note that Obama is casting a highly publicized early vote in Chicago today. Aaron Blake’s survey of the early voting — which includes some evidence that Republicans are beginning to tighten the margin — is worth reading.

#### Err neg---polls underestimate true turnout for Obama and he’s ahead where it matters

Wright 10/25 Robert is a senior editor at The Atlantic. “It's Official: Romney Has Zero Momentum,” 2012, http://www.theatlantic.com/politics/archive/2012/10/its-official-romney-has-zero-momentum/264141/

[1] Obama's numbers in swing states are running ahead of his numbers nationally. When the national polls were moving in Romney's direction, this gap may have been partly due to the fact that, because swing states polls were being done less often than national polls, swing state polls were lagging indicators. But when, as now, national polls are flat, and swing state polls are being conducted more and more often, that ceases to be a plausible explanation for the difference.¶ [2] **The polls, especially in swing states, may underpredict Obama's election day** numbers. These polls count only the responses of "likely voters"--a subset of the "registered voters" the pollsters interview. Obama tends to do better with the latter than the former. And some people think that, because Obama's "ground game" is better than Romney's, more Obama voters whom pollsters put in the "registered but not likely" category will wind up voting.¶ These two factors explain why, though Romney is slightly ahead in national "likely voter" polls, **Obama is a clear favorite** in the betting markets. As I write this, Intrade gives him a 62 percent chance of winning.

#### Momentum has shifted towards Obama

Silver 10/25 Nate is an elections expert at the New York Times’ 538 blog. “Oct. 24: In Polls, Romney’s Momentum Seems to Have Stopped,” 2012, <http://fivethirtyeight.blogs.nytimes.com/2012/10/25/oct-24-in-polls-romneys-momentum-seems-to-have-stopped/>

Mr. Romney clearly gained ground in the polls in the week or two after the Denver debate, putting himself in a much stronger overall position in the race. However, it seems that he is no longer doing so.¶ Take Wednesday’s national tracking polls, for instance. (There are now eight of them published each day.) Mr. Romney gained ground in just one of the polls, an online poll conducted for Reuters by the polling organization Ipsos. **He lost ground in five others**, with President Obama improving his standing instead in those surveys. On average, Mr. Obama gained about one point between the eight polls.¶ This is the closest that we’ve come in a week or so to one candidate clearly having “won” the day in the tracking polls — and it was Mr. Obama.¶ The trend could also be spurious. If the race is steady, it’s not that hard for one candidate to gain ground in five of six polls (excluding the two that showed no movement on Wednesday) just based on chance alone.¶ What isn’t very likely, however, is for one candidate to lose ground in five of six polls if the race is still moving toward him. In other words, we can debate whether Mr. Obama has a pinch of momentum or whether the race is instead flat, but it’s improbable that Mr. Romney would have a day like this if he still had momentum.¶ The FiveThirtyEight model looks at a broader array of polls — including state polls — in order to gauge the overall trend in the race.¶ Our “now-cast” also finds a slightly **favorable trend** for Mr. Obama over the course of the past 10 days or so. Mr. Romney’s position peaked in the “now-cast” on Friday, Oct. 12, at which point it estimated a virtual tie in the popular vote (Mr. Obama was the projected “winner” by 0.3 percentage points). As of Wednesday, however, Mr. Obama was 1.4 percentage points ahead in the “now-cast,” meaning that he may have regained about 1 percentage point of the 4 points or so that he lost after Denver. Mr. Obama’s chances of winning the Electoral College were up in the FiveThirtyEight forecast to 71 percent on Wednesday from 68.1 percent on Tuesday.¶ It’s not yet clear how much of this, if any, has to do with the final presidential debate in Florida this Monday, which instant polls regarded Mr. Obama as having won. Instead, it’s been more of a slow and unsteady trajectory for him, with Mr. Obama often taking two steps forward but then one step back. It’s also not out of the question that the apparent trend just represents statistical noise.¶ At the same time, there is more reason to take a potential change in the polls seriously if it is precipitated by a news event like the debate. The tracking polls that were released on Wednesday contained only one full day of interviews that postdated the Florida debate. If the debate moved the needle toward Mr. Obama, it should become more apparent in the coming days.¶ The battleground state polls that came in on Wednesday were generally very close to our model’s current projections. For instance, there were three Ohio polls published on Wednesday; one showed a tied race there, while the other two showed Mr. Obama ahead by margins of two and five points.That’s pretty much what you’d expect to see out of a trio of Ohio polls if Mr. Obama’s lead there were about two points, which is where our model now has it.¶ Some of the polls, especially the Time magazine poll which had Mr. Obama five points ahead in Ohio, seemed to set off a lot of discussion on Twitter, as though people were surprised that Mr. Obama still held the lead there.¶ But these polls are really nothing new. Since the Denver debate, Mr. Obama has held the lead in 16 Ohio polls against 6 for Mr. Romney. In Nevada, Mr. Obama has had the lead in 11 polls, to Mr. Romney’s 1. Mr. Obama has led in all polls of Wisconsin since the Denver debate, and he has had five poll leads in Iowa to one for Mr. Romney.¶ Part of the confusion (and part of the reason behind the perception that Mr. Romney is still gaining ground in the race) may be because of the headlines that accompany polls.¶ We’re still getting some polls trickling in where the most recent comparison is to a poll conducted before the Denver debate. We should expect Mr. Romney to gain ground relative to a poll conducted before Denver. (Mr. Romney may have lost a point or so off his bounce, but he has clearly not lost all of it). But it isn’t news when he does; Mr. Romney’s Denver gains had long ago become apparent, and priced into the various polling averages and forecast models.¶ The question, rather, is whether Mr. Romney is gaining ground relative to the post-Denver polls — or if, as Wednesday’s polls seemed to imply, the race instead may have ticked back slightly toward Mr. Obama.

#### Reject their Gallup polls---it’s skewed---Historics prove

Silver 10/18 Nate is head of the NYT’s 538 blog. “Gallup vs. the World,” 2012, http://fivethirtyeight.blogs.nytimes.com/2012/10/18/gallup-vs-the-world/?gwh=5E00DF13001CF76F90FE57382BE66AC8

The Gallup national tracking poll now shows a very strong lead for Mitt Romney. As of Wednesday, he was ahead by six points among likely voters. Mr. Romney’s advantage grew further, to seven points, when Gallup updated its numbers on Thursday afternoon.¶ The Gallup poll is accounted for in the forecast model, along with all other state and national surveys.¶ However, its results are deeply inconsistent with the results that other polling firms are showing in the presidential race, and the **Gallup poll has a history of performing very poorly when that is the case**.¶ Other national polls show a race that is roughly tied on average, while state polls continue to indicate a narrow advantage of about two points for President Obama in tipping-point states like Ohio. The forecast has Mr. Obama as a narrow favorite in the election largely on the basis of the state polls. (You can read my thoughts here on the challenge of reconciling state and national poll data.)¶ Our database contains records from 136 distinct pollsters that have released at least one state or national survey at some point in this election cycle. Of those, 53 are active enough to have issued at least one survey since Oct. 1.¶ With so much data to sort through, it will usually be a counterproductive use of one’s time to get overly attached to the results of any one particular poll. Whether you look at the relatively simple averaging methods used by Web sites like Real Clear Politics, or the more involved techniques in the FiveThirtyEight forecast, the Gallup national tracking poll constitutes a relatively small part of the polling landscape.¶ Let me walk you through the rules for how the FiveThirtyEight model weighs the Gallup poll relative to all the other information it accounts for. This explanation will be modestly technical — you may want to skip ahead to the next section if you aren’t concerned with these details.¶ The Role of the Gallup Poll in the FiveThirtyEight Model¶ There are two major pieces of information that we’re looking to extract from each poll. One is simply the raw number — who is ahead or behind? The other is the trend it shows in the race — which candidate is gaining or losing ground?¶ Different types of polls are relatively more and relatively less useful for these purposes. Because national tracking polls like Gallup are published every day, they are useful for the trend part of the calculation, measuring the change in the race against a constant baseline.¶ Each poll receives a weight in the FiveThirtyEight trend-line calculation based on its sample size and its pollster rating. The model accounts for the fact that tracking polls use an overlapping set of interviews. A three-day tracking poll might consist of interviews conducted on Monday, Tuesday and Wednesday, for instance. When the polling firm issues its next release of the survey, a fresh set of interviews from Thursday will replace the ones from Monday in the sample. Thus, we reduce the weight assigned to each edition of a tracking poll to avoid counting the same interviews multiple times.¶ Even so, there are quite a few interviews conducted by a tracking poll over the course of a week — about 3,000 per week in the Gallup national tracking poll, for instance.¶ But Gallup is not the only national tracking poll. There are six published on most days; the others are from Rasmussen Reports, Ipsos, the RAND Corporation, Investors’ Business Daily and United Press International. (A seventh daily tracking poll, from Public Policy Polling, made its debut on Thursday.)¶ Of the daily tracking polls, the Gallup survey receives the largest weight in the trend-line calculation. It uses a larger sample size than most other polls, and it has a methodology that includes calls to cellphone voters.¶ On the other hand, the pollster ratings are also based in part on past accuracy, and Gallup’s performance is middling in that department. It mostly gets a lot of weight by comparison, since the tracking surveys are a mediocre group on the whole.¶ The trend-line adjustment also looks at other national polls when they are published, like the New York Times/CBS News or the Wall Street Journal/NBC News surveys. This is a high-quality group of polls; the disadvantage is that they are published only occasionally.¶ State polls are also useful for determining the overall trend in the race. In this case, the advantage is the abundance and diversity of data: there might be 10 or 20 state polls published on a typical day, often from 5 or 10 polling firms.¶ The trend-line calculation applies a 50 percent penalty to the weight assigned to state polls because trends in any one state could be an aberration. However, the states generally rise and fall together when there is a shift in the national climate — and if one candidate makes an especially large gain in one state, it must necessarily be counterbalanced by others in which it is below average.¶ The relative amount of weight assigned to each type of poll is fluid rather than fixed, and depends on the overall volume of data. On days when a large number of state polls is published but few national ones, they will generally be the more useful source for making inferences about the trend in the race.¶ But on average since Oct. 1, the Gallup national tracking poll has accounted for 12 percent of the information that the model uses to calculate the trend line. The other daily tracking polls, collectively, have accounted for 24 percent of the data, and the occasionally published national polls for 19 percent. Finally, the state polls account for about 45 percent of the data used to calculate the trend-line adjustment.¶ Thus, even though the Gallup national tracking poll is more influential than any other individual poll series in the FiveThirtyEight trend-line calculation, it still accounts for only about 12 percent of it. It can very easily be outweighed by the other polls if they are in disagreement with it.¶ As I mentioned, however, this is only half the battle. Once “old” polls are brought up to date by adjusting them to reflect the current trend in the race, we still need to take some kind of average of them.¶ The way the polls are employed to calculate the average is a little different than in calculating the trend line. Our research suggests, for instance, that state polls, rather than national polls, often provide a better estimate of the national popular vote, in addition to the Electoral College.¶ In addition, although the trend-line calculation relies fairly heavily on the quantity of polling — even a mediocre poll can be useful for measuring how the race is changing if it is published frequently — the polling average tends to place more emphasis on the quality of the poll. (Otherwise high-quality polls that are a bit of out-of-date can still have a fair amount of influence on the average. The problem with these polls being less recent is mitigated because the trend-line adjustment serves to make them more contemporary in the event that there has been a significant shift in the race.)¶ Over all, the Gallup daily tracking poll accounts for only about 3 percent of the weight in this stage of the calculation. The national tracking polls collectively, including Gallup, account for only about 10 percent of it. Most of the weight, instead, is given to the state polls.¶ This is, obviously, a rather detailed answer to the seemingly simple question of how much information is provided by the Gallup national tracking poll, as opposed to all the other state and national surveys.¶ Nevertheless, any rigorous attempt to consider the value of the Gallup poll would probably get you to something of the same answer. Perhaps the Gallup poll accounts for 5 or 10 percent of the information that an election analyst should evaluate on a given day.¶ The Gallup poll’s influence on the subjective perception about where the presidential race stands seems to be proportionately much greater than that, however — especially when the poll seems to diverge from the consensus.¶ This simply isn’t rational, in my view. As I discuss in my book, our first instincts are often quite poor when it comes to weighing information. We tend to put too much emphasis on the newest, most widely reported and most dramatic pieces of data — more than is usually warranted.¶ Gallup Performs Poorly When Out of Consensus¶ Usually, when a poll is an outlier relative to the consensus, its results turn out badly.¶ You do not need to look any further than Gallup’s track record over the past two election cycles to find a demonstration of this.¶ In 2008, the Gallup poll put Mr. Obama 11 points ahead of John McCain on the eve of that November’s election.¶ That was tied for Mr. Obama’s largest projected margin of victory among any of the 15 or so national polls that were released just in advance of the election. The average of polls put Mr. Obama up by about seven points.¶ The average did a good job; Mr. Obama won the popular vote by seven points. The Gallup poll had a four-point miss, however.¶ In 2010, Gallup put Republicans ahead by 15 points on the national Congressional ballot, higher than other polling firms, which put Republicans an average of eight or nine points ahead instead.¶ In fact, Republicans won the popular vote for the United States House by about seven percentage points — fairly close to the average of polls, but representing another big miss for Gallup.¶ Apart from Gallup’s final poll not having been especially accurate in recent years, it has often been a wild ride to get there. Their polls, for whatever reason, have often found **implausibly large swings** in the race.¶ In 2000, for example, Gallup had George W. Bush 16 points ahead among likely voters in polling it conducted in early August. By Sept. 20, about six weeks later, they had Al Gore up by 10 points instead: a 26-point swing toward Mr. Gore over the course of a month and a half. No other polling firm showed a swing remotely that large.¶ Then in October 2000, Gallup showed a 14-point swing toward Mr. Bush over the course of a few days, and had him ahead by 13 points on Oct. 27 — just 10 days before an election that ended in a virtual tie.¶ In 1996, Gallup had Bill Clinton’s margin over Bob Dole increasing to 25 points from nine points over the course of four days.¶ After the Republican convention in 2008, Gallup had John McCain leading Mr. Obama by as many as 10 points among likely voters. Although some other polls also had Mr. McCain pulling ahead in the race, no other polling firm ever gave him larger than a four-point lead.¶ It’s not clear what causes such large swings, although Gallup’s likely voter model may have something to do with it.¶ Even its registered voter numbers can be volatile, however. In early September of this year, after the Democratic convention, Gallup had Mr. Obama’s lead among registered voters going from seven points to zero points over the course of a week — and then reverting to six points just as quickly. Most other polling firms showed a roughly steady race during this time period.¶ Because Gallup’s polls usually take large sample sizes, statistical variance alone probably cannot account these sorts of shifts. It seems to be an endemic issue with their methodology.¶ To be clear, I would not recommend that you literally just disregard the Gallup poll. You should consider it — but consider it in context.¶ The context is that its most recent results differ substantially from the dozens of other state and national polls about the campaign. **It’s much more likely that Gallup is wrong and everyone else is right than the other way around.**

**Plan uniquely focused on**

Pappas 12 Stephanie is a writer for LiveScience. “Fukushima chilled U.S. opinions on nuclear power,” Mar 14, http://www.mnn.com/earth-matters/energy/stories/fukushima-chilled-us-opinions-on-nuclear-power

The nuclear meltdowns at the Fukushima power plant after the Japanese tsunami a year ago has made Americans more leery of nuclear power, according to a Yale University report.¶ ¶ Surveys taken in May 2011 after the Japan tsunami and subsequent nuclear meltdowns in Fukushima revealed more negativity toward nuclear power than surveys taken in 2005 before the disaster. Support for new nuclear power plants also slipped 6 percentage points from 2010.¶ ¶ "Fukushima was a 'focusing event' — a crisis that generates massive media and public attention and ripple effects well beyond the disaster itself," wrote Anthony Leiserowitz, the director of the Yale Project on Climate Change Communication, in an email statement.

#### Voters just started paying attention and media spotlight is intensified---past issues matter little

Garofoli 9/8 Joe is a writer for the San Francisco Chronicle, “Critical time in presidential campaign,” 2012, http://www.sfgate.com/politics/joegarofoli/article/Critical-time-in-presidential-campaign-3850847.php

Americans will choose their next president in less than two months and **the race** is a statistical dead heat as it **enters the season that matters most:** **The one where Americans** who are not political geeks **start paying attention**.¶ The race will turn on how voters feel about the economy. Should President Obama be re-elected because it is headed in the right direction - 30 consecutive months of private sector job growth after precipitous losses during the George W. Bush presidency - or should GOP nominee Mitt Romney take the wheel because unemployment has been above 8 percent for more than three years, the longest stretch since the Great Depression?¶ RealClearPolitics.com's average of major polls shows 62 percent of Americans feel the country is headed in the wrong direction.¶ Coming out of a fortnight of back-to-back political party conventions that ended last week, **each side has little room for error as the spotlight intensifies** - and September is traditionally the cruelest months for gaffes. It was in September 2008 when GOP vice presidential nominee Sarah Palin became a running joke on "Saturday Night Live" after positing that being the governor of Alaska enhanced her foreign policy credentials because her state was so close to Russia.

#### Obama’s cut nuclear loan guarantee funding---proves our link

Bendery 12 Jennifer is a writer for the Huffington Post. “Obama's Budget Nixes New Money For Program That Funded Solyndra,” 2/14, <http://www.huffingtonpost.com/2012/02/14/obama-budget-solyndra-program_n_1276605.html>

In a quiet shift from the past two years, President Barack Obama's 2013 budget includes no new money for the Department of Energy loan guarantee program, the same program that House Republicans have scrutinized for losing more than $500 million in taxpayer dollars to the now-defunct solar power company, Solyndra. Obama has regularly included huge increases to the program's loan guarantee authority in his budget, though Congress has not approved his proposals. He provided a $36 billion increase for nuclear reactors in his 2011 budget, and again in his 2012 budget. He also included $200 million in credit subsidies for renewable and energy efficiency projects in his 2012 budget. **This year, he provided nothing**. Meg Reilly, a spokeswoman for the Office of Management and Budget, said in an email that Obama opted not to put new money toward the loan guarantee program this time because the administration is waiting on the results of an evaluation of the Energy Department's loan portfolio. Reilly also said the program still has "a significant amount of remaining resources" from prior years and that the focus will be on putting those funds to use. There's about $10 billion in its reserves. The Energy Department "continues to conduct due diligence and is in active negotiations with a number of additional project sponsors," Reilly said. "It's important to point out here that, as of January 2012, over $24 billion in direct loans and loan guarantees have closed to support a diverse range of over 30 wind, solar, electric vehicles and other clean energy projects projected to fund more than 50,000 jobs." But some environmental groups say Obama's budgetary shift is hugely significant because it **means no** new **money for** building **nuclear** powerplants -- and they speculate that, at least in part, they have Solyndra to thank for the shift. "The entire loan program has fallen into some disrepute on Capitol Hill ... because of Solyndra and some of the other renewable programs getting in trouble," said Michael Mariotte, executive director of Nuclear Information and Resource Service, an information hub for organizations concerned with nuclear power. The administration "may have decided to cut their losses" and stop providing new funds to the program altogether.

#### The plan’s explosive with the public---Fukushima had a chilling effect

CSI 12 Civil Society Institute. “SURVEY: AMERICANS NOT WARMING UP TO NUCLEAR POWER ONE YEAR AFTER FUKUSHIMA,” 3/7, http://www.civilsocietyinstitute.org/media/030712release.cfm

Contrary to Industry Predictions, Reactor Disaster Seen As Having a "Lasting Chill" on Perceptions; It's Not All Fukushima: 3 in 5 Americans Less Supportive Due to Woes of U.S. Nuclear Industry in Last Year.¶ WASHINGTON, D.C.///March 7, 2012///One year after the disaster at the Fukushima nuclear reactors in Japan, Americans continue to want to keep the brakes on more nuclear power in the United States, according to a major new ORC International survey conducted for the nonprofit and nonpartisan Civil Society Institute (CSI).¶ To gauge any shift in public attitudes, the new survey was benchmarked to an earlier poll carried out by ORC International in March 2011 for CSI. Conducted February 23-26 2012, the new survey of 1,032 Americans shows that:¶ • Nearly six in 10 Americans (57 percent) are less supportive of expanding nuclear power in the United States than they were before the Japanese reactor crisis, a nearly identical finding to the 58 percent who responded the same way when asked the same question one year ago. This contrasts sharply with pre-Fukushima surveys by Gallup and other organizations showing a 60 percent support level for nuclear power.¶ • More than three out of four Americans (77 percent) say they are now more supportive than they were a year ago "to using clean renewable energy resources - such as wind and solar - and increased energy efficiency as an alternative to more nuclear power in the United States." This finding edged up from the 2011 survey level of 76 percent.¶ • More than three out of four Americans (77 percent) would support "a shift of federal loan-guarantee support for energy away from nuclear reactors" in favor of wind and solar power. This level of support was up from the 74 percent finding in the 2011 survey.¶ • In response to a new question in the 2012 survey, more than six in 10 Americans (61 percent) said they were less supportive of nuclear power as a result of reports in the U.S. during 2011 and so far in 2012 of nuclear reactors that had to be shut down due such factors as natural disasters, equipment failure and radioactive leaks.¶ • About two thirds (65 percent) of Americans now say they would oppose "the construction of a new nuclear reactor within 50 miles of [their] home." This figure was roughly the same as the 67 percent opposition level in the March 2011 survey.¶ Pam Solo, founder and president, Civil Society Institute, said: "It is clear that Fukushima left an indelibleimpression on the thinking of Americans about nuclear power. The U.S. public clearly favors a conservative approach to energy that insists on it being safe in all senses of the word - including the risk to local communities and citizens. These poll findings support the need for a renewed national debate about the energy choices that America makes."¶ Peter Bradford, former member of the United States Nuclear Regulatory Commission, former chair of the New York and Maine utility regulatory commissions, and currently adjunct professor at Vermont Law School on "Nuclear Power and Public Policy, said: "This survey is another piece of bad news for new nuclear construction in the U.S. For an industry completely dependent on political support in order to gain access to the taxpayers' wallets (through loan guarantees and other federal subsidies) and the consumers' wallets (through rate guarantees to cover even canceled plants and cost overruns), **public skepticism of this magnitude is a** near fatal flaw. The nuclear industry has spent millions on polls telling the public how much the public longs for nuclear power. Such polls never ask real world questions linking new reactors to rate increases or to accident risk. Fukushima has made the links to risk much clearer in the public mind. This poll makes the consequences of that linkage clear."¶ Pollster Graham Hueber, senior researcher, ORC International, said: "I would summarize these findings as follows: We see here a lasting chill in how the public perceives nuclear power. The passage of one year since the Fukushima nuclear reactor crisis in Japan has neither dimmed concerns in the U.S. about nuclear power nor has it made Americans more inclined to support an expanded federal focus on promoting more nuclear reactors in the U.S."¶ Robert Alvarez, senior scholar, Institute for Policy Studies, where he is currently focused on nuclear disarmament and environmental and energy policies, and former senior policy advisor, U.S. Secretary of Energy, where he coordinated the effort to enact nuclear worker compensation legislation, said: "Nuclear power remains expensive, dangerous, and too radioactive for Wall Street. This survey shows why the industry has no future unless the U.S. government props it up and forces the public to bear the risks."¶ OTHER KEY SURVEY FINDINGS¶ • 72 percent of Americans do not "think taxpayers should take on the risk for the construction of new nuclear power reactors in the United States through billions of dollars in new federal loan guarantees for new reactors." This level of opposition was nearly identical to the 73 percent opposition level reported in the March 2011 survey.¶ • Nearly four out of five Americans (78 percent) would favor Congress reviewing a 1957 law indemnifying nuclear power companies from most disaster clean-up costs. Instead, Americans would hold the companies "liable for all damages resulting from a nuclear meltdown or other accident." This figure is up 5 percentage points from the 73 percent support level seen in 2011.¶ • Over half (52 percent) of Americans living within 50 miles of a nuclear reactor do not know "what to do in the event of nuclear reactor emergency," such as "the evacuation route and what other steps to take." (That figure is unchanged from the 2011 survey findings.) The 2012 poll indicates that nearly one in five (18 percent) of Americans say they live within 50 miles of a nuclear power reactor.¶ • Over half (51 percent) of Americans would now support "a moratorium on new nuclear reactor construction in the United States," if "increased energy efficiency and off the shelf renewable technologies such as wind and solar could meet our energy demands for the near term." This support level was little changed from the 53 percent level seen in the March 2011 survey.

#### The plan’s massively unpopular, especially with the Democratic base and environmentalists

Daily Kos 6/5 “Nuclear Power and Public Opinion: What the polls say,” 2012, http://www.dailykos.com/story/2012/06/05/1097574/-Nuclear-Power-and-Public-Opinion-What-the-polls-say

Conclusion 2: Americans do not think nuclear power is “clean” energy, and still **don’t want to** pay **for it**.¶ Jumping back to ORC International, their March 2012 poll found this:¶ About two out of three Americans (66 percent)---including 58 percent of Republicans, 65 percent of Independents, and 75 percent of Democrats -- agree that the term “‘clean energy standard’ should not be used to describe any energy plan that involves nuclear energy, coal-fired power, and natural gas that comes from hydraulic fracturing, also known as ‘fracking.’”¶ and this:¶ About three out of four Americans (73 percent) agree that “federal spending on energy should focus on developing the energy sources of tomorrow, such as wind and solar, and not the energy sources of yesterday, such as nuclear power.” Fewer than one in four (22 percent) say that “federal spending on energy should focus on existing energy sources, such as nuclear, and not emerging energy sources, such as wind and solar.”¶ Meanwhile, the New York Times in May reported on a Harvard/Yale poll (also behind a paywall), conducted in 2011 but released in May 2012, that found that Americans are willing to pay an average of $162/year more for clean energy than they are paying now—an average 13% increase in electric bills. But when clean energy was defined as including nuclear power or natural gas, that **support** plummeted.¶ This is consistent with findings over the past decade, which have shown that nuclear power has typically ranked well below renewable energy sources, especially solar and wind, in public opinion, at times battling with coal for **least-favorite U.S. energy source.**¶ A March 2012 Gallup poll found that 69% of Americans support spending more government money on solar and wind power—with majorities among Democrats (84%) and Republicans (51%) alike. But support for “expanding the use of nuclear power” barely received a majority (52%) and then only due to Republican support: 64% of Republicans supported that idea, only 41% of Democrats.